Worldradio

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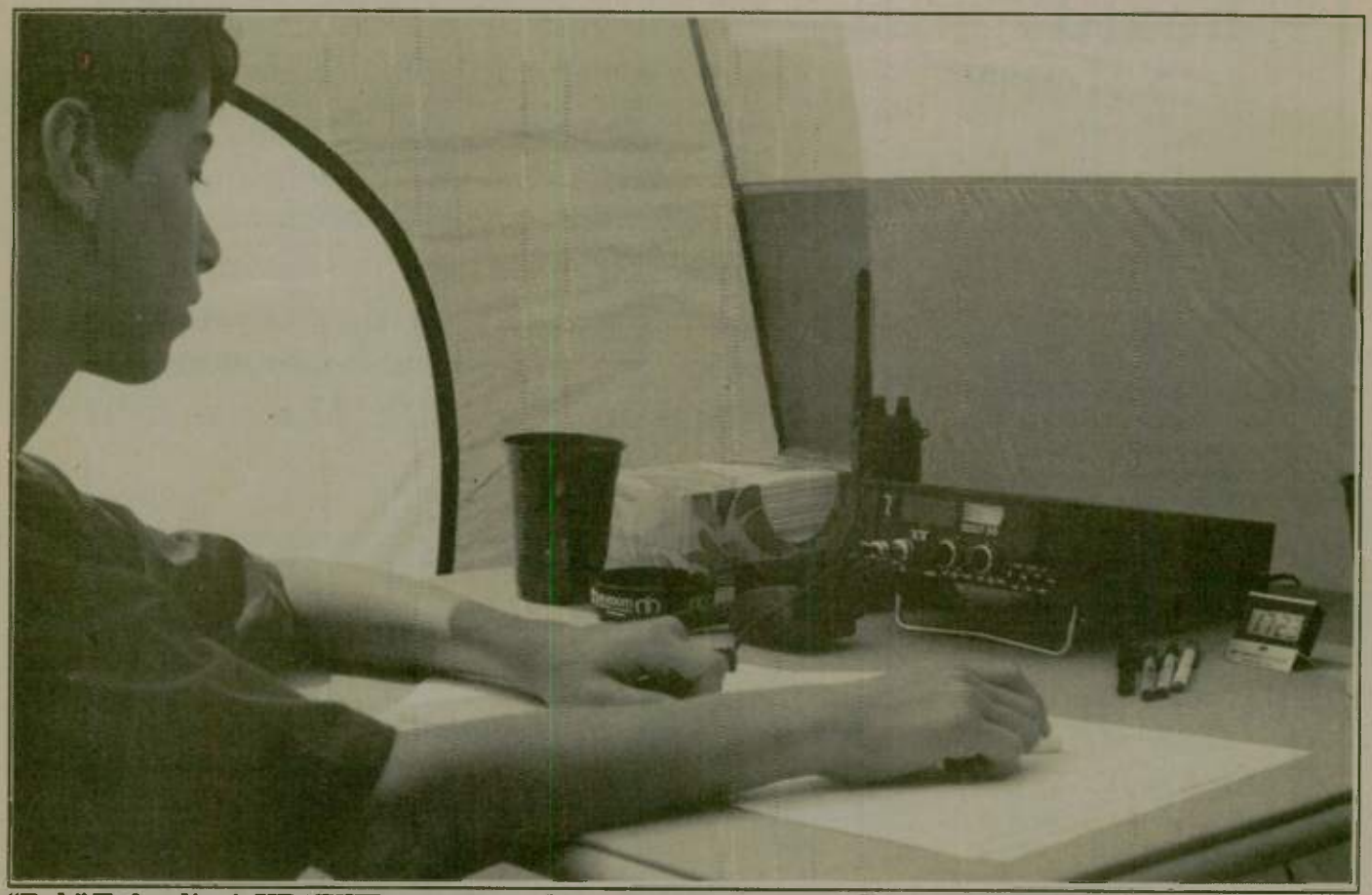

"Rob" Esfandiari, KD6EWT, age 13, working Field Day at N6UNX, the Conejo Valley California ARC during the 1995 outing. Rob worked 40 Phone and 15 CW and made 211 contacts using 5W with battery power and portable wire antennas. ***—photo courtesy of WB2WIK/6***

After Extra — what's next?

Steve Katz, WB2WIK/6

My nephew, Sohrab Esfandiari, KD6EWT, just passed his amateur Extra Class exam at the San Fernando Valley ARC VE session on 5 August, in Northridge, California. "Rob," as he is known on the air, is just 13 years old and was first licensed at age 10. He has been an Advanced Class licensee for about a year.

Rob is now in 7th grade and is very active in ham radio, with about 200 DXCC countries worked, mostly on CW. Although he has cerebral palsy, he is very interested in sports and plays basketball and does a lot of swimming. I'm teaching him volleyball and he's getting quite good. I think skiing will be next, this coming winter.

He became interested in ham radio at age 9, when he saw me (his old uncle, 30 years his senior) making DX contacts. I encouraged him to study for a Novice, which only took Rob about three weeks to prepare for and pass with flying colors. As a new Novice (age 10) he showed interest in CW because that was the only way he could work DX. I spent time with him to build his speed up from 5 to about 35 wpm in just a few weeks. It was easy for Rob, because he had no ill will towards CW and didn't know he wasn't supposed to like it.

I used my proven CW teaching technique, that is to make him put away his pencil and paper and just listen to the code at very high speeds while I sent familiar words, like the names of sports teams, cities and so forth. In just a few days, he could copy "Los Angeles Lakers" or "Baltimore Orioles" at over 40 wpm. I kept sending faster and faster, using familiar words. "Santiago, Chile" at 45 wpm; "Lincoln Nebraska" at 50 wpm; and "New York Yankees" at 55 wpm. As long as the text was familiar, there was no limit to his copying ability. He never wrote down anything. He was learning CW the right way: as a second language.

(please turn to page 6)

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— *Worldradio* NEWSFRONT —

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

FAR Scholarship winners named

The top Foundation for Amateur Radio scholarship winner for 1995 is David A. Arthur, N2ISB, of Charlton, New York. Davis is the recipient of the Rose Ellen Bills Memorial Scholarship of $2,000. Craig Gullickson, KC6CEX, of Fresno, California, received the John W. Gore Memorial Scholarship, and Thomas Schmidt, KD4WNP, of Chapel Hill, North Carolina, has been awarded the Edwin S. Van Deusen Memorial Scholarship. Each will get $1,250.

For 1995, 55 scholarships ranging from $500 to $2,000 were awarded. These annual scholarships are open to all licensed radio amateurs meeting the qualifications and residence requirements of the various sponsors. The foundation is a nonprofit organization incorporated in the District of Columbia, and represents more than 75 clubs in Maryland, the District of Columbia, and Northern Virginia.

VEC funding

The FCC will not permit the nation's Volunteer Examination Coordinators to copyright the Amateur Radio testing question pool.The government agency says that the preparation of the question pools is a part of the volunteer activity expected of VECs.

For some time, the VECs have been toying with the idea of copyrighting the question pool and then selling commercial publishers access to it. But speaking at the annual meeting of VECs, the FCC's John B. Johnston, W3BE, said that the entire purpose of the question pools is to inform examinees, examiners, educators, the amateur radio community and any other interested party as to exactly what a person has to know in order to obtain a ham radio license.

Copyrighting the pools, says Johnson, would be fundamentally contrary to the Commission's goal of giving the public the best possible service at minimal cost.

Johnston said that there is (one and only one) source of funding available to those who function as Volunteer Examination Coordinators. That source of revenue is the testing fees paid by examinees. The dollar amount of those fees is tightly government controlled so as to preclude a VEC from showing any profit from its testing operations and no other solicitation of funds is authorized under the VEC system. Johnston noted that the National Conference of Volunteer Examination Coordinators — an umbrella organization formed by the VECs may collect dues from its members, but it is forbidden to do any other form of fund raising until and unless congress passes legislation to authorize other fund raising activities.

ARRL board meeting

The ARRL Board of Directors met in its second session of 1995 on 21 and 22 July. A number of major actions were taken that will affect the way that the league approaches and enters the 21st century.

Possibly the most significant of these is a decision to institute three year terms for ARRL Directors and Vice Directors. This will be implemented in accordance with a transition schedule beginning in 1998.

Changes were also made to the operating procedures of the ARRL Awards Committee and Advisory Committees. Membership of the Awards Committee was reduced to six and an ad hoc committee has been formed to review the terms of reference and operating methods of all Advisory Committees.

The ARRL is getting into the RFI immunity testing of electronic gear. The board directed that the staff create a plan, including a budget, for the creation of standardized RFI immunity testing procedures for consumer electronics equipment.

In other news, the Board has declined to have the ARRL participate actively in the recently created corporation of volunteer examiner coordinators. On the other hand it has adopted a resolution thanking NASA for its continued support of the SAREX program.

And before adjourning, the Board of Directors expressed its gratitude to recently retired President George S. Wilson, W4OYI, for his many years of dedicated service to the league and to the Amateur Radio Service. The Board of Directors bestowed on George the title of ARRL President Emeritus. An honor that he truly deserves.

Gunman kills three California hams

Willie Woods is accused in the shooting deaths of Marty Wakefield, N6BZ, Neil Carpenter, KA6QIB and Anthony Gain, W6KFN, and non-ham James Walton.

Woods was described as a disgruntled radio repairman for the City of Los Angeles and has been indicted on four counts of murder in the first degree with special circumstances for the July 19th killings.

Anthony Gain was an Advanced Class licensee and trustee for a repeater operated by the city. He chose to continue to work although he could retire. Marty Wakefield was an active DXer and had been an ARRL volunteer examiner. Neil Carpenter was also an Advanced Class licensee. All four held FCC General Radiotelephone licenses as well.

The three hams were active in the Los Angeles City Amateur Radio Volunteers.

(more NEWSFRONT, page 6)

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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.

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PUBLISHER'S MICROPHONE

There have been many great people in the history of Amateur Radio. For example, the amateur who put our first Two Meter repeater on the air. But, what was his name and call?

Here's some great people whose names will not be forgotten. The latest to join the ***Worldradio*** Super-Boosters (Lifetime Subscribers) are:

•Scott Murray, KA1RVB, Coventry, RI
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•Arthur Phillips III, NN7A, Flagstaff, AZ
•Conley Walden, N5HYJ, Hobbs, NM
•Herb Rosenberg, KG6OK, Tustin, CA
•Peter Gonos, K6GZN, Shingle Springs, CA
•Max Sabo, N7NWG, West Linn, OR and belated recognition (3 years late)
•Joseph Utschig, KM6EK, San Diego, CA

•

On Sunday, 13 August, the Santa Barbara, California Amateur Radio Club held their 75th Anniversary Hamfest. How many other radio clubs can claim such longevity?

Santa Barbara is not one of the larger cities so they make up in spirit what they may lack in numbers. Their monthly bulletin is top notch. At their hamfest they had demonstrations of ATV and slow-scan, microwave, OSCAR, as well as free HT checkups, T-hunt, fast and slow and QLF CW contests, and the "transformer toss!" There was the noon barbeque, major and minor prizes, flea market and VE sessions. They also have a serious side as their emergency van demonstrates. It is truly one of the nation's outstanding clubs. As is true for any organization, it is the people that make it what it is.

•

The Neighborhood Associations seem to be anti-antenna. In the bulletin of the Austin (TX) Amateur Radio Club, Mickey McInnis, KB5YAC, offered a possible solution. He wrote:

"Neighborhood associations often have very hard times getting people to serve as officers. Volunteer. It's probably much easier to get your antenna approved or ignored by the neighborhood association if you are the neighborhood association."

•

Max Sabo, N7NWG, West Linn, Oregon, asked "if you have an e-mail address where we can send you things? If you don't could you please get one? I cannot tell you how easy it is to send people info using e-mail. Why it would make your magazine almost... interactive (I myself am not sure if I will survive if I say that word one more time). If you do have one be sure to publish it in a very conspicuous place."

OK. We're in the process of doing that and a modem has been purchased. In the meantime for those who want to save the 32 cents you may use Armond@Delphi.com

•

This year's Field Day has now moved into the memories of many. Usually the groups gather at the site. But, for many years our group would first gather at a coffee shop a few miles from the site. I would look at the other (non-ham) customers in the shop and actually feel sorry for them that they were not about to engage in this great activity known as Field Day.

There are many (if we may use the word in relation to Amatuer Radio) "hobby" activities. A good number of the others are passive in nature. Ours is certainly ACTIVE in nature. And, there certainly are so many fascinating aspects to it. Actually I find it puzzling that more people don't want to be amateurs. Possibly it takes a special kind of imagination to be attracted to voices in the air from all corners of the country and the world.

•

Lou Ann and I were talking about going mobile in days past. You had to have a multi-vibrator between the battery and the rig to obtain the proper voltages. We'll drop the subject before some liken all that to, "and how many miles did you have to walk through the snow on the way to school?"

de *Armond, N6WR*

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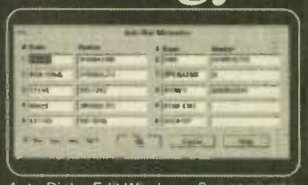
Main Window – Use Main Window to customize your HT. For example, the Auto Repeater Shift and Keypad Beep Tone can be selected "on" or "off". When scanning, the Display Lamp can be programmed to light up when a Busy Channel is found.



Auto Dialer Edit Window – Programming the Auto Dialer is easy. Type in names, phone numbers and in less than a minute, all DTMF Auto dial Stops are programmed.

Memory Listing Window – Left and Right Memory Channels can be displayed independently. View up to 22 memory channels in a single window. Frequency, CTCSS, Encode/Decode, Scan Skips, and Alpha Names are displayed for quick and easy changes.

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Unlock all the features of your FT-51R and FT-11/41R HTs, with a simple "point and click", easy programming of these dual band and 2 meter HTs, is yours. And, there's a Programmer Help window for each radio. Use ADMS-1 to download from HT to PC, then clone the information to another FT-51R or FT-11/41R HT instantly! Create memory Files for each city you visit, then load and go. Affordable for everyone, ADMS-1 Windows™ software is a neat little package that will change your HT use forever.

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New optional E-DC-12 Mobile DC Adapter slides onto the bottom of the FT-51R and FT-11/41R to provide direct 5 Watt power output, and trickle charge the battery, simultaneously. Go mobile with this quick-mount, easy to use Yaesu "exclusive"!

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The FT-51R is the most high-tech, state-of-the-art, example of HT technology made today. Easy to use, too. So easy, you won't need an operating manual. Exclusive, scrolling instruction menu in the large, backlit display, guides you through total operation. Other new features are exciting, too. Spectrum Scope™, for continuous real time frequency activity scanning in VFO, or in 8 user-choice memories. A digital battery voltage display, five power output levels, Smart Mute™, two VFOs on both bands and

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NEW! Alphanumeric Display Full function LCD combines letters and numbers!

NEW! Up/Down Thumb Control with Volume and Squelch Bar Graph. Back lit, too!

NEW! Compact Battery Design 4.8V gives you 1.5 Watts. A first for amateur radio!

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Accessories:
Consult your local dealer.

Specifications

- Frequency Coverage:
  - FT-11R: 2 m: RX: 110-180 MHz, TX: 144-148 MHz
  - FT-41R: 70 cm: RX: 420-470 MHz, TX: 430-450 MHz
- Selectable Alphanumeric Display
- Compact Battery Design 4.8V produces 1.5 Watts 9.6V produces full 5 Watts*
- 150 Memory Channels (75 w/Alphanumeric)
- AM Aircraft Receive (110-136 MHz)
- Small Size 4" H x 2-1/4" W x 1" D
- RX/TX Battery Savers Built-in
- MOS FET Power Module
- Backlit DTMF Keypad and Display
- Backlit Up/Down Volume/Squelch Controls
- DTMF Paging/Coded Squelch
- Automatic Power Off (APO)

Accessories:
Consult your local dealer
*FT-41R, 3.5 Watts

After Extra

(continued from page 1)

After only a few weeks as a Novice, I noticed Rob was carrying on QSOs mostly with higher class licensees in the Novice bands, and going very fast. "Extra or bust!" became our motto. He became a General at age 11, and Advanced at age 12, and now passed the final hurdle at age 13. He actually passed the CW portion of the Extra Class at age 11. Unfortunately, the theory threw him and he failed that part. His Certificate of Successful Completion for the 20 wpm code test ran out when he was 12, but we were never worried, as this was the easy part for him.

I taught Rob to use a scientific calculator a few months ago, so he could calculate in scientific notation to work the resonance, reactance and impedance problems. He has not yet had any trigonometry in school, so he had to learn about sines, cosines and tangents. Isn't Amateur Radio great?

I'm very proud that my 13 year-old nephew, who lives with the rest of my growing family (XYL, kids, in-laws, et al), achieved his crowning success. His only regret is, and I quote: "I wish there was another, higher class of license, like an Extra-plus with a 50 wpm code requirement and more questions. This wasn't that hard!"

For the record, just to keep up with the kid, after 25-plus years as an Advanced, I also passed my Extra a while back. This was no great challenge for me after 30 years as a ham, but I'm still impressed when a kid can do it. **WR**

"I love your magazine. I read it from cover to cover, every issue." *—KD2IN*

NEWSFRONT

(continued from p. 3)

Single day convention trend growing

Look for more and more ham radio conventions to become one day events. A recent issue of the *Repeater Journal*, a publication of the South Eastern Repeater Association says that there appears to be a major shift toward downsizing large and mid-sized conventions and hamfests from two and three day events into single day affairs.

Repeater Journal says that attendance patterns in the South Eastern United States having changed over the past five years. The vast majority of those in attendance show up on opening day with fewer than 10% coming the second or third day. As a result, many show planners have decided to cut back their shows into single day, high volume events.

It will be interesting to see if the trend toward the consolidation of ham radio conventions to single day events becomes a national one. Also, what will be the reaction of the Amateur Radio supply industry, many of whom fly 1,500 to 3,000 miles to a show? Will they still be willing to attend a convention that only provides eight to ten hours for exhibiting and sales?

Ham Radio Germany

While attendance at ham conventions in the United States may be dwindling, the same is not true overseas. The proof? Official figures just out say that 21,000 hams attended this year's Ham Radio Convention in Friedrichshafen Germany. The three day event which is sponsored by the Deutscher Amateur Radio Club saw a considerably greater number of hams than attended in 1994.

New interference handbook

The FCC has released a new Interference Handbook for consumers. The 24-page, full color book will be stocked by FCC field offices around the country to provide people experiencing interference to home electronic equipment with information and solutions to interference problems. Contact your local FCC office for information on the availability of this new publication. *(Look for a review in next month's* ***Worldradio****).*

ACC sold

Advanced Computer Controls, once the biggest name in repeater controllers has been sold to Link Communications, of Sydney, Montana. ACC pioneered controllers which utilized synthesized speech and digital voice recorders. The great popularity of the company's RC-850 in the early 1980s, followed by the introduction of lower priced controllers in the mid '80s led to an approximate 90% share of the repeater controller market by the end of the decade.

As the controller market continued to expand, though, newer technologies allowed competitors to produce controllers with greater capabilities at lower costs. Sales of ACC products, which were constructed with 1980s technology, fell dramatically. In the last three years, it was estimated that ACC's share of the market had dipped to only ten percent.

On 25 July, ACC's Ed Ingber, WA6AXX, sold most of the company's holdings to Link, which produces the RLC line of repeater controllers. Allen Overcast, KF7FW, who owns Link Communications, bought the source codes, vocabulary, some parts and other proprietary information that comprise the "brains" of ACC's controllers.

Overcast says that Link Communications will not provide technical support for ACC controllers. When certain parts fail, Overcast said, replacements will be difficult to find; but he also stated that he "would try to help owners in the search for parts."

Call signs inscribed in spacecraft

Ron Broadbent, G3AAJ, Secretary of AMSAT-UK, has announced the formation of a program whereby individuals making a donation of £150 or more to the AMSATUK Phase 3-D Fund will have their name and call sign placed in the spacecraft prior to its launch in 1996. Similarly, commercial, governmental or trade organizations will have their names inscribed in the satellite for a donation of £2,000 or more under the same program. *(more NEWSFRONT, page 12)*

SATERN sponsors workshop

Leroy Shaver, NH2Z

SATERN (Salvation Army Team Emergency Radio Network) is sponsoring its fourth annual emergency-communications conference Friday, 13 October to Sunday, 15 October, at Camp Wonderland, Wisconsin. All hams interested in sharpening their emergency preparedness skills are welcome to register. The weekend seminar will feature presentations by professionals involved in a wide range of disasters as well as skill building workshops.

The role of Amateur Radio operators in floods, aviation accidents, earthquakes and other mishaps will dominate discussions in large-group sessions. Eugene Kramer, WA9TZL, director of communications for the Illinois State Patrol, will discuss preparations for a major earthquake on the New Madrid faultline, in the Midwest.

Rick Schlegel will address biomedical hazards facing responders, based on his experiences after both Hurricane Andrew and the Roselawn American Eagle accident.

Tom Mulcrone with the Chicago Fire Department Chaplaincy Service will explain the role of SATERN and The Salvation Army's Emergency Disaster Services program in various natural and man-made catastrophes, including the deadly heat wave in Chicago.

During the three-day conference, there will be time for small group workshops and free time for participating in a special event station. Topics for the skill building sessions include emergency communication procedures, emergency antenna construction, and digital communications.

The registration fee is $25 per person. The fee includes two nights lodging at Camp Wonderland (a comfortable, scenic camp near Kenosha, Wisconsin), conference materials, and all meals.

To register, send your name, address, call sign (if any) and $25 to Della Garcia, Administrative Assistant, Emergency Disaster Services, The Salvation Army, 5040 N. Pulaski, Chicago, IL 60630. **WR**

That dreaded blue pencil

Kenneth E. Roush, N7SQU

The truth is, I love to write. I really enjoy putting pencil to paper and watching the words bloom, blossom, flourish, and grow. When I finish a manuscript, I am a happy camper. Then comes the job of rewrite and killing all the beautiful phrases that really have nothing to do with the article at hand. I have become brutal in the rewrite. Naturally, I follow my sixth grade teacher's advice. I put the work aside for a spell. She said six weeks; I usually wait three days.

Then comes the spell check and a quick look at grammar and style. With that behind me, I send the work off — carefully written and neatly typed — to my favorite magazine, ***Worldradio.***

In the olden days — before plastic wrap, automatic drip coffee makers, and Silicon Valley computers — I sent off many manuscripts. They always came back loaded with blue pencil marks, pointing out minor errors of punctuation, unnecessary adjectives, and intervening adverbs. Of course, the rejection slip followed.

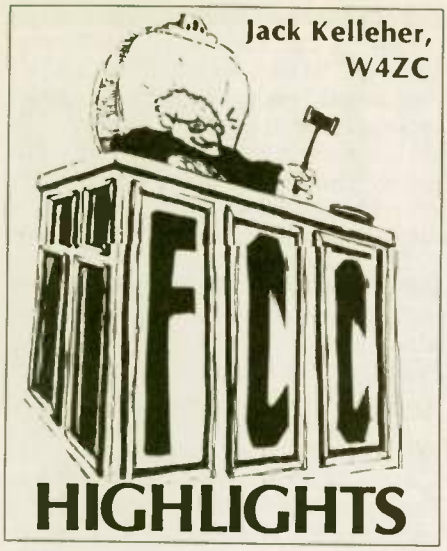
I did what any red-blooded American would do. I took up a new hobby, Amateur Radio. After getting my ticket, the first thing I noticed was the lack of blue pencil marks on my QSLs. I love this hobby. I also love ***Worldradio***. Finally, temptation overcame me. I wanted to submit an article. Fear and trembling overtook me and the past, as it always does, reared its ugly head. Oh boy, I just hate rejection. Fortunately, I quickly developed writer's block. I sat at the keyboard for hours and nothing appeared on the page.

One dark and rainy day, a both horrible and enlightening thing happened. My wife, Judy, AA7UC, joined the Amateur Radio News Service. It was horrible because they sent her a blue pencil with detailed instructions on its proper and inhumane usage. It was enlightening because, as always, our hobby came through. I bought a red pencil and, late at night when Judy was fast asleep, I carefully read their journal. With the secret help of the ARNS, I, too, became a professional advocate of Amateur Radio. Since then I have sent three major articles to my favorite publication. Most importantly, I received no rejection slips.

Brothers and sisters, with such help and great publications available to us, we can all forget that dreaded blue pencil and do more than simply ragchew. We can read, write, and become a part of publicizing our hobby. The ARNS and the professional staff at our prestigious chronicle, ***Worldradio,*** can and will, help. Why not join me and submit your news, dreams, hopes and fears.

If you're still afraid to put pencil to paper, just remember: You, too, could become a secret midnight reader of the ARNS *"Bulletin."* Check out their advertisement in ***Worldradio's*** classified section. Great stuff in there.

(Ed note: This editor does not return blue penciled manuscripts! My job is to help our contributors see their work in print. If it needs some help, that's why I am here. Of course, not everything can be used and if you need it returned, please include an SASE. Please be sure to include your phone number too, in case something needs clarification. —Lou Ann, KB6HP



Last month we introduced the column with these words. "The remarks of John Johnston and William Cross at the FCC Forum are, in my opinion, an outstanding discussion of our Rules and how they get that way, and a very valuable set of guidelines to the amateur fraternity concerning our activities and responsibilities under those rules. Here is the first half of the text; we hope to have room to finish it in the next issue."

Last month we reproduced about half of the FCC presentation, stopping midway through the discussion on Digital Message Forwarding. We now go back to the beginning of that Section, for the sake of completeness. And having read the text even more closely, we are more sure than before that it is a down-to-earth, much needed, plain-language version of our new and updated rules.

Digital message forwarding

"Message forwarding has always been one of your mainstream operating activities. You have had CW and phone nets since the very beginning.

"A decade or so ago, digital technology made high-volume high speed amateur systems practical. You linked your VHF and UHF stations to build easily accessible automatic message forwarding packet systems.

"Some of your systems, however, could not handle high volumes of messages because the model that Part 97 was based upon was that practiced by your phone and CW nets. Each operator in the relay chain screens every message before passing it along.

"These systems are very secure. Pirates and jokers simply can't take advantage of these systems. You make sure of that.

"They are also very slow. The rule making task, therefore, was to find an accommodation that would allow your message forwarding systems to operate at high speed without opening them to intolerable abuse. There were forty-two comments and two reply comments filed.

"Your systems are often unsupervised. They are easy targets for pirates and jokers. Even well-supervised commercial systems have difficulty at times with hackers. It takes a lot of enforcement resources to police an unsupervised high speed system.

"It is important, therefore, that there be supervision of your systems. It must come from the amateur service community.

"It appeared that those who are in the best position to supervise are the control operators at the stations that accept messages from originating stations.

"The accommodation was based upon this approach. A new section was added to Part 97. First, it codifies your authority to participate in ad hoc message forwarding systems.

"The accommodation is that the control operator of the station originating the message is primarily accountable for any violation in the message.

"When you accept communications directly from the station that originated it, yours is the first forwarding station. As such, you have a responsibility. Before you forward those communications into the system, you must do two things.

"Either you must authenticate the identity of the station from which you accepted the communications, or you must accept accountability for any rule violations in the communications.

"All of the other control operators in the system are not accountable for violative communications their stations retransmit inadvertently. They rely upon you. They expect you to make sure that no violative communication enters the system through your station. They are, however, responsible for discontinuing such communications once they become aware of their presence.

"Another place that you have been

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 August 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	AAØYS	KGØYM		KBØTNA
1	AA1OC	KE1CO	N1VPK	KB1BTJ
2	AA2YE	KG2DP		KB2VLB
3	AA3MH	KE3UK	N3VWC	KB3BKH
4	AE4LE	KT4BQ		KF4CDQ
5	AC5EF	KK5RM		KC5QAC
6	AC6PB	KO6YR		KE6WKS
7	AB7LS	KJ7QJ		KC7MMC
8	AA8UI	KG8SY		KB8AQN
9	AA9PT	KG9DR		KB9LFJ
N. Mariana Is.	KHØS	AHØAW	KHØED	WHØABC
Guam	WH2Q	AH2DA	KH2ON	WH2ANM
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6OE		WH6CXN
Amer. Samoa	AH8O	AH8AH	KH8CJ	WH8ABD
Alaska		AL7QD		WL7COF
Virgin Is.	WP2R	KP2CG	NP2II	WP2AHZ
Puerto Rico		KP4ZY		WP4NAI

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anxious to build a new VHF high speed digital system is in the 219-220 MHz band. New rules went into effect this week (the last week in April) that allow you access to this band on a secondary basis to the Automated Maritime Telecommunications System. There were 18 comments and 5 reply comments filed.

"Your station can now use this band only as a forwarding station in a fixed point-to-point digital message forwarding system, including intercity packet backbone networks.

"You must notify the League in writing of your station's specific geographic location at least 30 days prior to transmitting. The League will incorporate that information into a data base that is made available to the public.

"If your station is within 398 miles of an AMTS coast station, you must also notify the AMTS licensee in writing at least 30 days prior to transmitting. If your station is within 50 miles of an AMTS coast station, you must also obtain written approval from the AMTS licensee. You can obtain the locations of AMTS Coast Stations from the League or from Interactive Systems Inc. in Arlington, Virginia.

"The power limit is 50 watts PEP. The data group of emissions types is authorized. Those are those nine types listed in Section 97.3(c) for telemetry, telecommand and computer communications.

"Two other accommodations that you wanted were adopted last week. (April 1995) They allow automatic control of your HF station while it is transmitting a digital emission type. There were nineteen comments filed.

"When your station is transmitting on a shared HF band, it usually demands greater attention from you than it does when it is transmitting on VHF and above where propagation is short range and far more reliable.

"The accommodations require, therefore, that your automatically controlled station must either be connected to another station that is under manual control or it must transmit within a designated subband.The new rules become effective July 1st."

Frequency Allocations

"Congress is requiring that at least 200 MHz of Government spectrum be reallocated to the private sector. The first 50 MHz allocation included the 13 centimeter band. You have been sharing this band on a co-secondary basis with Government services.

"The 2390-2400 MHz segment was allocated to unlicensed low-power short-range wireless LANs (LocalArea Networks). This means that the LAN must not interfere with your operations and (that) the users have no recourse against any interference that you happen to cause to them.

"The amateur service was also elevated to primary status in the 2,402-2,417 MHz segment. In this segment there are unlicensed cordless telephones operating under Part 15.

"As a frequency allocation matter, this Docket is being handled by the Office of Engineering and Technology."

The next portion of the presentation concerns the Vanity Callsign System, about which much has been written already. The most significant part of that portion was "If the decision is to revise the rules that were previously adopted,' (in December 1994, and announced in January 1995) ' the Form 610-V that is now at the Office of Management and Budget awaiting approval may have to be revised.

Also, the specifications for the support software may have to be changed. In any event, the first gate will not open until rules are finalized, the FCC Form 610-V is available, and our Licensing Division is prepared to begin processing the applications. We will continue your sequential call sign system for new hams and for those who do not want vanity call signs."

The remainder of the presentation deals with matters already well-publicized, so we will cease our quotes at this point. Besides, we need room for other interesting news.

FCC to privatize RFI handling

Readers may remember our coverage of FCC's telephone RFI tests early in 1994. At that time the FCC said the transmitting stations most likely to cause telephone interference are citizens band, amateur and broadcast stations. Citizens band stations accounted for half the telephone interference cases, while amateur and broadcast stations caused the other half.

FCC's tests of RFI to telephones at that time indicated that telephones could be "interference-proofed," and identified manufacturers of such telephones.

The feature article in the August 1st issue of W5YI Report is "FCC Looking to Privatize RF Interference handling." That article is the basis for this report.

FCC receives approximately 30,000 complaints a year of RFI to home electronics equipment — and this may only be the tip of the iceberg. Due to the FCC's limited resources it is not possible for the FCC to resolve these problems, and it is now the Commission's policy not to further investigate them. Nevertheless, according to the Commission, RFI to home electronic equipment is a major problem in the U.S. which must be dealt to ensure communications excellence for the general public.

The FCC is now looking into the possibility of having the private sector become involved in resolving these interference problems. The Tampa office of the FCC's Compliance and Information Bureau is undertaking a pilot project to determine the feasibility of such a program. (Canada and Great Britain already have privatized RFI handling).

A fact-finding meeting took place in Tampa on July 19. Present were representatives from electronic repair organizations, broadcast media, manufacturers, appliance retailers, and radio operator training/testing organizations.

The meeting was moderated by Ralph Barlow, Engineer-in-Charge of the FCC's Tampa field office. Barlow said that the new program was part of the administration's initiative of "reinventing government" and improving service to the American people.

In the FCC report on the telephone tests in 1994 it was noted that CB stations accounted for about half of the reported cases of telephone interference. I was surprised, therefore, to read in W5YI's account of the meeting that "Barlow said that the FCC will no longer investigate CB violations of any type and that citizens band radio rules will no longer be enforced."

One would hope that this does not mean that CB out-of-band operation is permitted de facto rather than de jure. WR

Fort Tuthill Hamfest at Flagstaff: One of America's oldest?

Dave Reynolds, KE7QF

Arizona is known for cactus and lizards and Indians, but in Flagstaff near the end of July, it's herds of nerds, jams of hams, about ten thousand of them doing the annual ARCA Fort Tuthill Hamfest. It happened again this year, July 21 through 23, with the full cooperation of the weather (we usually get afternoon rain showers.) You'd better make your reservation in April if you want a room next year.

There are commercial vendors, door prizes, technical sessions, upgrade exams like all good hamfests, but the hundreds of 'tailgaters' are what attract the hardcore builders or recyclers. From antique tubes to lasers, they're all there. You ought to be able to start your own army with some of that stuff! And campers, well, just let me say just the generator on some of those rigs is worth more than my car. Tuthill gets a large contingent of traveling hams.

Fort Tuthill is a County Fairgrounds nestled in the pines three miles south of Flagstaff at a cool seven thousand feet elevation. Usually the place has horses and goats and chickens and a carnival. Yaesus and Kenwoods to antique radios and boat anchors take over at the hamfest, which may, incidentally, be the longest running annual event of its kind. We talked to a guy who told of buying an ARC-5 at Tuthill in 1951.

