

Worldradio

Year 23, Issue 2

August 1993 • \$1.25



Jim Rafferty, N6RJ

19 June 1949 – 13 June 1993

Notable accomplishments:

2F2FL (N6RJ) #1 World 1982 ARRL
DX Phone
ZFZFL (N6RJ) #1 World 1983 ARRL
DX Phone
ZF2FL (N6RJ) #1 World 1984 ARRL
DX Phone
ZFZFL (N6RJ) #1 World 1985 ARRL
DX Phone

Memories

"In my opinion, Jim Rafferty, N6RJ, belongs in a special category of radio amateurs. Year after year, his operating finesse and skill have been demonstrated by consistently successful results, whether from home or a distant Caribbean island.

"Of greater note, however, was Jim's unique ability to combine his professions with his hobby. When he trav-

elled to other HRO locations, such as in my area, he always found the time to meet with the local contest gang over pizza and beer. His passion for the hobby and unabated desire to learn from others clearly shone through every one of our conversations.

"Jim always had the time for people. Even in the busiest of shows, he could find it in himself to set five minutes aside and talk about last year's contest or the latest advance in contest logging software.

"Jim Rafferty was one of Amateur Radio's ambassadors—whether you measure it by his professional accomplishments or his support for areas of the hobby that he felt strongly about. I will always fondly remember him as a true friend who will be missed by amateurs around the world."

—John Dorr, K1AR

Jim Rafferty, N6RJ, the vice president of Ham Radio Outlet, died 13 June 1993 in Yorba Linda, California, after a long battle with cancer. He was 43 years old, born 19 June 1949, in Rockford, Illinois; he was the husband of Shirley Rafferty.

An active operator, Rafferty is remembered for his participation in the first operation from Kingman Reef, KP6KR, in 1974. He was one of the team to gather around the microphone and put out the first CQ from the new country.

In recent years he operated from the Cayman Islands as ZF2FL and later as ZF2JR, specializing in 40M. He held the world record for single-band 40 meters in the CQ Worldwide Phone Contest.

One of his labors of love was to, every fall, update the DXCC countries file for the "CT" software used by many active contest operators. He mailed copies of the new file to friends around the country, who passed it along to others.

Rafferty teamed with KL7GRF to translate the famous "W9IOP Second Op" into software and then marketed it as the N6RJ Second Op.

Although an executive at HRO, Rafferty manned the 800-line in Anaheim side by side with other store employees, over the years answering questions for thousands of ham callers. He was friendly and knowledgeable, always knowing where the best deal was, even if it wasn't at HRO.

Rafferty was first licensed in the early 1960s in Illinois, as WA9UCE. In the early 1970s he moved to California, becoming K6AAR and then N6RJ.

A final honor for N6RJ was appearing on the cover of the July 1993 issue of CQ magazine. He saw a copy of the magazine, just off the press, only hours before his death.

Jim Rafferty died at Placentia Linda Hospital in Yorba Linda. With him at the time of his death were his wife, along with other family members. Also there were his friends Chip Margelli, K7JA, Janet Margelli, WA7WMB, Joe Clement, KF6OG, and Lois Clement, N6NAS.

"I could communicate with Jim by squeezing CW on his foot," Chip Margelli (please turn to page 3)

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FEATURED IN THIS ISSUE

Barstow, CA — Amateurs assist grieving family

Dayton, OH — HamVention report

Pilot Hill, CA — Visit from the Crimea

Verde Valley, AZ — Verde River rampage, Part 2 of 2

Vero Beach, FL — "Noxious" tower ruling update

Yorba Linda, CA — Jim Rafferty, N6RJ, Silent Key

COLUMNS

- 10-10 News •Aerials •Amateur Hi •Amsat-Oscar schedule
- Amateur Radio Callsigns •Amateur Satellites •Computers & Basic Stuff
- Construction •Contests •Continuous Wave •Digital Bus •DX Prediction
- DX World •FCC Highlights •Hamfests •Mobile •New Products •Off the Air
- Product review •Propagation •Publisher's Microphone •QCWA •QRP
- Search & Rescue •Spacecom •Special Events •Station Appearance
- VE Exams •Visit Your Local Radio Club •Visit Your Local Radio Store
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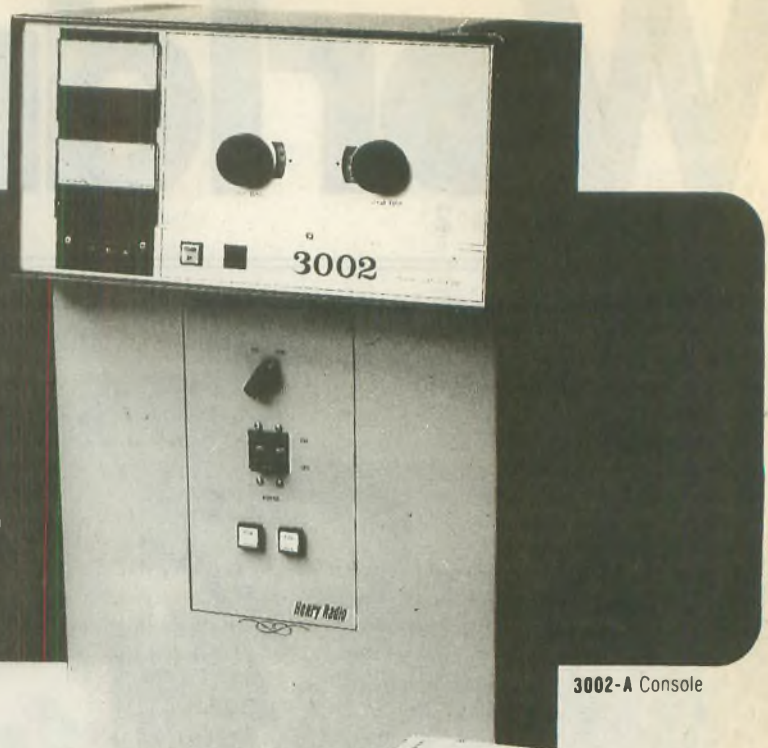
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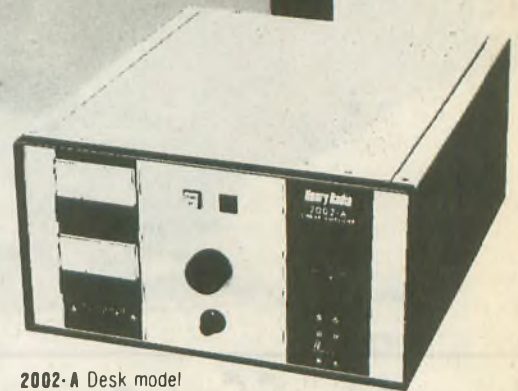
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RAFFERTY, N6RJ

(continued from page 1)

gelli said. "His code speed was down a little but he could still copy it."

In addition to his wife, Jim Rafferty leaves two sons, Jim and Mark, and a daughter, Whitney, all at home.

The funeral was scheduled for Friday, 18 June, at St. Martin's Catholic Church in Yorba Linda. (Mrs. Rafferty advises that, in lieu of flowers, donations in Jim's name may be made either

to the ARRL Foundation or the Northern California DX Foundation).

"The last weekend in October will never be quite the same without that big 40M signal from ZF2JR. R.I.P. Jim."

—Jim Cain K1TN for QST magazine

"... I first met Jim in the Cayman Islands back in 1983. Jim had come down to work some rare DX with Doc Jackman, ZF1MD.

"I have never met such an enjoyable

combination of HF savvy, operating skill and business sense packaged with great attitude and optimistic view of life.

"He will be very much missed."

—George A. Ure, AC7X, ex-ZF2HD

"The business won't be the same without Jim to offer sage advice about dealers, customers and products. He was a willing teacher to the new people in the industry... The cover on CQ is a great tribute to a great ham..."

—Rod Proctor, N7UDD, President, AEA

Hamvention forums

JOHN MINKE, N6JM

County hunters

The forum on county hunting was held Friday afternoon. Moderated by Billy Smith, W4HMY, this session included several speakers involved in chasing counties and the Mobile Amateur Radio Awards Club (MARAC).

Paul, AA2AV, stated that the frequency of 14.336 MHz is not only the gathering place for mobile stations running counties but an emergency frequency for mobile stations in need of assistance.

Based on CQ's USA-CA, they have several awards for working counties, such as the Second-Time-Around and Third-Time-Around. This is where the county hunter has worked every one of the 3,078 counties in the US and starts the process again for the second time around. This is like the DXer, upon reaching the top of the Honor Roll, starting all over again. A total of 156

county hunters have worked all the counties a second time around, with George Judy, KD8HA, being the latest to do so. Fifty-six have done this feat the third time around, with 22 the fourth time and three the fifth time around.

MARAC also sponsors the Cliff Corne, Jr. Memorial Award for working members who have completed USA-CA. Cliff, K9EAB, was the first to work all the counties in the United States, which he completed in 1965—all from an iron lung.

County hunters also meet on other frequencies and bands including 80 and 40M. For those interested in CW the frequency to check is 14.056.5 MHz.

If you are interested in chasing counties, especially the mobiles who travel from one to the next, mobile reply cards are available. Each card has space for information for several counties that the mobile station you worked operat-

ed from. You fill in the data and the operator signs it. We suggest you contact The B&B Shop, P.O. Box 83403, Phoenix, AZ 85071, for details. To continue to help keep the costs down, MARAC has a QSL bureau: Mobile QSL Bureau, Rt 3, Box 400, Timmons-ville, SC 29161.

Norm Van Raay, WA3RTY, the new custodian for CQ's USA-CA, was introduced. Norm said that he wishes to maintain the integrity of the USA-CA program. Beginning 1 July, he will require the submission of five QSL cards (please turn to page 12)

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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.

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PUBLISHER'S MICROPHONE

We now present the latest to join the *Worldradio* Super-Boosters (lifetime subscribers). They knew that such fame would open them up to flocks of autograph hunters at meetings of their local radio clubs, but they felt it was a small price to pay to join the annointed.

- Russel Appleyard, WA2MHY, Plymouth, MA
- Paul Gromatzky, KW7D, standing tall at an APO in Europe.
- Pat Kline, N3ICQ, Lawn, PA
- Bruce McCrory, WB4BXM, Mobile, AL
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- Dean Parpat, W5VPF, Muskogee, OK
- Manuel Cendejas, KD6EY, Antioch, CA
- Paul Lonnquist, KI6PL, Bend, OR

Continuing with our deeply scientific reports on whether RF is harmful to you, we have a letter from Donald Wheatly, KA1LX, Glover, Vermont, about his father, Ernest Wheatley, W1UHI. The senior Wheatley, licensed in 1950, is active on 2M and on 29 October will be 106 years old.

And, for those who are always saying, "I'm too old to learn new things," Henry Gorka, of Harrison, Michigan, thinks that's just a bunch of rot. "Hank" dropped a note in to have us change his call to an upgraded one of AA8KP. As he put it, "Not bad for a 72-year-old, eh?"

I was looking at a magazine at the newsstand. It was about hooking up your computer to the various services and whizzing messages about. Strange, though, terms like "cyberspace" were used to define the area between your computer and someone else's. In this magazine the photographs were all on an angle. I gather that before you can participate you have to listen to mind-bending music and wear your hair in a style that approximates the way you'd look if you stuck your fingers into the wall socket.

Amateurs, of course, have been zipping messages about the world for about 70 years now without making a psychedelic deal out of it. Woo, woo, "Etherspace!"

And, we don't need General Electric, IBM, Sears, or anybody else to make it possible. We don't need a telephone company. One can buy an adequate used transceiver for less than the price of a good modem.

Our appeal for authors has resulted in two amateurs burning the midnight oil to bring their words to the press. Both books will be highly interesting and will add to the knowledge available for amateurs.

Should you have a topic or field that you feel "brilliant" about, please let me hear from you. Amateur Radio subject matter only, please.

Should it have been your fate to have been paying into some insurance company for 20 years or so and then when it came to a claim the experience became an unpleasant one, you should investigate, at least for your radio equipment, the deal offered by the ARRL. We've heard good things about

the speed and the monetary level of return. The League also offers Radio Club insurance protecting the club (and its members) from all sorts of occurrences.

John Schmid, WA6PGA, of Lompoc, California, writes that it is high time that the USA get with the program that so many other countries have embraced: Your license is valid in other countries and their license is valid in yours, with no fuss and no muss. No forms to fill out and all that. It is certainly a great idea. The only objection may come from those whose sole ability is to transfer papers from "in" to "out" baskets without spilling too many of them onto the floor.

I see that a particular company is coming back into the Amateur Radio market (after a many-year absence) with a VHF hand-held transceiver. The question, of course, is how long will it be until they decide to leave it again. If the profit falls one-half a percent below the projections in the business plan, will all those radios become "orphans"?

Another gigantically huge company also makes a 2M radio (their only ham product). A good enough radio, but it is a hostage to the board of directors.

On the other hand we have had the radio companies who have stuck with the hams through thick and thin. These long-time companies have supported the magazines you read with their advertising, helped foot the bill for the conventions and repaired your radios.

These other companies have not been "fair-weather friends," abandoning us at a whim. Loyalty should be a two-way street.

— Armond, N6WR

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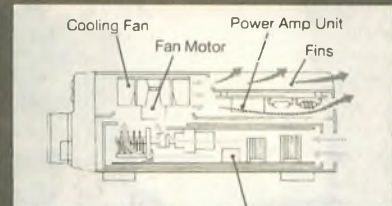
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Stan Sychov, RB5JZ, pictured here at the QTH of W6SUN, George McCarthy.

Visit from the Crimea

GEORGE McCARTHY, W6SUN

Stan Sychov, RB5JZ, was a recent visitor to his old radio buddy of over 24 years, Jim Heath, KB6SX, of Grass Valley, California. Stan had visited once before, three years ago, when Jim had held an open house for the many hams who had talked to Stan on the air. This time Stan flew

from the Crimea to Moscow and then to San Francisco via Alaska on Aeroflot, the Russian State-owned airline.

Jim and his wife, Eileen, met Stan in San Francisco, spending the night there before driving up to Grass Valley. Jim brought Stan to the DX convention at Visalia where he spent hours meeting with old radio friends.

Then it was back to Grass Valley and a Monday luncheon of the very informal Nevada County DX Non-Club, with 20 members present to greet Stan.