This may be the last of the biggies with no gate fee, and the hams have caught on. Commercial vendors also have caught on from Florida to Hawaii and four hundred tailgaters make for three days of solid copy fun in the sun. There are hourly door prizes and a main drawing that gave away the usual new rigs and stuff, and the grand prize was a expenses paid trip for two to the Dayton Hamvention.

The two biggest buildings house most of the commercial vendor exhibits, which included Yaesu, Kenwood, and several dozen other commercial vendors who make their livings traveling from hamfest to hamfest. Ever wonder what it's like to be a traveling ham equipment person, following boxes of display stuff all over the country? There's too much hot pop and cold coffee and dirty laundry in the suitcase.

One of the exhibits, RAD COM, was a new slant on upgrading your rig every few years. They sell an RF card and a controller card that your PC controls. The card puts out a low level RF to an amplifier, and the PC screen displays the front 'panel' of the rig. With your mouse or keyboard, you tell it what frequency you want and what mode, and any of the other things you do like memories, filters, offsets or the like. Like one of the sales guys told me, the main operating difference between my antique rig and the new ones is a lot of digital control. Fascinating idea! But I'm still keeping my Kenwood twins.

There were the usual technical programs like Larry Brown on AMSAT's latest plans, and of course the annual Lou McCoy discussion on antennas that you never should miss. The Volunteer Examiners created lots of new hams to come back next year.

About the last thing that happens is the annual junque auction by the veteran Tuthill announcer Wilse Morgan, KL7CQ. All the 'treasures' that didn't sell and vendors don't want to carry home are placed on a big stage in the open area. There are big old TV cameras, scopes, pager chargers, books, boxes of wire, relay racks, recorders, home brew remnants and boat anchors — you have to see it to believe it. You may get the item you want for a quarter, but you might have to take a box of (very) miscellaneous objects with it. My car became a low rider for $4.25.

ARCA composed of thirty seven amateur radio clubs in Arizona, is the sponsoring body at Fort Tuthill, which takes a big, year long effort of planning. They also co-sponsor some of the individual clubs' local hamfests, helping with publicity, insurance coverage, drawings and organization. ARCA's functions also include repeater coordination, club assistance with repeater grants etc., and a developing scholarship program. The idea is to make money, but turn it back to the ham community for equipment grants, scholarships, and ham radio improvement in general.

I started going to Tuthill ten years ago, looking for parts for my nostalgia 813's final. The amplifier is still unfinished and I'll go back with the same old "parts for the amp" excuse, but by now it's a annual eyeball reunion with the old gang. You ought to plan to join us next year in the tall pines on 19-21 July, 1996. Maybe you should bring a truck.

NEWSFRONT
(continued from p. 6)

Hemispheric permit sought

The ARRL has asked the Federal Communications Commission to implement U.S. participation in an "International Amateur Radio Permit" covering countries in the Western Hemisphere.

The IARP would allow, in conjunction with an amateur's home-country license, temporary operation in any other country in the Americas that has signed the agreement.

The IARP was developed through the Inter-American Telecommunication Commission (CITEL) by Region 2 of the International Amateur Radio Union, and after approval by CITEL it was presented to the General Assembly of the Organization of American States, where The Inter-American Convention on International Amateur Radio Permit was adopted on 8 June 1995.

(The U.S. Communications Act permits the FCC to allow foreign radio amateurs to operate in the U..S and its territories through both bilateral agreements—the familiar "reciprocal operating agreements" between two countries—and multilateral agreements, such as the IARP.)

The IARP, the League said, would eliminate paperwork for both the FCC and for U.S. as well as foreign, licensed amateurs. Countries signing the agreement will not be allowed to levy a fee or tax on visiting IARP-holder. IARPs would be issued in two categories: Class 1 (in the U.S. Amateur Extra Class privileges), and Class 2, Technician Class privileges).

Repeater map book

The new ARRL North American Repeater Atlas is out. The publication is not to be confused with the pocket sized repeater directory.

The Atlas features repeater maps for every US state, Canadian province plus Mexico, Central America, and the Caribbean. Contact League headquarters for pricing and availability.

Also, the ARRL will produce a handout aimed at new hams, explaining the concept of band planning. The publication will include a listing of ARRL approved plans.

Awards announced

The ARRL Board of Directors has honored several hams for their contributions to Amateur Radio.

Dick Jansson, WD4FAB, has been named recipient of the ARRL *Technical Merit Award* for his work on amateur satellites.

Philip A. Downes, N1IFP, was selected as the ARRL *Professional Educator of the Year* for 1994 with Charles Ward, KJ4RV, tabbed as the ARRL *Professional Instructor of the Year* for 1994.

Chris Townsend NU7V, won honors as the *Herb S. Brier Instructor of the Year*.

Karl Lambert, KB4DCR, won the *Excellence in Recruiting Award* and the Board selected Ulrich L. Rohde, KA2WEU, to receive the *Technical Excellence Award* for his series of articles on "Key Components of Modern Receiver Design" which appeared in the May, June, July and December, 1994 issues of *QST*.

Joseph Phillips, K8QOE, and Michael Karp, AF2L, are the corecipients of the *Philip J. McGan Silver Antenna Award* for 1994.

AMSAT news service needs help

The AMSAT News Service needs your help! The service is looking for volunteers to contribute weekly OSCAR status reports.

If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this weekly bulletin, please send your observations to WDØHHU at his Compuserve address of 705/24, 2272 or on the internet at WDØHHU@ amsat.org WR

Radio Club of JHS 22 barbeque

Mark Grossman, K2CON

The Radio Club of Junior High School 22, "The 22 Crew," held its 6th annual "eye-ball QSO"and barbeque on July 8th. Member Barry Friedman, N1QWA, served as host to the group at his Waitsfield, Vermont home. The Radio Club of JHS 22 was founded in 1980 by its president, teacher Joe Fairclough, WB2JKJ.

People traveled from various parts of the U.S. and Canada to attend the gathering. Every year a different member hosts the event.

Among those attending this year were: Fred and Evelyn Carroll, KD1HH and KA1ZMB from Frankfort, Maine; Paul and Eva Downs, N4LGD and N4VGW, from Hudson, Florida; Norm Jones, KD2KK of West Seneca, New York; Canadians Dick Begole, VE3WII and XYL Doreen of Downsview, Ontario; Jeff and Joan Chipokas, N1EZC and KA1SUH, of Naugatuck, Connecticut; Bill and Betty Scwarting, WR2L of Scotia, NY; David and Hope Hale,KD1KB and N1MAP from Barre, Vermont; and of course, Joe Fairclough, WB2JKJ, of New York City. Incidentally, the entire group is looking forward to celebrating the birthday of A.H. "Abe" Ellis, VE3VTC, an active member of the group who turns 94 this fall!

Left to right: Dick Begole, VE3WII; Doreen Begole; Betty Scwarting; Bill Scwarting, WR2L and host Barry Friedman, N1QWA.

Many of the student members have acquired their own licenses in Joe's program— one which they wish to attend, not one they are made to attend. Look for the "22 Crew" on the two Classroom Nets on 7.238 MHz, from 1100 UTC to 1230 UTC, and 21.395 MHz, from 1300 to 1900 UTC. WR

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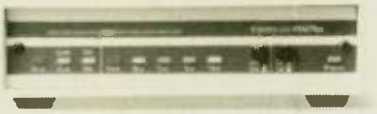

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Six Meters — the summertime DX band

Ken Neubeck, WB2AMU

Many veteran Six Meter operators await the start of the summertime sporadic-E season in May in the hopes of long range contacts, perhaps some of the double-hop variety. The persistent operator who monitors his 6M radio several times during the day during the month of June will eventually succeed. The summer of 1995 would bring DX success for many operators of the magic band.

My friend from Miami, Tom Glaze, KC4SUS, was hearing Caribbean DX on a regular basis during the months of May and June. One time he called me on the land line and let me hear an unanswered CQ by a V44 station on CW. Several hams such as KC4SUS and KB8TAG have reported that they worked the Cuban stations CO2OJ and CO2KK regularly during the early summer. In late May, Emil Pocock, W3EP, spent a week in Bermuda and operated on 6M. Emil heard significant openings on only two days but worked over 200 stations on those days.

Transatlantic DX became possible by early June for many stations. I was able to complete a SSB QSO with Cedric Rourke, CT3FT on 14 June at 2200Z, my first Africa QSO on 6M. Bob, KA2DRH, from Alabama was also able to work CT3FT around the same time. Cedric is one of the more active DX stations on 6M and he was heard quite a lot by many stations in North America during the months of June and July. In addition he is a very prompt QSLer when one provides IRCs with the QSL.

On Sunday, 18 June at 1400 Z, there was tremendous DX activity. There was the usual smattering of Caribbean DX with CO2OJ and even TI2NA could be heard up here in Long Island. I heard a loud signal on 50.123 which was Cedric, CT3FT again on SSB. He was running a pileup and his signal held in there at a solid 5 by 8 for almost an hour. He was working stations up and down the east coast and even into the midwest. Then his signal broke up indicating that one of the sporadic-E clouds was breaking up. At the same time CT3FT was heard, there were two other stations from the Azores who were running pileups, CU1AC and CU2CB.

What was ironic about this activity that day was that at the same time, I heard an old-timer from Florida up further on the band who was oblivious to this DX, who came on and was giving his outdated opinions about the "magic band."

What was ironic about this activity that day was that at the same time, I heard an old-timer from Florida up further on the band who was oblivious to this DX, who came on and was giving his outdated opinions about the "magic band." He was telling this newcomer to the band that he thought that the short skip stuff was okay, but the "real DX" was not going to come in until the sunspot count picked up for F2 activity. Here was another case of misinformation being spread about the band by so-called experts. Remember the following: Long range DX is quite possible on 6M, even during the lowest spot of the sunspot cycle! This is because double hop sporadic-E can make long range DX possible.

DX conditions continued with several weak openings to Europe over the next few days. I was able to copy weak CW signals from GW3JXN and G4HBN at 2130 Z on 19 June, but I was not able to work them. A fellow Long Islander, Al Smith, K2BPQ, was able to work Belgium on SSB on 50.170 MHz with 5 by 7 signal reports. It should be pointed out that many Europeans operate near 50.200 MHz as well as CW in the 50.100 range. Also on the 14th, FP5EK was running pileups from Canada and the eastern United States.

There were a number of VHF grid square expeditions which occurred during the month of June. One of the more highly publicized was the Yaesu Caribbean Cruise that took place from 18-24 June. A number of islands were to be operated from, as well as the water grids in between islands. We were not able to hear them despite the fact that the band was open. Tom, KC4SUS, worked them in one of the water grids but copy was rough as they operated on 50.111 where the harmonic of the TV color burst signal resides. Many DX stations and expeditions forget about the fact that this carrier exists and they should make efforts to operate lower such as 50.105 where it is easier for U.S. stations to copy.

The increase in DX reports does not necessarily means that there are improved conditions during the sunspot minimum. Rather, there is increased awareness of stations in the Northern Hemisphere that the month of June is particularly conducive to multiple sporadic-E cloud formations and that transatlantic DX is possible at any given time or day during this month. Certainly, this same type of condition can also be observed on 10 Meters, but it seems that 6M operators are particularly alert to the enhanced sporadic-E conditions. In addition, several more new stations have been checking out the band on both sides of the ocean.

I had the privilege of operating Field Day this year with K2AQ, the call sign for an excellent radio club in eastern Long Island known as the Peconic Amateur Radio Club. They were nice enough to invite me to set up a 6M station after I spoke at their club meeting earlier in the year. The radio club had an excellent location for their Field Day site at Horton lighthouse on high bluffs that overlooked Long Island Sound. This looked to be an ideal location for VHF work, particularly in the area of ground wave contacts.

I set up a moderate 6M station at 150 watts output with a two element Yagi up 20 feet in addition to the fifty

feet that we were already above sea level. I was encouraged by a few local contacts made prior to the contest that this setup would be great. When the contest started, I was able to complete many contacts with stations in New England, upstate New York and New Jersey. There was some evidence of sporadic-E activity in the afternoon with contacts to Virginia and Florida but the band really opened up in the evening towards Missouri, Arkansas, Oklahoma, Louisiana and Texas. The club members were surprised when they heard me working all of the stations by ground waves but were even more amazed when they heard me working stations that were thousands of miles away.

We ended up with over 125 QSOs during the 24-hour period on 6M with about 30 of the contacts being skip QSOs via sporadic-E. This meant that there were many stations that were worked on ground wave. 6M accounted for one of the better bands for the Peconic ARC during their Field Day effort. In comparison with four contacts that I made on Six during Field Day in 1992, I was encouraged to find many more stations using Six Meters. This can largely be attributed to the bonus points and scoring advantages that the ARRL had put into the Field Day rules. About 90% of the contacts were made on SSB with about ten contacts made on FM and five on CW. I felt that 6M worked a lot like 80M during Field Day where many local or ground wave contacts being made and skip contacts being made during the evening when the band opened.

Besides DX and Field Day, sporadic-E for stateside stations were as strong as last year's conditions. At my QTH in FN30, I observed 11 consecutive days where an opening occurred during the month of June. A significant increase in FM activity on the simplex calling frequency of 52.525 was observed during a number of openings. It appears that with a number of FM rigs for 6M, including two models by Azden, hams are working skip in addition to repeaters. There were also more CW stations observed than normal, particularly during the weaker openings. I found that 10 watts to a dipole was sufficient for CW work.

Many of the openings early in June were to Florida. Later in the month there were some significant openings to the midwest and Canada. If I had to pick one of the better openings, the one during the evening of 27 June ranks as a terrific one. On that night, I was working midwest stations in Illinois, Indiana, Ohio, Missouri and Wisconsin with booming signals heard. At the same time there was an opening to the north with VO1GAP, VO1ZA/B and FP5EK heard. I managed to work the latter on CW. A brief double hop skip was observed at 8 o'clock local time when I worked W7AHV from Montana. In total, there were openings on 25 out of 30 days for June as observed at this location.

For the remainder of June and into July, double-hop sporadic-E skip was seen almost on a daily basis with openings between Europe and the eastern United States as well as openings coast to coast. It was not unusual for stations in 2 land to hear 6s and 7s for ten minutes here and there. Europe was particularly good for New England stations and occasionally the opening would spread down to the East Coast or even into the midwest.

On 7 July, I was tuning around the CW portion and heard G4HBA. I did not have the amplifier with me in the shack, so I tried to get him with ten watts and a dipole. He heard me after a couple of go-arounds and we made a QSO! What good ears he had.

Over the next few days, I heard signals from Spain, Scotland and England. The activity was aided by the new CQ VHF contest which stirred things up. I made many mobile contacts that weekend using ten watts with other stateside stations. July seemed to have especially intense activity on 6M this year.

Sporadic-E is fairly constant for each summer season, although some hams believe that activity picks up a little during the sunspot minimum years. Ionosonde sporadic-E data that I have looked at from various locations throughout the world shows little variation during the summer months from year to year. It is good for hams to be aware of the consistently strong presence of the sporadic-E phenomenon during the summer, and that choice DX is certainly possible on 6M, particularly when double hop sporadic-E appears. The smart 6M operators know this fact while others lose out by keeping their 6M rig in storage during this time in the sunspot cycle!

•

Ken, WB2AMU, has written a book on Six Meters that is published by ***Worldradio****. The book is called, SIX METERS, A GUIDE TO THE MAGIC BAND and it provides a complete look on this incredible band. It costs $12 plus $2 shipping and handling (California residents—please add sales tax of $.98) and it can be ordered from:*

WORLDRADIO BOOKS, P.O. Box 189490, Sacramento, CA 95818. WR

MFJ HF/VHF SWR Analyzer™

. . . Read your antenna SWR from 1.8 to 170 MHz . . . built-in 10 digit LCD frequency counter. . . RF Resistance Meter™. . . smooth vernier tuning . . .

MFJ-259 **$229.95**

MFJ-259 handheld *Univeral SWR Analyzer™* lets you read your antenna SWR from 1.8 to 170 MHz quickly and easily without any other equipment!

MFJ's exclusive *RF Resistance Meter™* lets you measure RF resistance up to 500 ohms at minimum SWR.

Has built-in 10 digit LCD frequency counter and smooth vernier tuning.

You get *four* instruments in one . . . 10-digit frequency counter . . . RF signal generator. . . SWR Analyzer™. . . *RF Resistance Meter™*

Measure antenna resonant frequencies and 2:1 SWR bandwidths. Adjust mobile antennas, antenna tuners and matching networks in seconds.

Measure RF resistance, inductance, capacitance, resonant frequency of tuned circuits, transmission line velocity factor /impedance/ loss. Test RF chokes,baluns.

MFJ-209, $109.95, same as MFJ-259 less frequency counter and *RF Resistance Meter™*

See *free* MFJ catalog for complete line of MFJ SWR Analyzers™.

MFJ-949E 300 W Tuner

MFJ-949E **$139.95**

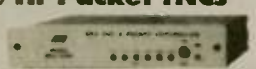
World's most popular antenna tuner covers 1.8-30 MHz, has lighted *peak/* average Cross- Needle SWR/ wattmeter, 4:1 balun for balanced lines and *full size* 300 watt dummy load.

Versatile 8 position antenna switch lets you *pre-tune* MFJ-949E into dummy load to minimize QRM.

Custom inductor switch was carefully engineered to withstand extreme voltages and currents.

Cabinet is chemically etched to MFJ's bond tough *baked-on* paint.

VHF/HF Packet TNCs



MFJ-1270C **$119.95**

MFJ-1270C *super* TAPR TNC clone has a world wide reputation as *the most reliable packet TNC in the world* -- many work 24 hours a day for years without a single failure!

Fully TAPR TNC-2 compatible, VHF *and* HF operation, *free* AC power supply, new *enchanced* mailbox expandable to 512K with auto/reverse mail forwarding, WeFAX mode lets you print weather maps, optional plug-in 2400/9600 baud modems, KISS interface, ***now GPS compatible.***

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Switch between your TNC or microphone by pushing a button!

Just plug pre-wired cables into your rig's mic connector and TNC.

Plug-in jumpers let you use nearly any rig with 8 pin mic connector.

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MFJ-1272BZ/PK-88, $39.95 each.

For 8 pin RJ45 modular phone jack replace B with M in model number above.

Regenerative RCVR Kit

MFJ-8100K **$59.95** *kit*
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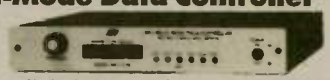
Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

MFJ-1278B Multi-Mode Data Controller



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Use this MFJ-1278B, your transceiver and computer to transmit and receive digital communications! You'll discover a whole new world of ham radio and communicate in ways you never knew existed on our ham bands.

The *world class* MFJ-1278B Multi-Mode and MultiCom™ software is packed with features *no other* multi-mode gives you.

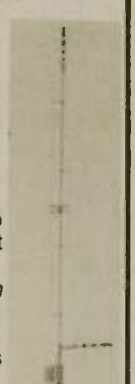
You get *10 digital modes* . . . Packet, AMTOR, PACTOR (at no extra cost), RTTY, ASCII, Navtex, Color SSTV, 16 Gray Level FAX, CW and Memory Keyer plus an *enchanced* 32K Mailbox.

You'll have fun joining worldwide *packet* networks and exchanging *color SSTV* pictures with your buddies around the world. You'll marvel at *full color FAX* news photos as they come to life on your screen. You'll see weather changes on highy detailed *weather maps* in all 16 gray levels. You'll eavesdrop on late breaking news as it happens on *RTTY*. You'll enjoy error free HF QSOs on *PACTOR* and *AMTOR* and receiving packet mail in an *enchanced 32K mailbox*. Want to copy some *CW*? Just watch your screen.

MFJ-1289, $59.95, MultiCom™ software and cables.

MFJ halfwave vertical Antenna

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



MFJ-1796 **$199.95**

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

It's only 12 feet high and has a *tiny* 24 inch footprint! You can mount it anywhere from ground level to the top of a tower -- on apartments, condos, small lots, even on motorhomes. Perfect for vacations, field day, DX- pedition, camping.

Frequency selection is fully automatic -- all you do is transmit. Its *low angle of radiation* really reachs out and brings in DX. Omni-directional. 1500 watts PEP.

Efficient *end loading*, no lossy traps. *Entire length* is always radiating. *Full size* halfwave on 2 and 6 Meters. High power *air-wound* choke balun eliminates feedline radiation. Adjusting one band has minimum effect on other bands. Add $20 s/h.

Easy to assemble -- you'll have it on the air in an afternoon.

MFJ's world famous 3 KW Versa Tuner V

MFJ-989C **$349.95**

Here's why the MFJ-989C is the finest 3 KW antenna tuner money can buy . . .

Two *massive* 250 pf transmitting variable capacitors can handle *amps* of RF current and *6000* RF volts. Logging scales.

Precision ball bearing roller inductor, three digit turns counter and spinner knob give you exact inductance control for minimum SWR.

Lighted *peak*/average Cross-Needle SWR/Wattmeter has 200/2000 watt ranges. Super heavy duty *current* balun has two giant 2½ inch powder iron toroid cores wound with *Teflon®* wire.

Six position *ceramic* antenna switch has extra large contacts. Flip stand, dummy load, one year *unconditional* guarantee, aluminum cabinet, tough *baked-on* paint, locking compound on nuts/bolts, handles 3 KW PEP, 10⅛x4½x15 in. Meter lamp needs 12 volts. Add $13 s/h.

MFJ *No Matter What™* Guarantee

MFJ's famous one year *No Matter What™ unconditional* guarantee means we will repair or replace (at our option) your MFJ product sold in this ad *no matter what* for a full year.

Super Hi-Q Loop Antenna

MFJ-1786 **$299.95**

Tiny 36 inch diameter high efficiency loop antenna covers 10-30 MHz *continuously* with low SWR. Handles 150 watts.

Ideal for home installations where space is limited-- apartments, condos, small lots. Take on trips.

All welded construction.

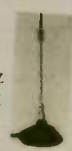
Remote control has *Automatic Band Selection™*, Cross-Needle SWR/ Wattmeter. No control cable needed. Use batteries or 110 VAC. Add$20 s/h.

No ground or tuner needed.

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

Dual Band Mobile Ant.

Mobile Antenna for 144/440 MHz



MFJ-1724B **$14.95**

MFJ *dual band* magnet mount mobile antenna for 144/440 MHz has 19 inch stainless steel radiator, low SWR. For mobile rigs with SO-239 UHF connector *and* handie-talkies with *included* BNC adapter.

5/8 Wave Mobile Ant.

MFJ-1728B **$24.95**

Maximum Gain™ 5/8 Wave 2 Meter *magnet mount* mobile antenna has stainless steel radiator, 12 ft coax, low SWR.For mobile rigs with SO-239 UHF connector *and* handie-talkies with *included* BNC adapter.

5/8 Wave Ground Plane

MFJ-1750 **$19.95**

$19.95 gets you a 2 Meter 5/8 wave ground plane *home station* antenna! You get the highest gain of any single element antenna, shunt fed matching, ceramic insulators.

MFJ-1752, $19.95, for 220 MHz.

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MFJ ACCESSORIES

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Here's a Compact *Speaker/Mic that fits comfortably in your hand and has a* full *size speaker for crystal clear audio.*

No need to remove your handheld from your belt to talk or monitor calls. Clip it near your ears so you can easily hear every call with the volume turned down.

First-rate electret mic element and full size speaker gives superb audio on transmit *and* recieve. Earphone jack, PTT, light-weight retractable cord. Gray. 1¼x2x3 in.

MFJ-284 fits Icom, Yaesu, Radio Shack, Standard; **MFJ-286** fits Kenwood.

MFJ-284 or MFJ-286
$24.95

Mini Speaker/Mics

These tiny *MFJ Speaker/Mics are so small and so lightweight you'll forget they're there -- until you get a call.*

Excellent audio from electret mic element and speaker. Has swiveling lapel /pocket clip, PTT button with transmit LED, earphone jack, lightweight retractable cord. Available with L or regular connector. *Tiny* 2x1¼x¼ in.

Order MFJ-285/MFJ-285L for ICOM, Yaesu, Alinco; **MFJ-287/MFJ-287L** for Radio Shack, Standard, Kenwood; **MFJ-283** for split plug Alinco; **MFJ-285W** for IC-W2A.

MFJ-283, MFJ-285, MFJ-285L, MFJ-285W, MFJ-287 or MFJ-287L
$24.95

L Connector also available - order L model.

MFJ Artificial RF Ground

MFJ-931
$79.95

Creates artifical RF ground that eliminates or reduces RF hot spots, RF feedback, TVI/RFI, weak signals caused by poor RF grounding.

Greatly improves your signal if you're using a random wire or longwire antenna with an ineffective ground.

Electrically places a far away RF ground directly at your rig by tuning out reactance of connecting wire.

20 Meter CW Transceiver

MFJ-9020
$189.95

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Super *Active* Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to- operate active antenna...quiet...excellent dynamic range...good gain... low noise...broad frequency coverage... excellent choice."

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz - 30 MHz.

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. Remote has 54 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95.

$129.95 MFJ-1024

Cross-Needle SWR Meter

MFJ-815B
$69.95

Peak/ average Cross-Needle SWR/ Wattmeter. Shows SWR, forward/ reflected power in 2000/500 & 200/50 watt ranges. 1.8-60 MHz.

Mechanical zero. SO-239 connectors. Lamp uses 12 VDC or 110 VAC with MFJ-1312, $12.95.

"Teflon® is a registered trademark of Dupont"

MFJ Coax Antenna Switches

$39.95 MFJ-1701

$21.95 MFJ-1702B

$59.95 MFJ-1704

Select any of several antennas from your operating desk with these MFJ Coax Switches. They feature mounting holes and automatic grounding of unused terminals. One year *unconditional* guarantee.

MFJ-1701, $39.95. 6 position antenna switch. SO-239 connectors. 50-75 ohm loads. 2 KW PEP, 1 KW CW. 10x3x1½ in. DC-60 MHz.

MFJ-1702B, $21.95. 2 positions plus new Center Ground. 2.5 KW PEP, 1 KW CW. Insertion loss below .2 dB. 50 dB isolation at 450 MHz. 50 ohm. 3x2x2 in. *MFJ-1702BN, $31.95, N connectors, DC-1.1 GHz.*

MFJ-1704, $59.95. 4 position cavity switch with lightning/surge protection. Center ground. 2.5 KW PEP, 1 KW CW. 50 dB isolation at 500 MHz. 50 ohm. 6¼x4¼x1¼ in. *MFJ-1704N, $69.95, N connectors.*

Dry Dummy Loads for HF/VHF/UHF

$29.95 MFJ-260C

$59.95 MFJ-264

MFJ has a full line of dummy loads to suit your needs. Use for tuning to reduce needless (and illegal) QRM and save your finals.

MFJ-260C, $29.95. VHF/HF. Air cooled, non-inductive 50 ohm resistor. SO-239 connector. 300 Watts for 30 seconds, derating curve. SWR less than 1.3:1 to 30 MHz, 1.5:1 to 650 MHz. 2½x2½x7 in. *MFJ-260CN, $34.95, N connectors.*

MFJ-264, $59.95. Versatile UHF/VHF/HF 1.5 KW load. Low SWR to 650 MHz, usable to 750 MHz. 100 watts/10 minutes, 1500 watts/10 seconds. SWR is 1.1:1 to 30 MHz, below 1.3:1 to 650 MHz. 3x3x7 in. *MFJ-264N, $69.95, N connector. MFJ-5803, $4.95, 3 ft. coax/ PL-259.*

MFJ Low Pass Filter

MFJ-704
$39.95

Suppress TVI, RFI, telephone and other interference by reducing unwanted harmonics going to your antenna. 9 poles, MFJ's exclusive *Teflon® Dielectric Technology™* capacitors, hi-Q inductors, ground plane shielding, RF tight cabinet gives excellent TVI/ RFI protection. Full legal power 1.8-30 MHz. Mounting tabs.

Full Color FAX

MFJ-1214PC
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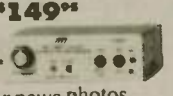

Use your computer and transceiver to receive, display and transmit *brilliant full color* news photos and incredible WeFAX weather maps with all 16 gray levels. Also receive/transmit RTTY, ASCII and CW.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Manager lists over 900 FAX stations. Automatic picture capture and save.

MFJ Iambic Paddles

MFJ-564
$49.95

MFJ Deluxe Iambic Paddles feature a full range of adjustments in tension and contact spacing, self-adjusting nylon and steel needle bearings, contact points that almost never need cleaning, precision machined frame and non-skid feet on heavy chrome base. For all electronic CW keyers.

MFJ/Bencher Keyer

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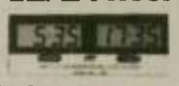
$134.95

The best of all CW worlds --a compact MFJ Keyer that fits right on the Bencher iambic paddle!

Iambic keying, speed (8-50 wpm), weight, tone, volume controls. Automatic keyer or semi-automatic ("bug")/tune mode. RF proof. 4⅛x2⅝x5½ in.

MFJ-422CX, $79.95, keyer only for mounting on your Bencher or MFJ paddle.

12/24 Hour LCD Clocks



$19.95 MFJ-108B

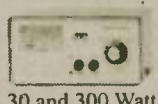
$24.95 MFJ-112

MFJ-108B dual clock has separate UTC and local time displays. Huge 5/8 inch LCD digits are easy-to -see. Brushed aluminum frame.

MFJ-112 shows hour/minute/ second, day, month, date, year at any QTH on *world map*. 12 or 24 hour display. Daylight saving time feature.

VHF SWR/Wattmeter

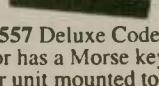
MFJ-812B
$29.95



Covers 2 Meters and 220 MHz. 30 and 300 Watt scales. Relative field strength 1-250 MHz, SWR above 14 MHz. 4½x2¼x3 in.

Code Practice Oscillator

MFJ-557
$24.95

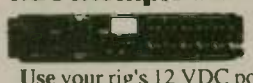


MFJ-557 Deluxe Code Practice Oscillator has a Morse key and oscillator unit mounted together on a heavy steel base so it stays put on your table. Portable. 9-volt battery or 110 VAC with MFJ-1305, $12.95.

Earphone jack for private practice, tone and volume controls for a wide range of sound. Speaker. Adjustable key. Can be hooked to transmitter. Sturdy. 8½x2¼x3¾ in.

MFJ Multiple DC Outlet

MFJ-1118
$69.95



Use your rig's 12 VDC power supply to power two HF/VHF rigs and six or more accessories with this MFJ *high current* multiple DC outlet.

2 pairs of 30 amp 5-way binding posts separately fused for rigs. 6 switched, fused pairs for accessories. DC voltmeter, "on" LED, RF bypassed, 6 ft. of 8 guage power cable. See *free* MFJ catalog for more DC outlets.

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SPECIAL EVENTS

Formation Skydiving

The West Volusia (county) Amateur Radio Society (WESTVARS) will operate W2DU from the site of the 1995 National Championships of Formation Skydiving in DeLand, Florida. This event will take place on 7 and 14 October from 1300-2200Z. This skydiving event, which runs from 6-15 October, is being called the International-Nationals because at least 17 countries will be represented.

Operations will be in the lower portion of the General 40, 20, and 15 Meter phone subbands, and in the Novice 10 Meter phone subband. CW will be at 7.025-7.050 MHz.

For a commemorative confirmation QSL, please send your QSL and an SASE to WESTVARS, P.O. Box 3502, DeLand, FL 32723-3502.

International Space Hall of Fame & Museum

The Alamogordo ARC will operate N5SUM on 21 October, 1500-2300 UTC from the International Space Hall of Fame & Museum during the annual induction ceremonies.

SSB operation will be on 28.475, 21.375 and 14.275, +/- QRM. CW operation will be announced on the air. We anticipate operating a station for satellite contacts and will announce that on the air also.

A beautiful QSL card picturing the Space Hall will be mailed to all 2-way/SWL requests received and confirmed. Packet messages do not qualify as a valid contact. No SASE is required or requested. Mail must be addressed to; (for audit purposes)

International Space Hall of Fame
Attn: N5SUM
Route 2001 P.O. Box 533
Alamogordo, NM 88311-0533

Please do not send requests to *Callbook*™ address. For further information contact Bill Leehan, N5SUM, 505/437-9781, event chairman or via K5DI BBS in NM.

Marconi Anniversary

The Piscataway ARC will operate AA2KS on 7 October from 1300-2100Z, to commemorate Marconi's first wireless transmission from the Twin Lights at the Navesink Highlands in New Jersey. Operation will be in the lower portion of the General 80, 40, & 20 Meter phone bands. For certificate send QSL and a SASE to PARC, P.O. Box 1233, Piscataway, NJ 08854.

Canadian Liberation March

Special event station OS4CLM will be on the air from Friday, 27 October to 5 November, jointly operating with Canadian and Belgian veterans, VIPs and radio amateurs.

On 1 November 1944, the town of Knokke, Belgium, was finally liberated at great cost of Canadian lives. On 15 November, a "Canadian Liberation March" will take place where fallen Canadians will be remembered with ceremonies and festivities.

A multi-colored OS4CLM Award and beautiful QSL card will be available to all licensed amateurs and SWLs for any contact with this special event station. Cost of the OS4CLM Award is 5US$ (no checks please) or 10 IRCs, with all proceeds going to a welfare fund. The money is used to maintain memorials and to keep station OS4CLM on the air for the coming year.

You can contact or listen to OS4CLM on the following frequencies:CW: 3.515, 7.012, 14.020, 21.020, 28.020, 144.020 SSB: 3.685, 7.045, 14.145, 21.245, 28.545, 144.250.

For more information, please contact:
ONL 453 (N1TBH), Bob Dyserinck
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BELGIUM

Tall Stacks

K8SCH/TS (Ohio, Kentucky, Indiana ARS); W8DZ/TS (Greater Cincinnati ARA); and W8VND/TS (Queen City Emergency Net) calls will operate between 11 and 15 October, in conjunction with the 1995 Tall Stacks celebration. The special stations will be using /TS suffix. They will operate all bands and modes through 70 cm. Special QSLs will be available showing historic steam paddle boats. QSL to the *Callbook*™ addresses of N8FU, with SASE or via bureau for any or all of the special calls. Tall Stacks recalls the historic and continuing importance of river commerce and will include 19 steam boats this year and is sponsored by the Greater Cincinnati Convention and Visitors Bureau.