From there Stan was driven to Christian Valley where he visited the QTH of super contester, Jack Morgan, W1FEA, who demonstrated his complex hookup of computer programs to the radio equipment used for contesting. Then it was on to the Pilot Hill QTH of George McCarthy, W6SUN, where Stan used the station located on top of a hill with a four-element quad at 25 meters to talk to a friend in the Crimea, who then called Stan's home to tell them he would be flying home from San Francisco on Friday.

The next day Stan was given a personal tour of the Spreckles Limestone Quarry, located on the middle fork of the American River. This quarry has been in continuous operation since 1860, at one time employing 1,500 men and a complex switchback rail system to get the limestone up from the canyon to Auburn, from where it could be shipped to points in northern California. Since Stan is an engineer at a similar limestone quarry in the Crimea near the Black Sea, he was very interested in the operation.

Then W6SUN and his XYL, Barbara, drove Stan back to KB6SX's QTH in Grass Valley. Stan then visited the QTH of Carl Cook, AI6V, contest world record holder, where he could see the multioperator radio room and the five towers on top of a hill. Carl drove Stan down to San Francisco where he spent an evening with Dale Green, VE7SV, who had flown all the way down from Vancouver just to spend some time with Stan.

The next day it was back home via Moscow and a very tired Stan was back at his own QTH. A wind storm of the 100+mph variety had blown Stan's tower and beams down some weeks before, but he was able to contact Marv, W6FR, to say he had arrived safely, though exhausted. It is hard to guess just how many ham friends Stan was able to meet with, but it was a wonderful demonstration of the warmth and comradeship that this hobby can generate. WR

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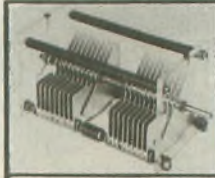
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Amateurs assist grieving family

LARRY BONNER, N6DWL

On 22 May 1993 Dennis Hall started, by himself, on a summer trek which he hoped would last 10 days, hiking the Pacific Crest Trail. He began at the Cottonwood trail head just below Banning and was to end in the Palmdale vicinity.

On 23 May at about 4 p.m. Dennis' 16-year-old son, Jason, was killed in an auto accident. The following day Roy Thomas, KD6IUK, and I reported to MCLB for work and heard about the accident from friends in the Hall's church. When the Hall family was called, Casie, the oldest daughter, said the sheriff and the forestry service could not search for Dennis because he was not in any danger. Ray and I packed up our radio gear and picked up three hikers, John Mahlam, Paul Wilson, and Aaron Hall (Dennis' eldest son) and departed for the San Bernadino Mountains to find Dennis.

Arriving at the Big Bear area, the three hikers started down the Pacific Coast Trail toward Onyx Pass and Dennis' starting point. Roy took one vehicle, leap-frogging to every point where the PCT intersected a road, to wait for the hikers. I went the other direction into town, contacting the local REACT Group on the Big Bear repeater (147.33 MHz). Buck, KD6DBO, responded with his 4x4 truck and met at the Fawnskin CDF office. Capt. Bob Buhrlé was already in contact with an army chopper pilot from Ft. Irwin who was in the mountains training. I made my way up Holcomb Valley in my big white van, leaving notes on the trees for Dennis to call home.

By 7 p.m. most of the search area had been covered, but Dennis still couldn't be found. Bob, Buck and I decided the search needed to be expanded. Larry went north to the Deep Creek area and Buck went south over Onyx pass. Larry

wasn't able to reach the PCT from Arrowhead because of the high water levels and bad roads that had been washed out from the winter rains. Roy and Buck met the hikers at about 9:30 p.m. and were going to meet me in town at 10:30 after looking in the last trail camp, Mission Springs. They went to the campground, but still no Dennis. While they were hiking back to the car, Aaron stopped and listened . . . he recognized Dennis' snoring and, sure enough, there was Dennis sleeping under the trees.

The tired search group returned to Barstow about 1 a.m. to the relief of Cindy, Dennis' wife, and a very sad situation. Jason's funeral was Friday, 28 May and Dennis asked when the next Amateur Radio class was going to be held.

There were a number of hams in Big Bear and Barstow who were involved in the search, but I would especially like to thank Les Dickie, N6YHS, and Ken Cloud, KB6BLA, in Barstow and George Ward, KA6CIA, of Big Bear and everybody else who was involved. WR

Amateur tower "noxious" — update


David, WA4NST, and Sherri, N4XLF, Brower of Vero Beach, Florida, won their appeal of the Code Enforcement Board's order finding them in violation of the laws and ordinances of Indian River County that limit the height of towers. In the code enforcement appeal, the court found that the local ordinances, which absolutely limit tower-heights to 70 feet, were preempted by PRB-1 and Sec. 125.0185(1), Fla. Stat. that incorporates PRB-1 as state law. Quoting the opinion, written by Judge J. Kenney, "We conclude that the ordinances in question are nothing more than flat and arbitrary prohibitions enacted without any attempt to consider,

much less balance, legitimate community concerns, with similarly legitimate, and legally recognized rights, of Amateur Radio licensees."

The appeal of the civil trial that found the radio transmissions to be a "noxious and offensive activity and the appearance of the tower and antenna an annoyance and nuisance to the neighborhood" is still pending. The issue in this case is the broad interpretation of deed restrictions to prohibit Amateur Radio. The tower and antennas are standing but the Browers are still enjoined from further radio transmissions from their home.

The Browers thank all who have written to the ARRL, government officials and ham radio publications and sent letters of encouragement. A special thanks goes out to James H. Laseter, N4ZYX, for acting as trustee

for the legal defense trust. Your generous contributions have helped cushion this tremendous financial burden. WR



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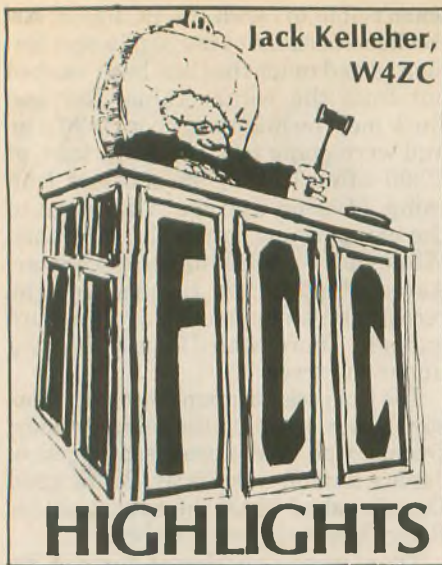
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Club call signs

The FCC has amended its Amateur Service rules to provide for volunteer organizations to administer a system designed to provide special call signs to club and military recreation stations. This rule change resulted from one of the changes to the Communications Act included in the Telecommunications Authorization Act of 1992 (see FCC Highlights, January '93). Organizations selected for the new system will be known as "Club and Military Recreation Station Call Sign Administrators."

An administrator must enter into a written agreement with the FCC, and public notices will be issued listing the administrators. To be an administrator, the organization must exist for the purpose of furthering the Amateur Service. Its membership must include at least one percent of the amateur operators licensed by the FCC, and it must be capable of serving as an administrator in all places where the Amateur Service is regulated by the FCC. An administrator must agree to accept and process all proper-

ly completed license application forms from the trustees of club stations and from the custodians of military recreation stations without regard to race, sex, religion, national origin or membership (or lack thereof) in any Amateur Service organization. The organization cannot charge a fee for services provided as an administrator.

Within 10 days of receiving an application, an administrator must provide the FCC's licensing facility in Gettysburg, Pennsylvania, with the actual license document, including the call sign. The document must be ready for endorsement and mailing.

Each administrator will be assigned initially a block of two-by-three call signs having a two-letter prefix from the NA-NZ series. An example of a block would be NA1AAA through NA0ZZZ. (There are 26 possible blocks.) The administrator must issue public announcements detailing the policies and procedures of its call sign system. The new rules providing for club call sign administrators go into effect on 19 July 1993.

Permitted and prohibited communications

The Commission's Report and Order on this matter (Part 97.113) is expected shortly. Meanwhile, a recent FCC letter (to the Municipal Justice Center in Aurora, Colorado) provides a further insight into present rules. In the letter it is said that the ham bands may be used for emergency communications "... when such communications are essential in connec-

tion with the immediate (emphasis added) safety of life and the immediate protection of property, and normal communications are not available." Routine traffic matters are the business of the police department. "... the Commission's Rules, paragraph 97.113(a), prohibits any communications which is intended to facilitate the business or commercial affairs of any party."

Is Technician the ham path of choice?

The *W5YI Report* for 15 May contains its second annual detailed report on what has happened, month by month, in terms of newcomers to ham radio since code-free licensing came to the Amateur Service. The accompanying text summarizes the Tables, viz:

In the year prior to the advent of the codeless Technician, 85 percent of the 27,000 newcomers learned Morse code and entered ham radio as a Novice. In the year following, the number of first-time licensees jumped from an average of 2,250 to nearly 4,100 a month, an 82 percent increase. The first codeless Technician ticket was not issued until 12 March 1991. Of the nearly 49,000 newcomers, two thirds chose the no-code Technician path into ham radio. The number of beginners entering ham radio at the 5 wpm Novice level dropped by 34 percent.

In the second year following, the number of codeless Technicians continued to increase but by a much lower percentage. The average number of newcomers to ham radio dropped to

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 1 June 1993.

For more information about the call sign 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
0	AA0NG	KG0GE	N0XCO	KB0LGZ
1	AA1GS	KD1PE	N1PGU	KB1AXJ
2	AA2NZ	KF2PE	N2VAX	KB2QGL
3	AA3ER	KE3II	N3PEV	KB3AUP
4	AD4ES	KQ4VO		KE4BWU
5	AB5NQ	KJ5MN		KC5AWV
6	AB6TV	KN6MM		KD6WHW
7	AA7WF	KI7NO		KB7VBN
8	AA8LI	KG8BM	N8YVY	KB8OZJ
9	AA9HG	KF9PN	N9TRQ	KB9IQE
North Mariana Is.	AH0S	AH0AN	KH0BZ	WH0AAX
Guam	NH2P	AH2CS	KH2GV	WH2ANG
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6MS	WH6MR	WH6CQN
Kure Is.			KH7AA	
American Samoa	AH8G	AH8AF	KH8AL	WH8ABB
Wake Wilkes Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska		AL7OY	WL7KU	WL7CHB
Virgin Is.	NP2Y	KP2CC	NP2GM	WP2AHU
Puerto Rico		KP4VI		WP4MAP

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3,700 a month, signalling the end of the initial surge. Interest in the codeless Technician Class certainly seems to be holding up, however. The FCC was right on target in its view that, given a choice, most newcomers to ham radio would elect the codeless path. Entry at the Novice level, however, dropped another 34 percent.

The number of examinees showing up at VEC exam sessions just about doubled in the year following the arrival of no-code hamming, from 67,000 to 116,000 applicants. In the year ending March 1993 the number of examinees increased another 10 percent.

(Note: These figures pre-date the inclusion of Novice Class operator license examinations in the Volunteer-Examiner Coordinator Examination System, which has now been implemented via an FCC Report and Order adopted 3 May and released 14 May 1993. Appropriate changes to the Rules are published in the Report and Order and become effective 1 July 1993.

Signatures

The FCC has adopted an order governing signature requirements for license applications that sets the stage for implementation of electronic filing of license applications in the private radio services, which include the personal and Amateur Radio services. (Up until 1 May all license applications had to include a personally signed handwritten signature.) In October 1992 Congress amended the Communications Act of 1934 to allow electronic filing of license applications to be signed "... in any manner or form, including electronic means, as the Commission may prescribe by regulation." (Interesting trivia: more than 100 public laws have been enacted amending the Communications Act of 1934, from the 73rd through the 101st Congress).

FCC accepts HF packet petition for comment

In our April column we summarized an ARRL petition for rulemaking to establish permanent rules governing automatic control of MF and HF data operation in the Amateur Radio Service. On 16 April the FCC acknowledged receiving the petition and assigned rulemaking file number RM-8218. The FCC set an initial 30-day comment period prior to issuing a Notice of Proposed Rulemaking.

Novice/Tech 30M petition denied

The FCC has denied a petition to grant Novice and Morse-certified Technician Class licensees access to the amateur 30M band. The petition, by William G. Welsh, W6DDB, asked

that such licensees be allowed CW operation from 10.1 to 10.15 MHz.

Welsh argued that the 40, 15 and 10M bands currently occupied by Novices and Technicians are becoming less useful due to changing sunspot conditions and interference from shortwave broadcast stations. He also said that the longer antennas needed for operation on 80M limited the appeal of that band for Novices and Technicians.

The FCC said that in opening the 30M band to the amateur in 1985 it had not included Novices and Technicians in order to promote an acceptable balance between licensing incentives and operating privileges. It followed the same guideline in opening of the 17M band in 1989, the FCC said. Thus, this petition for rulemaking was repetitive.

Third no-theory proposal filed

The lead article in *Westlink Report* for 13 May, by Vincent Biancomano, WB2EZG, is reproduced below; minus WB2EZG's editorial opinions, because the opinions are not part of the petition, and because they are rather long. We include the article because it raises anew the question of whether technical expertise is a principal criterion for retaining our frequencies. We think not—technical expertise is one criterion, but there are others, some of which are beyond our control. Therefore, we should not jump on this deceptively attractive bandwagon.

"A proposal for a no-code, no-theory HF license was refiled with the FCC on or about 14 April by WA2EQF, apparently in response to the Commission's request for supporting information to his initial proposal of 2 June 1992. In contrast to that relatively mild four-page document, the latest one is 28 pages, and it is a no-holds-barred document that regrettably provides in some cases overwhelming

evidence for the petitioner's claims—the major claim being that easing requirements into (sic) Amateur Radio has in fact compromised amateurs' ability to hold onto their presently allocated frequencies, an issue of great concern to many of us for several years.

"The petition calls upon FCC to redefine Part 97.1 so that amateurs can meet the new goals and requirements of the Amateur Radio Service and thus retain their frequencies without further encroachment by commercial interests; or that examination standards be restored so that amateurs be formally required to satisfy the technical requirements of Part 97.1 (which the petitioner argues that amateurs no longer meet), and thus justify their frequencies without fear of further encroachment.

"Given the fact that this proposal was issued at the same time, or perhaps just after the FCC's proposal for rulemaking concerning further sharing of the 900 MHz amateur band, it is possible WA2WQF withheld the filing, waiting for further evidence regarding the reclaiming of amateur frequencies. (Ed: This is misleading in that amateurs are secondary users in the 900 MHz band.) The timing of this refiling would thus certainly serve to support the petitioner's claims.

The latest proposal calls upon the FCC to formally announce its plans for the future of Amateur Radio as a technical hobby, or a non-technical one. The petitioner has apparently concluded that unless amateurs demonstrate their ability to meet either a newly defined Part 97.1 or formally demonstrate technical ability to meet the terms of the present Part 97.1, we have no justification to reclaim those frequencies.

"If the FCC's response is favorable we could see a return to more technically-based exams in the future; if the agency denies the petition, despite the evidence presented to indicate the Commission has led the movement to ease requirements into ham radio, then it may be effectively ruled that Amateur Radio will make the complete transition to a personal radio (Citizens Radio type) service in the near future. In any case, the Commission's actions will speak louder than words and send a clear message, one way or the other. Thus, no decision will be a decision and, moreover, put amateurs on notice that they would do well to immediately address the question of their frequencies and how to retain them." WR

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Hamvention FCC Forum

NORM BROOKS K6FO

"Amateurs are having difficulty in making the transition to digital communications."

This was the claim of John B. Johnston, W3BE, chief, Personal Radio Branch of the FCC. He was speaking at the FCC Forum at the Dayton Hamvention, 25 April 1993. Johnston, along with Bill Cross of the PRB put on a forum that was interesting as well as educational.

It may be that some of the amateurs' difficulties arise from the incorrect understanding of one critical term, Johnston said. Those of us who write rules know how important it is to carefully define the terms we use. So it is no wonder to the FCC that amateurs are having difficulty when they misuse the term in their newsletters, inquiries and phone calls to the FCC. The FCC has asked that this term be covered in the examination questions, but many of us passed our exams before this all came about. The term we're discussing is



John B. Johnston, W3BE

"automatic control."

Here's a sample question Johnston posed: What is the meaning of "automatic control" as used in Part 97 of the FCC Rules?

(1) Unattended operation. (Fire up the station and leave town. If it causes interference, it is somebody else's problem.)

(2) Automatic control means the station has priority use of the transmitting channel.

(3) Automatic control means the sta-

tion is transmitting without a control operator at the control point. Operation is such that the station is achieving compliance with all the rules because of the devices and procedures that have been implemented.

Johnston hopes we all will understand that answer (3) above is the correct answer.

In our search for the best way to get our individual stations into the new digital networks, Johnston sometimes fears we will become gridlocked and toss our problems to the FCC to solve. As he has repeatedly told us year after year, we should solve our problems without running to the FCC, because all they can do is write more rules. It is their objective to *simplify* rules, not write more of them.

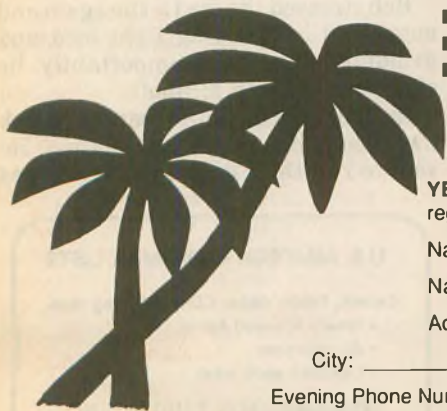
We next heard a report of the activities of the National Conference of Volunteer Examiner Coordinators. Fred Maia, W5YI, is chairman. This year, effective 1 July, 1993 the question pools for Elements 2 and 3A will be brought up to date. Ray Adams, N4BAQ, chairman of the Question Pool Committee explained some of the changes and handed out copies (both paper and computer disk) of the new question pools. The new questions were sent to publishers of Amateur Radio study materials earlier, so that their books, etc. will be up to date.

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HAMVENTION

(continued from page 3)

of his choice when applying for the final level of all 3,078 counties. Although, QSL cards are not required to be sent with your applications, you must have them in your possession. Prior to your receiving the award, Norm will pick five counties for which you must show proof of contact.

The county hunters are often plagued by QRMers. Norm suggested that they be ignored as they are only looking for attention. It appears that county hunters and DXers have a problem in common!

Pete Peterson, K4QFK, the custodian for the MARAC awards, said that over 51,000 awards have been issued in the program, with 47,000 of that the Last County Award. This is an award that is given to an operator for providing the final county in a given state or the final county for USA-CA. Of this amount, 10,342 such awards have been awarded to just one operator.

John Sebastian, N8BGF, the Great Lakes Director of MARAC, suggested that if you need emergency assistance and come upon the 14.336 MHz frequency, use the words "break break." Activities will cease and you will be assisted. John also mentioned several county hunter gatherings such as the National Convention in Seattle this 13 to 17 July, mini-conventions in Wisconsin in September, the Pacific Division Mini this 14 to 16 October, Murfreesboro, Tennessee, this 4 to 6 November, and one in Holland, Michigan, April 1994.

George, KD8HA, and his XYL, Joyce, KD8HB, also talked about their experiences while on the road giving out counties.

Additional information on the Mobile Amateur Radio Awards Club is available from MARAC Info Bureau, c/o Art Mager, N5DKW, P.O. Box 9112, Mesa, AZ 85214-9112. As a manner of

courtesy, please include a business sized SASE.

County hunting buffs may also want to turn to the County Hunter column next month by Ace Jensen, N3AHA. Ace's column appears bi-monthly in *Worldradio*.

Contests

The forum on contests was first on the agenda for Saturday morning. Tim Duffy, K3LR, and Scott Jones, WR3G, were listed as moderators for this session which was scheduled to commence at 9 a.m. and run straight through to 1 p.m. The forum actually was a collection of presentations that included the following:

Contest Operating Techniques, Bob Shohet, KQ2M

The VE3EJ Contest Station, John Sluymer, VE3EJ

Contest Video Essay, Don Dazo, WZ3Q

Multi-Multi From a Rooftop, CQWW from VS6WO, Steve Dubberstein, VS6WO

The Techniques of Operating Single Op Plus Packet, Charles Fulp, K3WW
The K3LR Contest Station, Tim Duffy, K3LR

A Tribute to Al Slater, G3FXB, Roger Western, G3SXW.

Unfortunately, we were only able to cover the first presentation.

Bob, KQ2M, in describing his 10 operating techniques to us, stated that he is always trying to better his last year's score in any particular contest. His techniques are summarized as follows:

1) Be in good physical condition. This point included in getting proper exercise.

2) Let your family know about the contest ahead of time. Don't inform them the day of the contest that you will be too busy over the weekend to be with them.

3) Have your antennas and beverages in perfect order.

4) Your station should be set up and

tested on Thursday.

5) Take a nap on Friday afternoon. Just relax.

6) Set up your food and beverages Friday afternoon.

7) Study previous logs. Most likely you have already forgotten the activity from last year. Check the patterns for your best activity.

8) Operate extensively during the week prior to the contest. Be aware of call signs, DXpeditions, etc. With that in mind you already will be a step ahead if you hear a call that may be incomplete or strange.

9) Program frequencies in memory. Most radios on the market today have that feature.

10) Let propagation tell you where to start. In other words, start on the band with the most activity.

Now, sharp eyed readers are going to question points 3 and 6. The former is a type of antenna; you drink the latter.

Bob said he likes to work at a rate of one contact per minute. He eats and drinks during the contest without any breaks, except for one sleep break, taken usually when the conditions are poor. He says to call everybody and when taking a break to stay away from the radio. Most important, don't compare your scores with your competitors as they may try to psych you out.

On setting up a station, Bob says that in stacking his antennas he has independent rotating for each. If possible, use hard-line for the extra dB of gain. Have a good comfortable chair with good back support. Wear comfortable clothes such as sweat pants (no jeans). Good lighting is important and all controls should be in easy reach. If using a computer, it should be at eye level and the monitor should be equipped with a glare filter to reduce fatigue. Automate everything you can and use a foot switch. Bob also suggests a backup system of two radios with a foot switch and mike for each. The mikes should be taped together on a common boom.

Bob stressed the food issue again and suggested only eating light food and avoiding sugar. Most importantly, he said, was to avoid alcohol.

In summarizing his presentation Bob included slides of his installation. He said to run the filters open as wide as

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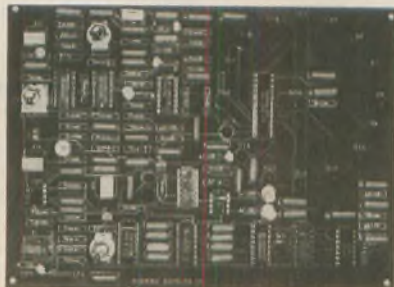
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possible. Identify with your call after each contact. When running, keep the frequency in memory in the event that you accidentally nudge the VFO. The speed of your run controls the pileup. Stay away from the band edges. Check the Novice bands, as you might be surprised at what shows up there. If you are requested to change bands for a multiplier pass, delay going there by saying you will go there in five minutes. Someone just might be waiting to grab your frequency the moment you leave. With the stated delay he most likely will not wait around for five minutes. Try to do something different every hour. Don't ignore the dead bands. Finally, have fun and don't worry about what others think of your score.

GERITOL Net

There was a fair sized crowd attending this one, most of them members of the Geritol Net. Everyone introduced themselves with their calls, states and Geritol numbers (if they had one). If anyone were to ask, the Geritol Net is a sort of 75M 10-10 net operation. This reporter participates in both organizations.

If you hold an Amateur Extra Class license and are interested in working states on 75M tune across the band to 3.768 MHz this fall beginning around the first of October (the net does not operate during the summer months). To get a Geritol number one must work all 50 US states in the Amateur Extra Class segment of 75M. All calls worked must be of the Amateur Extra Class structure, (the one-by-two, two-by-one, or the two-by-two beginning with the A prefix). Upon receipt of the required 50 QSL cards, send your application for WAS with a 75M Extra Class endorsement to ARRL headquarters in Newington. The certificate number will be your Geritol number. If your call is of a certain format, such as a state abbreviation, the suffix including your initials, etc., you will probably have many sta-

tions calling you for endorsements they have in their program.

Youth in Amateur Radio

Perhaps one of the more inspiring forums of Hamvention was the Saturday morning forum, "Youth in Amateur Radio," moderated by Carole Perry, WB2MGP. Carole had several young speakers ranging in age from eight to 17.

YL Shauna Richards, N7NGT, age 17, described her experiences in Amateur Radio from her home in Wyoming and remarked, "You can't spread (ham radio) around without it getting on you."

A young man from California, Matt d'Alessio, KC6VIM, talked about his interests in amateur television; on ATV there are no commercials.

However, what really caught this reporter's eye while browsing the Hamvention material on the forums was the ages of two of the speakers printed in the program, the young Haley brothers. I was not disappointed. The oldest of the two, Cody, KB5WYJ, age 10, spoke first. He is in the fourth grade and is from a family of hams. Cody said that his first-ever contact was with Kodiak Island in Alaska, and he likes to work pileups.

Then his little brother, Casey,



Shauna Richards, N7NGT

KB5UEO, age eight, had his turn. Casey, in the third grade, was first licensed at age seven, presently holds a General Class ticket and copies 20 words per minute. Before leaving for school in the morning he likes to check the PacketCluster to see what is on. Casey said it was good to be a kid, as he has often used it as an excuse on a DX

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**Cody,
KB5WYJ, age
10, and Casey,
KB5UEO, age
eight.**

net, saying he had to work the DX station before he'd be late for school. Casey holds the Worked All Continents Award, is a member of 10-10 International, and likes contests and often creates a pileup.

Another 10-year-old speaker was Lucas Ward, KO4IQ, who holds an Advanced ticket; he talked about the radio club at his school, the Springfield Estates Elementary School, of Springfield, Virginia.

Other speakers included in the forum were Mike Placco, KB8LCC, Barry Kennedy (age 15), N2PNG, and Eric Permut (age 12), KB0KQF. Alex Leynes, N9KYJ, was also scheduled to speak, but the forum had run out of time.

After listening to years of complaints such as "I can't pass the Extra, I'm not an electronics engineer" or "I can't learn the code" (thus enter the no-code ticket), it sure was nice to see some hope in our hobby. Thanks, Carole, for bringing these youngsters to Dayton!

DX Forum

The DX Forum commenced one-half hour ahead of the scheduled time indicated in the printed program. Like that of the forum on contests, several presentations by various DXers were made with Steve Bolia, N8BJQ, and Mike Wren, K8NW, acting as moderators. The topics and speakers were as follows:

- DX Advisory Council, Bob Beatty, W4VQ
- DX Happenings, Bill Kennamer, K5FUV
- Botswana, Dave Heil, A22MN
- South Orkney, Brian Maloon, VP8CFM
- P5RS7, Kan Mizoguchi, JA1BK, and Romeo Stepanenko, 3W3RR
- VP8SSI—Video, Tony Deprato, WA4JQS, and Jerry Dubson, W6MKB
- AH1A—1993, Mike McGirr, K9AJ
- Pacific Expedition, October 1992, Holger Y58IO, and Tom, Y31XO.

The presentation by Bill Kennamer, K5FUV, was accompanied with slides

showing the operations of the DXCC desk at Newington. Bill explained the causes of the backlog of DXCC applications which included the record conversion of the paper records, many of them in poor condition and many with errors, to the computer program designed to handle DXCC records. Initially, the program was inadequate as it was too difficult and they could not edit from it. With the new system the advantages to members include a new level of accuracy, the ability to know how the cards are credited, safety of archives and an accurate tracking of the received and shipped cards.



Lucas Ward, KO4IQ

Dave, A22MN, presented a video of Botswana which he narrated, which included a few scenes of other DXers in that country. Most of the video covered activities other than Amateur Radio.

Following Dave's presentation, the presentation on the South Orkney Islands was changed with that of the North Korea operation of P5RS7. Romeo Stepanenko, 3W3RR, was scheduled, but could not attend the Hamvention. In his presentation, Kan, JA1BK, used slides to show the operating conditions they had to contend with.

Initially, the coordination of this upcoming DXpedition was made by Ken, Romeo, and Martti Laine, OH2BH. However, Romeo had no visa for Japan, but did have one for China. And, Ken's visa to China was soon to expire, so

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Bill Kenamer, K5FUV

some fast arrangements were made for the meeting in Beijing. To get to Beijing from Moscow included three different modes of transportation for Romeo. His first segment was some 5,000 kilometers by air to Irkutsk and Ulaanbator in Mongolia, then another 2,000 kilometers by rail into China, and then a final 800 kilometers to Beijing by taxi.

Ken then introduced Toly Kirilenko, UT3UY, one of the operators of P5RS7. He talked about the DXpedition and said that due to poor propagation only 3,000 contacts were made the first day. However, the next day some 10,000 contacts were made. The operation took place from a military base where they used longwire and inverted V antennas. They had no beams.