Salmon Days Festival

The Issaquah ARC will operate special event station N7TIN, from 7 October 1200Z to 8 October 0400Z. Operation will be in the lower 25 kHz of the 80M, 40M, and 20M General Class phone subbands. For a certificate, send a 9 x 12 SASE and QSL to IARC, c/o N7TIN, P.O. Box 134, Issaquah, WA 98007-0134.

U.S.S. *Requin*

The Breezeshooters ARC will operate W3XX, 7-8 October from 1400-2100Z, from the submarine U.S.S. *Requin* docked at the Carnegie Science Center, Pittsburgh, PA, to celebrate the centennial of the Carnegie Science Center. The special event station will operate vintage CW equipment in the lower half of the Novice subbands. Phone operation will be in the General Class segment of 20M and 40M. For certificate and QSL card, send QSL and an 8½ x 11 inch SASE to Ron Berry, WB3LHD, 326 Sunset Drive, Bethel Park, PA 15102.

Christian Missionaries

The 5th annual MISSIONFEST will be on the air, seeking to talk with and encourage Christian missionaries on 7 October from 1500-0600 UTC and 8 October 1900-0100 UTC. This event is co-sponsored by Christ Lutheran Church, of Wichita Falls, Texas and Elim Lutheran Church of Lake Stevens, Washington, HF operations will be on 28.420, 21.420, 14.278 and 7.278 MHz. Join in with prayer requests and visit with foreign missionaries worldwide. Call signs N5JRF (Wichita Falls, TX) and N5UJA (Lake Stevens, WA). Call 817/528-2474 or 206/334-2540 for more info.

Santa Rosa Island

The Serious Hams ARC of Pensacola, Florida, will operate KF4BHC and put IOTA NA-142 from Fort Pickens in Santa Rosa Island on the air 14 October, from 1230Z- 1800Z. For QSL card, send SASE to Mike Brown, N4MAD, 519 S. Edgewood Cir., Pensacola, FL 32506.

Former POW Camp

The Kansas-Nebraska ARC will operate WØIND on 21 October, 1400-2000 UTC, to commemorate the 50th anniversary of the closing of the German prisoner-of-war camp near Concordia. Operation will take place from the airport park in Concordia and will be in the lower 25 kHz of the General phone portions of 80/75, 40, 20 and 15 Meter bands and packet on 145.01 MHz.

For a beautiful QSL certificate, send QSL and 9 x 12 SASE to: Kansas-Nebraska ARC, c/o Arlan R. Campbell, WØNBT, Route 3, Box 20-A, Concordia, KS 66901.

Royal Gorge Bridge

The Royal Gorge ARC will operate NCØA on 21 October, from 1400Z to 2100Z from the world's highest suspension bridge over the Royal Gorge. Operation will be in the lower portion of the General 40, 20, and 15 Meter subbands, and in the Novice 10 Meter subbands. For certificate, send QSL and a 9 x 12 inch SASE to RGARC, P.O. Box 2044, Canon City, CO 81215.

Fort Hancock

The Garden State ARA will operate W2GSA to commemorate the 100th anniversary of Fort Hancock. Fort Hancock is the site of the oldest continuously working light house in the United States and is located on Sandy Hook, New Jersey. Operation will take place on 21 October from 1400-2300Z and 22 October from 1300-1700Z. Operating frequencies will be 3.840, 7.240, 14.280 and 145.485 Rptr. Send 9 x 12 SASE with 2 units of postage. QSL to Bob Roman, N2DR, 28 Caterine Ave., Red Bank, NJ 07701. WR

More computer stuff

Computers are not intelligent. They only think they are.

The definition of an Upgrade: Take old bugs out, put new ones in.

BREAKFAST.COM Halted ...Cereal Port not responding.

As a computer, I find your faith in technology amusing.

SENILE.COM found...Out of Memory...

Who's General Failure and why is he reading my disk?

Shell to DOS...Come in DOS, do you copy? Shell to DOS...

ASCII stupid question, get a stupid ANSI.

All wiyht. Rho sritched mg kegtops awound?

Help! I'm modeming...and I can't hang up!!—*The Carrier,* Mt. DiabloARC

Awards

George D. (Dewey) Wilson, W7HF honored

Merle R. McLaughlin, W7DNY

1995 marks the 81st year W7HF has been an active Amateur Radio operator. George D. (Dewey) Wilson who resides in Aberdeen, Washington, is heard on a regular basis on 75 Meter single side band.

Dewey checks in on the Chapter 4 QCWA Sunday Net with a hearty voice and a good clean signal.

During the October, 1994, QCWA Chapter 4 meeting, Dewey was honored by presentation of a plaque celebrating his 80th year as an active FCC licensed amateur.

Born in November 1897, Dewey's interest in radio started at the age of 12, during the early spark gap era of radio. He spends part of the summer in his cottage at Hood canal on the Olympic peninsula. Dewey lives in the family QTH where he was a young lad with a burning desire to talk to far away places using code to communicate, and as the years passed using voice to talk to all his fellow amateurs.

Still physically active, Dewey is looking forwarded to a special birthday party Chapter 4 members have been planning for several years for their dear friend.

WR

Merle R. McLaughlin, W7DNY; George D. (Dewey) Wilson, W7HF; James C. Walsh, W7LVN.

SILENT KEYS

James H. Brown, W6VH

Retired municipal judge James H. Brown, W6VH, has died in Los Angeles at the age of 89. One of the first Amateur Radio operators licensed in Long Beach, CA, he was a charter member of Pacific Pioneer Broadcasters, a member of Radio Club of America, and had been a president of the Society of Wireless Pioneers.

After graduation from high school, he went to sea as a wireless operator. After serving as chief wireless operator, he returned to the Los Angeles area and worked as a disc jockey at radio stations KFOX and KGER. He earned an engineering degree at UCLA, and became chief engineer at KFAC and KFVD. In 1937 Jim became master control supervisor for NBC.

He was commissioned an officer in the U.S. Navy when WWII began, and was assigned to airborne radar design, working at MIT and other research facilities.

After the war, Jim earned a degree in law. He served as president and attorney for the National Association of Broadcast Employees and Technicians. In 1959 he was appointed to fill a vacancy which occurred on the Los Angeles City Council. He stood for election when that term expired and was reelected. In 1964, W6VH was appointed a municipal court judge by the Governor of the State of California, where he served until his retirement.

He is survived by his widow Margaret, daughter Dorothy O'Leary, son Lt. Col. James H. Brown, Jr, two sisters, ten grandchildren and twelve great-grand children.

I had the pleasure of working with Jim at NBC, and enjoyed a longtime friendship with this fine man. He will be missed by many.—*submitted by Ross J. Miller, KJ6KX.*

Shelton B. McAnelly, KD5SL

Shelton B. McAnelly, KD5SL, became a silent on 5 August at age 74, apparently from heart failure. Shelton was discovered at his home by fellow hams, KC5BMA and N5DXT and a family member when, for the first time in 10 years, he failed to check into an evening net. KD5SL, who was the ARRL Delta Division LA State Governmental Liaison, operated one of the nation's largest HF BBS gateways as part of the National Packet System.

He was an original member of the HF Skip Net group and was one of the first BBS sys-op's to be granted unattended status by the FCC. Shelton was the founder and current president of the Radio Amateur Service Club of Baton Rouge, the founder of the Baton Rouge Digital Radio Society, a past president of the Baton Rouge ARC (1983), and one of ham radio's greatest proponents.

He received national, state, and local recognition for his contributions and dedication to his community and ham radio. McAnelly, a Louisiana (Franklin) native, served in the U.S. Navy during WWII, held a Chemical Engineering degree and was a retired attorney.

He is survived by 3 daughters, 2 sons, 16 grandchildren and 5 great-grandchildren. At the time of his death, Shelton McAnelly, KD5SL, was in his "ham shack" surrounded by the world he loved...Amateur Radio. —*submitted by Charlie Dietrich, KF5EK*

OFF THE AIR

You prize what you earn

I was first introduced to ham radio in 1973 by a coworker who convinced me that communicating with fellow amateurs around the world was the greatest hobby anyone could have. So I began studying code and radio theory until I earned my Novice license which at that time was good for only two years and not renewable. Using the theory that I had learned I built a 40 Meter crystal controlled transmitter, and with the use of a massive military surplus receiver, was on the air. I remember experiencing a little fear, a great deal of excitement, and a wonderful feeling of accomplishment as I made my first contacts using that home made transmitter and the strange language made up of dots and dashes.

In those days I was struggling to raise a family and felt I could not justify the time needed to work toward that elusive General ticket. I now realize however, that I failed to upgrade and let my Novice license expire, not due to my lack of time, but to my lack of commitment.

In the early spring of 1994, while going through some old radio gear I had boxed up 23 years ago, the fun and excitement of ham radio come flooding back. Once again, I was bitten by the amateur bug, but with a difference. This time I made the commitment of time and energy, and once again I was studying for the code and theory exams. While reacquainting myself with my old hobby, I found that a lot of changes had taken place in Amateur Radio since 1973, and more changes are on the way; some good and others not so good. That is the reason for this letter.

Today, I am an educator and I also hold an Advanced Class Amateur Radio license. I see that some of the problems that we are experiencing in our educational system are very similar to some of the problems with which we are struggling within our Amateur Radio hobby. I would like to take this opportunity to draw some parallels between the educational system I work for and Amateur Radio in an attempt to compare and contrast the similarities.

I am presently on staff of a major university in California, and like the other universities in the system, its funding is based on the number of students it has enrolled and not necessarily on the quality of its programs. The university, in order to maintain the numbers needed to retain funding, are at times recruiting students who are not always qualified to attend, and in so doing the University is exchanging quality for quantity. This number-generated funding practice often results in the necessity to reduce the academic rigor of course work to insure student retention which ultimately results in the devaluation of a college degree.

We are also playing the numbers game in Amateur Radio. Decisions have been made, with regard to ways of attracting new people into ham radio but in so doing have we reduced the rigor of becoming a ham to the point that we have reduced the value of the license? I understand and support the need for an entry level licensing structure to attract new blood into our hobby but let us not undermine the inherent quality of our higher class licenses that Amateur Radio was built upon.

I recently read an editorial in a national ham radio publication in which the editor was advocating the elimination of the code requirement for any class license. Morse code is still a very effective communication mode. With minimal power consumption and simple equipment it can be used very effectively for emergency communication. However, that is only part of its real value. Morse code is the gate keeper requirement that safeguards the remaining quality of the upper class Amateur licenses. When you try to give people something for nothing they have a tendency to place the same value on it that they gave for it. This holds true for almost anything including college degrees as well as amateur licenses.

In higher education there are general education courses that are required before earning a degree. There are requirements in foreign language, U.S. history, world history, music etc., that may have nothing to do with the students major interest. The idea being that to have a rounded and complete (quality) education you need to know a little about your country, your world, other languages and so on.

I feel that Morse code should serve as a general education requirement for our licensing structure. It is a language and it has historical implications with regard to radio's beginnings. Let it serve as a gate keeper to insure that those who enter are serious enough to put forth the effort it takes to maintain the quality and professionalism of our amateur organization.

Ray Watkins, KO6TW
Orland, California

On the other hand ...will you use it?

After reading the FISTS Declaration of Purpose and Policy as published in the August issue of ***Worldradio,*** page 67, I felt compelled to respond. As an organization representing less than two-tenths of 1 percent of the licensed Amateur operators in the U.S., FISTS put forth an impressive declaration. None-theless by all the data I have at my disposal, in the past two decades there has actually been an increase in spectrum totaling 250 kHz in the HF allocation. The only reason the Amateur Radio Service has lost any spectrum is due to under utilization as happened with 220-222 MHz.

Knowing and using CW in no way exhibits any technical expertise. It only shows an ability to copy code. CW has never helped anyone build a rig or even repair one. Yet I continually hear people say that CW makes for a better operator.

The true spirit of Part 97 of the Communication Act of 1934 is to train radio operators and to serve the general public in times of need. To this end, I recommend that *all* licensed Amateur Radio operators get involved with your clubs and local disaster group. ARES, RACES or whatever it is called in your area, get out there and be active.

I have nothing against CW, (I am very close to 13 wpm) and I believe it has its place, but don't force me to become proficient in a mode I guarantee I will never use on the air. I am a firm believer that the current CW only portions of each band should remain the exclusive domain of CW and

should not be eroded.

I welcome responses as I believe I have an open mind to opposing views.

Richard A. Medhurst, KD6BFO
San Diego, California

A little respect please

I have been a ham for just over a year and am working towards an upgrade again, but I have to say that what I am hearing on the 2 Meter band is really starting to get to me.

With the advent of no-code licenses I was able to get started in this wonderful and exciting hobby. I am thankful to the FCC for this, but along with me there are thousands of others coming on board. Most of the new no-coders are good people and try hard to keep this hobby enjoyable for others and themselves.

Then comes the other bunch; the ones that came over from the CB band. I have heard some of these people and they have brought a lot of bad habits with them. Some use foul language, 10 codes, and even their CB handles. Some of these people won't even allow a breaking station to come on.

While tuning around the other bands I have heard many complaints across the country as well. I had operated in CB for over 20 years until it became apparent that it was a hopeless cause. When I came into the amateur ranks I left my CB habits behind. A non-ham friend of mine listens to our local repeater once in a while and best described some of what she heard, "2 Meters is becoming glorified CB."

I must ask what is happening to this wonderful hobby that gained so much respect from all over the world. Are we becoming so lax that we just don't care? It is my belief that we (the amateur community) have the power and voice to remedy this problem before it gets out of hand. There is a real possibility that we could lose some of our privileges if we allow this problem to continue.

I would urge all of our fellow hams to correct any problem they hear on all bands through all legal channels available. Together we can make a difference in our hobby.

Christopher A. Yount, Sr., N9XLG
Catlin, Illinois

Response to petition

Dear Editor:

This letter is in response to the ARRL's petition (RM-8418) [see p. 3, August, 1995, ***Worldradio***] to allow former licensees whose licenses have expired and are no longer within the grace period, be reinstated. To this I say...balderdash!

In my case my General Class ticket had been expired for 21 years by the time I went back to Novice Class to *earn* those operating privileges again.

One trip to the local Amateur Radio store told me things had changed a lot including current rules and regulations.

It took me a year to go from Novice to Extra Class, but because I had to work and study hard, I feel more a part of the amateur community than I ever did as a kid!

Giving back expired licenses without any return effort on the licensee's part sends the wrong message. Who knows? They just might learn something!

Ray Palmer, KO4RN
Goldenrod, Colorado
P.S. Great magazine!

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!***

Could it be ghosts?

Bill Plimpton, W2IXH

Congratulations to this month's winner. Bill shows us to be leery of where you put up an antenna wire.

Years ago, there was a ham who lived in New Jersey, near the area of metropolitan New York. His ham shack was in his bedroom on the second story of the house. The house was near a busy street, and adjacent to a cemetery. There wasn't much room for an antenna on his small lot, most especially for an antenna cut to 160 Meters. From his bedroom ham shack, however, he could look across to a tall oak tree on the far side of the cemetery.

The temptation was too great. Under cover of a dense fog, he put up a long wire from the second floor window to that inviting oak. He used extremely fine wire so the visibility factor would be minimal. He did however, yield to another small temptation. In those days many of us hung a neon lamp on the antenna, so a quick visual check was all that was needed to determine that it was intact. Our ham put a tiny one-quarter watt neon lamp in the middle of his "stealth" antenna.

That afternoon after returning from work, he tuned up his rig to the "invisible" long wire antenna. He was happy as a lark, working all kinds of stations that he had never before been able to work from his location.

He was having such a good time that he did not realize that it had grown dark outside. Slowly at first, then with an increasing urgency, he became aware of what was becoming an uproar of voices from the sidewalk below. There were even a couple of police cars parked by the cemetery, and the excited crowd all appeared to be pointing up at a strange light that had been winking and blinking over the cemetery!

Our brave hero did what any normal ham would do under the circumstances. He doused the lights, killed the transmitter, drew down the blinds, and laid low.

Very early the next morning before anyone was astir on the street or in the cemetery, he hastily removed the antenna.

Could it have been ghosts? UFOs, perhaps? How about plain old RF? To this day, he denies any knowledge of the incident. WR

STATION APPEARANCE

Raymond Bass, W7YKN/AAT9CX

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.

Our selection of the month goes to Raymond Bass, W7YKN, who resides in Reno, Nevada.

Back in the '50s like many kids, I had a paper route. One of my customers was a ham and when I stopped to collect for the paper I would see his equipment by the door and was amazed when I heard a Denver station coming in loud and clear in Butte, Montana.

I had been playing with crystal sets and when I got to know the ham, he gave me a one-tube battery operated plug-in coil radio. After getting an Acme headset I spent cold nights listening in the garage. My mother was always afraid I would burn down the house with this "thing." I got hooked! I got a copy of *How to Become a Radio Amateur* by ARRL and a license manual and later became WN7YKN. I went into the Marines after high school and was a radio operator after which I returned to Butte, got married and eventually moved to Reno, Nevada, where I have now lived for the past 30 years. I have an Extra Class ticket now and the same call W7YKN, as well as a commercial general license. I am currently employed as a lead electronic technician and run an electronic repair shop in Reno; to think it all started when a kid ran across a ham on his paper route.

Having built many Heathkits, I felt sad to see them stop producing the kits for ham radio. With the WRL Globe Scouts and Kings, the Knight kits, EICOs etc., Heathkit is a passing part of history. I am glad I was in that era. I am using a homebrew trapped dipole for 75 and 40 Meters and a TH6DXX on a 48' HDBX tower. Along with some public service awards and over 270 confirmed DXCC credits, I have the 5BWAS, and am life member of ARRL.

I am also active as AAT9CX in the Army MARS program and have been for the past twenty years. I was also active as a volunteer with the past four Earthwind launch attempts, supporting the ground and command communications as well as ground CCTV and sound systems.

The equipment pictured is (left to right, top to bottom): Yaesu FT-9990; Yaesu speaker; Heathkit SB-630 station console, phone patch; Heathkit HM-2130 watt meter; Heathkit HM-2102 VHF watt meter; Heathkit HO-10 monitor scope; Heathkit SB-200 amplifier; Hy-Gain Tailtwister control box; IRL FSK-2000 RTTY terminal; Apple IIe computer (not in photo); and a Tempo one, plus 2 Meter mobile mounted under table. WR

You know its time to ease off when....:

From the BARC Bulletin, Ft. Lauderdale, FL.

...you're talking on the phone with a ham buddy, and you end the conversation and hang up the phone with a 'KD1HZ.'

—Michael P. Deignan, KD1HZ

...after you find out who the calling party is, you say "you are 5-9 in Virginia." *—Ben E. Cline, AC4XO*

... you end a face-to-face conversation with "dit dit." *—Paul Flaherty, N9FZX*

...you go shopping, get to the checkout, write a check, and sign it KE3HO.

—James E. Proctor, KE3HO

...you're talking on an EMS telemetry radio with a base hospital for medication orders and such, and sign out with your call sign.... No, I didn't do this, but N5JXS swears he did, and that he got a call sign back...

—Jay Maynard, EMT-P, K5ZC

...u find urself typing in cw shorthand to fellow wrkers on internal email...(I hve found myself doing this too many times)... *—Fred M. Davis, VA3FD*

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TS-450S/690S •160m to 10m amateur band operation, 500kHz to 30MHz general coverage receiver •6m amateur band and 50-54MHz general coverage receive (TS-690S) •DDS (Direct Digital Synthesizer) & digital PLL system •AIP system •IF shift function tuning •AF notch filter

TS-140S •160m to 10m amateur band operation, 500kHz to 30MHz general coverage receive •IF shift circuit •31 memory channels with multi-scan functions •Dual-mode noise blanker •Speech processor with audio compression amplifier

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TS-50S •Super-compact, 100-watt, 160m to 10m transceiver, 500kHz to 30MHz general coverage receiver •DDS (Direct Digital Synthesizer) with "fuzzy logic" control •AIP system •100-memory channels •CW reverse •Menu system

TS-790A •144/440MHz dual-band operation •1200MHz unit (option) •All-mode operation •Satellite communications with Doppler effect frequency correction •59 multi-function memory channels with lithium battery back-up

TS-60S •50MHz all-mode operation •Max. 90W RF output (SSB, CW & FM) •100 memory channels •DDS with "fuzzy logic" control •AIP, IF shift (SSB & CW) and optional 500Hz CW filter •Dual-menu system

TM-255A/455A •All-mode operation (TM-255A: 144MHz TM-455A: 430MHz) •101 memory channels •DDS with "fuzzy logic" control •TF-SET (TX frequency set) function •DTSS selective calling with page •1200/9600bps packet terminal

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TM-733A •144MHz/440MHz dual-band operation •Dual receive on same band (VHF +VHF or UHF +UHF) •"6-in-1" programmable memory •72 memory channels •DTSS selective calling with page •1200/9600bps packet terminal •AIP system •Cross-band repeater function

TM-241A/331A/441A
•Single-band operation (TM-241A: 144MHz; TM-331A: 220MHz; TM-441A: 440MHz) •28 multi-function memory channels plus call channel •Multi-scan capability •Selectable CTCSS tone encoder •Multi-function microphone supplied

TM-251A/451A •Single-band operation (TM-251A: 144MHz; TM-451A: 440MHz) •41 memory channels (optionally expandable to 200) •Dual-band receive •Digital recording system •DTSS selective calling with page •1200/9600bps packet terminal

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•Single-band transmit and dual-band receive (TH-28A: TX 144MHz/RX 144/440MHz, TH-48A: TX 440MHz, RX 144/440MHz) •Alphanumeric memory •Alphanumeric message paging •40 multi-function memory channels (non-volatile) •Tone alert system with indicator

TH-22AT/42AT
•Single-band operation (TH-22A: 144MHz, TH-42A: 440MHz) •MOS FET power module •Built-in DTMF keypad •50 memory channels in EPROM (plus 1 call channel) •Multiple scan functions •Dual scan stop modes (CO & TO) •Channel Display function

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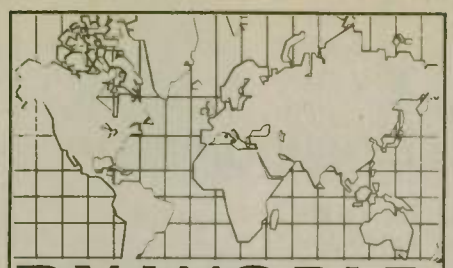


DX WORLD

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

W-100-N

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

499. Henry J. Borawski, KB2PFP
27 July 1995

Libya (5A)

The Ukrainian team put on a good show from Libya beginning July 13th signing with 5A1A and were active on most of the amateur bands, mostly CW. *DX News Sheet* reported them on SSB on 7.050 MHz on the 16th, 14.200 MHz on the 13th, 18.139 MHz on the 15th and 21.200 MHz on the 14th, all with Europeans. *QRZ DX* reports a 10 Meter contact on 28.480 MHz around 1315 UTC on the 22nd by an east coast DXer.

The team was to have shut down by 25 July. I hope this is a trend for activity from this rare one.

Scarborough Shoal (BS)

At the end of June the DXAC voted 9 to 7 against recommending the addition of Scarborough Reef (Shoal) to the DXCC countries list.

Those who voted against the recommendation cited membership opinion within their respective divisions. Some went on to state an opinion that the rocks that comprise the reef do not constitute islands, and for that reason no operation from the reef can be considered "land based."

Those who voted in favor felt that Scarborough Reef meets the criteria that were in effect at the time the petition was received. Several cited membership opinion in their divisions.

In membership correspondence to the entire DXAC, 157 persons (72%) were against adding Scarborough and 61 were in support of new country status.

DXAC Chair Garth Hamilton, VE3HO, stated, "The minimum-size rule was not applied to this petition. DXAC members made a judgment in accordance with the DX communities they represent." Your DX editor is trying to keep cool on this one and it would be interesting to know geographically where the membership resides who were against the petition.

The gathering of DXers at Visalia were in favor of the petition. The New England Division representative was one of the six DXAC members in favor of the proposal so we can't criticize east coast DXers.

Martti Laine, OH2BH, in a special report to *The DX Bulletin*, reflected his thoughts and listed those DXAC members who voted against the proposal: Richard Roderick, K5UR, Delta Division; Tedd Mirgliotta, KB8NW, Great Lakes Division; Bill Hellman, NA2M, Hudson Division; James Spencer, WØSR, Midwest Division; Robert Dixon, K4MQG, Roanoke Division; Charles Summers, KYØA, Rocky Mountain Division; Robert Beatty, W4VQ, Southeastern Division; Granville Lane, N5DC, West Gulf Division; and Garth Hamilton, VE3HO, DXAC Chairman and RAC representative. ARRL membership cannot remove a DXAC member, but can vote out the division directors who appointed their DXAC representative in the next election. No, I didn't work Scarborough Reef! However, this is not the end of the Scarborough issue. Read on.

At its meeting on 19 July, the ARRL Membership Services Committee (MSC) of the ARRL Board of Directors voted to remove from the Awards Committee Standard Operating Procedure (SOP) an administrative interpretation of a board motion. The deleted text said in part, "Thus it requires a favorable recommendation by the DXAC to initiate a country status review by the Awards Committee." All ARRL Directors were present at the meeting, and it was the sense of the meeting that the Awards Committee should review negative as well as positive country status recommendations of the DXAC.

On 25 July, the ARRL Awards Committee voted unanimously that Scarborough Shoal (Huang Yan Dao) should be added to the DXCC List under Point 2(a) of the Countries List Criteria. Committee members all felt that Scarborough meets the rules that were in place when the petition for new country status was received. Further, they concluded that it meets the definition of an island under the UN Law of the Sea Conventions. China claims Scarborough, and there is an absence of other territorial claims. Finally, it is more than 225 miles from the nearest part (island) of China.

Awards Committee Chair, Chuck Hutchinson, K8CH, shared the results with DXAC Chair, Garth Hamilton, VE3HO, immediately after the vote. As announced in a June 30, 1995 news release, the DXAC voted 9 to 7 against recommending the addition of Scarborough to the DXCC Countries List.

Under procedures established by the ARRL Board, and because the Chairs are unable to effect a compromise, there is an automatic appeal. In the next step, the two committees will report the reasons for their votes to the MSC for recommendation to the full Board, which ultimately will decide the matter.

Estonia (ES)

The call ES6Z/Ø was for a recent operation from Saaremaa Island operated by members of the Viljandi Radio Club, headed by ES6DO.

Several other calls out of Estonia have been reported on the bands, such as the following:

ES1AR	14.018 MHz	0415 UTC
ES1J	7.095 MHz	0230 UTC
ES1WN	14.269 MHz	0400 UTC
ES1WW	14.258 MHz	0415 UTC
ES4DX	14.011 MHz	1330 UTC
ES4MM	14.015 MHz	1300 UTC
ES7FQ	14.235 MHz	0345 UTC

Reunion Island (FR)

Check 20 Meter CW between 14.013 and 14.021 MHz for FR5DD as this station has been reported often, usually after 0330 UTC.

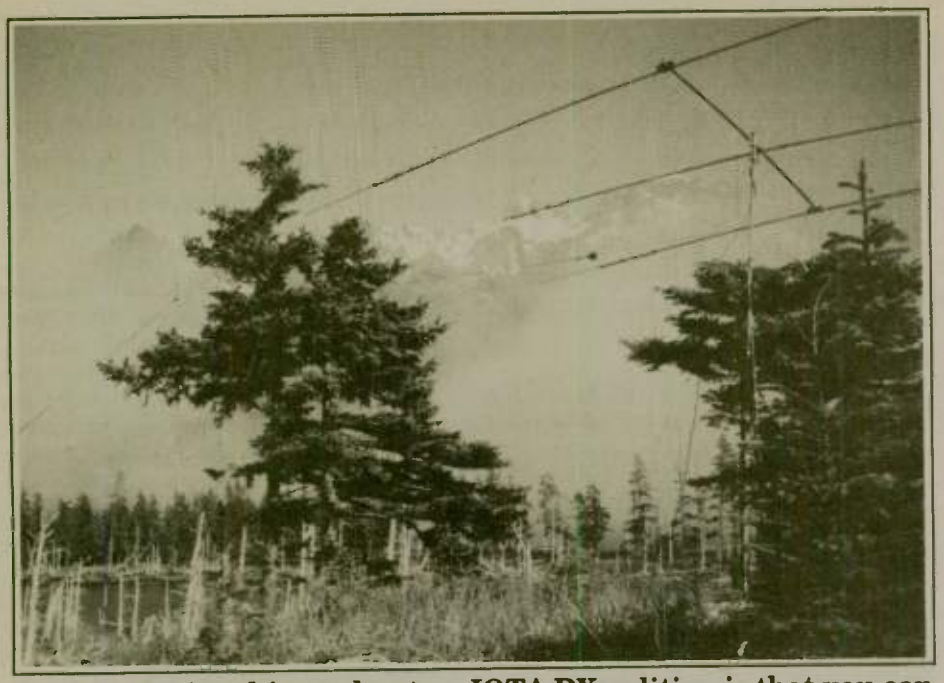
On 20 Meter SSB, FR5DX can be found between 14.175 and 14.218 MHz after 0400 UTC.

One other report of activity from Reunion Island is that of FR5DN on 7.052 MHz at 1300 UTC.

North Korea (P5)

North Korea has been added to the DXCC Countries List! On July 6th the ARRL DXCC Desk announced that documentation for the recent P5/OH2AM operation had been approved. In accordance with a news release dated July 16, 1995, North Korea (Democratic People's Republic of Korea) will now be added to the DXCC Countries List.

The DXCC Desk will accept QSL cards for this new country starting October 1, 1995. QSL cards received at the DXCC Desk before that date will be returned without action.



One of the nice things about an IOTA DXpedition is that you can enjoy the scenery while resting between QSOs. The IOTA DXpedition to the Barren Islands by N6IV, KF6XC and NL7TB, ended with an alternative location on Fox Island (NA-179). Notice the fog hanging over the channel between the island and the mainland. The water shown on the left is a fresh-water pond in the middle of a spit jutting north from the island. The trees were killed by the saltwater intrusion as a result of the 1964 Alaskan earthquake.
—photo courtesy of NL7TB

If you happen to have a P5RS7 QSL card, don't waste your time with that one as the operation took place outside the boundaries of North Korea and has been rejected.

West Kiribati (T30)

QRZ DX reports that David, T3ØDW, is very active on 20 Meter SSB at 1200 UTC and 0545 UTC. An Australian, David should be there for the next two years.

Central Kiribati (T31)

We have only one report of any activity from Central Kiribati. T31BB was heard on 14.194 MHz around 2300 UTC working Canadian DXers in Ontario.

East Kiribati (T32)

T32Z is a very active DXer on East Kiribati working mainly CW but will show on SSB. On 40 Meters he can be found near 7.005 MHz after 0300 UTC.

His 20 Meter spot is on 14.005 MHz anywhere from 2230 to 0130 UTC. On SSB he was found on 14.180 MHz after 0300 UTC.

On 15 Meters he is on 21.005 MHz after 0030 UTC, and on SSB he was worked on 21.240 MHz at 0300 UTC.

If 10 Meters is open, look for this one near 28.005 MHz around 0030 UTC.

Also from East Kiribati, T32LN has also been active near 14.226 MHz between 0200 and 0500 UTC.

San Marino (T7)

Near 14.025 MHz, T77BL often appears on CW. Look for this one from about 2100 UTC.

On SSB, T77CD was reported on 14.278 MHz on 1 July, around 2245 UTC.

Finally, on RTTY, T77WI has been worked between 14.081 and 14.086 MHz at 2030 UTC.

IOTA

Island hunters tend to gather on specific frequencies. On CW, try 3.530, 7.030, 10.114, 14.040, 18.098, 21.040, 24.920 and 28.040 MHz. For SSB listen on 3.765, 7.155, 14.260, 18.128, 21.260, 24.950 and 28.560 MHz. The IOTA Net is at 1300 UTC on Saturdays on 14.260 MHz and again on Sundays at the same time on 21.260 MHz.

Although, several bands are listed here, be aware that there are no endorsements in the IOTA program regarding band or mode.

Our monthly listing of IOTA activity continues with the following islands reported in July (not including the IOTA Contest):

EU-029	Sjaelland Archipelgo	OZ/DL3VZL/P
EU-032	Oleron Island	F6FTB/P
EU-047	Norderney Island	DJ9IN

EU-108	Treshnish Island	GB2TI
EU-127	Helgoland Island	DL8OBC/P
EU-133	Kotlin Island	UA1AD
EU-164	Lavezzi Island	TKØP
AS-089	Sharopovy Koshiki Island	RA9LI/9
AS-121	Nordenshel'da Archipelago	RUØB
NA-008	Ellesmere Island	VE8RCS
NA-019	Kodiak Island	WL7EM
NA-026	Long Island	KA2DFO
NA-041	Douglas Island	N6IV/KL7O
NA-065	San Juan Islands	N5LDX/7
NA-067	Ocracoke Island	KF8VX/4
NA-067	Hatteras Island	KD8JN
NA-071	Chirique Islands	3F3C
NA-075	Saltspring Island	VE7VP
NA-129	Banks Island	VE3VRO/VE8
NA-139	Assateague Island	N2OO/3
NA-152	Sarichef Island	KL7OH
NA-197	Fox Island	NL7TB
NA-198	Bell Island	VO1UM
OC-138	Thursday Island	VK4BRE

John Reisenauer, NL7TB, and his crew had to scrub their Barren Island DXpedition due to unstable landing conditions. They even attempted to land at Yukon Island near Homer, but that was a no-go too. The accessible area of the island is privately owned and permission from the owners was refused. But, all was not lost as they came on just after 0530 UTC on 5 July from Fox Island (NA-197). I activated that one for the first time last summer and was their second contact. Hal Anderson, N7BZI, was their first and he was first to answer my CQ up there last year.

The team was operating from the other side of the island and was equipped with a beam and a bit more power. I had worked no Europeans, but John and his group managed to do so and therefore eased the demand for NA-197. John reported that they had accumulated some 1100 contacts in 60 DXCC countries, most of them Europe. They will make another attempt next summer for the Barren Islands.

The 1st of a planned annual American and Canadian Islands Contest was scheduled for the 4th weekend in September. The contest will apply for all U.S. and Canadian islands, including non-IOTA types.

My family attended the Miss Oregon Pageant at Seaside and returned via the coast highway. In the process we scouted for Oregon islands (the last remaining island group on the west coast without a reference number). Tillamook Rock, a 100-foot high basalt sea stack, lies one mile off-shore from Tillamook Head, south of Seaside. The rock, with an inactive lighthouse, is now used as a columbarium. There are other rocks along the coast that appear to meet the IOTA requirements. However, landing on them is another problem. Perhaps some venturesome soul can activate this final group.

I received a request from Don Blom, N5JEU, regarding information on IOTA and where to write. All information is included in the *IOTA Directory* which is available at $10 from Dewitt L. Jones, W4BAA, P.O. Box 379, Glen Arbor, MI 49636. This route is for North America only. Not only does this publication explain IOTA, but has a wealth of information on the islands and the reference numbers. You must also have a copy when applying for an IOTA award.

IOTA Honor Roll

The annual listing of the standings of the IOTA hunters has been released and was listed in *Radio Communication*, a publication of the RSGB. The Honor Roll includes the following North American DXers, including their position and number of islands worked:

5	VE3XN	806	107	K5MK	604
8	W9DC	803	109	KE4I	602
11	W9DWQ	796	115	VE7IU	576
12	W4BAA	795	119	N5OUE	562
15	VE7IG	794	123	W2FXA	551
27	K9PPY	775	125	VE6PW	546
51	KC8PG	713	126	N3CWP	544
52	K8DYZ	712	128	KA5TQF	539
53	KD7SO	711	132	K3FN	520
56	K2VV	705	136	KA1DIG	515
65	WD8MGQ	695	139	KM4RX	509
68	VE6VK	680	146	K5FNR	490
69	W9NZM	679	150	N6PYN	477
80	K6DT	658	153	N6JM	465
81	WD9EEE	650	155	N4QQ	462
83	W3KH	646	156	W5KN	461
85	WT2O	641	156	KB8O	461
88	W5BOS	637	158	W9HAO	457
94	N7BZI	623	160	N3ERM	453
97	W1ENE	618	168	KD1CT	447
100	KA5W	611	172	NN2C	438
100	WØMLY	611	180	N8EDQ	430
103	N6BOI	608	184	WF1N	420
105	K2EYJ	607			

Also included in the listings were American SWLs: WØ-6437 with 632 islands, WDX3JFH 427, WØ-20276 418 and WDX2TAU 223.

The list ran to number 672 for 100 islands worked and confirmed, indicating that there are that many DXers who are presently active in the IOTA program. This number includes 179 Americans and 20 Canadians.

Who is on top of the IOTA Honor Roll? None other than Jean-Pierre Guillou, F9RM, with 834 islands. He is followed by Livio Zenti, I1ZL, with 822, and Gianni Varetto, I1HYW, with 814.

DXAC matters

The ARRL DX Advisory Committee (DXAC) voted 15 to 1 to suspend further study of the status of Aruba until the Netherlands and Aruba have announced a change in the current move towards independence for Aruba originally slated for 1996.

DXCC Processing status

The number of unprocessed applications at the DXCC Desk the end of June was 282 (39,866 QSL cards). During the month of June some 544 applications (67,919 QSLs) were received for endorsements and new awards. QSL cards checked by traveling DXCC staff in Spain (first of the month) and Germany (end of the month) brought up the total number of applications and cards received.

Bologna convention

The First Centennial of the Invention of Radio, sponsored by Associazione Radioamatori Italiani, will be held in Bologna for three days, 13-15 October, 1995. The highlights include: official celebration, 11th International Guglielmo Marconi HF-DX meeting, 5th IOTA Convention, Saturday evening DX dinner, DXpedition videos and slide show, Microwaves, packetCluster SySops meeting, laser communications, Digital modes forum, opening of the new robot beacon IY4M, ARI International Guglielmo Marconi Contest Prize presentations, DXCC skill competitions and DXCC desk, and finally, the ladies program.

The convention brochure is printed in both Italian and English, also the official languages during the convention.

If interested in attending, you should register no later than 30 September to Promoteam s.r.l., Via Benedetto Marcello, I-40141 Bologna, ITALY. The telephone is (051) 48-13-46 and Fax (051) 47-29-10. The cost for the entire package is 250,000 lira. (approximately 162$US). They can help you with hotel accommodations and will accept credit cards.

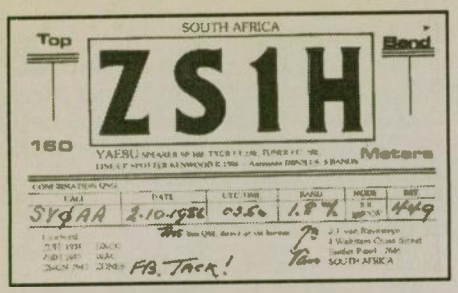
The convention sounds interesting. Wish I could go!

Clubs

New officers for the Northern California DX Club include: Al Burnham, W4RIM, President; Glen Vinson, W6OTC, Vice President; Lloyd Cabral, AA6T, Secretary, and Stan Goldstein, N6ULU, Treasurer. The new 1995-1996 officers were installed during the July 14th meeting in San Mateo.

Antique QSL Department

For our Antique QSL selection this month we wish to thank Charles Jackson, SVØAA, who submitted these



cards. All cards are that of J.J. van Ravenstein, ZS1H, in South Africa, using three different calls. You will also notice that Jack had used different calls when making these contacts.

Our first card sets the scene with Jack, SVØAA, working Van, ZU1T, back in 1986. These gentlemen worked each other on 160 Meters.

In 1949 Jack was signing from Hawaii with KH6PY and worked Van as ZS1CN on 20 Meter CW.

The third card is for a 1936 contact Jack, then W1DCE in Boston, made with Van when he was ZU1T.

The top bar is orange and the bottom bar is gray. The call letters are red!

I did run a card from Van exactly 10 years ago for a 1936 contact with W9PST. Van was using the call ZU1T.

Jack is retired from the U.S. Navy and is residing in Athens. He held the call W1DCE from 1931 to the end of World War II. From 1948 to 1950 he held the call KH6PY while stationed at Wakiawa. He also holds the call W6GBG since 1946 but the call has been relatively inactive since 1963 when he moved to Europe. He uses the call from San Diego when he visits his children.

QSL Information

Merle Allen, K8ESC, wants to know to where to send his QSL cards for delivery to overseas bureaus. We strongly recommend the use of the Outgoing QSL Bureau in Newington. However, you must be a member of the ARRL to take advantage of this service. If I remember correctly, it is a couple of bucks per pound of cards.

And, when sending your QSL requests directly, please remember to provide sufficient funds for return postage. The present rate of an IRC (International Reply Coupon) is $1.05. The redemption price at the post office is a mere 60 cents for those issued outside the U.S.

The cost of an IRC is high, but bulk quantities are available from various QSL managers who will sell them at reduced values. Obviously, the cost will be more than 60 cents each. Don't expect to purchase just a few. Contact your favorite QSL manager.

4F2BP —Mr. Benjamin Nixon Pennell, Center Beach San Fabian, Pangasinan C-2433, PHILIPPINES

5Z4FX —P.O. Box 234, Nyamra, KENYA

A61AI —Ahmed Saif, P.O. Box 20200, Dubai, UNITED ARAB EMIRATES

A61AM —Mohammed Khalifa, P.O. Box 22216, Dubai,

DX Prediction — October 1995

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

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

WEST COAST

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

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(12)*	8	*14	*(8)*	*13
10	*(12)*	8	13	*(8)*	13
12	23	8	12	15	22
14	27	11	*18	17	*25
16	29	*(10)*	*(16)*	16	*27
18	28	*(10)*	*(14)*	*(13)*	*28
20	23	*(16)*	*(21)*	*(10)*	*28
22	19	*(18)*	25	*(9)*	*27
24	*16	*(16)*	26	8	*23
2	*14	*(11)*	21	8	*19
4	*13	*(9)*	17	8	*17
6	*(12)*	*(9)*	*(15)*	*8	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(12)*	*(8)*	*(14)*	*8	*14
9	*(12)*	8	13	*(8)*	*13
11	24	8	12	15	20
13	28	9	*20	18	23
15	29	*(8)*	*(17)*	17	*24
17	*29	*(8)*	*(15)*	15	*26
19	*25	*(8)*	*(18)*	*(10)*	*28
21	21	*(15)*	*(23)*	*(9)*	*27
23	*16	*(16)*	26	9	*24
1	*15	*(10)*	20	8	*20
3	*13	*(9)*	*(17)*	8	*17
5	*12	*(9)*	*(15)*	8	*15

QSL Routes

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

3Z0RY	—SP4TKK	9K2CA	—ON6BY
3Z4JWR	—SP4JWR	9M6JC	—JS1QHO
4K6DFT	—UA9AB	9M8BG	—WA4WTG
4L8A	—OZ1HPS	9M8PV	—WA4WTG
4S7/HB9BRM	—HB9BRM	9N1WU	—JA8MWU
4V1ØØRC	—WA4JTK	9Y4VU	—W3EVW
5A1A	—(SeeNote2)	A43GI	—A47RS
5A2UA	—W4FRU	AA4VK/CY9	—WA4DAN
5A3UY	—W4FRU	AI5P/PJ7	—AI5P
5B/G3OZF	—G3OZF	AI5P/VP2E	—AI5P
5R8DL	—JH8YZB	AZ8FAD	—LU4FM
5R8DX	—JK1APJ	BS7H	—JA1BK
5R8FA	—JE8BKW	BVØARL/BV9G	—BV8BC
5TØAS/P	—IT9AZS	C47W	—5B4WN
5T5C	—OK2DL	C53HG	—W3HCW
5T6E	—F6FNU	C6AGN	—WS1E
5WØXC	—JE1DXC	CJ3NSZ/M	—VE3NSZ
6W1AE	—F5THR	CQ2C	—WA1ECA
7L1MFS/HS2	—7L1MFS		(SeeNote1)
7Q7JL	—GØIAS	CQ5B	—CT1FMX
7W5J	—7X5JF	CT1ESO/P	—CT1ESO
7Z5OO	—W1AF	CU3DX	—CU3AN
8P6DA	—KU9C	CU9B	—CU3AV
8Q7AI	—DL1IAI	CX2CB	—N8BX
8Q7BV	—HB9DIF	D2TT	—ON6TT
9A6V	—9A1BST	D3T	—ON6TT
9A7C	—KA9WON	DL3KBC/P	—DL3KBC
9G1BJ	—G4XTA	DU8ARK/9	—I2YDX
E21AOY/8	—DL9MDZ	IT9HLC/IH9	—IT9JOF
EA8BYR	—WA1ECA	IT9JOF/IH9	—IT9JOF
ED1IRA	—EA1BEZ	IT9ZAG/IH9	—IT9JOF
ED1PAL	—EA5AEN	J20RS	—A47RS
ED7STJ	—EA7GXW	J3/KBØQNS	—KFØUI
EG1RD	—EA1NK	JWØH	—LA5NM
EJ1D	—EI5HD	JWØKKI	—DL5EBE
ET3YU	—YU1FW	JW1CCA	—LA1CCA
EY8MM	—DL8WW	JW6RHA	—LA6RHA
EZ8AQ	—UH8AAQ	JY1	—WA3HUP
FG5FR	—F6FNU	JY74X	—4Z6TT
FH/IK2GNW	—IK2GNW	JY74Z	—JY6ZZ
FS5PL	—KFØUI	K4TVE/CY9	—WA4DAN
FW/JA1WPX	—JA1WPX	KC6GQ	—JG6TWS
GB2TI	—G3JNJ	KC6HK	—JE6DND
GC4MBC/P	—G4BWP	KC6IY	—JF6BCC
GMØGAV/P	—GMØGAV	KC6SM	—JA6GLH
GMØUSL/P	—GMØKVI	KK6WW/KH0	—JA6EGL
GM3TQQ/P	—G3TQQ	KW2P/CY9	—WA4DAN
GW5LP/P	—GW5LP	LQØA	—LU1ARL
H44/JA1OEM	—JA1OEM	LQ5C	—LU1ARL
H44XF	—G3TXF	LR1C	—LU1ARL
HBØ/DFØCB	—DFØCB	LTØA	—LU1ARL
HBØ/DKØFTG	—DKØFTG	LVØA	—LU1ARL
HFØPMC	—SP2BMX	N2PQE/KH	—JE2HCJ
HG95HQ	—HA5NK	OD5/OK1EE	—OK1FMR
HL9DC	—N7RO	OS4LD	—ON4LD
HS7CDI/2	—7L1MFS	P29PL	—VK9NS
HS8/DF8AN	—DF8AN	P29VJC	—KC6WYX
HV1CN	—IØGPY	PØAN	—CX3AN
IBØJN	—IK8DYD	PØCR	—CX4CR
IF9/IT9AUP	—IK1TZO	PA/DJØMCZ	—SP9ERV
IK2GAO/IMØ	—IK2GAO	PA/ON4TH/P	—ON4TH
IK4HPU/IMØ	—IK4HPU	PU2MHB	—PY2PE
PXØUP	—PY1UP	VF1L	—VE1AL
PYØZFB	—JH2MRA	VP2EP	—WB4CLO
R1FJC	—RW6HS	VP2EY	—HB9SL
R1FJL	—JA3AFR	VP2VI	—AB1U
R1FJZ	—DF7RX	VP5/PA3BBP	—PA3ERC
R3AAA/Ø	—RV3DDZ	VP5/PA3ER	—PA3ERC
RAØFA	—KM6ON	VP5/PA3EWP	—PA3ERC
RA9LI/9	—DL6ZFG	VP5/PA3FQA	—PA3ERC
SK7DX	—SM7TE	VP5C	—PA3ERC
SV3/SV1CID	—SV1CID	VP5J	—KF8UM
SV5/DL9GTI	—DL9GTI	VP8CQS	—DL1EHH
T3ØDP	—KH6JEB	VQ9SS	—N6SS
T3ØEG	—KH6JEB	VR2RJ	—JH1BED
T31JK	—GWØOJ	VS6FQ	—JL6TDF
T77GM	—IØMWI	VU2BIX	—VU2TRI
T93M	—K2PF	W5IJU/CY9	—WA4DAN
T99W	—DL1QQ	WA4DAN/CY9	—WA4DAN
TA2ZP	—JA2BDR	WB5JHK/PJ7	—WB5JHK
TI5NW	—WB3LUI	XJ2CQ	—VA2RC
TL8CN	—F5MBF	XK9NJ	—K2NJ
TMØPR	—F5JOT	XU1SS	—JA4XFA
TM8AT	—F5RUQ	YB5OLI	—N6QLQ
TR8VP	—F6FNU	YS/TI5NW	—WB3LUI
TY1IJ	—DK8ZD	YS1ZV	—KB5IPQ
TZ6VV	—AAØGL	YT5ØAT	—YU1SZ
UAØAZ	—W3HNK	YV5ANF/P	—YV5ECY
UAØMF/A	—HH2HM/F	YV5ENI	—I2CBM
V63BM	—JA6BSM	ZA1B	—HB9BGN
V63GY	—JH6RTO	ZC4C	—OK1RI
V63HK	—JE6DND	ZC4DX	—G3OZF
V63HZ	—JF1VXB	ZF2HH	—WAØECI
VE8RAC	—VE3VGI	ZK1DXC	—JE1DXC
VE8TA	—VE2BQB	ZK3RW	—ZL1AMO

	UNITED ARAB EMIRATES
A71A	—P.O. Box 22122, Doha, QATAR
A92FZ	—P.O. Box 15763, BAHRAIN
A92MM	—P.O. Box 116, Manama,
A92Q	BAHRAIN
BV3BW	—P.O. Box 92, Hsin-Chu 300, TAIWAN
C21DJ	—Darkey Jeremiah, P.O. Box 217, NAURU
C21NJ	—Norman Jeckane, P.O. Box 205, NAURU
CO4BM	—Lopez, P.O. Box 1503, Nueva Gerona, Isle of Pines, CUBA
EA9AR	—Javier, P.O. Box 1701, Melilla, via SPAIN
ET3AA	—Esknder, P.O. Box 60258, Addis Adaba, ETHIOPIA
ET3BN	—P.O. Box 150194, Addis Adaba, ETHIOPIA
FH5CB	—P.O. Box 50, 97610 Mayotte Island, FRANCE
JWØC	—Andre Kravtsov, 9178 Barentsburg, SVALBARD
N1KDS/KL7	—Mark Lapinskas, P.O. Box 14 St. Paul Island, AK 99660-0164
OD5NJ	—P.O. Box 70647, Neirut, LEBANON
ON6QP	—Fred Jans-Cooremans, 3 Tangedallaan, B-1850 Grimbergen, BELGIUM
PUØTRI	—Sergio S. Mendes, Rua Visconde de Santa Isabel, 692 Apto 202, Grajau, 20560 121 Rio de Janeiro, RJ, BRAZIL
T3ØDW	—David, P.O. Box 29, Bairiki, Tarawa, KIRIBATI
T97V	—Vlado, P.O. Box 14, Vitez, BOSNIA-HERZEGOVINA (via Croatia)
TI9JJP	—José Pastoria, P.O. Box 330-1000, San José, COSTA RICA
TN7OT	—B.P. 12, Impgondo, REPUBLIC OF THE CONGO
TR8IG	—P.O. Box 740, Libreville, GABON
UAØFM	—P.O. Box 49, Yuzhno-Sakhalinsk, 693006, RUSSIA
VK4BRE	—Rex, P.O. Box 418, Thursday Island, QLD 4875, AUSTRALIA
VP8CGC	—Steve Cuthbertson, Faraday Base, via Port Stanley, Falkland Islands, U.K.
XJ1CWI	—West Island ARC, P.O. Box 884, Pointe Claire/Dorval, PQ H9R 4Z6, CANADA
XT2CH	—Ed, American Embassy Burkina Faso, Dept. of State, Washington, DC 20521-2440
YIØEB	—P.O. Box 55072, Bagdad, IRAQ
ZK1AT	—Amy Tabique, P.O. Box 1264 Hanalei, HI 96714

Notes:

1. This route is for North America only. Europeans use CT1EEB.

2. QSL requests for CW contacts go via Vlad Vladov, LZ2UA, P.O. Box 100, 5600 Troyan, BULGARIA; SSB contacts via Horecky Stefan, OM3JW, Mlynska 4, Stupava, IBV 900 31, SLOVAK REPUBLIC.

Many thanks to the following contributors: SVØAA, N5JEU, NL7TB, K8ESC, N8FU, Western Washington DX Club (WAØRJY), Northern California DX Club (N6AN), Western New York DX Association (KB2NMV), Salt City DXAssociation (KB2G), Northern Arizona DX Association (W7YS), The American Radio Relay League (K5FUV), The OPDX Bulletin (KB8NW), *CQ Ham Radio*, *Amateur Radio Action* (VK9NS), *Long Skip* (VA3JS), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

There was a lot of island activity in the IOTA contest and many IOTA types picked up some more islands. Unfortunately, the propagation was not good. In California the signals out of Europe were weak when they were coming through. I added five new ones to my ever growing IOTA list — all European islands. If you haven't dropped by an IOTA operation, why not take a listen near 14.260 MHz? Hope you had a enjoyable summer.

73 de John N6JM. WR

Abbreviations

DXCC	Contact 100 different countries and get written confirmation
10M DXCC	100 countries on the 10M band (28.0-29.7 MHz)
WAC	Worked all continents (only 7)
5B WAC	all continents on 10, 15, 20, 40 and 75M bands (35 total QSLs)
WAS	Worked all states (50 contacts)
WAZ	Worked all zones (40 zones)

There are more than 180 countries in the world but according to Ham DX rules, you wind up with over 300 by counting distinct areas and remote islands owned by some of those countries. The 40 Zones are also a Ham invention. —South West Iowa ARC *Printed Circuit*

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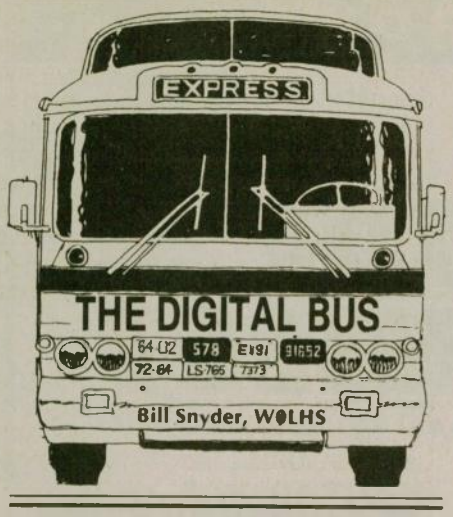

The longer I am on the worldwide packet network of Amateur Radio operators, the more disgusted I get with it. It used to be quite good, but as time goes by and other methods of communicating come "on line," the less I think of it.

It wasn't too many years ago that I could communicate with Bob Lawrence, W7VFR, in Pasco, Washington in a matter of hours. Now it's a matter of days. When things were working well, I had many messages from Bob in less than eight hours, some even less than four, and this was with eight relay stations in the chain. I really thought the system was perking on all cylinders, but now I wonder if the system will survive.

A couple of years ago I asked people to send 10 messages, one a day for ten days, and I would tabulate the results. Of the 33 that I know of who sent me 10, I managed to get all ten from only three stations around the USA. That ain't too good, is it?

I think we have a dumb system of addressing, but I can do nothing about that.

I thought the ZIP Code was the logical method, and I still do. Ten years ago, I had a friend who used to address postal letters to me at 412 58107-0412. That's all: my box number and the ZIP Code. I got every one of them. No losses. If the ZIP Code works for the mail system, why wouldn't it be easy for the packet addresses?

I'm not asking for ten-message tests again, because I only get frustrated and depressed. I once thought the packet system was really great. Now I'm sorry it turned out to be so punk. The last test I participated in was with John Schmid, WA6PGA or HB9CDP. John was real tricky with his test: he originated his 10 packet test messages at the BBS of DBØFHO in Europe, and he did it from Lompoc, California. John also used the internet and telnet to put messages to me on the DB9FHO BBS in Germany. Pretty tricky stuff.

On 16 June, I received the first of John's ten. It was filed 950614 at 2211. On 18 June, I received numbers two and three. Filing date times: 950615/1920 and 950616/0357. On June 19 I got numbers 4/950616/1730 and 5/950617/1817. And that was all, numbers 6, 7, 8, 9, and 10 hit the bit bucket somewhere along the line. No trace of the last five at all. I was not able to check my BBS everyday, that is why I got two a day. The last message I received from John was number 11, and it was received on July 7th, but it was via the USA system, not the tricky overseas route.

Well, I answered John's messages by using the SR command on my BBS. That automatically addresses it to the sending station. It reads the header and sends it to the last station in the list, which in my case was VE3FD. I assume that is the station that received them from Europe, but I'm not sure. So, I did send them to the DB9FHO address, too. But I guess none of them every made it back to John by his tricky system. Another test gone bad. Sorry.

African adventures

The other day I got into a discussion of audio tape recording operations right after the end of World War II. A few of us old timers were talking about the great progress the recording business has made in the last 50 years. I couldn't help recalling my African adventures in 1948. It began while I was with the Gatti-Hallicrafters African Expedition. There we had nothing but Webster wire recorders, which Attilio Gatti, the expedition leader, thought could be used for high fidelity sound recording. He had visions of being able to record VHF broadcasts from the top of Mount Kilimanjaro and then quickly playing them back on 10 Meter phone to the waiting hams in the USA. And somehow he also thought we'd be able to use wire to record dialog sound for motion pictures footage photographed without a synchronizing system. He was quite dismayed when I told him the bare facts.

After I left the Gatti group, I joined Arch Oboler, an award-winning American radio playwright who was spending six months in Africa making radio recordings for a syndicated program company. Oboler had a name and great talent for writing radio dramas. A network radio show called "Lights Out" was his brainchild. He had written some 700 radio shows of the mystery type that had been broadcast near midnight across America. When I got the chance to go with him, I jumped at it because I had been a fan of his work for a number of years.

In those days there were no real professional audio tape recorders like the AMPEX. The Brush Sound Mirror, a consumer product, was the closest thing to a professional recorder at the time. So, before he left the United States, Oboler had two Sound Mirrors taken out of their wooden cabinets and mounted in dust-proof Halliburton aluminum carrying cases. Along with the recorders, he

brought boxes of ¼ inch paper-based magnetic tape, and also some experimental plastic-based tape that the 3M Company gave him for testing.

When Oboler showed me the two recorders, they were really something new for me. First, they used a "magic eye" recording volume indicator, no VU meter. When I made the first recording on one of them, I discovered that the power transformer was mounted in the case in such a manner that the magnetic field was picked up by the playback head, and so it hummed. Pretty hard to monitor a recording when you have a background of hum to contend with. I wasn't sure if the recording had hum in it either, because I had no way of telling whether the hum was introduced on recording or playback, as the same head was used for both processes. To solve the problem, I mounted the power transformers in surplus ammunition carrying cases.

For power we had a portable 120 volt generator, plus two lead acid battery boxes with a vibrator power supply that put out 115 volts of something like 60 cycles. Oboler also brought along transformers to run the recorders on the local 240 volt 50 cycle current. Of course this gave us recordings with different speeds as the motors in the Sound Mirror were synchronous and they tracked at the cycle rate. You had to play back on the same current source, or the voices were higher or lower pitched depending on the cycle speed it was recorded at.

Our first foray into the actual recording was done in Masai country in the shadow of Mount Kilimanjaro. We made the trip along with Goeffrey Hutchinson, a public relations manager for the Kenya Colony Government. Goeff, a pleasant Kenya civil servant, was a great help to us in finding things of interest to record and photograph.

I set up one of the Sound Mirrors for the first recording session, for Oboler wanted to record Masai music and vocals. The mike input had been modified to take low-impedance microphones, because the stock Sound Mirror came with a high impedance mike and a rather short cable. I was as green as grass with how to judge the recording level with a "magic eye." The first thing I discovered was the magic eye was overly sensitive to low frequency drum beats. It would indicate overmodulation with the single input gain control just barely cracked. I had a set of earphones, so I had to disregard the eye blink whenever heavy drums were used and wherever we went the "ngoma" (dance) was the thing to record. (Capitol Records released a long play record of our music.)

As far as I could find out, we had the first tape recorder in Kenya. Wherever we went it was a thing of interest. So that day we recorded a number of Masai songs, and I began to pack up the recorder. Goeff came over and said, "Let's play them back for the people," so I pulled the earphone plug out of the jack and rewound the tape. The native crowd gathered around the recorder to listen. At first there were laughs when they heard their voices, then they settled down and listened carefully to each song. The group engaged in some Masai language conversation about each number, then suddenly I noticed the people were getting less jovial and more somber.

When the reel was finished, I packed up the gear and put it in the truck. Goeff, Oboler, and local District Commissioner were suddenly engaged in serious talking with the tribal elders. I had been Africa for about five months and had many contacts with the native population, but something seemed strange in the way they were talking. "What's with the Masai?" I asked Goeff.

"It's serious, Bill," Goeff said, "They have the idea that when you closed that recorder lid and put it in the truck, you were going to take their voices in that aluminum box when you drove away."

I had just heard a story about the Masai Morani (warrior) who put a spear through a Kenya government tax collector when he came around to assess the tribe's cattle herd, so I was leery of what might happen.

"Bill," Goeff said, "set up the recorder and play it back for them again. We've got to convince them you are not stealing their voices."

I played the tape several times, then closed the lid between each playback and had them sing. Finally we felt they were convinced that we were not stealing their voices. As we drove away, the District Commissioner had them sing again, and I guess that proved we were not thieves.

EAVESDROPPINGS

I DON'T LIKE TO WORK ON PC BOARDS ANYMORE—EITHER THE BOARDS ARE GETTING SMALLER OR MY EYES ARE GETTING BIGGER... TENNIS IS THE ONLY GAME WHERE "LOVE" MEANS NOTHING...IT'S BEEN SO HOT AND DRY THIS SUMMER THAT I SHOULD HAVE PLANTED CACTUS INSTEAD OF VEGGIES.

Thanks to KA1RFD, W7VFR, WBØZOK for help with the column. Write to me: Bill Snyder, WØLHS, 1514 12th ST S, Fargo ND 58103-4134. 73 and DIT DIT. WR

3456 MHz record

Extraordinary conditions for tropospheric propagation in the U.S. Midwest have resulted in a new overland record on the amateur 3456 MHz, UHF band. At 1224 UTC on 12 July, Al Ward, WB5LUA, in Allen, Texas, worked Gary Morhlant, WAØBWE, in Maplewood, Minnesota over a distance of 841 miles. The previous record of 736 miles was set on 1 May 1992, between WB5UA and W9ZIH, in Malta, Illinois. Third time around WAØBWE was running about 5 watts and WB5LUA operated 100 watts to a 5' dish at 65 feet.

Search And Rescue Communications

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

A few weeks ago, a group of young people came by for a Cook's tour of Amateur Radio. For an hour we explored some of the science aspects of radio waves, propagation, sound and how we communicate. We then tuned through the shortwave broadcast bands and listened to voices from around the globe.

These kids were amazed that in a world with cellular telephones, cable television and satellite links, people in many countries rely on shortwave broadcasts. Because the hour was late, we then turned to the AM broadcast band and they were excited to hear stations from around the United States. We discussed why this happens at night and what neat things there are out there to hear.

Moving into the Amateur Radio spectrum, we found some Morse code activity. These kids were awed when the words came across the computer screen and they saw some health and welfare traffic concerning Hurricane Erin. Even though the words moved slowly across the screen and they could hardly hear the signal, the message came through.

This group of youths represented what I call the "consumer mindset." They are aware of events but unaware of what makes things work — they know that the on-off switch is their window to entertainment and information and that's as far as they have explored. They have not considered a condition where a telephone or television might not work or what would happen.

I think this mindset is important to consider as we "sell" Amateur Radio to public service agencies. I believe the agency doesn't care how the messages get through, they just want to turn "on" the system and have it work. When we make it complex or unattractive for some reason, the agency is disturbed — they just want to flip the switch and have it happen.

Under the Incident Command System, communications falls under the logistics area. Many operators complain that the ICS system is a disservice to what they do. Before you criticize the system, look at the role of communications. It is not to command, or to fight the fire, or to rescue the injured — communications helps things happen and connects command and operational elements. Just as it takes fuel to make the chopper go, it takes communications to make the operation go. The chopper crew doesn't care who fills the tank as long as it is the right fuel. The operations people don't care who relays the messages, as long as it happens quickly and dependably.

Our role in selling Amateur Radio to public service agencies is one of making things work smoothly and dependably and becoming critical to successful outcomes. When we not only learn about how our equipment works and how to employ our services effectively but also learn about how emergencies are handled, we become a valuable asset.

In a recent firefighter publication an article discussed fireworks and how they are made, how they explode, and what happens in emergency situations. Here is an example of where firefighters learn beyond just putting out a fire, but how something works. As Amateur Radio groups, one key focus has to be on how things work — we need to look beyond the on-off switch and understand how we impact the big picture.

Volunteer incentives

In the September, 1994, issue of *Incentive magazine*, author Flora MacLeod discusses ways to keep volunteers active in an organization. "Just because volunteers work for free doesn't mean they don't want recognition," she writes.

You and I will agree with her assessment that volunteers appreciate being given credit for work done and like to feel they are partners in the operation. The article recommends simply asking volunteers what kinds of recognition would be appropriate. It might be a certificate, a small gift or an awards banquet, but the important step is doing it!

One critical element is a philosophy of treating volunteers as important to the effort which include respect, ensuring the work to be accomplished is of value and not perceived as "make work," and simply listening to input from the volunteer.

Some other suggestions are to create job descriptions that show how the volunteer contributes to the effort, offer options for involvement and growth, maintain accurate service records and conduct orientation and training sessions designed to build confidence and expand skills. She also encourages leaders to look for and reward volunteers who display creativity, innovation, courage, foresight and accomplishment. By recognizing favorable actions, leaders will encourage other volunteers to emulate the positive actions as well.

It is also important to note that "people respond to increased responsibility, input to decision making and opportunities to influence the direction of the program." You involve people by sharing information, encouraging (AND accepting) participation, recognizing expertise and giving recognition.

Standard connectors

From time to time I get letters encouraging a national standard for

power, antenna and microphone connectors. Some magazines have published articles encouraging the same. What's wrong with a national standard? Nothing if you have a national mission and have national involvement.

I've always been a supporter of some level of standardization — but it must be tied to the scope of your involvement. It does NO good for Ventura County to match New York City UNLESS both groups have common involvement. I'm not going to Vermont for their next emergency so I don't want to adopt what they're doing and don't want them matching what I'm doing unless it makes sense to adopt acceptable standards where none exist.

It makes sense for a national group, such as the Civil Air Patrol, MARS, or U.S. Coast Guard Auxiliary because they have a nationwide mission that includes moving resources to affected areas. When the CAP was needed during the Midwest flooding, resources were brought in from distant units and it was important that things mesh smoothly. If your local ARES or SAR group has a mission that includes working with distant units, it makes sense to coordinate standards. It also makes sense to coordinate among "logical" local resources. By logical I mean "will they be working together?" not simply adjacent.

Some groups like the Anderson Powerpole connectors for power leads and others like Molex connectors. I've heard arguments for and against both and my response is: "So what?" If it works, and it's accepted by the group that's what matters. It's one thing to work together among groups that will be responding to similar events and quite another to dictate a national standard and force expensive changes when no useful purpose is served.

I do encourage groups to include antenna adapters, power leads, microphone connectors and soldering irons in their field kits. If all else fails, clip the power lead (in an emergency) and solder it. Personally I have adapted all my radios to a single 8-pin microphone standard and have all my power leads matching the local ARES recommendation. Beyond that, I carry antenna and audio adapters.

It would be nice if every radio used the same pin-out for microphones and had the same power, headphone and antenna connectors. Don't hold your breath waiting for it to happen! Many newer radios now use a crimp-on plastic microphone connector — my point being manufacturers will use what fits the need, makes economic sense and sells. (I still laugh every time I see a request for an Azden 12-pin connector — talk about scarce and difficult to install.)

Please don't say it!