The operation at P5RS7 finished on 6 January 1993 with some 35,000 contacts in the log. Only five contacts were made on 6M, all of them with Japan, with JA1BK being the first contact. Temperatures reached a low of minus 20°C; the temperature inside was minus 6°C.

Brian, VP8CFM, then gave his presentation which was accompanied by slides of the activities on Signy Island, one of the South Orkney group. Brian said that he first went to the island as an electrical engineer and was later promoted to base commander.

QRP-ARCI

QRPers gathered early Sunday morning at 9:30 to attend the forum on QRP, moderated by Jim Fitton, W1FMR. There were three presentations to be given with the first, QRP Contesting, by Randy Rand, AA2U.

Randy is an active contester, specializing in QRPP (extra-low-power). He outlined several of the contests that are for QRP types or have a QRP category. New this year will be a four-hour affair, the Northwest QRP Contest on CW.

Much of Randy's presentation actually applied to contesting in general, such as awards, contest goals, contest planning and contest strategies. However, Randy listed some of his recent scores that will gain the respect of even the high-power types. During the 1992 CQ Worldwide DX Contest on CW, Randy collected some 940 contacts amounting to 1,197,000 points. This included a total of 184 contacts in 76 DXCC countries and 21 zones on 40M.

Fellow QRPer, KR2Q, according to Randy, collected some 1,069 contacts in the 1990 CQ Worldwide DX Contest on SSB and holds the QRP record. During the 1992 ARRL International DX Contest Randy made 1,055 contacts, which was the most ever that he made in any DX contest. Randy worked DXCC on eight bands using only wire antennas.

Peter, OK1CZ, from Prague, was then introduced and gave a short presentation. Peter is a member of the Czech Republic QRP Club and said he was honored to be here and it was his first visit outside of Europe. His slides included stations of several European QRPers, including that of GM3OXX, who only runs 1W output to simple wire antennas. Another DXer running 1W output is OK1DZD. Peter reported that there was also such a QRPP club in Yugoslavia. Most, if not all of these rigs are homebrew. Peter is hoping for a QRP gathering in Prague in 1994.

Jim, W1FMR, then discussed forming of QRP clubs. This was directed at

gaining interest of non-QRP types by setting up demonstrations of what you can do running that power level. Jim hopes to someday see a World QRP Federation. Jim, a member of the QRP Club of New England, claims the membership is presently at 177 members.

Does QRP sound interesting to you? Then please turn to QRP, by Richard Fisher, KI6SN, a monthly column in Amateur Radio's finest journal, *Worldradio*.

Amateur of the Year Award

Harry J. Dannals, W2HD, was awarded the Amateur of the Year Award for his many years of leadership with the American Radio Relay League, the Quarter Century Wireless Association and, most recently, that of bringing into being the no-code Amateur Radio license. In accepting his award Harry said that he was from a family of hams; he is the son of a ham (his father was W2GG), he is the brother of two hams, and the father of Bob, W2UZU, and Tom, W2FEW. Harry said that he is proud to be a radio amateur. In comparison to the Academy Awards presentation on TV Harry said thanks to the many who supported him, especially his wife, Kay, who stood by his affair with Amateur Radio. WR

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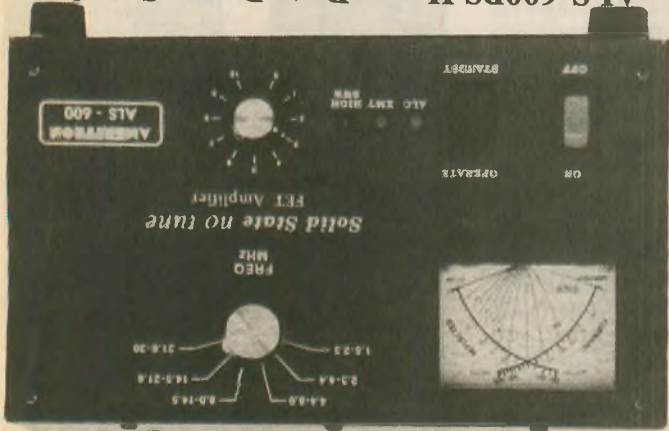
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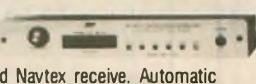
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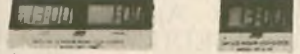
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PUBLIC SERVICE

Verde River rampage (conclusion)

This story continues from our July 1993 issue's Public Service column.

CAL TURNER, WI6S

At 1:30 p.m. Saturday, the Red Cross requested Amateur Radio coverage be set up at the Camp Verde Marshal's office and Bob Barker, N7SLS, responded. A Red Cross shelter was activated in the old Camp Verde high school and all available motels in the area opened their doors for evacuees. Another ham, Mike Spurgeon, N5EDH, was dispatched to Cliff Castle Lodge, a motel, where Red Cross personnel were meeting with evacuees to assign them a more permanent shelter.

On Saturday at 2 p.m. Cal received a 2M contact that two hams, Rick Wigelsworth, N0NKU, and Robert Wyatt, KB7KEZ, were on their way to help from Apache Junction, Arizona, 100 miles south. Their offer of assistance was readily accepted as the VVARA resources were beginning to dwindle. Balancing the needs of the Red Cross with the resources of available hams became an ongoing task. Hourly changes occurred for the next few days, requiring a juggling of men, radios and time.

By 4 p.m., offers of assistance by hams began pouring in. The state emergency center in Phoenix was monitoring the VVARA 147.22 repeater and offered help if needed, and Red Cross personnel were arriving from 21 states, as far away as Massachusetts, Pennsylvania and Virginia.

By Sunday morning, 21 February,

the needs of the Red Cross and the resources of the VVARA began to take shape. The Red Cross requested radio operators for the command center, the shelter, and for four mobile units for damage assessment, plus one for the food van. The responding hams were Bill Paritz, N6ALQ; Frank Funk, N7EBT; Lowell Pickup, KB7SRG;

quency, which was a simplex operation, but in the mountainous terrain around the Verde Valley were not capable of efficient communication. As the hams boarded the vans they found the cigar lighter receptacles had been dismantled, which meant their HTs were going to be put to hard use to make a full day's run.

Some of the hams had the new In-nova Power Pack, giving a 12V source which enabled them to continue the runs throughout the day. Others had to make do with alligator clips to the van batteries. Magmount 5/8-wave antennas worked best for this operation, although the rubber ducks did fairly well through the VVARA repeater.



Dora and Paul, W7EI, Travis sift through household effects and family pictures after the devastating flood.

Warren Messenger, N7AJH; Glen Beeson, N7PNB; George Hopping, NZ7I; and Oliver Grieve, W7WGW.

The Red Cross vans were equipped with Red Cross HTs on their 47.42 fre-

On Monday, 22 February, the fire station was again manned by Oliver Grieve, W7WGW, and Al, KB7QNX, the government organization liaison for the Red Cross. A request for two more ham operators was made by the Red Cross, one for another van and one for the Lutheran Church in Sedona. Frank, N7EBT, and Mike Wilson, W7JAE, responded. Another ham, Joe Krelick, N7ZFW, volun-

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teered to relieve the ARES team, and he drove in from Cordes Junction, 40 miles away. An additional request was made by the Red Cross for a radio operator at the Camp Verde shelter and again Bill Paritz, N6ALQ, volunteered.

At 4 p.m. the Red Cross command center was relocated to the Cottonwood Civic Center auditorium with a larger floor space for all the necessary functions. Oliver, W7WGW, moved his 2M operation along with the Red Cross personnel, and he was then relieved by Dick Gillson, WX6E, for the remainder of the evening. Telephones had not yet been installed in the new quarters so 2M was their only communication between vans, shelter and the command center.

To assist in the scheduling of personnel, John Kubrock, KB7EDI, of the Cottonwood Police Department, who had been appointed communications officer for the Red Cross, spent many hours determining the needs of the Red Cross for forthcoming days. He kept Cal, WI6S, apprised of the needs a day ahead to give him a chance to prepare for the next day's activities.

On Tuesday, 8 a.m., Cal requested Walt, WF7J, to put out the word that the VVARA could use more help to give the current operators a much-needed rest. The Bill Williams Mountain Repeater group, under Ron, AK6Y, responded and he stated that they would have a team ready for Wednesday.

On Wednesday, 9 a.m., two of their members, Ron, AK6Y, and Merrill Van Noty, N7EBD, while enroute to the Red Cross command center, were involved in a vehicle accident when their vehicle skidded on ice and they were hit by another car. There were no serious injuries but their vehicle was totaled. They called for help and another group was dispatched to take their place. Barbara Reed, AA7AC, and Ian James, KB7PWZ, arrived at the command center to assist the VVARA and the Red Cross.

On Wednesday at 2 p.m. the Red Cross base station on 47.42 had been installed and Red Cross vehicles were getting in contact on a limited basis. They evaluated their needs for additional ham help and by Thursday it was determined that the need for ham operators had reduced to one person at the command center to handle both the ham frequency and their Red Cross frequency.

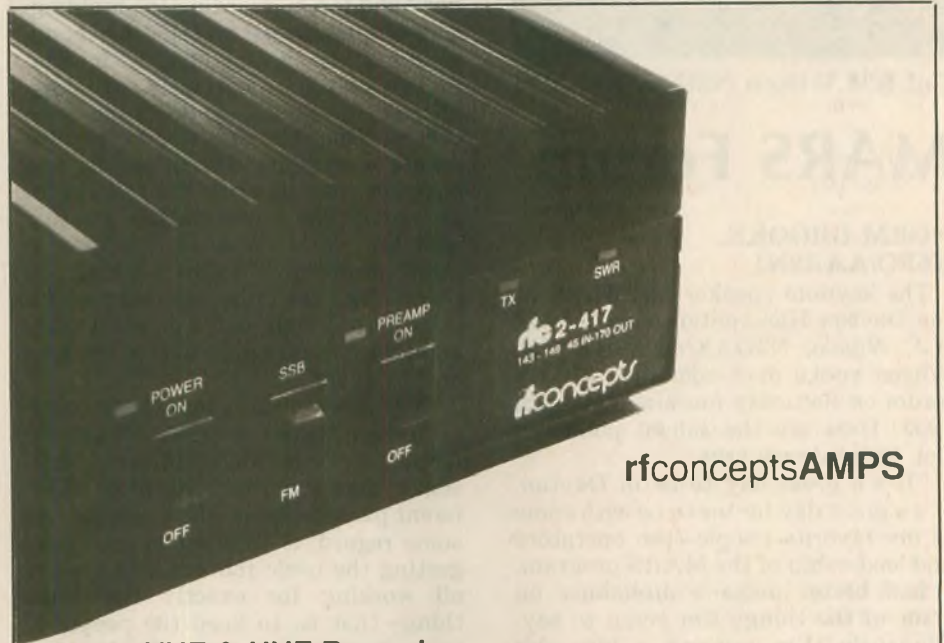
In addition to the hams previously mentioned, the following amateurs also participated in manning the command center, the shelter and the Red Cross vans through Wednesday, 3 March:

Mary Turner, KA6RCM; Art Rissberger, KC2EN; Howard Chambers, W7DC; Lee Holcomb, N7QMQ; Keith Littlejohn, N7JUZ; Bob Tillman, K7CJW; Dick Berg, W2TIL; Cal Miller, N7IMD; Morgan Hoagan, WW7B; and Bill Byron, W7DHD. The final statistics from Red Cross showed 31 hams with over 500 hours of operating time.

A ray of sunshine came out of the storm clouds from the TONTO Amateur Radio Association and the Military Order of the Purple Heart through Jack Sheahan, WB7UUL, of Payson, Arizona, who wrote a letter

stating that their club had donated \$100 to the Red Cross on behalf of the work done by the VVARA during the flood. His letter also advised that another donation of \$50 had been made by the Military Order of the Purple Heart for the same reason.

As an aftermath of the coverage for the Red Cross, 10 hams turned out on 4 March to assist fellow ham Paul Travis, W7EI, whose home and belongings suffered massive flood damage. Shovels, rakes, hoes and wheelbarrows were brought by the VVARA members who pitched in to uncover and clean off the mud. WR



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Col. B.J. Wilson, N3DAK/AFA3BJ

MARS Forum

**NORM BROOKS,
K6FO/AAR9NI**

The keynote speaker for MARS at the Dayton Hamvention was Colonel B.J. Wilson, N3DAK/AFA3BJ. Col. Wilson spoke at a combined MARS forum on Saturday morning, 24 April 1993. Here are the salient points in Col. Wilson's remarks.

"It's a great day to be in Dayton. It's a great day for me to be with some of my favorite people—the operators and leadership of the MARS program. I had better make a disclaimer on some of the things I'm going to say. Obviously, I'm wearing a blue Air Force uniform, so there will be an Air Force 'spin' on some of the things I'm going to say. I don't mean that to slight the other services, as we're in this together. But certainly my perspective, my background has been an Air Force perspective, so my comments are coming from there. At the same time, the legal office wants me to remind you that the comments I make do not necessarily represent the views

of the Air Force. (laughter) I'm really on my own today!

"General Colin Powell made a very interesting observation recently about communicators. He said we have a serious problem with our military structure. When I give an order, no matter how simple it is, it is misunderstood. It gets communicated wrong and the strangest things happen. Let me give you an example. I'll say, 'Secure that building!' If a Navy person responds, all he or she would do is walk over there, turn off the lights and close the door. If the Army responds, they're going to post a corporal out front with a rifle, walking back and forth, guarding the building. The Marine Corps, on the other hand, would attack that building with an infantry platoon supported by coordinated air strikes and off-shore artillery. The Air Force, however, to secure a building would go out and contract for it and have it built. (laughter) The moral to the story is that we really do have communications problems. We're working on them. If we can approach them with a little bit of humor and a good bit of insight we can probably deal with them and fix them.

"The folks in this room today represent the different services. Those different services have different missions, have different priorities, a different perspective on the world and, in some regard, a different approach to getting the basic job done. But we're all working for exactly the same thing—that is, to keep the people of this country free and safe. Nothing else matters. That is our sole mission—we need to keep our sights on that.

"The job of the service MARS chiefs is to insure the cooperation and coordination among the services, while not undermining the basic requirements of the service they support. That means there has to be operational compromises, there can never be compromises in integrity and basic

management. None of the services can accomplish its mission without effective, reliable C3: command, control and communications. For the foreseeable future that capability has to absolutely include MARS. There is not enough money, time, people, equipment or technology available in this country now or for the next 10 or 15 years to accomplish our communications mission without MARS. But therein lies the problem. I have had over 20 years experience dealing with MARS in dealing with Air Force communications problems. I have been as deeply immersed in analyzing that situation, probably, as about anybody. So I understand it. Most people don't. Most military and civilian leaders don't understand MARS. We're going through a very, very turbulent time right now with budget cuts.