Please join the campaign against "be advised" and "station not heard." When you are giving someone information, you are advising them simply by giving them the message. If you are NOT advising them, why communicate? It is a significant annoyance and waste of air time to tell another station to "be advised" of something. Just tell them! It's also silly to be on an FM repeater, make a couple of calls and then (when we all have noticed the obvious) tell everyone the station you have been calling was not heard. What does this accomplish? It makes sense to just replace the microphone on the hook and ponder someone else to call. I'm sure my next audio nightmare will start with "Be advised, station not heard."

See you next month! I hope you had a rewarding summer and found some time to enjoy Amateur Radio including public service. Best wishes from Salt Lake City! WR

QUARTER CENTURY WIRELESS ASSOCIATION INC.

John G. Troster, W6ISQ

Ethel Smith, K4LMB

Our regular columnist is a hard act to follow, but we will have to concede that he is entitled to a month off once in awhile. Jack Troster, W6ISQ, will be back in this corner next month.

In the mean time, our genial general manager has some exciting news for the digital buffs. Headquarters now has a Home Page on the Internet. You can find an up-to-the-minute membership directory, information on the QCWA activities and programs, and even a photo tour of the QCWA Headquarters. In the first month after the program went on line (1 July), Headquarters has received over 300 inquiries and 100 requests for applications! Here is the address for the Internet QCWA

World Wide Web:
http;//www.efn.org\~qcwa

This move into one of the newer technologies prompted us to do some thinking about the incredible advances that have taken place within the lifetime of many of our QCWA members.Home Page on the Internet is a far cry from the spark gap that caught the interest of our founding fathers.

We know it all started back about 1912 when the only mode of operation was spark gap and a good percentage of the experimenters were kids of around 15 years of age. Then came licensing, by the Department of Commerce, and the advent of World War I. Many hams went into the service and many GIs were exposed to the rush of developments in communications technology. Following the war, there was a great surge in the number of Amateur Radio operators.

Ralph Hasslinger, W2CVF, at his station in 1925. Note all the leyden jars in the background.

Soon we had CW, and not far behind came AM — with the equipment housed in racks 5 or 6 feet tall. Then along came 1941 and another war — with more people exposed to communications and more leaps in technology. We got SSB and RTTY and a multitude of different modulations techniques and digital modes.

By 1947, most of those early experimenters had been through two world wars and many advances in communications technology and they had now been licensed Amateurs for around 25 years. A far-sighted group in New York City decided to form a club for those Amateurs who were licensed by 1922.

They named it the Quarter Century Wireless Association. Of the 34 members who attended that first organizational meeting, only three are still with us today: Ralph Hasslinger,W2CVF; Frank Lester, W2AMJ, and Clarence Seid, W2KW. Ralph has been very active in the organization for all these 48 years and he provided me with much first-hand information for this column. (See Ralph's Brief Synopsis of QCWA History in the Spring '94 issue of the *Journal*. It is fascinating to hear his stories about some of the early activities and the famous people who participated.

In the beginning, QCWA was strictly a New York organization and there was still little thought about branching out. It was not until 1951 that a Cleveland group petitioned to become recognized as a local chapter. They became QCWA Chapter #1. Three years later Chicago followed suit and became QCWA Chapter #2.

Somehow, it didn't occur to the original group to give themselves a number until 1956. Consequently you will find the Founders' Chapter carrying the number 46!

Meetings of the founding group were always held in the vicinity of New York City. The nearest thing to a break in the meeting tradition came in 1958, when Washington, D.C. Chapter #23 sponsored a national convention of the ARRL. The QCWA officers were talked into meeting at the same time and holding a "coffee and brandy meeting" for anyone who had been in ham radio 25 years or longer. It was not until 1966 that the by-laws were amended to permit officers and directors of the national organization to be elected from outside the New York Metropolitan area. Art Miligan, W8KW, became the first "outsider" to become a Director.

It was another six years before the first Annual Meeting/Convention was held outside the New York area. In 1972, (when Barry Goldwater was QCWA president), the convention was held in Washington, D.C. The next year it was in Scottsdale, Arizona; 1974 was in Orlando, Florida. Since then the conventions have rotated all over the country — with this year's convention in New Hampshire becoming the 16th state. Next year we break tradition again with the first convention ever to be held outside the U.S.; the 1996 convention will be in Ontario, Canada. Be sure to mark your calendar for that one.

Today there are 187 chapters in the U.S. and another six international chapters. Total active membership is over 10,000. And this group represents something like 350,000 man-years of Amateur Radio experience. Look what God has wrought!

General Manager Jim Walsh, W7LVN, (and his faithful cohort Jan Harter), are eager to gather all possible historical information about QCWA. If you have any old files or memorabilia you are willing to part with, please send them to Headquarters. Don't ever throw away (or let your family throw away) any of those old pictures and records. Contact Jim via the Internet or phone 503/683-0987 or BBS or FAX 503/686-4181 or check into the QCWA International SSB Net any Sunday afternoon at 2000Z on 14.347 kHz.

We are looking forward to seeing you in New Hampshire 13-14 October. **WR**

CQ, CQ, Amateur Radio operators

If you have been licensed for 25 or more years, please come to the first organizational meeting to help us form a local Chapter of the QCWA in Sun City Center, Florida.

This meeting will take place on 8 November from 11:30 a.m. at Stacey's Restaurant, Sun Point Shopping Center, 1 block west of I-75, State Route 674 (exit 46) Ruskin. For information, contact Leo Witkowski, K1QPJ, or Lorraine Witkowski, WA1EDR, 812 McCallister Ave., Sun City Center, FL 33573.

FM & REPEATERS

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N6OMS Ousted as TASMA Chairman

The head of Southern California's Two Meter repeater coordination council was recalled in early July. By a ratio of three to two, Attorney Sidney Radus, N6OMS, has been removed from his role as leader of the TASMA political structure.

Radus' ouster was primarily the result of a well-orchestrated boycott of TASMA by those most affected by the organization — the 340-plus repeater owner-operators of 2 Meter repeaters in the region. While on the surface it appeared as if Radus had been removed from office by a coalition effort on the part of hams from San Diego, Riverside and other outlying Southern California areas, in reality, the petition itself had little impact on the outcome. This is because of a long established FM and repeater "political pecking order" that was first established in 1955 that remains a dominant force to this day.

A word about the petition

In the recall petition, Radus was charged with: "...acting outside of TASMA bylaws, ...acting outside the authority of the office of Chairman, ...acting in violation of the Rules of the Federal Communications Commission as it regulates the Amateur Radio Service and for putting TASMA in legal jeopardy" — but never spelled out what he was supposed to have done.

The recall petition was supposedly penned by one Julio Armenteros, N6IDD. I say supposedly because on reading, it becomes obvious that it contains the thoughts of more than one individual.

But there was a problem with the petition. While it presents an eloquent case for those favoring Sid Radus' recall, not one accusation has ever been proven. It amounted to hearsay and innuendo, making the recall drive a movement based on politics. It was a popularity contest.

Dirty politics

In days past, to vote at a TASMA meeting required showing up in person and being a repeater owner. Somewhere along the way that got changed and now any ham can cast a ballot in person or by proxy. The only requirement is joining organization and paying the dues.

I was disappointed in the way in which many of the recall votes were solicited. Radus' backers and the hams petitioning for his removal depended heavily on drumming up proxy votes.

In the weeks prior to the 7 July recall election meeting, hams across Southern California were subjected to several packet radio campaign messages urging that they take sides. Each side claimed that it supported packet radio and thereby inferred that it had the power to do favors for packet operators; favors, neither side could possibly deliver.

Few repeater owner-operators appeared!

It was not the negative aspects of the proxy vote campaign that led to Radus' recall. Yes, there were about 100 hams present for the five hour meeting. It lasted so long that the group was evicted from the hall and had to complete its vote counting in the parking lot. The truth however, is that each one only represented his or her own personal point of view as a repeater user. While this may anger some of you, the reality is that while we "users" make up the majority of those "heard" on a repeater, we are not the people who have put their time, energy, and call sign on the line to bring a repeater to life. That honor — if one considers this kind of responsibility an honor — goes to a class of radio amateur known as the repeater owner-operator-licensee.

Only a half-dozen or so who attended were the repeater owner-operators and those who did come were not that interested in the vote. Most were system operators who were involved in confrontations with other repeaters and looking for TASMA to perform miracles on their behalf; miracles that even the wisdom of King Solomon could not deliver in the world's most crowded ham radio RF corridor.

Repeater owners — the power

In fact, N6OMS, was kicked out of

the TASMA leadership position by the repeater owner-operators of Southern California. The same repeater owner-operators that TASMA has coordinated since its inception as the SCRA. The same repeater owner-operators who collectively cast a silent vote against the man— and more so — the organization by their overwhelming collective boycott of the meeting and of the organization.

A bit of history:

It takes very little time to realize that the TASMA of today is far different from the way things were back in 1971 when charismatic leaders like Capt. Richard McKay, K6VGP, Charles R. "Dick" Flanagan, W6OLD, Fredrick E. Deeg, N6FD, and countless other second generation repeater pioneers gathered in a school auditorium. Their job was to form the Southern California Repeater Association from the ashes of the old California Amateur Relay Council, and they suceeded.

As SCRA, the group was the undisputed national trendsetter in setting repeater coordination standards and policies. SCRA was not afraid to tackle the most horrifying of technological problems and find solutions. The bandplanning research performed by several of its members like Burt I. Weiner, K6OQK, and Robert Thornburg, WB6JPI, will forever live in the annals of FM and repeater history. SCRA put politics second to technological advancement, and that policy is what made it great.

A big mistake?

In 1979, a decision was made to create two separate coordination councils for 2 Meters and 1.25 Meters respectively. SCRA was split. The 220 MHz Spectrum Management Association carried on many of the SCRA policies and remains strong to this day.

On the other hand, TASMA decided to become "user oriented." It involved itself in matters such as trying to decide disputes between repeaters that were (and still are) causing interference to one another. It got involved more than once in the internal affairs of repeaters where the users were at odds with the system owner-operators.

In the end it became an organization so totally immersed in is own internal political strife that it forgot its only reason to exist. The only reason that any frequency coordinator in any radio service exists, to simply advise potential repeater owner-operators on the best frequency on which to put up a radio relay device — and to do nothing more.

History repeats

It is said that history tends to repeat itself. It appears that this is true here as once again the people who have their repeaters on the air with signals "cast in concrete" have shown. As was the case in 1977 when they held "Repeater Appreciation Week" (a week where 99.9% of the regions repeaters went silent to protest user abuses), the area's repeater owner-operators have again proven that they still possess the ultimate power on the band. They have said in effect to Sidney Radus N6OMS, to TASMA and to the entire Southern California 2 Meter user community: "...TASMA no longer serves our needs — it's time for a change."

From the packet airwaves

A 911 TIP

By Jim Reeves, KC6YRU

"When using an autopatch or cellular phone to call 911, be sure you know where you are! When you call on the cell phone or autopatch, the system only identifies you as a mobile phone, and does not give a location. Calling 911 without knowing your location only slows down response to the emergency.

"Keep a mental picture of your location as you travel. If nothing else, keep track of how long since you passed a landmark, such as a city, business, park, or something similar. We need some clue as to where you might be. It is very frustrating to know that someone needs help, but be unable to send it because we don't know where the problem is located.

"If you call on the autopatch, be brief! You could drive out of the range of the repeater if you get long winded! This happened in our area. The ham drove over the hill and out of the repeater without getting to where he was! We had to tell the dispatcher what happened and that we would try to locate the caller. We never did. Let the dispatcher ask you the questions after you give a short synopsis of what the problem is, this will speed our response."

A request for information

WD9GHG writes via packet that the Amateur Radio Club of Mt. Vernon (IL) is in the process of installing an autopatch on its repeater. The club is seeking your input on how to administer the autopatch and needs your advice.

What are your policies? How do you run your autopatch? Not all of the club members live in the local calling area.

How do you handle long distance calls?

All replies will be appreciated. Send them to Alan at his *Callbook*™ address or to WD9GHG @ N9AZZ.#SIL.IL.USA.NA WR

YLs on the Air

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

Coming Events

23-24 September
JLRS Party Contest (SSB)
30 September - 1 October
JLRS Party Contest (CW)
11-13 October
YLAP CW)
25-27 October
YLAP (SSB)
11 November
ALARA Contest

The 6th of each month is YL Activity Day.

YL Contests

The logs for the DX-YL to NA-YL Contest held in April have been checked, and congratulations go to Rosel Dach, DL2FCA, the DX winner, and Lia Zwack, WA2NFY, the North American winner.

YLRLs Howdy Days in September marked the beginning of the YL fall/winter contest schedule, and the next one will be the 24th annual JLRS Party Contest, sponsored by the Japanese Ladies Radio Society. This contest is open to both OM and YL operators throughout the world. OMs score one point for each YL contact and 5 points for a member of JLRS, and YLs score 1 point for each contact with an OM and five points for each YL contact. The exchange for OMs is RS/RST and QSO number starting at 001; for YLs, RS/RST and QSO number starting at 2001, and for JLRS members, RS/RST and QSO number starting at 5001. For total score, multiply the number of contact points by the total number of different prefixes worked in each band.

The CW and phone portions will be scored as separate contests. Logs go to Suga Yamakawa, JA5CUE, 4-14 Harigihigashi-machi kochi-city 780 Japan and must be postmarked by 20 October. All participants will receive a certificate and a list of the contest results in January, 1996, and stickers will be added to this certificate for every participation in the next 10 years from the issue of the certificate.

The YL Anniversary Party, celebrating YLRL's founding in 1939, is always a lot of fun. This is only open for YL operators, and CW and phone portions are scored as separate contests. Complete rules are published in the contest columns of ***Worldradio*** and other Amateur Radio publications. Logs go to Carla Watson, WO6X, 473 Palo Verde Dr., Sunnyvale, CA 94086, and must be postmarked not later than 30 days after each contest ends.

Dot Burden, KA1LDS, and Deb Clark, KB1AOV, are planning to operate again during the contest from W1AW, so this is a good time to get a YL contact with W1AW in your log.

The Australian Ladies' Amateur Radio Association invites all OMs, YLs, and SWLs to participate in the annual ALARA Contest, held in November. OMs and club stations work YLs only, and YLs work everyone. The exchange for ALARA members is RS/RST, QSO number starting at 001, ALARA member, and name; for other YLs, OMs, and club stations, it's RS/RST, QSO number starting at 001, name, and whether it is a club station.

Scoring for everyone is 5 points for ALARA member contacts, 4 points for other YLs, and 3 points for each OM or club station contacted on phone; on CW, scoring is the same except that contacts where at least one operator is a Novice count double points. Each station may be counted twice on each band for credit—once on phone and once on CW. Logs go to Marilyn Syme, VK3DMS, P. O. Box 91, Irymple 3498, VIC Australia and must be received by December 31. Drop me a note if you need the complete rules for these contests and I'll be glad to send them.

Marti Brutcher, N6XDS, President, YLRL.

New YLRL Officers

YLRL officers to serve in 1996-1997 were elected in July. Congratulations to Marti Brutcher, N6XDS, who was elected President; Carol Hugentober, K8DHK, Vice-President; Norma Griffin, N7GLQ, Secretary, and Ginger Franzen, AB6WS, Disbursing Treasurer. Their terms of office will begin on January 1, 1996, and end on December 31, 1997. All four of these YLs are active on the air and in their local radio clubs. The current Receiving Treasurers and all District Chairmen were re-elected to serve another term.

YL Updates

Regular readers of this column may remember an item in the April column about Lynda Jopson, who had re-

quested and received the call sign G6QA, first issued to Arnold Whiteley, now an SK. Arnold had used his Amateur Radio skills to serve his country during World War II and was a close friend of Lynda's grandfather. Mrs. Pat Barnes, Arnold's daughter, had given permission for Lynda to receive her father's call sign and had visited in the shack of Mervyn Rigg, GØEUP, when he had a sked with Lynda so that she could hear her father's call sign in use again.

Lynda, who didn't know about the article, was very surprised to find out about it on the air. She wrote me that she was talking to a young man named Andy at a club station in Estonia at the end of March when, "There was such a commotion in the background I thought their shack had set on fire. A gentleman took the mike and said, 'Lynda, we know all about you.' He then started to explain about an article about me in a magazine. I didn't take it all in the first time so I asked him to start again. He told me about the magazine called ***Worldradio*** and the article. I thought, 'It's good this, I am in England talking to someone in Estonia who is reading an article in an American magazine all about me.' It's a funny old world."

Lynda also said that after her earlier QSO with Mervyn Rigg, GØEUP, she had invited Mrs. Barnes to visit her and hang the G6QA call sign on the wall to officially open her shack. Last August, Mrs. Barnes did just that and Lynda wrote, "As it was such hard work, we all went down to the Horseshoe Inn (my local pub) and had a lovely lunch. What a lovely day we had. I love having my call. Lots of people call me and tell me all about them knowing Arnold and how pleased that I have the call."

There are about 600 two-letter G-calls now and Lynda has worked 53 of them and is trying to find more. She's having a great time on the air.

On Memorial Day weekend I was tuning across 20 Meters and heard Sue Chung, N9YON, calling "CQ." She was new to the HF bands and just wanted to see how many states she could work over the holiday weekend. She had quite a nice pile-up going, with a lot of stations trying to help her out, and she did work 36 states that day. She was also having a great time on the air!

Hilary Moore, EI4IE, in County Cork, Ireland, is also new to the HF bands although she is very familiar with Amateur Radio. Her dad is Dave Moore, EI4BZ, Editor of the *IRTS Newsletter*, and a very active Amateur. Hilary is a new member of YLRL and will be participating in the YLRL contests.

Pamela dos Reis, CU3YY, can be found on 20 Meters. Her QSL Manager is Vitor Manuel Reis, CT1GG, QT Telheiros, Chainca (Alferrarede), Abrantes 2200 Portugal.

Hazel Schofield, TN7OT, is active on 15 Meters, and the QSL route is direct to her at B. P. 12, Impfonda, Republic of Congo. Hazel is also AL7OT.

You can also find Laura Marcelle Martinez, 3A2MD, on 15 Meters. Her address is P. O. Box 2, in Monaco. WR

Computers & Basic Stuff

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

Basic Antennas, Part III

In my August column, Antennas Part II, I wrote that bipolar transistors absorb reflected power and can be damaged. I knew better, but because I was thinking in the context of SWR and reflections, I didn't catch the error.

While bipolar transistors may absorb small amounts of reflected power, they certainly are not destroyed by it. What actually happens is that bipolar transistors may be damaged by "seeing," (or being presented with) the wrong value of load impedance. This, in turn, may cause more current to flow through the transistor than is actually safe for its operation. When the current flow is outside the transistor's constant power dissipation curve, the semiconductor may go into thermal runaway and literally melt itself to death.

To see why this might happen you have to understand that a transistor's load impedance is more a function of its operating voltage and power dissipation than of any self-intrinsic value. From the formula $Z=Vcc^2/2*Po$) we can see that the load impedance of a 50-watt transistor operating at 12 volts is only 1.44 ohms. That's not very high! (An output network can step it up to 50 ohms for matching to a transmission line and antenna).

Where we run into problems is when the line impedance drops for some reason. If the line's impedance drops, for example, and presents only a 1-ohm load at the output (and assuming additional current is available from the power supply), then the transistor will draw more current and dissipate greater power. This may put its operation outside its safe operating curves, and possibly damage it.

Damage may be in the form of a melted junction, secondary breakdown or hot-spot punch-through. The worst case, a shorted collector-emitter junction, may also damage the power supply by presenting it low impedance as well.

I regret any confusion the misstatement might have caused. The basic point of the article remains: If there is any real reason to keep SWR low, it is to protect our transistorized equipment from possible damage.

So far we've seen that SWR doesn't tell us anything about antenna performance (in the June issue). In our August follow-up we discussed the theory behind SWR, and the misconception that power reflected by an SWR mismatch is power lost. We learned instead that RF power that is reflected by a mismatched load can also be rereflected at the source. When the source isn't detuned by the reflections, all power is rereflected and is eventually radiated (except for what little power is lost in line attenuation).

Now to tie a few concepts together: We know, from our first article, that radiation resistance is partly a function of an antenna's height above ground. A 125' 80 Meter antenna strung 40' above ground, for instance, has an electrical height of one-eighth wavelength with an accompanying feed point resistance very close to 50 ohms.

This antenna height, in wavelengths, varies with even small changes in frequency. If this height is measured at the band's center frequency, then at band edges the electrical height will be higher at the high-frequency end and lower at low frequencies. This change in electrical height with frequency also changes the feed point resistance. It won't be much, so the change in SWR won't be all that great either.

Anyone who operates on 80M might disagree. They'll tell you that SWR is a big problem at the band's edges, sometimes in the range of 7:1, or 8:1 or even higher. What causes this kind of standing wave ratio?

To understand that we have to understand that all conductors exhibit two more electrical characteristics in addition to resistance; and those are capacitance and inductance. These characteristics cause reactances on any antenna. At resonance they cancel each other, but since we often tune our rigs to off-resonant frequencies, we therefore experience a predominance of either capacitive or inductive reactance.

To illustrate the effect, try running the program in figure 1. A typical antenna inductance to start with is about 35 to 40 uH (for an 80M dipole). The program lets you determine the antenna's resonant frequency, then computes the value and sign of reactance for an off-resonant frequency. Line 20 contains the math to compute capacitance and line 40 compares and prints the difference in reactances. (Reactance is usually noted with a *j* operator, with + values being inductive and - values capacitive). To end the program type 999 when asked for a new off-resonant frequency (Fig. 1).

```
 0 PRINT "ANTENNA REACTANCE  (ENTER 999 TO QUIT)"
 5 K=6.283185: W=10E5
10 INPUT "ANTENNA INDUCTANCE (uH)";A: B=A/W
20 INPUT "RESONANT FREQUENCY (MHz)";M: C=1/((M*K*W)^2*B)
30 INPUT "OFF-RESONANT FREQUENCY"; F: IF F=999 THEN END
40 PRINT "REACTANCE=J";K*F*W*B-1/(K*F*W*C);"OHMS"
50 GOTO 30
```

Figure 1.

```
 0 PRINT "SWR COMPUTATION  (ENTER 999 TO QUIT)"
10 INPUT "COAX Z0";Z
20 INPUT "LOAD RESISTANCE";R: IF R=999 THEN END
30 INPUT "LOAD REACTANCE (+/-)"; X
40 A=R/Z: B=X/Z: C=(B^2+1)/A+A
50 PRINT "SWR=";(C+SQR(C^2-4))/2;":1"
60 GOTO 20
```

Figure 2.

How does reactance affect SWR? The next short program calculates the effect reactance has on resistance in the establishment of SWR (Fig. 2).

Now try the two programs. If you assume a 35-uH antenna inductance, a 3.75 MHz resonant frequency and a 3.5 MHz off-resonant frequency in the first listing, you should see a j-113.88-ohm reactance. Plugging that value into listing 2, along with a 50 ohm coax and a 50 ohm antenna resistance, you can see that the SWR is about 7.05:1!

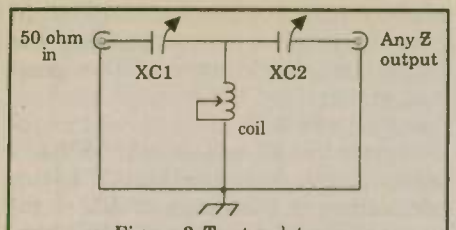


Figure 3. T-network tuner

(It is interesting to note that without the effect of reactance in this case, the SWR would be a perfect 1:1).

We also know that power resulting from current (or voltage) across a reactance isn't wasted. In fact, reactive power is often called "wattless power" or "volt-amperes-reactive (VAR) power" rather than "watts."

Because the power is "wattless" it isn't consumed, and that means that it is available for other work. In reality it is reflected only to be rereflected and eventually radiated as real power.

That brings us to the statement in our August column where we wrote that the only real reason to keep SWR low was "to protect our transistorized equipment from being damaged." Transistor amplifiers are especially sensitive to high SWR, and many rigs nowadays have built-in sensing circuits that reduce power as a way to combat the problem. As long as a rig "sees" an SWR below about 3:1 it performs optimally, or very close to it.

One of the very best ways to get the transmitter to see a 50 ohm resistive load, despite the actual load resistance and any reactance on the line, is to use an antenna tuner. Unfortunately, there are so many misconceptions about tuners, and how they work, that many newcomers to our hobby are afraid to try them. Statements that "Antenna tuners only fool the rig into thinking it's seeing a 50 ohm load..." only seem to add to the confusion.

There's no fooling involved — a properly tuned antenna tuner does present a 50 ohm non-reactive load to the transmitter. The principles and theory involved are well known, and our third BASIC listing illustrates that fact. It is a program to calculate impedances and component values for the common "T-network" tuner (see Figure 3). The formula can be derived, in several different forms, from just about any decent antenna text. Component values can be tested on real antennas as well as on workbench models. (see Figure 4).

Line 40 establishes an operating "Q" for the load, and it should be as low as possible for the component values on hand (if it's too low, line 120 gives you the option to raise it). The value "RM" in line 60 is the median impedance common to both L-networks of the "T." Line 70 establishes the "Q" of the input network so that the reactances in line 80 can be calculated, and lines 90 through 110 convert the reactances to component values. If these values are too high, line 120 affords the opportunity to raise the "Q" to lower them.

```
 0 PRINT "TTUNER.BAS (ENTER 999 TO QUIT)": REM, BY KD5DL, 10/95
 10 W=6.283185: M=10E5: INPUT "FREQUENCY ";F
 20 INPUT "SOURCE RESISTANCE ";RS: INPUT "LOAD RESISTANCE ";RL
 30 INPUT "LOAD REACTANCE (+/-) ";X
 40 IF RS>RL THEN Y=RS/RL ELSE Y=RL/RS
 50 PRINT "Q (MUST BE >";Y:; INPUT Q
 60 RM=RL*(QL^2+1): XS=QL*RL
 70 XL=XS+X: XP=RM/QL: QS=SQR(RM/RS-1)
 80 XT=QL*RL: XN=RM/QS: XC=XP*XN/(XP+XN): XI=RS*QS
 90 PRINT "XC1=";XI;"OHMS (";M/(W*F*XI);"pF)"
100 PRINT "XC2=";XL;"OHMS (";M/(W*F*XL);"pF)"
110 PRINT "COIL=";XC;"OHMS (";XC/(W*F);"uH)"
120 INPUT "NEW Q ";QL: IF QL=999 THEN END
130 GOTO 60
```
Figure 4.

A properly-tuned antenna tuner presents a perfect resistive *match* to the *transmitter*, but it does not necessarily tune the antenna. (Perhaps the term "antenna tuner" is misleading in this respect; some amateurs believe "transmatch" is a better term for the circuit, since it provides a match to the transmitter). SWR may remain high between the tuner and the antenna, but the transmitter's finals are protected on the one side, and since reflections are rereflected on the other, maximum power is radiated by the antenna.

A final hint: A properly-tuned tuner has its load capacitor set to a value near maximum capacitance. If there are two or more settings where SWR is minimal, the proper setting is the one with the most capacitance in the load capacitor.

Next time we'll discuss antenna effectiveness as a function of height and directivity. Until then, keep yourself radio active. WR

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

In all of its prior months, this column has been devoted to the documentation and publicizing of the many accomplishments of Army MARS, and, by invitation, of all the service MARS organizations. We have looked at Army MARS as a whole... as a body...as a single entity. This particular column looks at a few typical Army MARS members representative of thousands like them...untitled, largely unsung, but greatly appreciated.

People are the most important part of Army MARS. Without its people, there would be no Army MARS or any other MARS organization. Ten thousand (10,000) fine individuals, devoted to service, make up the current MARS organizations. It is time that we look at a few of these individuals selected not for their rank in the organizations but as a random sample of typical MARS operators.

One of these typical Army MARS members is Charlie Hooker, AAR3GH, from Pennsylvania Army MARS. I received information from Mr. Hooker about an unusual result of delivering a message. It reveals the interaction between a MARS member and an individual customer. Further, it gives great insight into the cooperative spirit practiced between and among MARS members everywhere.

His message to me follows:

"Ordinarily, I would have left this message on the AT3TPA MCS for a Wilkes-barre (PA) station to deliver. Since AAR3GM generally edits* incoming traffic and he is away this week, I took the message and made delivery yesterday evening. On the first attempt, I got an answering machine; so I left my telephone number. The addressee returned my call at about 2200 hours. I delivered the message and answered her questions about Army MARS. I asked her if I could originate a return message, but since the originator of the message had just arrived in Korea, she did not have an address.

"The conversation might have ended there, but she asked if I were an Amateur Radio operator. I explained that this was a requirement for being a MARS member. Then she asked me if I knew her father. After a brief exchange, I remembered his nickname and told her that I had visited him on one or two occasions as he was not in the best of health. In fact, one time when I was hospitalized, he had loaned me some dry cell batteries to power my radio for portable operation. She then told me her father had died about five years ago and that her mother was trying to sell his equipment before it became too obsolete.

"The other factor in the message delivery was that the addressee lived in the area of the church where I am preaching on a temporary basis.

"In addition to all of this, the message was filed in Korea DTG** 191313Z Jun 95 and was delivered about 200200Z Jun 95 ... a transit time of a little over twelve hours."

*edits — does not mean editing the messages themselves. A BBS sysop edits traffic by separating all the messages according to their destination and making sure that they are transmitted properly.

**DTG — Date-Time-Group assigned to each message. This is the time that the message is first placed into the Army MARS system.

Leonard Norman, AAV9EH, has been an Army MARS member since 1953 and has served in California, Utah, and, currently, in Nevada. Like Mr. Hooker, he enjoys being able to bring those treasured messages to people in the Las Vegas area and to transmit the responses which are treasured even more by those often lonely recipients overseas. Mr. Norman finds his work in Army MARS and in Amateur Radio "most rewarding."

Mr. Billy Bateman, AAAØW, (new call from his original AAA9B) acknowledges the assistance given to him at his Fort Huachuca office by Mr. George Turner, AAR9UY. Mr. Turner is a member of Arizona Army MARS and volunteered many hours of service helping Mr. Bateman in the collection and organization of all the paperwork involved in consolidating the Western Area Directorship into the Fort Huachuca framework. This is another MARS member whose

work is vital to the whole organization as with thousands of others like him.

Mr. Richard Zucker, AAR3EO, in Maryland, sent me a particularly interesting message.

On 14 August 1945, Sgt. Richard S. Zucker was serving with the 3116th Signal Service Battalion at WTJ Radio Control on Oahu, Hawaii. At 2314Z, Sgt. Zucker received a very special message on radiotelephone and relayed that message to General MacArthur in the Philippines.

Today, Sgt. Zucker is AAR3EO, an Army MARS operator from Maryland. The message that he relayed 50 years ago was sent from station WAR (Pentagon based Army Communications Center) signifying the official end of World War II. Some of the original characters on his original tape have blurred over the years, but the message read as follows:

TZKZLVKWL SS URGENT KK RGE V WARJ NR1
URGENTKK= T KWLA KK= FROM WAR 142314Z
TO KWLA
INFO JGUT
GHR
GR 44

NO 1407 YOU ARE HEREBY OFFICIALLY NOTIFIED OF JAPANESE CAPITULATION PD APPOINTMENT OF GENERAL MACARTHUR PAREN FROM MARSHALL TO SPAATZ AND WHEELER PAREN AS SUPREME COMMANDER FOR THE ALLIED POWERS FOR THE PURPOSE OF ENFORCING THE SURRENDER OF JAPAN IS EFFECTIVE AT ONCE

HULL
BT
142314Z 2335 1407

Mr. Zucker reports that large rhombic antennas were used for both receiving and transmitting. The transmitters were Press Wireless 40kW and the receivers were RCA Dual Diversity Model 89. Western Electric 850Hz shift MercuryWetted relays fed a Wilcox-Gay Modem with a 2+ cross-ellipse oscilloscope display. The teletype tape machines were originally designed to operate at 60 WPM, but had been modified to run at 100 WPM. This change caused jamming unless the equipment was constantly sprayed with oil. Even so, overheating caused an occasional oil/paper fire.

In reading this description of the equipment used 50 years ago, we can be most appreciative of the progress that has gone into the equipment we use today. I thank Mr. Zucker for sharing this information with us. I further thank him and many operators like him who were there when our country needed them and who have contributed so much to communications in continuing service over the ensuing years.

Throughout the many years, Mr. Zucker has exemplified through his service the spirit of MARS operators everywhere.

The purpose of this column is not to ignore the MARS members who have special assignments, but to salute those untitled MARS members who participate in their state operations and who are always there when needed. They are the backbone ofArmy MARS...of all the MARS structures. They are the unsung heroes of the entire organization. This column is a salute to them...to you...all 10,000 of you.

You are the men and women who keep MARS...proud, professional and ready. **WR**

HEY BERT, CAN YOU LOOK ON YOUR MONITOR AND SEE WHAT MY PACKET JUST SENT? IT'S BEEN INITIATING STUFF ON ITS OWN

Visit Your Local RADIO CLUB

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.

ALASKA

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

ARIZONA

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

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

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

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

CALIFORNIA

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

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

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

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

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

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

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

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico.

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

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

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CONNECTICUT

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

FLORIDA

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

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

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

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

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

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

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

GEORGIA

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

HAWAII

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

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 595-6245.

IDAHO

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

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m.

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

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

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, IL 60805. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.07. Info: (312) 974-3291.

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

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

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

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

IOWA

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

MAINE

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

MASSACHUSETTS

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

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

MICHIGAN

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

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

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(+).

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

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

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

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

MISSOURI

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

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

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

NEVADA

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

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

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

NEW HAMPSHIRE

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

NEW JERSEY

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

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

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

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

NEW MEXICO

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

NEW YORK

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

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

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

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

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

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

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

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

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 962-9666 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A.

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

NORTH CAROLINA

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

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

OHIO

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

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly 7:30 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 146.85(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS.

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

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.

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

Triple States Radio Amateur Club. Meets Wed./weekly on 28.48 at 8:30 p.m., 7260 at 9 p.m. and Sun. 4 p.m. on 7240. Rptrs. 146.91(-), 146.715(-). P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

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

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06(+) MHz. Info: (503) 385-1156.

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

Oregon Coast Emergency Rptr., Inc. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-3081.

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

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly.

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

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

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

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

RHODE ISLAND

South Coast Wireless Society. P.O. Box 1516, Westerly, RI 02891. Meets 4th Tue./monthly, 7:00 p.m., Pawcatuck Neighborhood Center. Info: Dean, N1SXL, (401) 539-0775.

TEXAS

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

VIRGINIA

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

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

WASHINGTON

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

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

WEST VIRGINIA

Jackson Couny Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. For info: D. Tenant, N8ZYB, Rt. 1, Box 317, Cottageville, WV 25239.

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

WYOMING

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

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Scholarships

Stuart Meyers, KB8JBK, from Oxford, Ohio and Samuel Wettling, KC4VIL, from Glen Ellyn, Illinois, have been selected to be the 1995 winners of the two $750, 10-10 International Net, Inc. Scholarships.

Stuart is majoring in pre-medicine and psychology at Miami University in Oxford, Ohio, where he has a 3.73 cumulative grade point average. He has a great respect for his fellow hams and the hobby. He does his best to help others in return for the kindness, generosity and patience shown to him when he first became licensed. He was recommended by Samuel Rachlin, K3ALQ, #13174.

Samuel has been accepted at the University of California at Berkeley where he plans to study computer engineering. Besides being an Eagle Scout, he has a variety of hobbies. He was recommended by Warren Geary, KI9H, #12806.

At the 10-10 Board of Directors meeting in Tuscaloosa, Alabama, in June 1995, the Board voted to increase the 10-10 Scholarship Fund program from two $750 scholarships per year to three $1000 scholarships each year. Each year the Foundation For Amateur Radio administers the 10-10 Scholarship program along with approximately 55 others from various Amateur Radio clubs and organizations. 10-10 was pleased to participate in the FAR program for 1995.

We will also participate with FAR in 1996 who will administer the three $1000 scholarships. Watch for the announcement of the 1996 scholarship program in the April, 1996, issue of the *10-10 International News*.

FAR advised that 25% of the applications filed in 1995 had the signatures of 10-10 members as sponsors. Fantastic response from 10-10!

If you would like to support the 10-10 Scholarship program by becoming a 10-10 Scholarship Volunteer, please send your donation, any amount, to the 10-10 Scholarship Program Manager, Morrie Goldman, W6EHM, #4189, 21518 Marjorie Avenue, Torrance, CA 90503-6418. Make your check out to: 10-10 Scholarship Fund. You will receive a 10-10 Scholarship Volunteer Certificate and be listed in the 10-10 News.

Meet one of our young 10-10 members

Bryan Kosczuk, N3TSL, #66558, is 14 years old and he earned his Technician Plus license at the age of 13. He has now upgraded to General Class and has his mind made up to have his Extra Class license before his 15th birthday. He has played ice hockey since the age of 8 and is now a defense man on his high school hockey team where he served as co-captain last season. Bryan has a keen interest in the martial arts, taking karate lessons since he was 6. He is now a black belt and conducts private lessons. He is also an active member of the Chestnut Ridge ARC of Latrobe, PA. Bryan's dad is Joe Kosezuk, N3SKD, #66553.

Chapter coordinator resigns

Joyce Medlen, KE4KGB, #66157, has found it necessary to resign her volunteer job with 10-10 as the Chapter coordinator due to personal reasons.

Although Joyce has been the Chapter coordinator just a few short months, she has accomplished a great deal, getting the 10-10 chapter program in order and updating the 10-10 Awards and Certificate Guide.

Her duties will be temporally performed by two directors, Linda Barnes, KJ4FM, #43299, who will handle the Awards and Certificate Guide and Ed Redwine, K5ERJ, #11843, who will handle the Chapter activities. Information regarding additions or changes to the Award and Certificate Guide should be sent to Linda at 310 Sequoyah Drive, Kingsport, TN 37660-3742 and Chapter reports and information should be sent to Ed at 9 Yellowrose Lane, Augusta, KS 67010-2230. Applications for both volunteer positions, Award and Certificate Guide Editor and Chapter Coordinator, are now being accepted by the respective directors noted above.

IOTA Expedition

The OH-KY-IN Amateur Radio Club, K8SCH, #46888, planned on being active from IOTA NA-58, Tybee Island, GA (Chatham County) from 21 through 24 September 1995.

Expected frequencies for K8SCH/4 from NA-58 for 10 Meters: CW 28.040 and SSB 28.460 and 28.560. If you were lucky enough to work K8SCH/4, QSL via either N8FU or K8SCH *Callbook™* address. DX QSL via the Bureau.

10-10 is looking into the possibilities of an IOTA Award for the future and it should be an interesting challenge to work 10-10 stations on islands around the world.

Amateur Radio enhances the Children's Museum in Wichita, Kansas

For the past eight years, the Wichita Amateur Radio Club has operated their club station, WØSOE, #41667, at the Wichita Children's Museum. The station was first initiated by Sharon and John Minor, whose calls are KDØXW, #41647, and WDØEDK, #33052. John and Sharon turned the station operation over to Roger N. Wilson, KDØAY, who was its coordinator for several years. The station's present coordinators are Bill Turner, NØGGO, #41649, and Curtis Boughton, NØUGJ.

The station's equipment includes a Kenwood TS440S and a Santec 2 Meter transceiver. There is also a packet station in operation. Antennas include a Mosely 3-element tribander for 10, 15 and 20 Meters. Stacked on top is a 3-element Cushcraft A3WS, which operates on 12 and 17 Meters.

Also used are a Butternut HF6VX vertical and a Ringo Ranger for 2 Meters.

The museum's station is operated every Saturday afternoon from 1:00 p.m. to 3:00 p.m. CST. A rotation of nine sets of operators are used to operate the station. Its purpose is to acquaint both children and adults who come into the museum with Amateur Radio, and the excitement of communication with the people of the United States and around the world. Outside speakers pipe the radio conversations out into the museum.

The station welcomes all contacts, and happily provide 10-10 numbers for those who desire them. The station is privileged to receive excellent support from Dr. Al DeSena, President of the Science Center, and Rosemary Hartman, Operations Manager, and their staff.

Are you "on line?"

More and more 10-10 members are joining one of the on-line services such as America Online, Prodigy, or have access to the Internet. If you have access to e-mail through one of the on-line services, send your address to Ed Redwine, K5ERJ, #11843, via E-Mail at k5erj@aol.com

A list of 10-10 net officials and members with e-mail capability is available from Ed for a #10 SASE. His address is 9 Yellowrose Lane, Augusta, KS 67010-2230.

Information about 10-10?

If you would like information about 10-10, and how you can become a member and receive your very own unique 10-10 number, send $1.00 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ, #54625, 9832 Gurdon Court, Boise, ID 83704-4080. No SASE please as the information package requires a 9 x 12 envelope. You will receive information which contains everything you want to know about the 10-10 organization and a copy of the latest issue of the *10-10 International News*, the 10-10 quarterly magazine.

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

Things to ponder

•Be nice to your kids. They'll choose your nursing home.

•There are 3 kinds of people: those who can count and those who can't.

•Why is "abbreviation" such a long word?

•Don't use a big word where a diminutive one will suffice.

•For people who like peace and quiet: a phoneless cord.

•Madness takes it toll. Please have exact change.

•There cannot be a crisis today; my schedule is already full.

•Proofread carefully to see if you any words out.

•I'd explain it to you, but your brain would explode.

•Ever stop to think, and forget to start again?

•A conclusion is simply the place where you got tired of thinking.

•I don't have a solution but I admire the problem.

•If at first you DO succeed, try not to look astonished!

•Diplomacy — the art of letting someone have your way.

•It's not hard to meet expenses, they're everywhere.

•If one synchronized swimmer drowns, do the rest have to drown too?

•If things get any worse, I'll have to ask you to stop helping me.—*The Carrier,* Mt. Diablo ARC

-Tell a friend about Wordradio!-

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

QRX for the 'St. Louis Tuner'

The St. Louis QRP Society and Northern California QRP Club are pooling their expertise to produce the "St. Louis Tuner," a QRP kit featuring an antenna tuning unit (ATU), SWR bridge, and dummy load with switching for a dizzying array of band and function combinations. This is big news in a world where quality QRP transmatch/SWR bridge kits are virtually nonexistent.

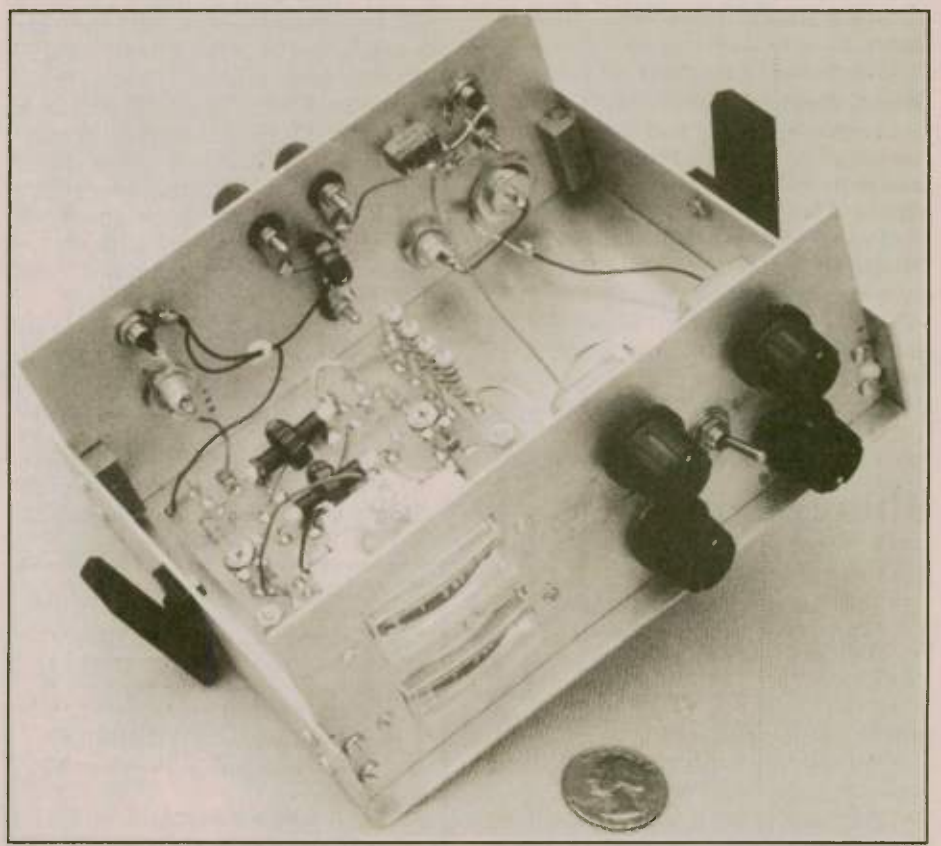
Over four years and five prototypes, the boys from St. Louis handled the tuner's research and development, design and testing, guided by veteran QRPers Keith Arns, KCØPP, and Dave Gauding, NFØR.

NorCal is taking on the kit's production and distribution, coordinated by Jim Cates, WA6GER, and Doug Hendricks, KI6DS.

The combined expertise from each organization solidifies a marriage made in QRP heaven. The prototype offered for testing at KI6SN was built by Hendricks, who housed the kit in a Sierra transceiver-style cabinet. The production model will also be available in a smaller cabinet matching NorCal's famed NorCal 40-A transceiver. The builder will have a choice of cabinet style when ordering, Cates said. Hendricks says NorCal's shooting for making the "St. Louis Tuner" kit available by December, priced about $50. And, as in the past, kits will be available only to NorCal QRP Club members.

If you've missed out on NorCal's previous kit offerings, rest assured that this organization has turned project production, ordering and distribution into a fine art.

The tuner prototype tested here at KI6SN was impressive. Two meters on the front panel show tuning conditions simultaneously: Reflected power on one; forward power on the other. Bandswitching is accomplished with a multi-position wafer switch selecting taps on a toroidal inductor.



The KI6DS prototype of the "St. Louis Tuner" kit, coming soon.

So if you want a shot at getting one of these limited-run tuners, now is the time to sign up for NorCal membership.

While there's no fee to join, subscriptions to the club's quarterly journal *QRPp* are $10 in the U.S., $15 Canada, and $20 DX. Checks should be made out to Jim Cates, and mailed to him at 3241 Eastwood Rd., Sacramento, CA 95821.

Matching the transmitter and antenna is nicely handled by two small front-panel mounted capacitors. There's also a switchable balun inside for matching antennae with open wire feeders. A front panel switch enables the operator to bypass the tuner altogether.

Forward and reflected power sensing circuitry and the rig's dummy load are on a tidy printed circuit board. The unit nicely matched the G5RV multiband dipole at KI6SN on a wide range of high frequencies — 1:1 all over the place. And the 'RV here has a reputation for being rather uncooperative when tuning the variety of QRP transceivers and transmitters in the shack.

Rigorous lab testing of the prototype is being conducted by Charles

Lofgren, W6JJZ, of Claremont, CA. Many readers will recognize his name and call sign as a leading designer and published authority on antenna tuning units and antenna matching. His findings will be shared with ***Worldradio*** QRP column readers when testing is complete. There will also be a comprehensive review of the production kit with details of the tuner's full range of functions and capabilities, and an assessment of how the kit went together. For now, anyone interested in obtaining the "St. Louis Tuner" kit should contact NorCal QRP Club for more information. He who hesitates will be out of tune.

Field Day '95: A QRPer's tale

Longtime QRPer and owner of antenna/solar power/station accessory company called Antennas West, Jim Stevens, KK7C, ventured from his base in Provo, Utah to 7,300' high Pump House Ridge for 1995 Field Day.

It was just Stevens, and "two lonely 45-foot pines standing 75 feet apart along a north-south line," as he operated solar-powered QRP single operator portable in Utah County.

He had to stay at "low elevation" this year because "snow covered the fabled 9,600-foot spot I have used in the past. But the deer came by to check on me here, too.

"The land slopes gently to the east, revealing mountains — rank upon rank — to the Colorado border.

"I launched lines over the pines with the (Antennas West) QRV Launcher, then stretched a TNT Windom in the shape of a half-square between them for a no-tune multiband beam firing east and west." Stevens VW van supported a south facing QRV Solar Power Supply and the upper edge of a blue sunshade.

"I operated the station from the middle bench seat, and made a bed behind me. A board resting on the shoulders of the front bucket seats and the dashboard held the Ten Tec 509, which ran at less than four watts.

"It drew 130 milliamperes on receive and 900 milliamperes key down, so even while operating full blast, the battery on the floor beneath was accumulating charge for operation through the night.

"Key and log book rested on a narrow shelf that packs away when not in use. Light for night operation was provided by a low-drain miner's head lamp whose battery was charged by the sun.

"Conditions were good. The bands were packed. It was bedlam on 20 and 40 Meters. Fortunately, I could rest up on 80 and 15 between the skirmishes on 40 and 20."

Stevens logged 326 CW QSOs in 68 sections and two European countries during 15 hours of operation on 15, 20, 40 and 80 Meters.

It's QRP survey time

January's ***Worldradio*** QRP column featured results of the '94-'95 ***Worldradio*** QRP Organization Survey, packed with information on more than a dozen QRP groups around the United States and the world.

The '95-'96 survey, now being conducted for the third consecutive year and readied for publication in January 1996, is updating developments in existing clubs, as well as showcasing new clubs that have popped up since the last survey. More and more QRP groups are forming each year, further underscoring the growing popularity of low power operation.

If you're in a club that did not appear in the last January's survey, please contact me at the address listed at the head of this column. I'll get a survey questionnaire to you right away.

If your group was featured in the '94-'95 survey, it will be contacted directly for the '95-'96 update.

Because of advanced deadlines, survey information must be ready for compilation a couple of months before publication. So don't delay. Help us to make this year's roundup the most comprehensive ever.

October's QRP Fall QSO Party

Make a point to highlight the second full weekend in October on your QRP contest calendar. It's time for the QRP Amateur Radio Club Inter-national's Fall QSO Party — traditionally one of the club's most popular contests.

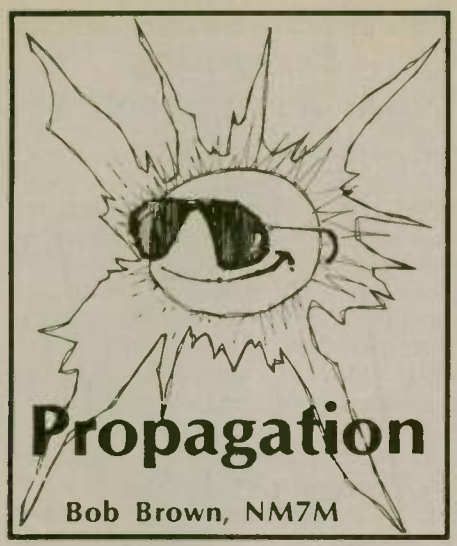
The contest runs from 1200Z, Saturday, 14 October to 2400Z Sunday, 15 October. Operate up to a maximum of 24 hours.

The Fall QSO Party exchange is: RS(T), State/Province/Country, and QRP ARCI membership number. If you're not a club member, don't despair. Substitute your power output in place of a membership number.

Contacts with QRP ARCI members count 5 points. Others are 2 points for the same continent; 4 points for different continent.

Running between 1 and 5 watts qualifies for a multiplier of 7; below 1 watt is a multiplier of 10. To determine your score: QSO points x State/Province/Country worked per band x power multiplier. Contest logs must be postmarked no later than 15 November, and sent to:

Cam Hartford, N6GA, 1959 Bridgeport Ave., Claremont, CA 91711. Hope to see you in the contest. WR



Did you ever think that national sports could influence how one might approach a scientific problem? I had occasion to think that was the case when I was teaching at the Big U in California and I was reminded of that recently, believe it or not, in regard to the ionosphere. Let me tell you how it started at the Big U.

In teaching mechanics to freshman engineers, one of the first things we did was to get them involved in kinematics, the more descriptive side of motion. So after simple problems where the motion was at a constant speed, we "raised the ante" and took the students over to accelerated motion, the favorite cases being with problems in the earth's gravitational field.

For example, there was the "fly ball" problem from American baseball. One variation I liked to put on exams was the case of an outfielder whose throwing arm could reach home plate on the fly from 270 feet in left field but no further. The question was whether he could get the ball to the catcher in time to tag out a runner who could make it to home plate from third base in 4 seconds after a fly ball was caught.

If the student knew that the outfielder could achieve his maximum range by throwing the ball at 45 degrees above the ground, a bit of calculation would show that the outfielder's arm was not up to the task, the runner beating the throw to home plate by a whisker, 0.1 second. That approach assumed the flight of the ball was in a graceful parabola, idealized for freshmen students by neglecting air friction.

The Big U had students from all over the world, especially in engineering, so it was no surprise when a student from India came to my office hour to complain that his solution to the problem was marked wrong. I looked at his solution and saw that he said the runner was tagged out, the ball reaching home plate in 2.9 seconds instead of 4.1 seconds. When I looked at his solution to the problem, it became apparent that the student had the ball thrown horizontally, sliding along a frictionless (freshman-type) surface.

I won't get into the intricacies of his thinking but the gist of the story was that the student's favorite sport was the British game of cricket where the ball or whatever it's called stays close to the ground. Indeed, he thought it was a waste not to use all the speed available by throwing the ball up in the air. I argued with him but being a "Bombay Lawyer," he said he was entitled to that approach by being a freshman in a frictionless world.

So what does that have to do with the ionosphere, you ask. Well, a while back I wrote about John Reinartz and his DX triumphs in the early '20s. If you look at my article, you'll see that I mentioned that Reinartz thought that a 45 degree launch angle for RF might be the most effective angle for reflection off the Heaviside layer. He didn't indicate in the April, 1925, *QST* article where he got the idea for that particular launch angle but maybe he played baseball as a youngster and the experience influenced his thinking. I'd no other explanation so had to leave it there.

At the time, Reinartz's articles were showing single-hop paths with reflections off the Heaviside layer but no specific height given for the layer. Of course, there was precious little to go on at the time of his historic QSO on 100 Meters between Nice, France and Connecticut in November, '23.

Later, in the April, '25 *QST* article, he argued that RF went to different heights before being returned to ground. He got that idea from longer paths on 20 Meters than on 40 Meters and even came up with the idea of the skip zone around a transmitter. And he made a "big thing" out of a trans-continental QSO with 6TS in Santa Monica, California on 20 Meters that year, even giving a ray diagram showing a one-hop connection.

But Reinartz's article was strangely silent on the height of the Heaviside layer even though he showed a geometry for the 4,000 km path to California on 20 Meters. Maybe, just maybe, he was embarrassed by the implications of the 20 Meter QSO, when taken with the 100 Meter QSO with France (presumably on one hop path too, but now out to 6,300 km distance). If he'd stuck with the 45 degree launch angle for both QSOs, the height of his Heaviside layer for the 100 Meter contact would have been much higher than for the 20 Meter contact with 6TS. That would have contradicted the results in his April '25 *QST* article. Sorta embarrassing? Right!

But that's life when it comes to building models; you go as far as possible, with a minimum of assumptions, and then when the roof caves in on you, you rethink the problem and try to sort out a new approach. So it would've been for the "baseball theory of HF propagation," giving up the 45 degree launch angle and allowing the ball to reach home plate on the first bounce. In real life, that means multi-hop paths from ground reflections of RF. Okay?

Now we go across the Atlantic and come to the British game of cricket. In ionospheric terms, the analogy would be for RF to hug the earth, the bending of rays or refracting of wavefronts taking place so as to match the earth's curvature. Not too surprising, that was the idea of Sir Joseph Larmor in a paper he published in December of 1924. But he didn't have the riches of data that Reinartz had, only using the propagation of 1,000 Meter waves around the earth and inventing his model "out of thin air."

Larmor used the earlier ideas of electromagnetic waves going through a medium containing electrons but he made the bold stroke of considering them free, not bound to any atoms. Once that was done, he was able to work out how fast waves would move in the "free electron gas," corresponding to the index of refraction in the optical case. That done, all he needed to do was have the waves follow the curvature of the earth, as in Figure 1 where wavefronts advance from left

to right but always perpendicular to the earth's surface.

Now for waves to move in that fashion, it was necessary to have the upper or higher part of the wavefront move faster than the lower part. That

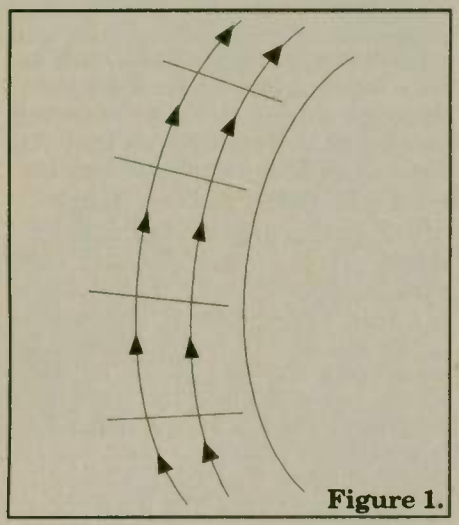


Figure 1.

was done by having the electron density greater in the upper reaches of the wavefront than below. The only thing left to do was "anchor" the electron profile and Larmor used the one thing he knew about, the height of auroral displays up around 80 km, to fix how the electron density increased in going up from ground level.

If Larmor had known of Reinartz's results on the 40 and 20 Meter bands, he could have accommodated them in his theory by just extending the electron density profile upward and increasing its contents. Keeping the same height for the 1,000 Meter case and increasing the electron content wouldn't have worked as the higher electron density required to bend 20 Meter waves would have driven the 1,000 Meter waves into the ground in short order.

So Larmor had the start of a viable theory, essentially for the lower D-region, and it was capable of extension to higher altitudes to deal with higher frequencies. But that would only be for wave-trains moving so as to remain parallel to the earth's surface, say "round-the-world" signals. Reinartz's signals, on the other hand, were going over the horizon and coming back to ground level, not circling the earth.

For that to happen, Larmor's theory would've needed more electrons at high altitude to bend the 20 Meter rays back down. The question then becomes just how high to push the electron density profile and how fast should it increase with altitude, in a straight-line fashion or faster. There wasn't much to go on at the time.

But then something interesting happened in 1925 — Breit and Tuve here in the USA started to get echoes of RF pulses off the Heaviside layer and could determine its height. That's something like dropping a rock in a well and figuring out where the water level is by listening for the splash. That's no big deal; right? But what would you think if you heard the sound of two splashes, one delayed after the other? Even three splashes!

Breit and Tuve sent up RF pulses and displayed the echoes on an oscilloscope, the first upgoing pulse followed by the echoes. That's shown in Figure 2, like the old "A-scan" radar display of WWII. The multiplicity of echoes — A1, A2, and A3 - equally spaced in time after the ground wave pulse G is the result of ground-reflected waves going back up and being reflected, time after time. The first echo A1 was the important one for Breit and Tuve as the delay could be converted to layer height; the rest of the display was not important.

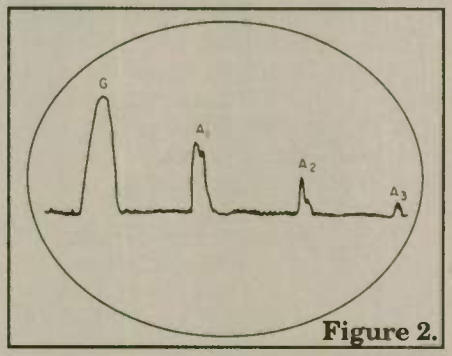


Figure 2.

Or was it? After all, starting with a 10 kW pulse, the other pulses, A2 and A3, were clearly detectable so the ground surface was not all that lossy on reflection. In fact, it should be possible to get the reflection coefficient for ground, at least in magnitude, from those records. That's like getting the elastic coefficient of steel by bouncing steel marbles off a steel plate and seeing how high the rebound is each time.

This discussion is just a preamble to a more serious one on ground reflections and multi-hop paths, ideas which took some time to be understood and appreciated. We'll get to that later. For now, you can see the approaches to propagation around '25 — Reinartz's model which was descriptive, sort of like the kinematics of radio waves, and Larmor's model which involved the physics of radio waves moving through a weak gas of electrons.

The two ideas are still there today but have been brought together by the computer, it now being possible to work out ray paths for RF going through a realistic model of the ionosphere. Now you see how we got there but it required developing the idea of ground reflections and multiple hops. More on that later. **WR**

SEDSAT update

Dennis Wingo, KD4ETA, the project manager for the SEDSAT 1 experimental satellite reports from Huntsville that the satellite and its support program is doing fine right now.

Wingo says that he has two graduate students and six undergraduate students working on the project full time. He also has the services of two Ph.D. level professors to help in getting our experiments together.

KD4ETA adds that the group is expecting delivery of its Mode L transponder shortly and will put it on the air locally for use in test mode for high data rate communications.

SEDSAT 1 is currently on the manifest for a 17 July 1997 launch, from the space shuttle during the STS 85 flight.

CONSTRUCTION

A cheap and easy antenna support

Ken Lowrey, KF8BC

With the sunspots near the bottom of the cycle, sometimes operating conditions above 20 Meters are not very attractive, and therefore many hams QSY to the lower bands. This means increased competition for limited frequency spectrums on 160-30 Meters. The often heard advice of installing antennas as high as possible is certainly true on the low bands. Some hams are blessed with towers which support antennas at high altitudes, and therefore can compete better than those who have dipoles at lower heights. But towers are expensive and are out of the budget range of many hams. Push up masts are more reasonably priced, but are cumbersome and not very sturdy. They will support wire antennas, but are not easily to erect. In addition, due to telescoping, a 50 foot push up mast is only 45' tall. With these disadvantages, it is easy to understand why some hams are reluctant to pay over $100 for a mast, guy wires, and insulators.

This article suggests an alternative antenna support to towers and push up masts. There are numerous advantages to this alternative type of antenna support. It is cheap, the parts are easy to find, it is easily constructed, and it is non-metallic. As you read on, I believe that you will see that the mast not only is versatile but it can also be easily modified to suit your wishes. If you want an antenna support with all these advantages, and still costs less than $100, read on.

Before we discuss the antenna support however, a few words of caution are warranted. Anytime you are working with ladders, on roofs, with antenna structures, or in any situation where objects or people can fall, please be careful. Pay close attention to where the antenna and guy wires will run. Always think ahead. Do not cross power lines. Remember, amateur radio is supposed to be fun. Do not risk your or someone else's life on this project.

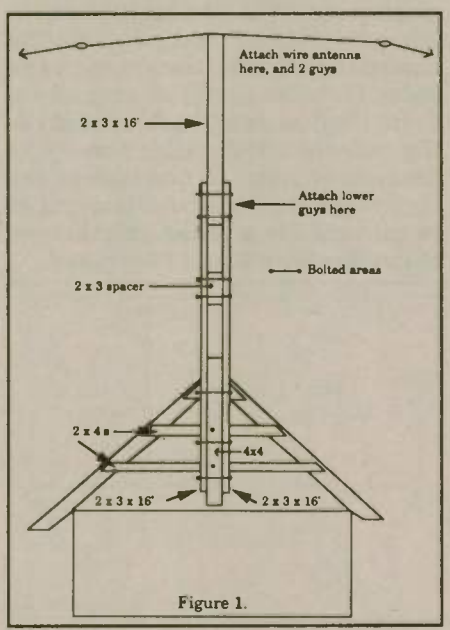


Figure 1.

Figure 1 shows the configuration of the support. It can be bolted to the eave of a house or other supporting structure. Depending on the length of lumber chosen for the project, the mast can reach heights of over 50 feet when placed on the end of a two story house.

Since there are tremendous varieties in roof pitches, layout of houses, placement of trees, power lines and other site specific problems, this article will not give step by step construction details. However, there will be enough information so that you can custom design and build your own mast and "Get High On A Budget."

To begin the project, obtain the necessary pieces of wood. You will need three lengths of 2 x 4s, three lengths of 2 x 3s, and one 4 x 4. The lengths of the 2 x 4s will be determined by measuring the side of the building where you will place the mast. The lengths of the 2 x 3s will depend on how tall you wish your mast to be. I would suggest that the 2 x 3s be no longer than 16 feet. The 4 x 4 should be about 4 feet long.

I had some 2 x 4s in my garage, but I had to purchase lengths of 2 x 3s from a local lumber company. They cut my 2 x 3s from 16' lengths of 2 x 6s. I told them what I wanted to do, and specifically asked for good, straight pieces *without knots*. Consult your yellow pages to locate lumber yards which may be near your home. I would recommend that you not go to a national chain or a home and garden housing center; in my area, these types of stores do not normally stock long lengths of 2 x 3s. If you are skilled in working with wood, you may wish to cut your own, but my lumber yard did not charge for the cutting. Remember to exercise caution when transporting these long lengths of wood. The bolts, washers and nuts and any other mounting hardware can be obtained from hardware stores.

Before installation, you would be well advised to clean the bare surface of the wood with a detergent and bleach mixture. A couple of tablespoonful of clothes washing detergent and one forth of a gallon of bleach is mixed with about one gallon of warm water. This solution will clean the surface and discourage mildew growth. I suggest that you wear gloves to protect your skin from the bleach. Next, allow the wood to dry and apply several coats of paint. I used a bare wood primer with two coats of exterior grade house paint. The paint seals the surface so that the wood will not deteriorate rapidly. Remember the mast will be mounted up in the air and will therefore be sub-

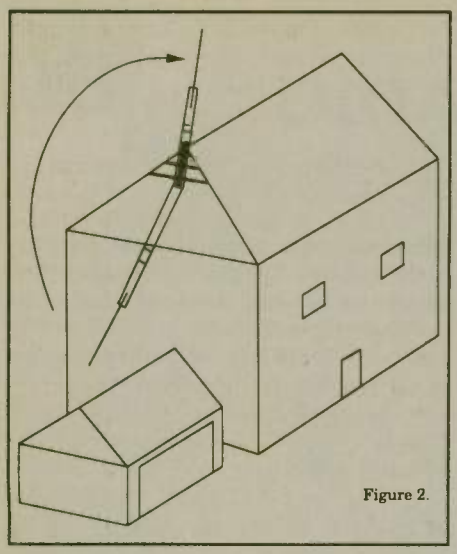


Figure 2.

jected to harsher weather conditions than you might think.

Begin the construction by installing the three lengths of 2 x 4s which will be secured to the fascia boards at the end of your chosen support structure. A 4 x 4 is then bolted vertically to the 2 x 4s. A critical step is to make certain that the 4 x 4 is vertical by using a carpenter's level. Check both the front and side of the 4 x 4. I have found that large flat washers are handy devices when space must be added between wood pieces in order to achieve a vertical position. A large "C" clamp is useful in holding the 4 x 4 in place while using the level, and while drilling holes for bolting the wood together. My experience has shown that the bolts need to be larger than ¼ inch; I used ⅜ inch bolts, nuts, and washers.

In order to build the mast itself, a "top" section of a 16' (or shorter if you prefer) length of 2 x 3 is bolted between two more 16' lengths of 2 x 3s; these two 2 x 3s make up the "bottom" section (Figure 1). Leave an 18" overlap where the "top" and "bottom" sections are joined. The result is a mast of about 30' in total length. A six to eight inch wood spacer is bolted between the 2 x 3s a few feet above where the mast will connect to the 4 x 4. Be careful to place this spacer far enough above the 4 x 4 so that the "bottom" section will fit on the 4 x 4 without binding or breaking. My experience has shown that a distance of about 7 feet is workable, but your spacing may be different due to variations in mast lengths and in the wood itself. Tighten all mast bolts before attaching the mast to the 4 x 4.

In order to mount the mast to the 4 x 4, the "bottom" section of the completed mast is loosely bolted to the 4 x 4 (Figure 2). Antennas and guys are attached where the "top" and "bottom" sections join, and to the top of the mast as well. The next step is to swing the mast into vertical position (do not attempt this on a windy day). This is accomplished by attaching a rope to the mast, standing on the roof, and pulling the mast into a vertical position. Temporarily secure the rope in order to keep the mast upright. It is important that the mast be vertical, so double check the mast with the carpenter's level to make certain, then bolt the mast to the top of the 4 x 4. Tighten the bolts at the 4 x 4. The ends of the antennas and guys are then pulled tight and fastened. If the reader is fortunate enough to have a two story house as shown in Figure 3, perhaps all the guys may

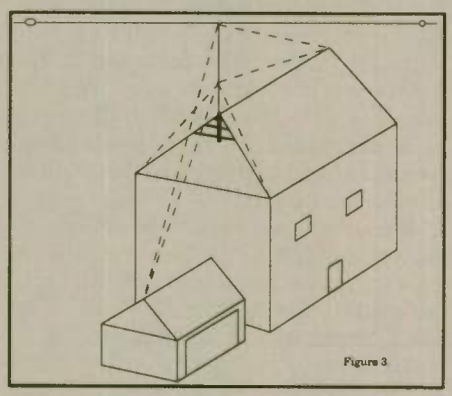


Figure 3

be attached to the house, with only the wire antenna reaching longer distances.