"Today I want to discuss three things: some background on what's going on and why; why you see the turbulence in the military that you're seeing now; the specific challenge that is facing us in the MARS programs. Then a strategy for dealing with that challenge.

"Let's look at the last one thousand days. We've had an intense operational tempo. We have been under stress. Just before the 1,000 days we had the Panama situation, Just Cause, Hurricane Hugo, and the Loma Prieta earthquake in California. In the 1,000 days we had Desert Shield, Desert Storm, Fiery Vigil, Sea Angel in the Pacific, Provide Comfort. Then in '92 Provide Hope, Desert Calm, and typhoons all over the Pacific. The Los Angeles riots, the Southern Watch mission, Hurricane Andrew and Typhoon Iniki. Then in '93 the UN effort Provide Promise, Restore Hope, special counter-drug operations and the Haitian sea-immigration crisis. All these things coming at once. The past 1,000 days have been the busiest and most demanding times in the US military in recent history. It has been done at a time of dramatically shrinking budgets and massive reorganization. The only way we have been able to do it is by harsh duty schedules and intense deployment commitment. It

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has just about broken the back of our military.

"Where has MARS been through all this? MARS has been right in the thick of it. No let-up for you just as there has been no let-up for us. Taking the Army as an example, last year Army MARS affiliates contributed over a million man-hours to their program. That represents 500 man-years of work. At military specialists' pay, that would have cost the Army over 11 million dollars. What other government activity that you know about can provide so much service at so little cost? I can't think of a single one. From the standpoint of the American taxpayer, MARS is one of the best bargains in the entire country. We need to let the taxpayers know that.

"What about the mission effectiveness of MARS? General James Cassidy, former commander of Air Force Communications Command put it in the best way I have heard; 'MARS is the indispensable communications system. MARS is too reliable to be left out of contingency plans.' That message got through to many Air Force commanders. It was a powerful thought and it represented a commitment to the initiative that was taken in 1984 by the three service MARS chiefs that includes the MARS system in the Defense Communications Agency Master Contingency plan.

"But there is still a problem. This is the best description of the problem I can give you. Bob Sutton, Chief Army MARS, had an article on the MARS mission in the May 1993 issue of *Worldradio*. I think that article should be mandatory reading for everybody in all the three MARS service programs, and for everybody involved in communications planning. The bottom line is this: While performing our mission, we are apparently invisible to the public, and apparently even to some of our own members. What a profound thought, but I believe it's true. We do our job so well, our customers don't realize we are doing the job. You need to read that article if you haven't.

"We have a two-edged problem; customers who don't fully realize their own needs, and who are oblivious to

our capability; at the same time, there is a necessary ethic that says we don't horn in where we're not invited. We're all dressed up to go to the party, but nobody sends us an invitation. I don't advocate crashing parties, but we should become such desirable guests that no one would have a party without making sure that we could come. To put that in operational language, it means that no base plan, no intermediate command plan, no contingency operations plan ever again published by any agency of the DOD unless it includes an annex on MARS and includes MARS for contingency and exercise support. We've got to find a way to do that.

"What do I want you to do? It depends on where you are in the MARS system. I think the MARS chiefs are on the correct track. I wouldn't ask them to change a thing. But it is time to rethink our mission. It may be time to reinvent the process we use for providing the service. It appears to me that our MARS systems are structured precisely to meet the world threat, the national need of the 1970s and 1980s, perhaps not the challenges of the 21st century.

"I'd like you to think for a minute about Swiss watches. A generation ago, all of us wanted an expensive

Swiss watch. In just 1,000 days, the entire Swiss watch industry was destroyed, with perhaps the few makers of watches that were basically jewelry. By what? A simple thing like a quartz watch. The Swiss lost five hundred years of commitment and investment in making mechanical watches. They were so focused on their product that they forgot the customer. Another example is the carburetor being replaced by fuel injection.

"I ask all of you in leadership positions in the MARS system to look at yourselves not just as communications specialists, but as sales people and as consultants. Only a part of your job is handling communications. The harder part of it is finding customers for your service and convincing them to trust you to do it.

"If we're going to get ready for the next century, we're going to have to think 'out of the box,' to come up with original solutions and find practical ways of implementing them. I talked about the past 1,000 days, but think of 1,000 days into the future. It only took about 1,000 days to take the atomic bomb theory on paper and turn that into a horrible weapon carried on an airplane. What can you and I do for the MARS program over the next

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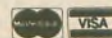
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1,000 days? What can be done and, more importantly, what ought to be done?

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they need. People in sales generally agree that the customer probably doesn't know what he needs. The customer knows what he wants, but he doesn't necessarily know what he needs. There is a difference. Buyers thought they wanted carburetors. But what they really needed was an effi-

cient system for putting air and fuel into their engine.

"During these next 1,000 days, let us concentrate on customer education. Put as much effort into sales as you do into production. The future of MARS as a viable system depends greatly on how you handle the next 1,000 days." WR

DX Dinner in Dayton

JOHN MINKE, N6JM

Very popular at the Dayton Hamvention is the DX Dinner. Sponsored by the Southwest Ohio DX Association for the past eight years, the dinner attracted in excess of 500 DXers, and was held at the Stouffer Center Plaza Hotel.

We were at the Hamvention with the *Worldradio* group and as DX Editor, we took this one in. Anyway, the deserving DXers were already there at the cocktail hour for the usual "eyeball QSOs." We met our "cousin" Johnny, W0JM, of the Kansas City DX Club, and within a minute or two stumbled into Jody, VP5JM, another "cousin."

There was the traditional DXCC countdown where the deserving DXers all stand up; as the DXCC totals are announced DXers then sit down when their totals are reached. There was also a request that all DXers who had reached the top of the Honor Roll stand (DXers who have worked and confirmed every one of the countries on the DXCC Countries List, not counting deletions). There were many! Then the countdown began. We sat down when the count passed 312 and it seemed most of the crowd was still

standing. The remaining DXer still standing was Ted Gillette, W6HX, of the Southern California DX Club, with 377 DXCC countries worked. The last to sit down was Howie, W2AGW, of the North Jersey DX Association with a total of 378 DXCC countries worked, which includes deletions.

Ralph Fedor, K0IR, one of the operators from the VP8SSI South Sandwich Islands DXpedition, reported on the DXpedition to Peter I Island, scheduled for 1 February 1994. They hope to be successful and will need help to get it going. They plan for a stay of 16 days on the island.

The guest speakers for the evening were none other than the Hensons, Carl, WB4ZNH, and Martha, WN4FVU. Carl described their operations from Ethiopia and Eritrea of last October. Carl and Martha had been going on DXpeditions for almost 20 years. They get much of their news from the Carter Center in Atlanta regarding these countries and were interested in finding out more about Eritrea, now independent of Ethiopia, but not on the DXCC list as such.

They tried to go to Eritrea the previous year, but this didn't work out due to travel arrangements. They tried again last October and aimed to include Ethiopia. This time their travel arrangements were successful.

Using the calls of ET3BC (operated by Carl) and ET3YL (operated by Martha) they first operated from the Hilton in Addis Ababa, which cost them \$125 per night. The manager said they couldn't install any antennas on the roof, but they could install them on their balcony. Carl said the manager had a "hissy fit" the next morning when he saw the dipoles extending down and away from the balcony. They then found a better place to operate

from, the Waybe Shabelle Hotel at \$35 per night.

The next stop was Eritrea and they were required to pay an international departure tax. They arrived at the Nyala Hotel in Asmara and set up a TH3 Jr. Carl said they requested specific frequencies rather than just bands for operating. Two operating positions were used, one for Martha and the other for Carl.

Following the presentation by the Hensons, the SWODXA (Southwest Ohio DX Association) awarded a plaque for the successful VP8SSI DXpedition to the South Sandwich Islands. Accepting the award was Tony, WB4JQS, who was one of the team members. Tony reported that it had taken three and a half years to put together the DXpedition and they received many donations of \$5, \$10, \$15 and as much as \$100 from DXers totaling in excess of \$114,000.

Carl and Martha were also presented with a plaque for DXpedition of the Year. The plaque was accepted by Martha and they acknowledged Lloyd, W6KG, and Iris, W6YL, Colvin, for setting the theme for these DXpeditions. Lloyd and Iris were present at the dinner.

Steve Bolia, N8BJQ, was acknowledged as the SWODXA DXer of the Year.

The final presentation was a plaque to the Southwest Ohio DX Association from Rama, YV5EED. Accepting the plaque was Bob Esquire, W9UI, president.

The conclusion of the banquet didn't mean the end of the evening. Several hospitality suites were opened for visiting DXers. These included the North Jersey DX Association, the Southwest Ohio DX Association, the Western New York DX Association and the Kansas City DX Club. WR

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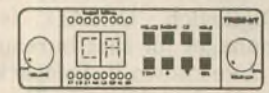
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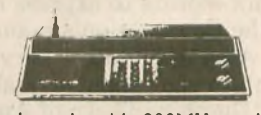


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OFF THE AIR

Congratulations

I'd like to send a big "Congrats" to Deborah Riehl, KI7GC/AE, on her SAR involvement and her recent find of a nine-year-old girl (see "Rescue Epics — a weekend to Remember," Feb. '93).

I am the president of the Northeast Mobile Search and Rescue team in upper New York state, and I'm trying to encourage my people to participate in Amateur Radio for our search efforts as well as for personal enjoyment.

A year ago we had no one licensed, now we have seven, and hopefully six more by March. It's a great hobby that can also be used in other areas; as Deb put it so well, "This sort of rescue is enough to keep a rescuer going for another decade." Bravo to Deb and her team!

JAMES PICKETT, N2RXP
Mechanicville, NY

"Gentlemen's" bands

The following is a reprint of one amateur's letter to the FCC, 22 December 1992.

Dear commissioners:

I am writing to express my support for the Commission's management of the Amateur Radio Service. Please maintain your stand of quality against the "Dumbing Down of America" lobby who would denigrate this service into another Citizen's Band out of their own laziness.

There is no enduring human institution that does not acknowledge the accomplishments of its members with privileges of rank. The incentive licensing system assures the integrity and growth of the service as a whole, and promotes both the technical and fraternal aspects as well.

While I am an avid CW operator myself, I have no problem with the reduction or elimination of code requirements due to technical obsolescence. It is sad that those who stubbornly condemn it without a try will

never know the fun it can be, but I suppose this is true of any path in life.

However, while I am truly an "amateur" and have no vocational training or involvement in radio work, I maintain that the current written exams are far too easy in light of the rapidly advancing technical status of Amateur Radio — a point attested to by the growing number of incompetent hams on the air. I encourage you to upgrade these requirements, or at the very least, hold your ground.

In an ideal society, amateurs could agree upon the sharing of band space. However, in our real world, regulated subbands are necessary not only to promote incentive licensing but to assure effective communications. Sadly, open bands governed only by "gentlemen's agreements" would quickly become chaos — for want of gentlemen. At the very least, "digital" vs. "analog" subbands are essential. Witness the "gentlemen" operating 20M networks, or the 40M digital segment or, better said, what's left of it.

ROBERT KINNER, AA8FH
Hamilton, OH

For Western consumption only

In response to the October 1992 article, "QSL Chernobyl," I'd like to clarify that "QSL Chernobyl" is a private enterprise of Mr. V. Pristavko, UC2AAA. The bureau had not been endorsed in any way and is not representing interests of the amateurs of Belarus (Byelorussia) or any other republics. It has no authorization to receive and send cards. The only official QSL bureau of Belarus, UC QSL Bureau, is P.O. Box 469, Minsk-50, 220050, Belarus, CIS. Victor Digilevich, UC2AO, is the official manager for that bureau.

I've known V. Pristavko, UC2AAA, for the last 15 years. For that reason it was shocking to find, along with factual information, some apparent omissions and outright lies. Mr. Pristavko had never been in charge of Belarus-

sian QSL bureau, for the simple reason that there never was such a position. There was no boss, just a group of volunteer-hams, sacrificing their own time for common cause and benefit. Some of these people are Victor, UC2AO (he contributed the most effort and time); Roman, UC2ABC; and Gena, UC2ADX. I myself, from 1985 through 1990, worked at the bureau. V. Pristavko had been affiliated with the bureau for several months in 1985, then voluntarily removed himself from work thereafter, and as a result his membership in the QSL bureau was revoked.

For several years I was a member of the same radio club with Mr. Pristavko, first UK2AAG (now UC1AWG). He was asked to leave that club.

I have great respect for Mr. Pristavko; as a biologist he made some contributions toward studies of the Chernobyl catastrophe. But in my view there are some ethical questions popping up:

1. In opening envelopes addressed to others, Mr. Pristavko violates their right to privacy.

2. Because "QSL Chernobyl" had declared itself a non-profit organization, it is questionable why it asks for green stamps via F6AML. An air-mail letter from Belarus to any country in the world only costs 6¢ in US currency.

3. Mr. Pristavko has published the address of his private P.O. Box (QSL Chernobyl) in the *International Callbook* as an official Belarus QSL bureau address. Neither the Federation of Radiosports of Belarus nor any ham of the Republic knew about this. No one even knew about the existence of the so-called "QSL Chernobyl" bureau back home—the whole thing was seemingly created "for Western consumption only."

Mr. Pristavko, UC2AAA, has every right to provide a valuable service to the amateur community, but he *cannot* act for the official QSL bureau, nor can he take QSL cards of others and peruse them without their knowledge. In my own opinion, he has the right to make all the money in the world, but he must be honest about how he does his *business*.

ANDY STCHISLENOK, RC2AR/
AA3BG
Brooklyn, NY

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SPECIAL EVENTS

Experimental aircraft fly-in

The Fox Cities ARC will operate W9ZL 29 July through 1 August from the Experimental Aircraft Association Fly-In and Convention in Oshkosh.

Operation will be in the General phone portions of the HF bands, as well as RTTY and CW as conditions permit from 8 a.m. to 5 p.m. daily.

For special certificate, send QSL and SASE to Wayne Pennings, WD9FLJ, 913 N. Mason, Appleton, WI 54914.

Mt. Davis highest point

The Somerset County ARC will operate NJ3T 7-8 August from the highest point in Pennsylvania at Mt. Davis.