A similar antenna support has been in use at my QTH for over four years without a single problem. I have a dual band J-pole (2 Meters and 440 mounted on the mast, and my low band antenna is a 75 Meter inverted "V", using 450 ohm ladder line. The antenna is fed by an antenna tuner and works well on 160-10 Meters. Those of us who use wire antennas fed with open wire or ladder line can testify as to the difficulty of keeping the feedline away from metal masts. This mast eliminates that problem. As a matter of fact, you can even tape your feedline to the mast to keep it from blowing in the breeze.

If you would prefer to feed your antennas with coax, go right ahead. In fact, you could feed several dipoles (or inverted "V" type antennas) from the same coax; the dipole wires could perform double duty, also serving as the guy wires.

As for your installation, use your imagination. Tailor the idea to your requirements. If the sunspots have your wire antennas at a low level disadvantage, go ahead and "Get High On A Budget"! **WR**

A computer warning

John Chapman, KD6QDA

A special note to put by your computer.

This machine is subject to breakdowns during periods of critical need.

A special circuit in the machine called a 'critical detector' senses the operator's emotional state in terms of how desperate he or she is to use the machine. The 'critical detector' then creates a malfunction proportional to the desperation of the operator. Threatening the machine with violence only aggravates the situation.

Likewise, attempts to use another machine may cause it also to malfunction. They belong to the same union. Keep cool and say nice things to the machine. Nothing else seems to work.

Never let anything mechanical know you are in a hurry.

OLD-TIME RADIO

An early-day receiver

Helen M. Douglass, W5LGY

One day in 1925, my father came home with the news that he had taken on the dealership of the Fada Neutradyne receiver for his hardware store, and we were to have the first one. My mother's reaction was: "You don't know how they operate. How can you sell them?" He replied that the salesman had told him how it worked, and that he would have him teach Helen (me) how to install and operate the device. There I was, thrown into a sea of ignorance having to work my way ashore!

First a long pole was erected outdoors to hold one end of a long wire, the antenna, with the other end fed into the house to be fastened to the receiver. A ground wire went from the receiver through a hole (in Mother's new hardwood floor) to be anchored securely to a rod driven in the ground, under the house.

A round table was to be the destination for the Fada Neutradyne receiver. Its cabinet was walnut, and measured about 24" x 12" x 12". The front panel was of black Bakelite™, with three, 4" round divided dials across the front. The on/off switch was a large black knob in the lower left corner and the last knob was for the volume control.

Making it work

The antenna and ground wires were attached to the back of the chassis, as were the two leads from the crook-neck Magnavox speaker which sat on top of the cabinet. There were two wires which came from the three 45-volt B batteries wired in series which provided the 135 volts of B voltage, and two wires from the 6-volt battery for the tube filaments. The little 4.5-volt battery for the grid voltage of one of the tubes went into the cabinet. The leads for the other batteries, which sat on the floor, dangled down the back.

Since there were no written directions, let alone a manual, this was all taught to me by the salesman. When the Douglass' store sold a receiver, it was Helen who had to go along to do the installation. One Saturday a man refused to buy a receiver because, he said, it would not work if installed by a young woman. He was sure that such work was much too complicated for any female to learn. The following Monday morning, his wife came in and bought the receiver, with the request that it be installed and working by the time her husband returned from work that afternoon. It was.

Refinements and fun

Those wires dangling down the wall from the back of the receiver were unsightly and hard to keep free of dust. I found a two-door, single drawer washstand made of oak and refinished it to serve as a cabinet for the receiver. Holes were bored in the back for the wiring and I stored the batteries inside the former washstand. This made our receiver the first cabinet radio, or console, in Hunt County Texas. Many came to see it.

We had many listening parties. When something especially interesting occurred, like when the Gene Tunney vs. Jack Dempsey boxing match took place, or at Christmas when some of our local musicians were "on the radio," a party would be held.

There was a 10¢ "radio paper" that listed every radio station in the United States, giving call, date, and time of every station on the air. I made a chart of those which could be heard, and added to it as new stations were found.

It didn't take long to learn that the batteries ran down too fast, and were expensive, too. We changed from the dry six-volters to wet batteries that could be recharged. We listened at night for the most part, because that was when reception was at its best.

All this ended when we bought an AC-powered, cabinet model Stewart Warner receiver that had a shortwave converter. As long as we paid the light bill, this receiver kept working! WR

The Contest Corner

Don Durk, KA1DWX

76226.1414@compuserve.com

Well, I called to find out where my second favorite column went (Kurt is my favorite) and ended up hunting and pecking away. Welcome to The Contest Corner!

Using an FT-1000, long wires, an occasional experimental quad and an AL1200 I put modest efforts into several contests for our club...the Yankee Clipper Contest Club.

If you're like me you enjoy trying to work some of the contests even if it's just to check out the rig, give out a few points or give your state out (Heaven is really SD!), well Contest Corner will be geared to you!

The contest listings will be short and aimed at getting you on the air. Obtain full logging and entry details if serious. The results will also be brief.

I encourage your input and may even pay attention to it once in a while so don't be shy!

The big discussion going on now in the ARRL CAC (Contest Advisory Committee) is contest free zones — that is, areas within the bands where contest activity is discouraged. No, not the whole band you grumpusses! Non US windows have been tried on 160 and 80 with some success. Perhaps a more radical approach is needed. For example....the rumored new software called "Contest" ...you enter all your variables.... powers, towers, helpers, locations, IQ, Certified Manual Dexterity Index, HAAAT (height above average amateur stations terrain), assets, etc. Two weeks before the scheduled contest all participants electronically submit the data to CQ, ARRL, etc. The program predicts the winners and issues certificates. Voila! No QRM! An ecologically sound solution with a minimal use of resources and fewer holes burned in the ozone!

Well, here it is October – a real contest month!

Most contests require separate logs per band, check sheets for over 200 Qs, a summary sheet and a signed and dated affidavit attesting to observance of the rules of both the contest and your local regulating authority. A statement wherein you agree to be bound by the decisions of the contest committee is also needed. All times are in UTC.

Late September 'tests

•CQWW RTTY

23 September 00:00 - 24 September 24:00

(RST+ST/VE AREA+CQ ZONE)

Q Only 1x/band. No digipeats or gateways. Baudot/ AMTOR (FEC/ ARQ)/ASCII and AX.25. 3.5-28MHz. Pts (1pt same country/2 pts same continent/3 pts diff continent) x mults(48 states/13 VE areas/DXCC/ WAE). Single op single band or multi band/high or low power/single op all band asssisted. Single op ok full 48 but only 1st 30 hrs used for score. Multi op 1 Tx; 1 sig/band; 48 hrs ok; 10 minute rule. KT1N

•Washington State Salmon Run

23 September 16:00 - 24 September 24:00

(RS(T)+ST/PRV/DXCC)

CW, SSB, MIXED. Q stn 1x/band; Q Mults 1x Mode. 1.8-28MHz. Pts(2 SSB, 3 CW, 6 Nov/Tech) x Wash. counties or for WA stns state+ prov+DXCC x (2 if < 200W, or 3 if QRP). W7FR

•SAC SSB(59+NR)

29 September 15:00 - 30 September 18:00

Q 1x/band. Wk JW,JX,LA-LJ,OF-OZ,7S,8S,SI-SM,TF. 3.5-28MHz.

Pts(Eu 1pt/Scandinavian stn; Non Eu 1/pt 14-28; 3 pts 3.5-7) x SAC call areas(0-9)/ band. /p = 0. SI3/SK3/SL3/ SM3/7S3/8S3 = 1 call area/band. Single op multi band or QRP max 5W// Multi op., 1 Tx.

October 'tests

•RSGB 21/28 SSB (59+NR)

1 October 07:00-19:00

Q 1x/band. Wk UK only. Pts(3UK) x (UK counties/band). Single op/Multi op. G3UFY

•ARRL INT'L EME(Call+RPT)

7 October 00:00 - 8 October 24:00

Q 1x/band. Ack call+rpt. Pts (100/Q x Mults/band). Mults = U.S.+VE call areas+DXCC countries (not U.S./Canada). S. Op multi band/single band// Multi Op. ARRL

•VK/ZL SSB(59+NR)

7 October 10:00 - 10:00

Q 1x/band. Wk VK/ZL/Oceania. Pts (2 pts/VK,ZL,Oceania) x (Prefixes for all bands *not* per band). Single op. Sep log/band. VK3APN.

•YL CW Party

11 October 14:00 - 13 October 02:00

(599+NR+SEC/PROV/DXCC)

Q 1x/band. 3.5 - 28 MHz. Pts (US+VE YLs 1pt w/same, 2 pts w/ other; Other YLs 1 pt same continent, 2 pts other continent) x Mults (ARRL Sec/prov/DXCC total) x 1.5 CW 100W or less WO6X.

•IL QSO Party (SSB CW)

15 October 18:00 - 16 October 02:00

RS(T)+ST/PROV/DXCC/CNTY

Q 1x/band and mode. /m may be worked in each county/mode. 1.8 - 28 MHz. Pts(1/SSB//2/CW) x total counties, not per band; IL stns sts+cnties+prov+DXCC (Max 5). Check rules for bonuses.RAMS, 3620 N. Oleander, Chicago., IL 60634

•Work all Germany (SSB/CW)

21 October 15:00 - 22 October 15:00

RS(T)+NR or DOK for Germany

Q 1x/Mode per band. 3.5 - 28 MHz. Pts(Non German 3/QSO; German -1 pt/German; 3 pts/EU; 5 pts/DX) x mults German - DXCC/WAE; Non German - German Districts/ band = the first letter of the DOK exchange). Multi Op 1 Tx; Single Op CW all bands; Single op CW+SSB all bands; Single op QRP CW+SSB all bands. DL1DTL.

•QRP ARCI CW

21 October 12:00 - 22 October 24:00

(RST+ST/PROV/DXCC+ARCI NR or POWER OUT)

Q 1x/band. 1.8 - 50 MHz. Max. op time 24 hrs. Pts(5 pts/ARCI member; 4 pts diff. continent; 2 pts same continent) x mults (states/provs/DXCC per band) x pwr mult (0-1W out x 10; 1-5W out x 7). Single band; all band; Low band (160-40); High band (20-6); Team contesting. Ck rules for bonuses. K5VOL.

•RSGB 21/28 MHz CW

21 October 07:00 - 19:00

(See RSGB SSB)

•YL Party SSB

(See YL Party CW)

•CQ WW SSB(59+CQ zone)

28 October 00:00 - 29 October 24:00

Q 1x/ band. 1.8- 28 MHz. You must sign portable if your call sign indicates a different zone or country than actual. Single ops need 12 hrs or more for awards; multis need 24. Ten minute rule and antenna details-ck rules! Pts (Dif continent 3 pts; Own country 0 pts but ok for mult; NA other NA countries 2 pts; Non NA stns - same continent 1 pt) x Mults(Ea CQ Zone+ea DXCC/WAE per band). Single op asstd/unasstd//single band/ all band/single band//multi op - 1 tx// hi/lo/QRP power//multi multi. CQ.WR

Computer crazy

•Does fuzzy logic tickle?

•A computer's attention span is as long as its power cord.

•Disinformation is not as good as datinformation.

•Access denied—nah nah nah nah!

•Windows: Just another pane in the glass. —*The Carrier,* Mt. Diablo ARC

AERIALS

Lil Paddle

We continue with the reasons for calling the *ARRL Handbook* GREAT regarding their antenna and allied chapters. Looking on page 19.5 we see a chart comparing various feedlines in terms of loss (in dB) per hundred feet across the radio spectrum from 1 to 1000 MHz.

For example, RG-8, at 2 MHz has a loss of 0.275 dB. The same cable at 4 MHz has a loss of 0.4 dB. Moving up to 8 MHz the loss is 0.6 dB. At 15 MHz the loss is 0.85 dB. Going to 30 MHz we see 1.3 dB loss.

Six Meter operators will have to accept 1.75 dB. Two Meter buffs will suffer as 3.2 dB is the figure, and half the power has been lost and at 220 MHz, 4.5 dB. At 450 MHz the loss is about 6dB or (sad to relate) only one-fourth (1/4) of the original power has reached the antenna. (The figures quoted are for transmission lines that are perfectly matched lines.)

Turning the page to 19.6, we find a chart that explains "Additional Loss in dB Caused by Standing Waves."

For example, compared to the proper way to do things (referenced above), let us together look at the same RG-8 at various SWR levels while on the 20M band.

With all conditions optimum there is normal line loss of 0.85 dB. At an SWR of 2 the additional loss is about 0.16 dB. Yes, a bit less than 1/5 of a dB. At an SWR of 3, the additional loss will be a slice less than 0.4 dB, or 2/5 for those who prefer fractions.

An SWR of 4 results in additional loss of about 0.7 dB, and moving up to SWR 5 the additional loss is around 0.9 dB which is, as the term goes, undetectable.

No, I hardly advocate running at such a loss, but I merely point out that a level of that nature is obviously not "obscene" as was recently printed. With a properly adjusted transmatch in the line the actual losses will be not worth considering.

Just bear with your Uncle Kurt and your Auntie Lil and you will travel the proper path.

Let's take a look at gain. First, on a piece of paper draw a full circle. In the precise center of that circle make a dot. That dot now represents a vertical antenna, bird's eye view. The circle is assuming equal horizontal plane radiation in all directions from the vertical.

Now, fold the circle in half, from the North Pole to the South Pole or, from 0 to 180 degrees. We will take all the power that was in the left half of the circle and fold it totally over into the right half of the circle. That is a power gain of 3 dB, over the omni-directional horizontal plane pattern. That is, if not a speck of power is being radiated in the westerly direction.

Next, we take the remaining half-circle, and on the plane that would represent West to East or 270 to 90 degrees we again fold all of the cut away power into the remaining quarter circle. That is another gain of 3 dB. We know have a total gain of 6 dB over an omni-directional vertical. That is, of course, without a speck of power wafting away in any other direction.

The only way, in this situation, of increasing gain is to take power from other directions (leaving a void) and adding it in the desired direction.

Thus, when some manufacturer claims 9 dB for an antenna that many others claim to have 6 dB, you may ask them how they "squished" that pattern with the same number of elements and boom length as their competitors.

Returning to our diminishing circle, in order to add another 3 dB gain it would, of course, be necessary to fold the remaining quarter-circle, again in half, folding all the power into the wedge remaining.

Thus you can see that some of the gains claimed for 2-element Yagis are somewhat over-optimistic.

There are those who claim that "ground reflection" can add 6 dB to the gain of their Yagi antenna. That would of course be over "perfect ground" of which but little exists. That same supposed gain situation would also exist for a dipole at the same height. So we are, again, in actuality, comparing the gain of a particular Yagi, still against the dipole, no matter what stardust has been blown at the hams.

Allow me to digress for a moment. A company selling mobile antennas claims to outperform any other mobile antenna by at least 20 dB. A modicum of analysis reveals that this company is claiming a power gain of 100 times. A 10 dB gain means a ten times power gain. A 20 dB gain is not 10 dB times two. It is indeed 10 times 10. This, translated, means that their antenna will radiate the same signal with one watt input as yours will with 100 watts. Surely they jest.

As we saw, we got antenna gain by squeezing the horizontal (azimuth) plane pattern. We can get additional gain by doing the same to the vertical (elevation) pattern. In Yagi antennas, both the horizontal and vertical patterns are narrowed by the actions of the directors.

If more gain than can be obtained by one Yagi antenna is desired, further gain is had by stacking two such antennas, one on top of the other. This squeezes the vertical pattern, resulting in more gain. Putting two such antennas side by side does not change the vertical pattern, but reduces the horizontal beam width, resulting in more gain. With wire antennas, the general idea is the same. Two half-wave wires placed end to end and fed in phase nearly doubles the gain by reducing the horizontal plane beamwidth.

It's important to remember that the only way we get antenna gain is by squeezing the radiated pattern in one, or both planes.

The Swiech company of San Diego, Calif., has just introduced a 3-element, 6M Yagi for which 6.1 dB gain is claimed. This poor boy. He has not realized that the way to financial success is instead to claim eight dB. Possibly he should try for nine. Or, to emulate his peers, he should fold into his numbers the voltage dBs (field intensity) with the power dBs and come up with twelve!

A letter sent to ***Worldradio*** HQ accused Kurt of having a "holier-than-thou" attitude. Knowing him as well as I do, I can say that the accusation is false. It is just that he does not like people who lie, cheat or steal or tolerate those who do. (Do you hear that, Waldo?)

Actually I see Kurt as the voice of reason. He may lead the others to a new Renaissance in column writing regarding not only antennas but ethics.

Another letter said that his battle was boring and that the manufacturers were not going to change. Au contraire! One of the worst has been driven from the playing field, another has changed their figures, and the good fight continues.

Is someone really using in their product literature the phrase "true radiated SWR?" True radiated SWR? Whew! There are only two possibilities on that one. (A) They thought they would just slip that one past unknowing hams. (B) They haven't a clue as to what they are saying, it just pours out.

These pages are, of course, open for their answer. Which would, of course, prove to be utterly amusing, if you have that sort of sense of humor.

Is one of the antenna companies actually saying that their vertical antenna "eliminates" ground losses? If they had said "reduces," not only would that be a worthwhile accomplishment, but true.

Another company continues to call their (40M-10M) short vertical "half-wave design." Unless the tape measure reads about 66 feet it is NOT a half-wave on forty.

One of the ham periodicals has accepted an advert for the so-called Double Bazooka antenna with a claimed "1.5 dB gain over wire antennas." First, does that mean gain over any and/or all of the different configurations of "wire antennas" out there? Does that include V-beams and Rhombics? Or did it just mean over dipoles? As to this oft claimed, but never proven gain, just where does this additional power come from? Where was it taken from? Where was it sent? How was the pattern of the antennas affected? Answers please, inquiring minds want to know.

Kurt's SWR Analyzer fun and games has proved to be quite popular. We are going to hold a new and separate drawing. So I shall offer the MFJ 3 kW Versa Tuner V. The retail price is $350 and we'll pay the shipping. It is brand new. This way you can run open-wire line and totally forget the idea of feedline losses. It features a roller inductor, dummy load, watt meter and more. (Absolutely no purchase of any kind is needed to enter.)

Address your QSL card to me, Lil Paddle, ***Worldradio***, 2120 28th St., Sacramento, CA 95818. One card will be drawn 60 days after the first card is received. Only one entry per amateur. Entries will be cross checked. The only announcement of this game is in this column.

(Kurt and Lil are the masked and caped crusaders doing good works on behalf of amateurs who otherwise might believe everything they hear or read. And that would be a sorry situation.) **WR**

GEE, I HATE IT WHEN HE DOES THAT. SOMETHING ABOUT HE LIKES HORIZONTAL POLARIZATION.

YL Anniversary Party(YL-AP)

CW: 1400 UTC, 11 October to 0200 UTC, 13 October.

SSB: 1400 UTC, 25 October to 0200 UTC, 27 October. All licensed women operators worldwide are invited to participate.

Eligibility: All licensed women operators worldwide are invited to participate. Only YLRL members are eligible for the cup and plaque awards. Non-YLRL members will receive certificates.

Procedure: Call "CQ-YL"

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

Exchange: Station calls; QSO numbers; RS(T); and U.S. ARRL section/Canadian province/country. Log entries must show time, band, and transmitter power.

Suggested frequencies: CW 80 Meters: 3.540-3.725 MHz; 40 Meters: 7.040-7.070 MHz; 20 Meters: 14.040-14.070; 15 Meters: 21.120-21.150 MHz; 10 Meters: 28.150-28.200 MHz

SSB 80 Meters: 3.940-3.970 MHz; 40 Meters: 7.240-7.270 MHz; 20 Meters: 14.250-14.280 MHz;15 Meters: 21.380-21.410 MHz; 10 Meters: 28.300-28.610 MHz. Note: Since Band Allocations in other countries are often different than in the U.S., NA-YLs should look for DX-YLs in other parts of the bands.

Scoring: (a) CW and SSB are scored as separate contests. *Submit separate logs*. (b) YLs located in a U.S. ARRL section or Canadian Province are defined as NA-YL. All others are defined as DX-YL. (c) All NA-YL score one point for each QSO with another NA-YL; one point for a QSO with a DX-YL on the same continent, and two points for a QSO with a DX-YL on a different continent. (d) All DX-YL score one point for each QSO on the same continent and two points for each QSO on a different continent. (e) Each contestant multiply the score claimed under (c) or (d) by the sum of each U. S. ARRL section, Canadian Province or country worked. (f) Each contestant using power output of 100 watts or less on CW or 200 watts PEP or less on SSB (at all times) multiply the score claimed in (e) by 1.5, the low power multiplier. Those not entitled to the low power multiplier are limited to 750 watts on CW and 1500 watts PEP on SSB.

Logs: You must show *all* operating breaks in your log. To qualify for awards all logs must show the operator's call, U. S. section/Canadian province/ country, claimed score, and YLRL membership status (member or nonmember).

For each QSO, logs must show: QSO number sent and received, date, time, call of station worked; RS(T) sent and received, U.S. ARRL section/Canadian province/country of station worked and power output used. If you work 200 or more QSOs submit separate logs for each band and submit a dupe sheet. File separate logs for each contest and sign each log. Please print or type logs and submit no carbon copies (photocopies are OK). No logs will be returned. All logs must be postmarked no later than 30 days after each contest. Send all logs to: Carla Watson, WO6X, 473 Palo Verde Dr., Sunnyvale, CA 94086.

In each contest (CW and SSB) the highest scoring NA-YL will be declared the NA-YL winner and the highest scoring DX-YL will be declared the DX winner. Winners who are YLRL members will receive a YL-AP cup.

Non-YLRL members will receive a first place certificate. NA and DX second and third place winners will be awarded certificates regardless of YLRL membership. A certificate will be awarded to the highest CW and SSB winner in each U. S. call district, Canadian province and country. The Corcoran award plaque will be awarded to the YLRL member earning the highest combined SSB and CW score within a U. S. State or Canadian Province. The Hager award plaque will be awarded to the YLRL member earning the highest combined CW and SSB score at any DX location.

California QSO Party

Sponsored by the Northern California Contest Club, the contest begins 1600Z, 7 October to 2200Z, 8 October. Bands are 160 to 2 Meters, excluding the 30, 17, and 12 Meter bands.

Classes: Single operation, multi-op single-transmitter, multi-op multi-transmitter, California-county expedition, mobile, and Novice/Technician.

Exchange: QSO number. and CA county or state/province/DXCC country. Work stations once per band/mode. CA stations may be worked again as they change counties. CA stations on county lines count as one QSO but multiple counties.

Single operators — limited to 24 hours, time-off periods must be at least 15 minutes and noted in log.

For multi-single only: Band/mode changes must be at least 10 minutes apart. Single-operator and multi-single stations are allowed only one transmitted signal at a time.

CW QSOs must be outside the phone subbands, except for 160 Meters. No repeater or MCW QSOs.

CW — 1805 and 40 kHz up from low end; phone — 1.850, 3.850, 7.230, 14.250, 21.300, 28.450; Novice — 10 kHz up from band edges and 28.450.

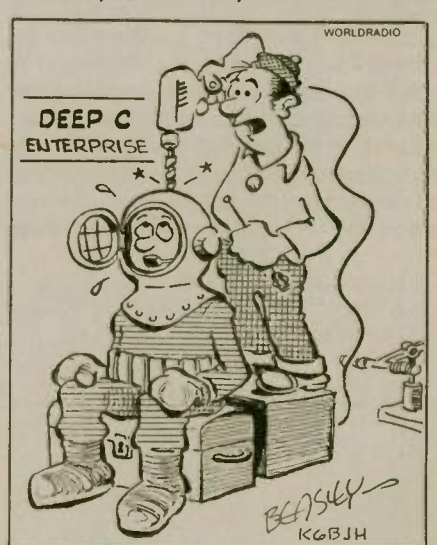
Try CW on the half hour: 147.54 at 2000Z, 0000Z, 0400Z; 160 at 0500Z; 75/80 at 0300Z and 0700Z.

Scoring: Phone, 2 points; CW, 3 points. Mult. QSO pts x no.of CA counties (max 58).

Entries with more than 200 QSOs must include a dupe sheet. Logs may be submitted electronically by e-mail in ASCII or on disk in CT-BIN format and must include a summary page. Submission deadline is 15 November.

Send entries via e-mail to:

cqp-1995@kb.org or via postal mail to NCCC, c/o Ken Anderson, K6PU, P.O. Box 853, Pine Grove, CA 95665. WR



I'VE ALWAYS WANTED TO TRY A QUARTER WAVE ROOF-MOUNT, OF COURSE, YOU'LL PROBABLY HAVE TO KEEP YOUR HEAD ABOVE WATER.

hamfests October

Arizona

The TRI CITY ARCs will hold a hamfest on 7 October at the Chamber of Commerce Building, 1251 Arizona Highway 95 across the river from Laughlin, NV. The fee for tailgaters inside the building is $15 and outside the building is $5. For further information call Dave Sumner, KG7XZ, 520/763-2589.

California

The LIVERMORE ARK is sponsoring an Amateur Radio/Electronics/Computer Swap Meet on 1 October from 7 a.m. to 12 noon at Las Positas College in Livermore. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. Talk-in on 147.045(+) from the west and 145.35(-) PL 100Hz from the east. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves. or leave message days at 510/783-2803.

Colorado

The ROCKY MOUNTAIN RADIO LEAGUE, INC., will hold a hamfest on 22 October from 8 a.m. to 2 p.m. at the Jefferson County Fairgrounds, 15200 W. 6th Ave., Golden. Features include VE testing, ARRL forum, refreshments and door prizes. Admission is $4 per person, $10 per table in advance or at the door. For information, contact Joe Dickinson, WTØC at 303/771-9577. Talk-in on 145.22(-)

Connecticut

The TRI-CITY ARC will hold its annual fall auction on 28 October from 10 a.m. until sold out at the Senior Citizen's Center, Waterford Municipal Complex. Bring your equipment to be auctioned. Admission is free, food will be available, and the location is handicapped accessible. Auction setup is at 9 a.m. Contact Bob Dargel, KA1BB, 8 Willow Ln., E. Lyme, CT 06333; 203/739-8016. Talk-in on 146.67(-).

Florida

The ARC, BRADFORD AREA will hold its annual Starke Hamfest and Computer Show on 20 October from 4 p.m. to 9 p.m., and 21 October from 8 a.m. to 4 p.m. at the Bradford County Fairgrounds north of Starke. Refreshments available. All activities under cover. Family fun is guaranteed, even if it rains. Admission for families is $3, tailgaters $4, tables are $5. Talk-in 145.15(-), 146.82(-), or 146.52(S). Contact Dan Phillips, K4RVD, 8214 Carl Brook Rd., Keystone Hts., FL 32656; 904/475-2695.

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The PORT ST. LUCIE ARA will hold a hamfest on 28 October at the Port St. Lucie Yacht Club, 500 Prima Vista Blvd., Port St.Lucie. Food and drinks available. Admission is $2 per person; vendors (inside) $10 which includes table and AC power; tailgaters $5 (in parking lot). Talk-in on 146.955(-),146.52(S). Contact Bill Perciasepe, 407/879-4020, or Roy Cox at 407/340-4319.

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The PALM BEACH REPEATER ASSOCIATION, INC., will hold a hamfest on 21 October (9 a.m. to 5 p.m.) and 22 October (9 a.m. to 3 p.m.) at the South Florida Fairgrounds in West Palm Beach. Flea market setup 2 p.m. to 8 p.m. on Friday. FCC exams on both days at 9 a.m. Admission is $4 in advance, $5 at the door, flea market tables $20, electricity $5. For more information, call Vi Kiekenapp, KC4LCF at 407/585-9074. For vendor information, call 407/439-0805. Send SASE and make checks payable to: PBRA Hamfest, P.O. Box 461, Lake Worth, FL 33460.

Indiana

The HUNTINGTON COUNTY ARS, Inc., will hold its annual hamfest, 1 October from 8 a.m. to 1 p.m. at the Police Athletic League Club. Features include an indoor flea market, free parking, handicapped accessibility, and VE testing. Admission is $4. Eight-foot vendor tables are $5, first-come, first-served. Vendor setup time is 6 a.m. Talk-in on 146.68(-), and 443.975(+). Contact Chris Richardson, P.O. Box 284, Huntington, IN 46750; 219/356-0319.

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The BOONE and CLINTON ARCs will hold a hamfest on 29 October from 8 a.m. to 4 p.m. (setup 6 a.m.) at the Boone County 4-H Fairgrounds, warm and dry Community Building. Dealers, flea market and tailgaters, free parking and great food. Admission is $3, table space $5. V.E. testing will take place. For information, contact Michael Ottinger, NX9Q, 809 E. Walnut St., Lebanon, IN 46052; 317/482-1866. Talk-in on 147.105(+) 443.150(+).

Iowa

The TIKVA TRACERS ARC will hold a hamfest on 29 October from 8 a.m. (setup Sat. 6-9 p.m. and Sun. 6 a.m.) at the Iowa State Fairgrounds in the 4H building in Des Moines. Features include seminars and forums and good food. Admission is $5; tables $10/first, $8 each additional, electricity $8. VE session 9:30 a.m. For information, contact Randal Lees, NØLMS, 1575 Northwest 78th St., Clive, IA 50325-1255; 515-279-4241. Talk-in on 146.82(-).

Kentucky

The GREATER LOUISVILLE HAMFEST ASSOC., will hold its annual hamfest and the ARRL Kentucky State Convention 14-15 October at the Kentucky Fair and Exposition Center in Louisville. All tickets $5. Send advanced ticket registration with SASE to: P.O. Box 34444-Q, Louisville, KY 40232. Information for commercial spaces, call 812/948-0037; flea market spaces 812/282-4898.

Maryland

The CARROLL COUNTY and PENN-MAR ARCs will hold the 6th annual Mason-Dixon computer and hamfest on 29 October from 8 a.m. (setup for vendors/tailgating 6 a.m.) at the Carroll County Ag Center in Westminster, Maryland. Seminars will be presented. VE exam registration begins at 8 a.m. p/r

requested (call Bill at 717/359-7095). Contact Larry Martin, N3DGK, 410/374-4544.

Michigan

The UTICA SHELBY EMERGENCY COMMUNICATIONS ASSOCIATION INC., will hold a USECA Swap 22 October from 8 a.m. to 2 p.m. at Our Lady of Redemption Conference Center, 425 Cole St., Warren. Swap your ham gear, electronic parts, computer hardware and software, etc. Food service by the Hyatt Catering Services. VE testing is by pre-registration; contact Bill, N8CVC, 810/468-8345. Admission is $4. Vendor tables are $15. Contact Jim, N8OKW, or Marianne, N8TMJ, at 810/739-6565 or Biff, N8NQQ, 810/566-7749. Talk-in on 147.18(+), or 147.42(S).

Minnesota

The TWIN CITIES FM CLUB will hold their 11th annual Hamfest Minnesota and Computer Expo on 28 October from 8 a.m. to 4 p.m. at the St. Paul Civic Center in St. Paul. Features include a huge flea market, educational and fun seminars, retailers, manufacturers, fabulous prizes, food and easy access to indoor parking. VE testing and flea market setup will take place on Friday.

Admission is $5.50 in advance, $7 at the door. Flea market tables are $20.

Talk-in on 146.76(-). Contact The Big One, P.O. Box 5598, Hopkins, MN 55343; or call the information line at 612/535-0637.

Missouri

The ST. LOUIS ARC and the GATEWAY TO HAM RADIO CLUB will hold a hamfest 28 October from 8:30 a.m. to 2 p.m. at the West County Tech School, 8 miles west of St. Louis on Maryville Centre Dr., at Highway 40. Free admission, ARRL and dealer displays, forums, VE exams, refreshments. Contact for tables, Keith Ray, 4642 Ray Ave., St. Louis, MO 63116; 314/832-8895. For other information, contact Dennis McCarthy, 5022 Lansdowne Ave., St. Louis, MO 63109; 314/351-3568. Talk-in 146.94(-).

New Jersey

The GARDEN STATE ARA, BROOKDALE ARC, NEPTUNE ARC, and OCEAN-MONMOUTH ARC will hold their 7th annual Shore Area Hamfest and ARRL New Jersey State Convention on 8 October at the Brookdale Community College, in Lincroft off exit 109 Garden State Parkway, 2.3 miles west to college entrance. Vendor setup 6 a.m., general public 8 a.m. Unlimited tailgating spaces are $10 each, free parking, handicapped accessible. Admission is $5 in advance; $6 at the gate. For tickets and vendor reservations, send SASE to Shore Area Hamfest, P.O. Box 635, Eatontown, NJ 07724. For information, contact Al Allen, K2LG at 908/495-3246. Talk-in on N2DR repeater 145.60(-).

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The BERGEN ARA will hold a hamfest on 7 October from 8 a.m. (vendor setup 6 a.m.) at Fairleigh Dickinson University in Teaneck. Features include VE testing (Tech, No-code, Adv. 8-9 a.m. and all others 9-10 a.m. p/r only); ARRL forums, food and free parking. Admission is $3, XYLs and harmonics free. Vendor spaces $10 (reservations required). For information, call Jim Joyce at 201/664-6725 and for VE testing call Bob Neukomm at 201/427-3568. Please, no calls after 10 p.m. Talk-in on 146.79(-).

New York

The HALL OF SCIENCE ARC will hold a hamfest 1 October from 9 a.m. to 3 p.m. (vendor setup at 7:30 a.m.) at the New York Hall of Science parking lot, Flushing Meadow Park in Queens. Free parking, door prizes, food and refreshments. Admission is by donation, $5 for buyers, $10 for sellers. Talk-in on 444.20(+) or 146.52(S). Contact Arnie Schiffman, WB2YXB, 718/343-0172 eves.