Operations will be in the lower 50 kHz of the General Class phone bands of 10 to 80M as conditions allow.

For certificate, send QSL and SASE to NJ3T, Jim Crowley, RD 5 Box 223A, Somerset, PA 15501.

9th annual Trainfest

The Northeastern South Dakota Hams will operate a special event station 14-15 August to commemorate the ninth annual Trainfest in Milbank.

Operation will be in the 10, 40, 80M General

phone subbands and the Novice 10M subband from 1400Z to 0200Z.

For certificate, send a QSL and a 9X12 SASE to NØJUO, P.O. Box 189, Wilmot, SD 57279-0189.

Birthday celebrations

The Bergen ARA will operate WA2QWM 21-22 August from the *USS Ling*, to commemorate the BARA club's 30th anniversary, the 50th birthday of the submarine and the 300th birthday of the city of Hackensack.

Operation will be in the General phone 75 to 15M and Novice/Tech 10M phone and packet on 145.09 locally from 1400Z 21 August to 1600Z 22 August.

For certificate, send QSL and 9X12 SASE to Mike Surmick, WA2QWM, 511 VanBinsberger Blvd., Paramus, NJ 07652.

Antique aircraft fly-in

The Clark County ARC will operate a special event station 21-22 August to help the Northwest Antique Aircraft Club of Vancouver celebrate the 34th annual fly-in at Evergreen flying field.

Operation will be in the lower portion of the General phone bands; 40, 20, 15M with possible operation in the 10M Novice band and 75M band at night.

For certificate, send SASE to CCARC, P.O. Box 1424, Vancouver, WA 98668.

Marin ARC 60th anniversary

The Marin ARC will operate W6SG 21-22 August from its clubhouse locations at Hamilton AFB and the San Rafael Red Cross to commemorate the 60th anniversary of the club.

Activities are planned for all bands, all modes, including Novice subbands. Look at the lower portion of each subband.

For certificate, send QSL and SASE to MARC, P.O. Box 151231, San Rafael, CA 94915-1231.

Mt. Clemens 175 years old

The L'Anse Creuse ARC will operate WA8BIJ 28-29 August to commemorate the 175th anniversary of the city of Mt. Clemens.

Operation will be in the lower portion of the General bands of 80-10M and on or about 28.425 MHz of the Novice band, conditions permitting, from 1300Z 28 August to 2100Z 29 August.

For certificate, send QSL and SASE to Allan Koch, KA8JUN, 23682 Kim Dr., Clinton Twp., MI 48035. No certificates will be sent without SASE.

Midwest Threshers reunion

The Mt. Pleasant Iowa ARC will operate WØMME 1-6 September at the Midwest Old Threshers Reunion.

Operation will be on 3.970, 7.243, 14.271, 147.39 (+) and 444.950 (+) repeaters.

For QSL, send SASE to Dave Schneider, WDØENR, RR3, Box 307A, Mt. Pleasant, IA 52641.



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Product Review

M² V/UHF antennas

RICH ARLAND, K7YHA

After working the Low Earth Orbit (LEO) satellites for almost two years, I decided it was time to assemble the necessary bits and pieces for an OSCAR station capable of accessing the high orbit birds. In addition, with proper rotor automation (interfaced with the *TrakSat* software) these antennas can be used for the LEO PacSats as well as SAREX and MIR contacts.

A phone call to Mike Staal, K6MYC, at M² Enterprises had a 436-CP30 (30 elements on 70cm) and a 2M-CP14 (14 elements on 2M) on order. Shipping was delayed for a few weeks due to the tremendous backlog of orders. The two antennas arrived in early January (the start of our incessant bad weather). Rick Rinehimer, KA3QKI, one of the local SATOPs, was interested in helping assemble the antennas. Assembly time was approximately 6.5 hours for both antennas, which allowed time for careful measurement of each element.

After assembling the 30-element cross-polarized 70cm antenna, it became quite evident that the 14-element 2M antenna would have to wait until we had good weather so we could assemble it outside. Due to the time involved (to do the job properly) and the physical size of the 2M antenna, outside assembly was a must. Almost one month elapsed between the assembly of the two antennas. One bright Saturday in May, Rick and I once again joined forces, accompanied by Dave Carey, N3PBV, my next door neighbor, who recently passed his Tech-plus test. Total time from start to finish to build the 2M cross-polarized antenna: two hours.

Although M² provided weatherproof F-connector nuts to ensure no water gets into the phasing lines and balun stubs, I decided to augment this with liberal amounts of CoaxSeal. Since any water that gets into the coax on these antennas will degrade performance, I wanted to leave nothing to chance. All F-connectors as well as the driven element feed N-connectors were sealed in this manner prior to erecting the antennas.

Boom length of the 2M antenna is 10 feet, six inches. The 70cm beam is only nine feet, nine inches in overall length. This combination makes for a very compact OSCAR satellite antenna system that has a relatively small

environmental impact (translation: "eyesore factor"). M² manufactures a 22-element cross-polarized 2M OSCAR antenna but it is almost double the length of the 14-element version. It was an easy tradeoff for me. I have neighbors (who already think I'm nuts) and I need to keep these folks on my side. The smaller 2M antenna was just the ticket for my particular OSCAR installation.

Antenna assembly went smoothly. The two antennas are robust to say the very least. These antennas are made to withstand repeated abuse from nature. One word of caution at this point: Take your time and measure the elements carefully. Do not hurry your work, as this will affect the overall performance of the antennas. The construction of both antennas was very straightforward and no difficulties were encountered (constant rechecking of the element lengths on the UHF antenna not withstanding). It helps, however, to have several people working on an antenna, as this reduces fatigue and the chance of making a measurement error (one person cross-checks the measurements of the other).

The polyethylene "button" boom-to-element insulators fit very tightly onto the elements. Care should be taken to ensure that proper element centering is maintained as the antennas are assembled. Once the element keepers are installed on each side of the elements, the only way the element can be repositioned for centering is to cut off one of the keepers. Extra keepers and insulators are provided in case you make a mistake. The key words here are "measure carefully and take your time." The overall performance of the antennas depends upon proper element positioning. An added note of caution: the element length is *not* uniform as you progress down the boom. Read the instructions and look carefully at the drawings as you assemble the antennas.

The antennas are configured for either *right hand circular* or *left hand circular* polarization. *The polarization is not switchable once the antennas are constructed and the phasing lines are in place.* Since most OSCAR stations use RHCP, my antennas were configured in this manner. The lack of switching relays means that there will

be less attenuation (somewhere in the neighborhood of 1.5 to 2.5dB, depending upon how much loss the switching relays induce), resulting in an improved overall system noise figure. The loss of the ability to switch polarization is not a major problem, especially in light of the improved system noise performance.

The coaxial feedline (in my case, RG-213CQ) from the driven element out to about 10 feet is allowed to trail down behind the antenna. This makes for a rather untidy looking installation, but it is necessary to maintain a good VSWR and not to skew the antenna radiation pattern. The RG-213CQ is terminated into a length of Belden 9913 for the run into the shack. One word of caution here: Use good quality N-connectors and take your time installing them on the feedline. This will save you time and headaches after installation.

Placement of the antennas on the fiberglass (non-metallic) crossboom was done in an "X" fashion to discourage birds from landing on the antenna elements. The entire antenna and crossboom assembly was placed atop a 10 ft. length of mast, which was secured into a small tripod set up in my side yard for initial testing. VSWR was measured at 1.3:1 on 2M and 1.5:1 on 70cm. Eventually, these two antennas will be located on the rear main roof of my house. That will offer an almost unrestricted horizon-to-horizon look for the array.

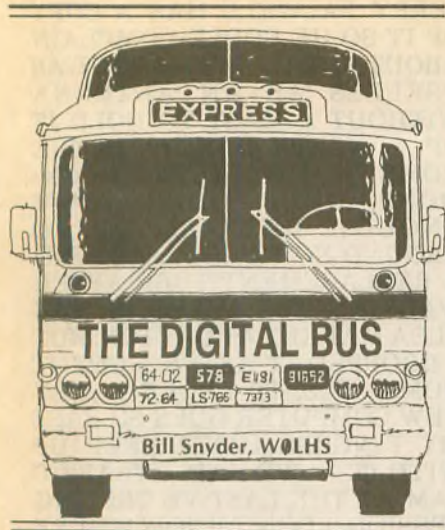
The set of M² OSCAR antennas performs very well. Their rugged design and construction means that these antennas are built to last and will be around for a very long time. Mike Staal (in case you're wondering) was the "M" in the old "KLM" antenna manufacturer. He has been around the V/UHF arenas for quite a while and knows how to manufacture an outstanding product. These two satellite antennas are a prime example of Mike's dedication to his craft and attention to detail.

Bottom line on the M² 436-CP30 and 2M-CP14 OSCAR antennas: great value for the money; robust construction; relatively easy to assemble. They work great! Priced at \$220 and \$149 (plus shipping) respectively, these two antennas provide the serious satellite operator a cost-effective way to become active on the high-orbit satellites or to add high gain, pointable arrays for the LEO PacSats, MIR and the shuttles. For further details or to order these antennas, contact Mike Staal, K6MVC, at M² Enterprises, 7560 N. Del Mar, Fresno, CA 93711; 209/432-8873. Don't forget to tell them that you saw it in *Worldradio* magazine. WR

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For years I have used the term "smoke test" for the first trial of an electronic piece of equipment. When you first plug in a home-made piece of gear, there's a little extra thrill that accompanies the effort. The thrill increases when the stuff works, and disappointment increases when it doesn't, and your heart sinks when smoke curls upward out of the gear.

However, after a piece of your sophisticated electronic gear has been laboring diligently for five years, and suddenly you see smoke issuing upward from it, that's really disappointment! That's what happened to me recently: An old faithful transceiver blew its cool—and mine, too!

The smoker was my satellite dual-band rig. Lately I have been using it to run my 2M BBS, because I borrowed the transceiver for the BBS and haywired it in my automobile "temporarily." I haven't been too active on the birds lately, so I let the OSCAR rig take over the BBS chores. I know it's overkill, but it's only temporary.

I don't know what caused the smoke to start, but at the time I was playing, yes, literally playing around on the keyboard of the BBS computer. I must have hit some combination of keys that did something wrong, because I was looking directly at the rig when the smoke began. I don't have those "little fingers" needed to work on today's equipment, so I hauled it to my friendly Watertown supplier of ham gear for repair. It was the power supply. The BBS rig is still "temporarily" in my car.

In my 60-plus years of ham radio, I've seen smoking rigs before, and I've also smelled smoke of various flavors. In addition, I've sniffed the pungent scent of "ozone" when electrical sparks blow holes in the air we breathe, and I've watched the plate of an RF amplifier tube get red, then white and, before I could hit the power

switch, burn a hole in the white-hot plate. Yes, I've seen about every combination of smoke-producing problems.

One particularly smokey evening happened a year ago when I finished putting a Heathkit 500W HF final together. I got the wiring done, put the cabinet covers on, laid the instruction book out so I could test it according to the manual, and turned it on for the "smoke test." It worked. It tuned up fine. Everything was okay. I was ready for a QSO, so I called CQ on CW. Before I could look for an answer the smoke started rising out of the pretty green box.

I pulled the plugs, grabbed the box and headed for the work bench. I removed the screws and lifted the cover off the cabinet. I touched the filament transformer carefully—it was hot enough to fry eggs, and the goo it generated was dripping into the bottom of the case. All I could think of was that the transformer must have had a shorted turn or two, because the filaments of the final were lit enough to make the amplifier work okay. I assessed the damage.

The filament transformer was one of the first things to go in when assembling the kit. After that, all kinds of stuff covered up access to the filament transformer; it was hidden in circuit boards and a maze of wires. I said to myself: "This ain't no job for old Bill." So I called the company and shipped the amplifier back to Heath for repair. It was gone for quite a while. I can imagine the fun someone had disassembling the whole thing, replacing the shorted transformer, and putting it together again. It was about like doing the kit all over from the word "go." When it came back it worked like a champ.

Later I sold the Heathkit to the late Paul Carufel, W0PQW, one of my old-time ham buddies. Paul, in his working years, was head of the radio com-

munication services for the North Dakota state government in Bismarck. He was a great person. In his career he had copied Japanese CW code for the FCC before WWII, worked on wartime radio communications in Alaska, and was a great CW operator. When he retired, he moved to a lake home about 50 miles from me, so we were able to CW back and forth on 20M groundwave. The first night we hooked up it was a three-way QSO with Jim Wayman, N0BCW, another old-timer who lived near Paul's home. We were batting the code around the circle for about a half hour when I had to leave.

The next day I got a phone call from Jim. "Hey," he said, "I've got one on Paul to tell you. After you left last night, Paul said to me: 'Old Bill has still got a really good CW "fist." He sends nearly perfect Morse code; he always did. His fist hasn't changed since those days right after the war when I was in Alaska and he and I would chew the rag on CW.' "

I smiled at what Paul had said about my bug sending ability. He and I had a lot of good CW QSOs back in the 1946 time frame.

Then Jim said, "You know, Bill, I almost hated to tell Paul you were using your Robot keyboard, but I did!"

Carufel never let me forget that incident. He reminded me of it every time we talked, either in person or on the air. "Using a keyboard," he would say, "that ain't legal for a CW operator." And then he smiled.

Other call signs

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something about the progression of those letters that makes it hard to say for some. The same for my last name. About one of every five want to spell it SYNDER instead of SNYDER.

I recently received a note from Rolan Cobb, W0HLS, in Sterling, Kansas. Rolan works for a pipeline company as an electronic technician on "all sorts of stuff, and more computers all the time (yuk). Enough to put me in the nut house." I can imagine his problems.

I wonder how many times Rolan has been called W0LHS?

Lost message

Allan Chapman, W6MEO, of Santa Rosa, California, mailed me a printout copy of a bulletin he sent to the officers and directors of the Northern California Packet Association. It was a request for a "pledge of reliability for the packet system." Although it was a hardcopy of the message Allen sent to me by the packet system, I did not receive it on the BBS system. At first I thought I found the reason—it was addressed to MD instead of ND, but down a few lines Allan had corrected the state mistake. I still have not received it on my BBS. Allan reasons it might be because of the message length, but I have received longer messages than the missing one.

Eugene Santoso of Dover, New Jersey, wants to get back into ham radio. He recalls the "old days" before World War II when ham "achievement was the mark of the man and not mega-buck gear. It was such a thrill to get homebrew gear to work." Yes, Eugene, I agree with you. The moments I remember best were those days of "smoke testing" a home-built transmitter and being able to draw RF sparks off the tank circuit with the smell of ozone, not smoke.