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The SUFFOLK COUNTY RC and the GREAT SOUTH BAY RC will hold a hamfest/computer show on 29 October from 9 a.m. to 4 p.m. at the Knights of Columbus Hall, 400 S. Broadway, in Lindenhurst. Admission is $5. Food service on premises. For information, call Andy Feldman, WB2FXN, 516/928-3868 (7-10 p.m.), or Walt Wenzel, KA2RGI, 516/957-0218. Talk-in on WB2FKZ rptr., 146.68(-) PL 4Z - 136.5 and 223.86(-) (open carrier).

North Carolina

The MAYSVILLE Hamfest will be held on 8 October from 8:30 a.m. at the Maysville Community Center in Maysville. Admission, outside tailgating and limited inside tailgating are free. Vendors are welcome. Breakfast and lunch will be available. VE exams will not be given. For further information, contact Jo Ann Taylor, WD4JYR, 220 Anita Forte Dr., Swansboro, NC 28584; telephone 919/393-2120. Talk-in on 146.68(-).

North Dakota

The FORX ARC will hold a hamfest on 7 October from 7 a.m. to 2 p.m. at the University Lutheran Church, 2122 University Ave., in Grand Forks. Flea market, forums, and banquet. Flea market tables $1 in advance (by 30 Sep) $5 at the door depending upon availability. Admission is $5. Vendor setup is at 7 a.m. Contact Jeff Sorell, NØPPW, 701/594-5013 or write to FORX ARC, P.O. Box 14773, Grand Forks, ND 58208. Talk-in on 146.94(-).

Ohio

The NORTHWEST OHIO ARC will hold a hamfest on 1 October from 8 a.m. to 3 p.m. (setup 6 a.m.) at the Allen County Fairgrounds, State Route 309, one-half mile east of I-75, exit 125. Features include free parking, indoor facilities, prizes, hot food. VE session at 9 a.m. (no walk-ins). Admission $4 in advance, $5 at the door. For ticket and table reservations send SASE to NOARC, P.O. Box 211, Lima, OH 45802; 419/647-6321. Talk-in on 147.67(-), 146.94(-) or 147.03(+).

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The ASHLAND AREA ARC will sponsor a hamfest on 1 October from 8 a.m. to 3 p.m. at the Ashland County Fairgrounds. Admission is $3 in advance, $4 at the door. Vendor tables are $7, and 10' flea market spaces are $3. Contact Wally Green, W3YXS, 3 E. Liberty St., Ashland OH 44805. Talk-in on 147.105(+).

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The INDEPENDENT RADIO ASSOCIATION will hold a hamfest and computer fair on 8 October, 8 a.m. (vendor setup 6 p.m. 7 Oct) to 3 p.m. at the Clark County Fairgrounds in Springfield. Free parking and handicapped accessible. Admission is $4 in advance, $5 at the gate. Advanced table reservation $10; $12 at the gate. Electric hookup available $10. For information on advanced

sales, call 513/323-6680; general information, 513/964-8618. Reservations made after 25 September will be held at the gate. Talk-in on 145.45(-).

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The MARION ARC will hold its 21st annual Hamfest and Computer Show on 29 October from 8 a.m. to 3 p.m. at the Marion County Fairgrounds Coliseum. Prizes, refreshments and ample free parking available. Admission is $4 in advance, $5 at the door. Vendor tables are $10. For information regarding tickets or tables, contact Karen Eckard, N8JDH, 6583 S. Street, Meeker (Marion), OH 43302; 614/499-3565 or Betty Krist, N8UDT, 132 N. Seffner Ave., Marion, OH 43302; 614/387-3533 (after 5 p.m.). Talk-in on 147.30(+).

Oregon

The MID-VALLEY ARES will hold its 1995 Swap-toberfest and ARES/RACES Convention on 21 October from 9 a.m. to 5 p.m. (setup 6-9 p.m. 20 Oct, and 7 a.m. 21 Oct) at the Polk County Fairgrounds in Rickreal. Features include flea market, dealers, VE testing (p/r required), ARRL forums and exhibits. Admission is $6 in advance, $7 at the door (under 12 free). Self-contained RV spaces available, $8 per night. For pre-registration and swap tables, contact Evan Burroughs, N7IFJ at 503/585-5924; for VE testing, contact Sandy Berry, N7TQQ at 503/588-7685.

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The ROGUE VALLEY ARC will hold a hamfest on 21 October from 9 a.m to 4 p.m. (setup 7 a.m.) at the Medford Armory, 1701 South Pacific Highway. Features include a special ARRL visitor, packet meeting, ARRL VE testing, prizes, free parking, consignment area. Admission is $5 in advance, $6 at the door. Tables $10. For information, contact W5HVK at 503/770-5631. Talk-in on 147.16(+), 146.94(-).

Pennsylvania

The FORT VENANGO MIKE & KEY CLUB will hold a ham and radio auction and flea market on 21 October from 8 a.m. (auction begins at 10 a.m.). Admission $3 per person (children 12 and under are free). Vendor and flea market area, $5 per table. For information on reserving flea market space, call Mary Housholder, N3QCR, 814/437-2036. E-mail address: MAHOUSHOLD@aol.com or write to Fort Venango Mike & Key Club, R.D. #1, P.O. Box 591, Cranberry, PA 16319. Talk-in on 147.12(+), 145.23(-), 145.19(-) or 444.125(+).

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The RH HILL ARC will hold a hamfest on 22 October at the Sellersville Fire House, Rte. 152, 5 miles south of Quakertown and 8 miles north of Montgomeryville. VE session starts at 9 a.m., all classes, bring documents. Admission $5, XYLs and kids free. Indoor spaces $18 (table included), outdoor $6, bring tables. Hamfest Hotline, Linda Erdman 215/679-5764 or P.O. Box 29, Colmar, PA 18915.

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The PENN WIRELESS Ham and Computer Tradefest will be held on 29 October from 8 a.m. to 4 p.m. at the Bucks County Community College in Newtown, next to Tyler State Park on Swamp Road. Admission is $5. Tailgaters $10, XYLs and children under 12 are free. Indoor 12' space $12. Indoor and outdoor vendor spaces available. VE exams 10 a.m. (call 215/943-4886). For information, contact Steve at 215/752-1202. Talk-in on 145.25(-), PL 131.8 or 146.52(S).

South Carolina

The YORK COUNTY ARS will hold a hamfest on 7 October from 6 a.m. at the Knights Stadium in Fort Mill. Features include inside commercial vendors, computer dealers, flea market, huge tailgating area, VE testing. Admission is $5 in advance, $6 at the door, tables $10. For information, contact George Trunk, AB4BG, 803/327-4344. YCARS Hamfest, 2129 Squire Rd., Rock Hill, SC 29730. Talk-in on 147.03(+).

Tennessee

The KINGSPORT, BRISTOL and JOHNSON CITY RCs will hold their annual TRI-CITIES Hamfest on 21 October at the Appalachian Fairgrounds, located off I-181 in Gray. A large drive-in indoor and outdoor flea market space is available. RV hookups. Admission is $5. Mail inquiries to P.O. Box 3682 CRS, Johnson City, TN 37602.

Happy Halloween!

Texas

The NORTH TEXAS AR COUNCIL will hold an Amateur Radio Day, 15-16 October from 9 a.m. to 9 p.m. at the Texas State Fair in Dallas. Features include special event station W5TEX, OSCAR operations, ATV, RACES, MARS, education/testing.

For information or if you would like to help in planning, operations, etc., please contact Will Summers, WR5C, 3407 Ridgeoak Way, Farmers Branch, TX 75234; 214/484-1080.

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The AMATEUR RADIO CLUBS of EL PASO, Texas, JUAREZ, MEXICO and LAS CRUCES, New Mexico will hold an International Hamfiesta on 7 October from 8 a.m. to 5 p.m. and 8 October, 8 a.m to 2 p.m. at the Texas National Guard Bldg., 9100 Gateway Blvd., North, El Paso. Admission is $10 in advance, ($12 at the door; tables $10 ($12 at the door); tailgating $10 ($12 at the door). RV parking, no hookups, VE exams both days, seminars, refreshments, entertainment, QCWA breakfast. For information, contact Clay Emert, K5TRW, P.O. Box 10496, El Paso, TX 79995; 915/859-5502.

Wisconsin

The KETTLE MORAINE RADIO AMATEUR CLUB, INC., will hold a swapfest on 15 October from 8 a.m. to 1 p.m. (setup 6 a.m.), rain or shine at the Waukesha County Exposition Center, Highways J and FT in Waukesha. VE exams will be given. Admission is $3 in advance, $4 at the door. Reserved tables (4') are $5. Power $5. Reservations accepted until 7 October. Send a check payable to KMRA Swapfest, S46 W32264 Highview Dr., Waukesha, WI 53188. Include SASE, order will be held at the door. WR

Why 99.9% isn't good enough

Why isn't 99.9% defect free good enough? This is what life would be like if things were done 99.9% of the time: *We'd have to accept:*

- One hour of unsafe drinking water monthly.
- Two plane crashes per day at O'Hare Field.
- 16,000 pieces of U.S. mail lost hourly.
- 20,000 incorrect drug prescriptions per year.
- 500 incorrect surgical operations each week.
- 22,000 bank checks deducted incorrectly/hour.
- 32,000 missed heartbeats per person per year.

Suddenly, the quest for zero defects makes a lot of sense. —*Tnx Pitman Post Office* / K2JF

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

M★ LOG™

M★ LOG™ is a full-featured application for the automation of Amateur Radio and SWL log-keeping, and is widely reputed to the best general purpose logging software available. It is user friendly, flexible, and powerful. State-of-the-art database and compiler technology have been employed to create a log-keeping system of unparalleled performance and flexibility.

M★ LOG provides for unlimited QSO records in an unlimited number of discrete log tables, so logs for different purposes can easily be maintained. Performance is fast and the only practical limit to data storage is available disk space. Any or all of the information recorded for a QSO is accessible to reports and QSL card formats, and valuable space is *not* used by empty fields. Three methods of data entry are supported: Direct log editing (add/edit/search/delete functions for existing log tables), **Batch Data Entry** (ideal for transcription of paper logs), and **Real-time Contest Logging** (with auto-time, dupe checking, and serial numbering). Data entry routines are optimized to make the process as efficient as possible, and to avoid re-keying of repetitive data.

M★ LOG directly supports and imports data from the AmSoft World of ham radio and the QRZ! *Callbook™* databases. Other popular databases can be used if adequate system memory is available. Internal utilities are provided for control of program operation (including screen colors, function keys, mouse operation, and default field contents), data backup, and file maintenance. Utilities are also provided for database repair and data import/export.

M★ LOG is priced at $34.95 and requires and IBM-PC or compatible personal computer with at least 640kb RAM, a single high density diskette drive, and DOS 2.10 or later.

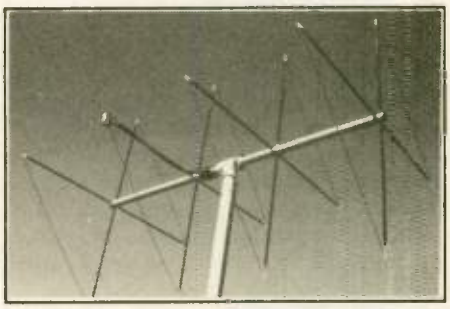
For more information, contact Marshall, AAØXO at 303/752-3382 or write: Milestone Technologies, 3140 S. Peoria St., Unit K-156, Aurora, CO 80014-3155. E-mail can be addressed to Marshall via CompuServe 75230,1405), the internet 75230.1405@compuserve.com, or FIDONET 1:104/443.

Advanced CMOS electronic keyer

Radio Adventures Corp. is pleased to announce the immediate availability of the CodeBoy model A1 advanced CMOS electronic keyer. The CodeBoy features a speed range of 10-40 wpm, calibrated speed control, Iambic A or B style operation, space and weight compensation, paddle and straight key or bug input, autospace on straight key or bug, debouncing of key inputs and MOSFET keying transistor output. The CodeBoy is powered by a built-in battery and is based on the company's C1 Iambic Keyer/Controller chip. It is housed in a very attractive (and very small) all aluminum case painted dark brown and eggshell white. Case dimensions are $1^3/_{16}$H x $3^1/_8$W x $2^7/_8$D and the completed unit weights $3^1/_2$ oz. In addition to the complete kit which includes the battery, available under stock number A1K for $37.95, a wired and tested unit is available as stock number A1W for $54.95, and a printed circuit board kit without case is available as stock number BK-167 for $24.95. Shipping is $3.75. A free data sheet is available. Contact Lee Richey, Radio Adventures Corp., at P.O. Box 339, Seneca, PA 16346; telephone 814/677-7221, Fax 814/677-6456, e-mail rac@usa.net

YELLOW JACKET Antenna

The CUBEX Antenna Company proudly announces its new quad antenna product — the YELLOW JACKET 2 Meter 4 element quad antenna. The antenna is of fiberglass construction and pre-tuned to provide less than 1.7:1 SWR across the 2 Meter band. There is nothing to adjust and the system is directly coax fed. The



antenna can be rotated for quick horizontal or vertical polarization and uses only a 42" boom.

Components may be assembled in the field without tools leaving only a final twist with a pair of pliers to tighten the driven wire element. The best feature is the price, only $34.95 F.O.B. California, plus shipping and handling. CUBEX Company has been producing quality quad antennas for over 39 years.

CUBEX is located at 2761 Saturn St., Unit E, Brea, CA 92621; telephone 714/577-9009, Fax 714/577-9124.

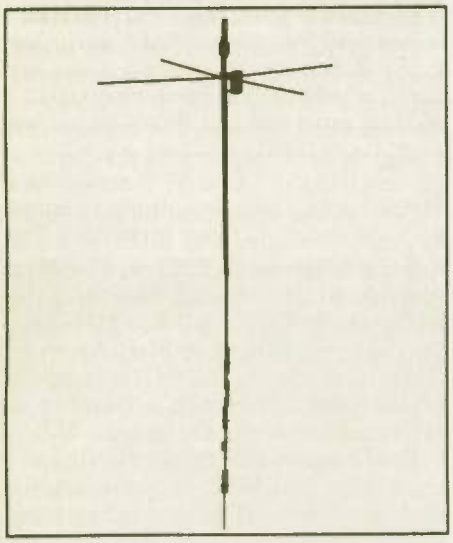
DX77 Advanced Vertical Windom

Telex introduces its new Hy-Gain DX77 Advanced Vertical Windom with advanced features, surpassing any verticals currently on the market. The superior mechanical design, high-power capabilities and 55% greater bandwidth than competitive verticals on 20 and 40 Meters make it an exceptional value for a high performance system.

The unique design of this vertical antenna provides no-compromise perfor-

mance without the need for ground radial wires. It will operate 10, through 40 Meters, including the WARC bands. Capable of handling more power than any other vertical designed without ground radials, the DX77 AVW can handle 1,000 watts of RF output. Automatic band switching and low angle of radiation allows for enhanced DX capabilities.

The Hy-Gain DX77 features Telex's su-



perior quality and reliable mechanical design with double-wall tubing, steel mast clamps and all stainless-steel hardware. The 29-foot vertical also features a new easy-tilt mount that makes lowering it for tuning an easy, one-person job. The DX77 comes with Telex's 2-year limited antenna warranty.

The DX77 can be mounted on a pole, chimney, rooftop or deck and is superb for portable operation. The suggested retail price is $419.95. For information, contact Telex Communications, Inc., 8601 E. Cornhusker Highway, P.O. Box 5579, Lincoln, NE 68505; telephone 402/467-5321, Fax 402/467-3279.

Push-to-talk switch

A new unique PUSH-TO-TALK (PTT) switch model PTT-01 has been announced by the Communications Division ofAzden Corporation, a manufacturer, distributor and dealer of Azden brand amateur and commercial radios and accessories. They are located at 147 New Hyde Park Rd., Franklin Square, NY 11010. Telephone at 516/328-7501; Fax 516/328-7506.

This device can give any radio the advantages of remote PTT, variable microphone gain, adjustable frequency response and automatic timed shutoff. It is usable with all types of microphones including dynamic and electret. A removable belt clip, Velcro™ tape and a soft desk pad permit universal mounting.

An OFF-LOCAL-DX switch permits either flat frequency response or a peaked response at 2kHz, both with adjustable gain to match most microphones to most

radios. A LOCK button permits hands-off operation and the built-in adjustable timer and shut off the transmitter after a preset time of from 1 to 5 minutes. The unit measures 2.4W x .87H x 3.35D inches. A single 9-volt alkaline battery is used. The suggested price is $40.

For additional information, write for a data sheet or call Syd Wolin, Manager, Communications division.

NEC-WIN

A new computer-aided antenna design and analysis package, based on a Penn State engineer's core technology, promises to replace trial-and-error methods with quick, easy, economical, point-and-click precision.

The package, called NEC-WIN, can be run at expert, intermediate or novice skill levels and is flexible enough to be used to optimize an Amateur Radio antenna or to model advanced applications for a professional designer.

Users can input their requirements and have the software generate a 3-D graphic view of an appropriate antenna. The software can also generate 2-D and 3-D plots of antenna's output pattern.

Packaged and marketed by Paragon Technology Inc. of State College, PA, NEC-WIN is based on modeling techniques developed by Dr. James K. Breakall, associate professor of electrical engineering at Penn State.

Breakall says the core of the new modeling package is the Numerical Electromagnetic Code (NEC Code), the world standard for antenna design. Building an antenna model and displaying the results of NEC calculations on the computer has been notoriously user unfriendly. He notes that previously NEC has been used only to analyze antennas after they have been designed using trial, error and intuition.

NEC-WIN has the following features:

*It has a new Windows version of the software which doesn't require the user to know anything about NEC. Everything is point and click.

*It is very easy to use and the first class of students to use it needed no special training.

*It provides a wide range of powerful features which significantly enhance the ability of the antenna designer to quickly and efficiently analyze even the most complex antenna structures.

*Users will be able to quickly enter the appropriate data which describes an antenna structure by using the graphical-assisted commands, which prompt the user for the required information.

*By using the 3 dimensional viewing capability of the program, the designer has instant access to a graphical representation of the structure during the data entry process and can visualize the antenna using rotate, zoom and pan features.

*The designer can also analyze the structure in order to verify wire connections and placement, and use the software's configuration capability to highlight non-connected wires.

The NEC-WIN software is available for $75.00. For more information, contact Paragon Technology, 200 Innovation Blvd., Ste. 240, State College, PA 16803; 814/234-3335.

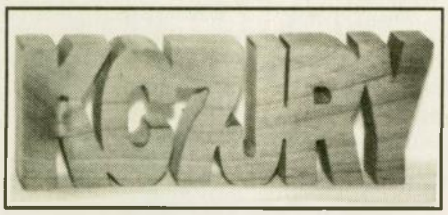
Economy magnet mount

Lakeview Company, Inc., "The hamstick people," presents an economy dual band antenna. It comes pretuned for the center of the 2M band (146 MHz) and the 70 CM band (446 MHz). Standing only 19 inches tall, the antenna has a very low SWR across both bands. It is supplied with a black whip, a very strong, powder-coated magnet, complete with 15' of RG-58 coax. A choice of PL-259 or BNC connector is available. A vinyl magnet pad is

included at no additional charge. Priced at only $14.95, order EDB-1 for PL-259 connector, or EDB-2 for a BNC connector. The antenna is also available in a whip-only version complete with 3/8 by 24 TPI adapter that fits most existing mounts at the low price of $8.95. Order EDBW-1. For information, contact G.A. "Butch" Shira, III, N4WHB, Lakeview Company, Inc., 3620-9A Whitehall Rd., Anderson, SC 29624; 803/226-6990, Fax 803/225-4565.

Call sign License Plaque

A fun way to spruce up your ham shack is with the Executive Desktop Call sign offered by Shack Attack. It is custom-cut from ¾" thick wood and stands anywhere. This handsome heavy-duty call sign is perfect for your desk, a bookshelf, or on top of your rig.



The Executive Desktop call sign is made from alder wood (a medium-dark wood), and displays your call sign in large, two-inch tall custom-cut letters. The length varies between 4-6" depending on your call. Each call sign is finished with a clear polyurethane gloss which accents the beautiful wood grain.

The desktop call sign is available from Shack Attack for only $8.00, which includes shipping. Shack Attack will ship gift call signs direct and include your sentiments in an Amateur Radio gift card at no extra charge! Shack Attack guarantees your satisfaction with a money-back refund offer, and cautions those who order by mail to please print your call sign clearly. Call toll-free 800/573-7388; E-mail: kb7vrd@aol.com Shack Attack, 51 W. Center St., Dept. 325, Orem, UT 84057.

10 Band Antenna

The new MFJ-1798 is a "perfect 10!" 10 bands that is, 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 Meters with only one antenna. The MFJ-1798 antenna offers separate full size radiators, end loading, elevated top feed, low radiation angle, and very wide bandwidth.

It gives low angles of radiation for working DX, fully automatic band switching, omni-directional coverage, low SWR and full 1500 watts PEP SSB power handling.

MFJ's unique Elevated Top Feed™ puts the maximum radiation point high up where it will do the most good.

The MFJ-1798 is self-supporting and only 20 feet tall. It will mount easily to any ground level spot, tower top, condo, or roof top. It operates with end loading, provides performance on 30, 40, 75/80 Meters with wide bandwidth, low-angle radiation and automatic band switching.

The MFJ-1798 is also easy to tune. The frequency adjustments are nearly independent — adjusting just one band has a minimum effect on resonant frequency of other bands.

This antenna is also remarkably strong. It was built to last, featuring solid fiberglass rod and large-diameter 6061T-6 aircraft strength aluminum tubing, and no guy wires are needed.

The MFJ-1798, which has no ground or radials is available for $269.95.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762 or call 601/323-5869, Fax 601/323-6551, or order toll-free 800/647-1800. WR

ARRL vs. Apple at 5 GHz

The ARRL is saying "no" to Apple computer in its bid for new spectrum to create a license-free public data communications service. The League has filed comments in opposition to the Apple sponsored petition for rule making that would allocate 300 MHz of spectrum in the 5-GHz band; a proposal that the ARRL says will affect the Amateur Radio Service.

The Apple petition is designated M 8653. It asks for spectrum for a new, unlicensed radio service that the League called "essentially unregulated, save for certain technical rules." The new service proposes the use of directional antennas and relatively high power, and a protected allocation status in shared bands by non-technical persons.

Part of the spectrum being sought by Apple includes 150 MHz, at 5.150 to 5.300 MHz, and 5.725 to 5.875 MHz. Amateurs currently have access to the entire range 5.650 to 5.925 MHz on a shared basis. In defense of the Amateur Radio allocation in the 5-GHz band the ARRL cites activity in a number of metropolitan areas around the U.S.

The League says the petition doesn't show why 300 MHz is necessary for such a service. It asks why existing allocations are not sufficient; why existing wireless and wireline services aren't sufficient; and why this proceeding should not wait until current proposals on such services are resolved. The ARRL also says the petition fails to consider compatibility between the proposed new radio service and other services, including Amateur Radio.

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 January, please have the information to us by mid October.

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			
11/18/95	Tucson	Joe, K7OPX 602/886-7217	w/i only
11/11/95	Tucson	Micki, AA7RR 602/883-8305	p/r
Arkansas			
11/18/95	Mtn. Home	Gerald, WM5W 501/430-512	p/r
11/11/95	Siloam Springs	Ward, WA5NRT 918/326-4631	p/r pref.
California			
11/19/95	Berkeley	Gary, N6YBD 408/255-9000	w/i
11/11/95	Carlsbad	Rusty, AA6OM 619/747-5872	w/i pref.
11/25/95	Chula Vista	Jim, KK6KZ 619/428-8418	w/i pref.
11/30/95	Colton	Harold, AB6RN 909/825-7136 days 909/685-6073 eves	
11/25/95	Culver City	Scott, K6PYP 310/459-0337 or Dave, N3BKV 818/559-2572	w/i
11/25/95	Escondido	Tom, N6CLO 619/745-7850	w/i pref.
11/25/95	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
11/11/95	Fontana	Ken, KE6GRY 909/685-7694	
11/16/95	Ftn. Valley	Cam, KI6WK 714/846-6984	
11/7/95	Fremont	Greg, KJ6EP 510/791-6818	w/i
11/11/95	Glen Ellen	Jim, 707/996-6461	p/r
11/4/95	Hesperia	619/244-1396	p/r pref.
11/11/95	Jackson	Bobby,WZ6Y 209/295-7947	w/i
11/11/95	Novato	Recording 415/883-9789	p/r
11/11/95	Orange	Rick, AA6NA 310/598-0086	p/r pref.
11/18/95	Pomona	Don, WA6HNC 909/949-0059	p/r pref.
11/18/95	Redwood City	Joe, KB6OWG 145.23(-) PL=100Hz	w/i
11/18/95	Sacramento	Phil, N6ZVA 916/338-3223	w/i
11/11/95	San Diego	Jeff, AB6NE 619/295-5852	
11/4/95	S.L. Obispo	Charlie, KD6RCQ 805/528-1022	
11/11/95	San Pedro	N6DYZ 310/325-2965	p/r
11/4/95	Santee	Knick, K6SK 619/466-8219	w/i pref.
11/18/95	Stockton	Mark, W6DKI 209/465-7496	w/i
11/11/95	Sunnyvale	24-hr recording 408/255-9000	w/i
Colorado			
All Colorado exams		24-hr recording 303/360-7293	
11/11/95	Denver	Glenn, WØIJR 303/366-9689	p/r pref.
11/11/95	Ft. Collins	Trent, 303/484-8315	p/r pref.
11/4/95	Littleton	David Avery, 303/795-5718	p/r pref.
11/25/95	Longmont	Randy Abbott, 303/651-1075	p/r pref.
Connecticut			
11/15/95	Shelton	Lee, WA1TSW 203/735-9476	p/r pref.
Florida			
11/18/95	Melbourne	WB9IVR 407/724-6183	p/r pref.
11/16/95	Vero Beach	Roger, KC4NHB 407/567-3979	p/r pref.
Idaho			
11/11/95	Boise	Lem,W7JMH 208/343-9153	p/r pref.
Illinois			
11/18/95	Bolingbrook	Bob, WR9M 708/739-6015	p/r pref.
11/18/95	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
11/11/95	Oak Forest	David, NF9N 708/448-0580	p/r pref.
Indiana			
11/15/95	Indianapolis	Pete Zinkan, 317/259-7610	p/r
Kansas			
11/29/95	Emporia	Ray, KØJDB 316/343-2158	p/r
11/24/95	Kansas City	Bernia, NCØM 913/262-0631	p/r pref.
11/2/95	Newton	KAØRCK 316/283-6042	p/r pref.
Maryland			
11/28/95	Annapolis	Lois, KA3VVQ 410/647-4178	p/r pref.
Massachusetts			
11/12/95	Gloucester	Rick, WZ1B 508/283-2278	p/r pref.
11/18/95	Melrose	Scott, WB1F 617/665-7654	p/r pref.
Michigan			
11/11/95	Dearborn	313/676-6248	p/r pref.
11/4/95	Mt. Clemens	Bill, N8CVC 810/468-8345 (before 9 p.m.)	p/r pref. p/r pref.
Missouri			
11/11/95	Independence	Joe, WIØX 816/483-2037	p/r pref.
11/4/95	Kimberling	NQØG 417/739-2888	p/r pref.
Montana			
11/14/95	Great Falls	George, AA7GS 406/453-2360	p/r pref.
Nevada			
11/18/95	Minden	George, WW7E 702/265-4278	w/i
11/11/95	Reno	Don, WS2Z 702/851-1176	p/r pref.
New Jersey			
11/11/95	Cranford	24-hr hotline 201/377-4790	p/r pref.
11/18/95	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	p/r pref.
11/18/95	Pennington	Don, AA2F 609/737-1723	p/r pref.
11/6/95	Sayreville	Larry, N2ELW 908/754-5800 day; 908/613-8967 nite	p/r pref.
11/14/95	Hicksville	Bob, W2ILP 516/499-2214	w/i
11/18/96	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
New York			
11/14/95	Hicksville	Bob, W2ILP 516/499-2214	w/i
11/18/95	Huntington	Joe, W2DDZ 516/266-3192	
11/18/95	Long Island	Les, AA2FJ 516/364-0030	
11/5/95	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
North Carolina			
11/2/95	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
11/18/95	Morehead City	Art, KC4QD 919/726-1205	p/r pref.
Ohio			
11/11/95	Van Wert	Robert, KA8IAF 419/795-5763	p/r
11/16/95	Youngstown	James, N8IRL 216/534-1394	p/r
Oregon			
11/15/95	Florence	Hal, N7NNA 503/997-2323 or Bob, KG7VA 503/997-1222	p/r pref.
11/8/95	Roseburg	Dick, AA7GC 503/672-7564	p/r pref.
Pennsylvania			
11/4/95	Erie	Norma, W3CG 814/665-9124	p/r pref.
11/2/95	Levittown	David, K3TX 215/946-1040	p/r pref.
11/3/95	Nazareth	Robin, WA3T 610/820-9110	w/i
11/18/95	Stockdale	Lou, KA3FLU 412/938-8125	p/r
Rhode Island			
11/9/95	Providence	Judy, KC1RI 401/231-9156 or Al, NN1W 401/454-6848	p/r pref.
11/13/95	E. Providence	Bob, AA1CT 401/438-0935	p/r pref.
11/25/95	Slatersville	Bob, W2YRC 401/333-2129	p/r pref.
Texas			
11/18/95	Austin	Jim, AB5EK 512/327-6184	p/r pref.
11/11/95	Dallas	Larry, WR3J 214/350-5803	p/r pref.
11/23/95	Garland	Bill, K8DNE 214/272-4499	p/r pref.
11/4/95	Harlingen	George, K5MRT 210/797-1762	
11/14/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
11/18/95	Lubbock	Gerry WB5R 806/765-5526 or Doug, W5JUV 745-1504	
11/18/95	Mission	Vince, W9KGT 210/580-1957	
Virginia			
11/25/95	Gloucester	Fran, KS4FO 804/693-2117	
11/4/94	Portsmouth	Art, AA4AT 804/484-2857	p/r pref.
Wisconsin			
11/5/95	Kaukauna	George, W9MDP 414/832-6279	w/i
11/4/95	Oak Creek	Jack, W9JK 414/774-6999	p/r pref.
Wyoming			
11/11	Cody	Lynn, K7IKO 307/587-5888	w/i

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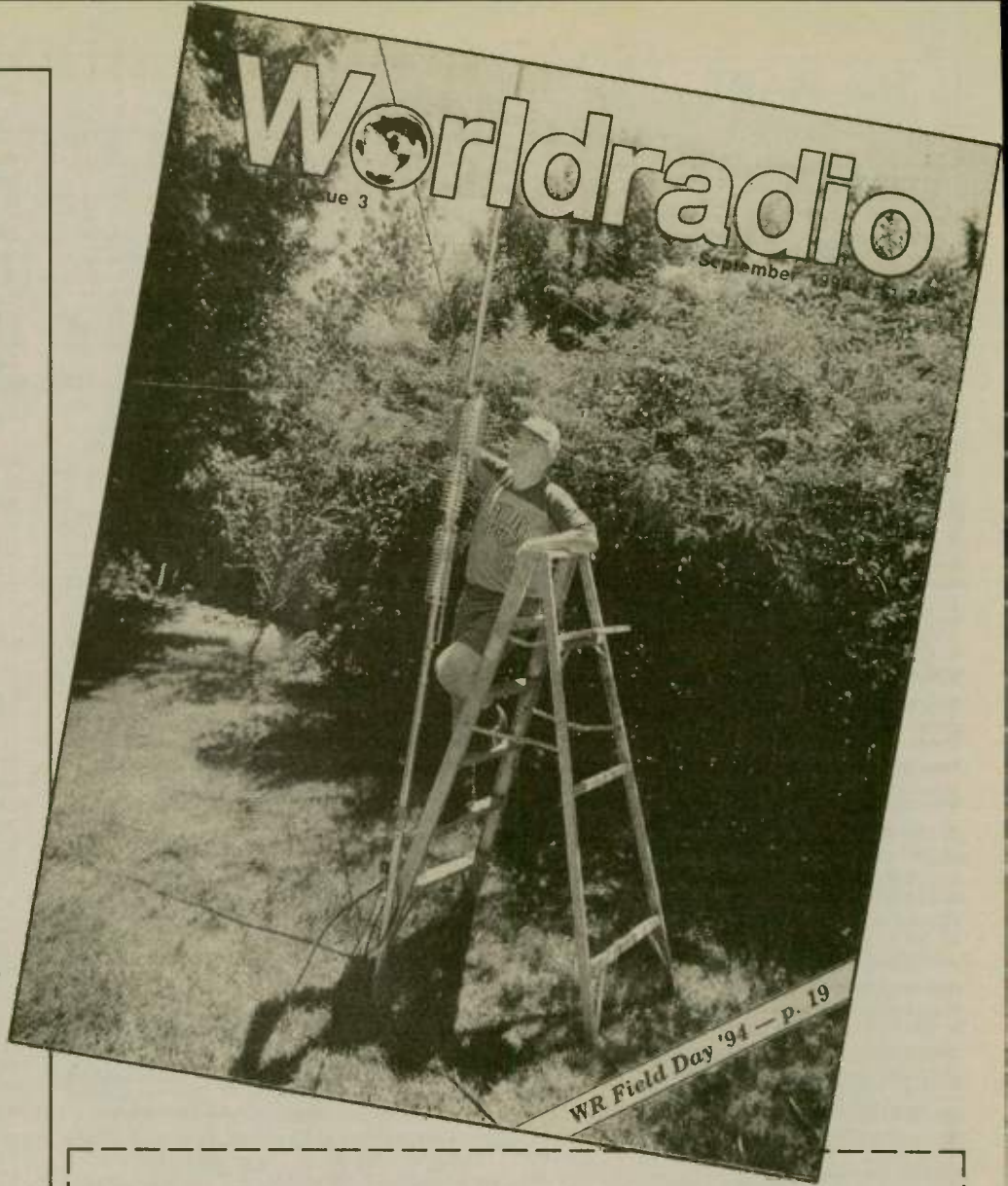

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