Eavesdroppings

REMEMER WHEN EVERYONE WAS PLAYING THOSE 'KNOCK KNOCK, WHOSE THERE' GAMES? AND THEN THERE WERE THOSE CHINESE PHILOSOPHER 'CONFUSIONS SAY' JOKES GOING AROUND ... I SAW A BOOK THE OTHER DAY THAT HAD 1700 LIMERICK POEMS IN IT AND ALL OF THEM WERE DIRTY. I WONDER IF

JERRY FALWELL HAS A COPY OF IT SO HE COULD COMPLAIN ABOUT SMUT ... IT'S ABOUT AS USELESS AS AN ANTENNA WITHOUT A MAST TO HOLD IT UP ... NORTH DAKOTA IS THE HOME OF THE BUFFALO COMMONS, ONLY THERE AIN'T ENOUGH BUFFALO TO GO AROUND NO MORE ... I FOUND A REPLACEMENT TUBE AFTER WALKING TEN MILES IN THE FLEA MARKET AT DAYTON, BUT I DROPPED IT AFTER I GOT IT HOME—YES, IT BROKE ... MY NEW COMPUTER GOES SO FAST MY FINGERS CAN'T KEEP UP WITH IT ... WE HAD A TRAFFIC JAM AT THE LAST VE TESTING SESSION, I DON'T KNOW WHERE THEY ALL CAME FROM ... DID YOU KNOW THAT THERE ARE 23,779 USA HAMS NAMED JOHN, 5,474 NAMED SMITH, BUT ONLY 147 NAMED JOHN SMITH AND 34 NAMED JACK SMITH? ... I GOT HIGH AT MY HIGH SCHOOL REUNION WHEN I SAW MY OLD GIRLFRIEND ALL ALONE ... WORKING DX IS THE RICH HAM'S POLO ... I GO BACK IN HAM RADIO TO FIVE METER DAYS ... THE ONLY DOOR PRIZE I EVER WON AT A HAM FEST IS A FIVE POUND ROLL OF SOLDER AND I'VE NEVER USED ANY OF IT, BUT IT'S SURE HANDY TO HAVE AROUND THE SHACK ... THE CD-ROM IS CERTAINLY NICE FOR LOOKING UP HAM ADDRESSES, I DON'T HAVE TO GET THE MAGNIFYING GLASS OUT TO READ THE SMALL PRINT IN THE CALL BOOK ... MY WIFE SAYS I CAN HAVE A NEW RIG THIS YEAR, IF SHE WINS THE LOTTERY ... HE'S THE ONLY GUY I KNOW WHO WORKS MOBILE CW FROM HIS TRACTOR ... I CAN SEND FAX MESSAGES FROM MY COMPUTER, BUT I CAN'T RECEIVE THEM ON PURPOSE ... 73 AND DON'T FORGET TO WATER YOUR GARDEN.

If you wish to communicate with me, my address is Bill Snyder, W0LHS, 1514 South 12th Street, Fargo, ND 58103. I can also be reached by packet at W0LHS @ W0LHS.#SEND.ND.USA.NA. I answer all packet mail, so if you don't hear from me, the system didn't work one way or the other. 73 and, as we say on CW, DIT DIT. WR

The dipole stated to the feedline, "This is for the birds."

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Jerry Wellman, WB7ULH

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What do you call it when 400 people from FEMA and other federal agencies as well as thousands of state, county and local government workers and thousands of volunteers gather? Throw in a simulated earthquake and you have Response '93.

It was billed as the largest ever FEMA orchestrated disaster exercise and involved, literally, the whole state of Utah. It lasted five days (7-11 June) and included all government services (federal, state, local) and most departments within government. Many volunteer groups were involved such as the Civil Air Patrol, MARS, county SAR teams, Rescue Dogs, American Red Cross and, of course, Amateur Radio.

Although many groups and agencies were enroute or in place prior to the official start at 8 a.m. Monday, as Response '93 unfolded the unexpected was the rule. During the next four days the simulated scenario provided some interesting insight to what might happen when the Earth begins to shake. During the exercise weather wasn't too cooperative and we experienced actual problems such as phone outages and continually busy cell phones.

Mountains of paper were collected and the final critique should make interesting reading. Many systems (such as the Emergency Broadcast System) were tested and problems were discovered. (That's why exercises are important! If you can detect and correct problems, or observe and prevent problems, you'll be in a better position to serve during the real thing.)

I'd like to pass along some of my observations. These reflect *only* my opinions. Having not attended any of the planning and strategy meetings or briefings, my comments are from the perspective of a participant.

Briefly, the county ARES assignment was to support the State of Utah EOC, Salt Lake County EOC, West Valley City EOC, Red Cross and provide links

The Salt Lake County ARES communications trailer at Camp Williams handled a variety of amateur and public safety frequencies including packet.



to many participating agencies. About 75 stations checked in and were assigned to the various functional nets. (Statewide about 150 Amateur Radio operators participated.)

To give you some perspective on my observations, I'll explain what my assignment was. It is important to realize that many, many people were on the Amateur Radio "team" and did an outstanding job. Others were assigned as hospital net control or shelter net control. Some shadowed mayors or the governor and key officials. Other counties had similar structures and involvement. It was a *team* effort!

My job, as ARES resource net control, was to make periodic announcements, assign and track Amateur Radio resources. Because it was a pretty basic function, I would operate a single operator station at Camp Williams on

emergency power for two days.

I anticipated, based on past experience, being able to listen in on other nets, monitor my scanner, catch up on some correspondence and perhaps finish a packet hookup. About two hours into operations, four Coast Guard officers came into the trailer with a surprise—stacks and stacks of messages. It got real busy, real quick, and stayed busy. Another station took over the resource net and for the rest of the day, I formulated and sent exercise messages. What follows are some of what I observed during my unexpected traffic handling.



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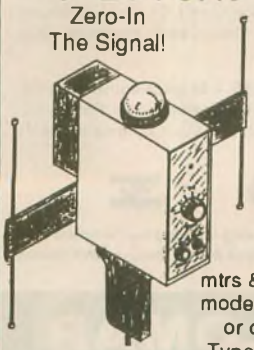
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FEMA multi-radio van and support vehicles cover HF, VHF, UHF, microwave and satellites. They can also link into radio and phone systems with 48 phone lines, repeaters, phone patches and computers. Operation can last up to a week on a 110-gallon fuel tank.

Plan on the unexpected—especially if you're in the field. It's realistic to assume someone will discover you as an Amateur Radio outlet and give you traffic to handle.

Locate net control away from the front lines. You can't do a good job as NCS if you have to handle traffic or make a lot of announcements.

Low power, good coax, matched antennas, beams and frequency selection help to minimize intermod and interference.

Some of the newer listen-to-the-whole-spectrum radios don't work very well in a high RF environment. Some operators had better luck with an older

radio (such as an IC-04) than with a brand new dualband hand-held. The new radios picked up police calls, pager calls and all sorts of stuff, often blocking valid signals or irritating the operator to the point of turning the radio off.

Plan for overload. One person cannot monitor several active frequencies for long periods of time. One operator per

frequency (with headsets) in high activity areas is a must.

Packet works better than voice for sending traffic—especially large volumes of traffic and lengthy lists of hard-to-spell items or names. For packet to be effective, however, you need experienced packet operators who know how the local network functions and how packet functions. Knowing how to use a BBS, a node or a digipeater is very important. Operators must be familiar with packet terms, TNC settings and how to troubleshoot this specialized mode of communication.

Have extra antennas, coax and adapters.

Work with your ARRL section manager to standardize message formats, packet settings and message numbering. Every message (formal and informal) needs a unique, traceable message number.

It is probably not possible to standardize packet software because of the different types of terminals (smart, dumb, DOS, UNIX, non-PC, etc.) in use. This makes it difficult to assign someone off the shelf to handle a packet station.



Claude Grant, KG7PJ, handles traffic during Response '93.

Plan on untrained operators or new operators and have some equipment lists, operating guides and maybe an Elmer to help get these people oriented.

Pre-plan generic responses (people and operating locations) and compile resource lists. Knowing who has what equipment (HF, UHF, VHF, packet, portable, etc.), who has certain capabilities, and where they are located is invaluable and saves time. Load your information into a common database program, but provide regular printouts to group leaders. Allow decision making at the lowest possible level. Delegate as much as possible.

Operate under the Incident Command System. Those groups and agen-

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State and federal agency representatives received traffic and coordinated emergency response when the state relocated its EOC to Camp Williams.

cies that used ICS seemed more organized. One major component of ICS is planning—don't overlook it.

Have "stress" supplies. Aspirin (or other pain medicine), snacks, soft drinks, a pillow, RS-232 adapters (9 to 25-pin), software on large and small floppy disks and audio adapters are among this category of preparation.

Headsets that cover both ears help filter out ambient noise of lots of people in closed spaces. Foot switches help when you need both hands to keep track of messages and logs.

Anticipate your people catching colds (I did), having sore throats, having cars that won't start or experiencing other problems. Be compassionate, we're all human!

Try to learn how other agencies and groups function. It helps to direct messages or seek responses when you know who the other players are and how they fit into the operation. Help each other. Be nice to each other and watch your temper, especially on the air.

Don't expect messages to be properly addressed or written clearly. Your communication skills come into play when you assist the process. Most of the messages we were given were "real"—being wordy, almost conversational and often with redundant content. It takes time and practice to put them into efficient form.

A lot of messages will be simply addressed to the jurisdiction's emergency operations center. The sender may need medicines, cranes, generators, supplies or services—and this is a key point—but doesn't care where the stuff comes from. It's almost impossible in the field to know who has all the resources. Yet, the EOC, or the coordination center, should know where resources are located. I think it's inefficient and unrealistic to expect, for example, an on-scene sheriff official to know exactly where a message is to be sent—other than to

the political jurisdiction's "EOC" or to a group's headquarters.

Briefings and other means of sharing information help reduce stress and increase efficiency. You could appoint a briefing person or an internal information position who would only collect information and make announcements. Several groups did very well, others did pretty bad. Your people want to know what's going on and will need information to do their jobs better. Regular and complete briefings satisfy our natural curiosity and dispel the notion that some are "entitled to know" and others are not.

Share critiques with other groups. Learn from other Amateur Radio groups and other response agencies. It doesn't matter who made the mistake as long as you learn from it. Some leaders think critiques make them look bad so they don't have them or share them. But groups actually look worse when they repeat the same mistakes because they didn't do a critique.

Being a media person I was disappointed that most Amateur Radio groups ignored having a public information person. In all the newspaper, radio and TV coverage there was little mention (if at all) about Amateur Radio—yet there was a volunteer operator with just about every key official, agency or participating group. We do ourselves a disservice when we (and especially our ARRL section officials) don't sound our own horn.

Lots of neat things were done and done right. My observations account for those rough spots along a mighty impressive response effort. A lot of people deserve a lot of credit for their hard work on behalf of Amateur Radio. Two who spent a lot of time representing Amateur Radio during State of Utah and FEMA planning sessions were John Parken, KA7GZH, and Richard Evans, N7PCE.

Until next month, 73 from Salt Lake City.

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DX WORLD

John F.W. Minke III, N6JM

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W100N

The following DXers were recently issued *Worldradio's* Worked 100 Nations Award:

- 455. Phil Barrett, VE7MJY, 28 May '93
- 456. Donald McKay, VE7SKB, 28 May '93
- 457. Joe Hintz, WZ8U, 28 May '93
- 458. Jimmie Felts, W6RQO, 28 May '93

It is interesting to note that the first two of the W100N applicants are from British Columbia. Bruce is from southern B.C., whereas Phil is much further north at 70 Mile House.

Spratly Islands (1S)

The DXpedition to Spratly Islands came on as expected signing with 9M0S. The group has been active on several bands and was involved with the recent WPX bash the end of May. QSL requests for this one go via W4FRU.

Peter I Island (3Y)

The 1994 DXpedition to Peter I Island has been formally announced with an expected start date of 1 February 1994. The DXpedition team will consist of 10 operators and will spend some 16 days on the island running four HF stations on all bands, CW, SSB and RTTY.

The DXpedition team will consist of a core group of the VP8SSI South Sandwich Islands operators. The DXpedition is in need of funds prior to the operation. Please send your contribution to Jerry Branson, AA6BB, 93787 Dorsey Lane, Junction City, OR97449. All funds will be returned if the DXpedition does not take place. Jerry will also be the QSL manager for all SSB contacts. Joanie, KA6V, will handle QSL requests for the CW and RTTY contacts.

Qatar (A7)

It has been reported that Slim has been busy pirating the call of A71CW on 15M. If you worked A71CW around 1300 UTC on 26 March it would have been a bogus contact. Other contacts with this station most likely are genuine and he has been quite active. Look

for this one on 20M between 14.007 and 14.022 MHz after 2300 UTC, although he has been reported earlier than that.

WARC band activity from A71CW includes all three bands: 10.101 to 10.103 MHz around 2345 to 0145 UTC; 18.074 to 18.079 MHz around 2300 UTC; and 24.893 to 24.900 MHz around 2315 UTC.

Howland Island (AH1A)

John Peters, K1ER, informs us that the team members of the 1993 DXpedition to Howland Island have finally agreed on the QSL design. Apple Computer of Europe is sponsoring the card printing and the cards will be printed in Belgium. The color photo QSL cards should start going through the mail this September.

Mozambique (C9)

The prefix for Mozambique (C9) has been divided into call areas as follows:

- C91 Maputo
- C92 Gaza—Inhambane provinces
- C93 Sosala—Manica provinces
- C94 Nampula—Zambesia provinces
- C95 Tete—Niasa provinces
- C96 Cabo—Delgado provinces
- C97 VHF
- C98 VHF
- C99 VHF
- C90 Sonderrufzeichen

The above information was taken from *Beam*, a German language Amateur Radio publication.

Fairly active from Maputo has been C91J, formerly C9RJJ, operated by John Janssen. John can be found on 20M on the low end. He was busy with the W6s the early part of June on 14.014 MHz around 0500 UTC.

On 15M C91J was found between 21.014 and 21.018 MHz between 1700 and 1800 UTC and on 10M between 28.435 and 28.480 MHz after 1530 UTC. John is also active in the DX contests and sends his logs regularly to his QSL manager, W8GIO. Work this one and your confirmation will be in hand before the dust settles.

During April and May there was a

C9LCK/P active on the bands. This was Franco, I4LCK, operating from a few of the offshore islands for the IOTA bunch.

Eritrea (E35X)

Unfortunately, this was received at the last minute (less than a week prior to the event). Erling Wiig, LA6VM, teamed up a Norwegian DXpedition to Asmara for an operation from 31 May to 9 June. The team members included Erling, LA6VM; Just Qvigstad, LA9DL; Halvard Eriksen, LA7XK/KK6ZS; Einar Enderud, LA1EE; and Jim Fujiwara, JF1IST. The group came on the air as planned, signing E35X to the delight of the deserving. QSL requests should be sent via Ruth Tollefsen, LA6ZH, P.O. Box 17, N-0617 Oslo, Norway.

The DXpedition program included an Amateur Radio introductory seminar, the setup of a club station and on-the-air operation. Engineers, technicians and students selected by the Telecommunications Authority of Eritrea were to attend.

Eritrea was deleted as a separate DXCC country on 14 November 1962 after it had been annexed by Ethiopia as its 14th province. Amateur Radio was banned for many years. After the recent referendum, Eritrea has been recognized as an independent state, with 24 May 1993 as its formal Declaration of Independence day. Eritrea will soon reappear on the DXCC Countries List.

Papua New Guinea (P29)

Prior to mid-September 1975 this one consisted of two separate DXCC countries, Territory of New Guinea and Papua Territory, with the latter the most difficult to work. Both sported the Australian territory prefix of VK9 almost up to the time of their independence. Many years ago, prior to the independence, a staff member of *Worldradio* went to New Guinea to do a documentary and picked up a VK9 call. I believe it was VK9AN.

Twenty meters is a good place to look for a contact from Papua New Guinea, as is indicated by the following:

P29AI	14.258 MHz	1130 UTC
P29DK	14.007 MHz	1130 UTC
P29JA	14.187 MHz	1215 UTC
P29KH	14.033 MHz	1100 UTC
P29NB	14.235 MHz	1200 UTC
P29SC	14.226 MHz	1230 UTC

Other band activity included P29PL on 7.004 MHz at 1030 UTC, P29JA between 10.102 and 10.105 MHz from 1200 UTC, and P29VTL on 18.142 MHz at 1315 UTC.

On RTTY P29JA was worked near 14.088 MHz at 1300 UTC the end of May.

Micronesia (V63)

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new amateur who is reported to have upgraded to Amateur Extra from nothing in 90 days. She is a Peace Corps volunteer doing teacher training on Woleai Atoll (OC-132) and should be there for about two years.

Other activity from Micronesia includes that of V63DJ who has been found on 20M often. Look for him between 14.235 and 14.265 MHz between 0500 and and 1200 UTC. He was also reported on 15M near 21.254 MHz around 2230 UTC working into Ontario.

On 15M we also have V63OM worked near 21.256 MHz around 1230 UTC.

Mellish Reef DXpedition (VK9)

Continuing from last month's information, the confirmed dates of operation for the 1993 DXpedition to Mellish Reef are 19 through 28 September. Eight operators will participate and spend 10 days on the reef. The team members will include: VK4CRR, VK2BJL, VK2BEX, P29DX, V73C, WA4DAN, K5VT and G3WGV. Donations are still being sought. Refer to last month's column for the address.

IOTA

Tom Le Clerc, WB1CBY/VE8, has been spending several months up in the Northwest Territories. He had planned for some IOTA activity from Richards Island, but it looks like he will not be able to get to the island. He is planning to visit Victoria Island, (NA-006), 8 July through 12 August and then over to Bray Island, one of the islands in the Fox Basin, (NA-174), 12 August through 16 September. The following is a selection of what has appeared on the bands:

EU-048 Bretagne (Morbihan) Region		
TM5BI	14.260 MHz	0530 UTC
EU-052 Ionian Islands		
SV8JE	14.260 MHz	0430 UTC
SV8ZC	14.033 MHz	0530 UTC
EU-081 St. Marcouf Island		
TM6SM	14.259 MHz	0600 UTC
AS-042 Severnaya Zemlya		
4K4/RA3ST	14.009 MHz	0030 UTC
NA-006 Victoria Island		
VE8KM	14.260 MHz	0200 UTC
NA-014 Campobello Island		
VE1ST	14.004 MHz	0115 UTC
NA-038 La Madeleine Islands		
KA2PHQ/VE2	14.260 MHz	0400 UTC
NA-046 Nantucket Island		
KA1USLP	21.260 MHz	1830 UTC
NA-051 Queen Charlotte Islands		
VE7EGK	14.260 MHz	0430 UTC
NA-091 Denman Island		
VE7DYR	14.260 MHz	0500 UTC
Hornby Island		
VE7BPL	14.260 MHz	0500 UTC
NA-161 Pleasant Island		
KL7TG	14.258 MHz	0545 UTC
NA-179 Guadalupe Island		
XF1G	14.260 MHz	2130 UTC
NA-181 Estevan Group		
VB7DP/7	14.260 MHz	0500 UTC
NA-??? Isla Roqueta		
XF3/XE1L	14.260 MHz	0045 UTC

OC-034 New Guinea		
P29AI	14.260 MHz	0615 UTC
OC-059 Kosrae Island		
V63DJ	14.260 MHz	0500 UTC
OC-146 Sulawesi Island		
YB8AUD	14.235 MHz	0715 UTC
OC-183 Wedge Island		
VI6BAT	14.257 MHz	0530 UTC
OC-185 East Bremer Island		
VK8TI	14.260 MHz	0800 UTC

Look for YW5LT, a commemorative call to celebrate the anniversary of the Venezuelan Navy, from 15 to 18 July. They will be operating from Los Testigos Island (SA-059) and will be on all bands 10 through 160M, CW and SSB.

Don't forget the IOTA Contest 24 and 25 July. Robert Ferrero, Jr., WB6RZK, will be operating from the Yasawa group

(OC-156).

Nicholson Island, recently activated by Paul MacDougall, VE8YQ, has received an IOTA reference number of NA-183. This is part of the Northwest Territories (Inuvik Region) East group of islands.

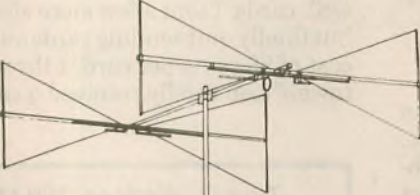
If you played around with those Europeans during Field Day the first weekend in June and worked OH1MDR/P you grabbed EU-096.

DXCC credits

The world famous DXCC desk has received documentation and has approved the following for DXCC credit beginning at the following operations dates:

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Operates as a dipole
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•Add-on kit for 17 and 12 meters
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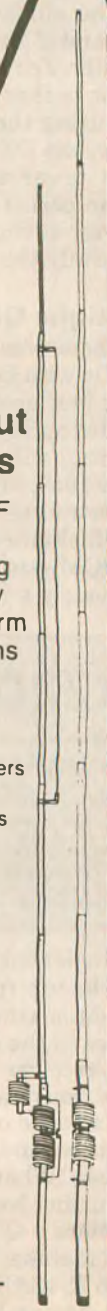
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5X1B	12 March 1992
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5X1XT	26 April 1993
60/G3K0X	14 Dec. 1992
9G1AA	24 March 1993
S21ZK	06 March 1993
T5CB	31 Jan. 1993
T5/K30QF	21 Feb. 1993
T5/KF6BL	26 Dec. 1992
T53UN	20 March 1992
T55FO	6 Jan. 1993
Y19CW	1 July 1992

DXCC backlog

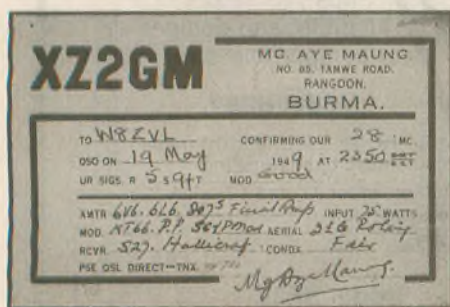
The backlog of unprocessed DXCC applications as of the end of May was down to 278, (48,803 QSL cards). The backlog as of the end of April was at 1,140, so the end is in sight. Last October the backlog was 3,803 applications, which included some 268,729 QSL cards.

The applications being sent out at the end of May were received 5.9 weeks earlier. Ten applications were received prior to that time.

During the first five months of this year, the DXCC desk received 22 percent fewer applications than for the same period last year. QSL cards received during those periods were essentially the same.

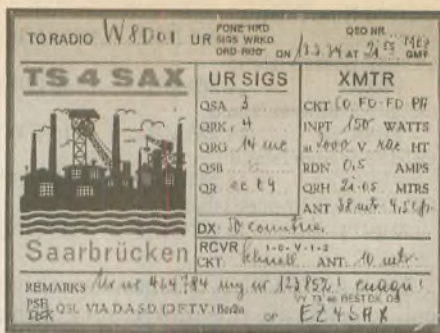
Antique QSLs

There was once upon a time when QSOs with Burma were commonplace. Our first dream time QSL card is submitted by Ray Balch, K6VX, for a contact he made with XZ2GM in Rangoon on 19 May 1949. Ray was signing W8ZVL out of Detroit using the 10M band on good old-fashioned AM. The operator at XZ2GM was given as Mg. Aye Maung, obviously a local and not a European.



As indicated on the card the transmitter lineup (please don't say working conditions) included a 6V6, 6L6 and 807 tubes in the final for an input of 75W. His receiver was a Hallicrafters S27. Now, you new novice DXers, an 807 was not a bottle of beer, but rather a vacuum tube. And, some smart aleck is going to ask, "What is a vacuum tube?"

Further back in the vacuum tube era we have a QSL card submitted by Harold Mahlke, W8QG, for a contact made with TS4SAX on 13 March 1934. Harold was signing W8DOI in those days. The card indicated Saarbrücken, which was



later overrun by Hitler's Nazi troops. The operator was given as EZ4SAX.

We ran the TS4SAX back in the March 1983 issue and the operator is still there with the present call of DL8AX.

QSL cards from Cuba

Len Webre, N7VVD, wrote to *Worldradio* regarding the frustration of obtaining a QSL card from Cuba. On 23 March 1992 he contacted CL2PL on 40M and soon after sent a QSL card. Len says, "Much to my dismay, weeks, then months went by with no reply. Finally I gave up. Many more QSOs were made with hams in Cuba, and all asked for QSL cards. I sent a few more since then, but finally quit sending cards out. At the cost of 95 cents per card, I threw in the towel." Len finally received a card from

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CL2PL with a note on the card that it was received 8 January 1993!

Evidently, Len, you are new to the DXing game. Never expect an immediate response to a QSL card sent direct, as there are many circumstances that interplay here. For one thing Cuba and the United States do not have direct mail arrangements. Your card to Cuba had to be routed through some other country and it depends which country your post office sent it to.

The DX operator at the other end may not run down to the post office to mail his QSL card back to you. He may even send it via the bureau. Sometimes you have to send a follow-up card, as often the DX operator never receives the first card. And, unfortunately, with some DX operators the exchange of QSL cards is a one-way street. They are usually the ones that make it a point to send their mailing address at the beginning of each contact.

QSL cards from Pitcairn

Ralph Cabanillas, W6IL, informs us that Dr. Charles Mert Moser, W6HS, died on 19 April. Mert had been the QSL manager for the Christians, Tom, VR6TC, Betty, VR6YL, and their daughter, Raelene, VR6RC. Effective immediately, George Stevens, WD6GUD, will assume the QSL responsibilities except for Raelene, VR6RC. Raelene prefers direct QSL cards to P.O. Box 1, Pitcairn Island, South Pacific via New Zealand.

However, don't expect to work Raelene on Pitcairn for a while, as she has left for a visit to the United States. She may even enter college here, so she may not return to Pitcairn Island. She will be staying with Howard Phelps, WA6TUI, and his family in Sacramento, California.

QSL managers

The subject of profit motive of certain QSL managers has been under fire recently, such as the case of one person overseas who had been steaming open envelopes, processing the QSL requests, keeping the funds, and resealing the envelope, marking it "return" and dumping it in the mails.

We just received our FK5C QSL for contacts made last February via QSL manager Yves Verbeke, F6CYV. Our request included three IRCs. With my card were included the return of two IRCs. Obviously, the spirit of DXing and the practice of QSL requests still prevails in a positive manner! Actually, my intent was to cover any other costs involved in the IOTA DXpedition.

QSL information

When directing any cards to Bosnia-Herzegovina, be sure to add "via Split,



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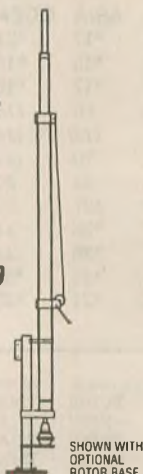
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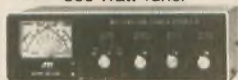


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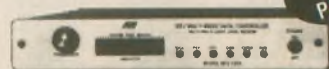
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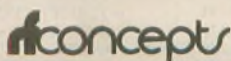
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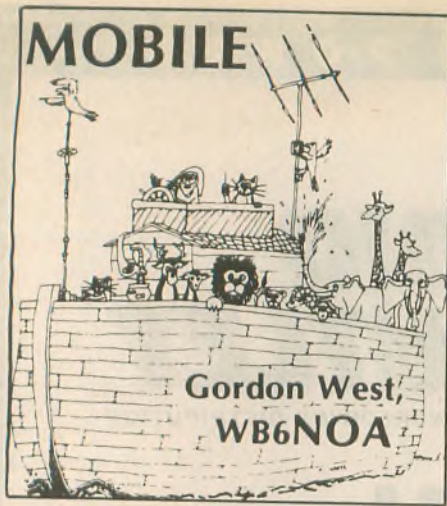
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Remote-control transceivers

There is no car or van too small for a 2M, dualband, or high-frequency installation. Even though your dashboard may be scaled down to almost nothing, specific transceivers have capabilities of being remote controlled. The tiny head goes on the dash where you can see it and work it and the transceiver box hides out of the way.

Some dualband VHF/UHF mobile transceivers are specifically designed around remote-head installation. The Icom IC-900 and IC-901 series is a good example. You start out with a remote controlled package that will take additional band units for up to six different bands: 10M FM; 6M FM; 2M FM and SSB; 222 MHz; 440 MHz; 1270 MHz; other bands rumored soon.

The Icom head is controlled by a data line that also carries voltage to illuminate the unit at night. Everything goes up and down the tiny RG-174 spaghetti-sized control line. But be sure to ground the control head--this keeps the unit from accidentally locking up on high-power transmit.

The Yaesu FT-5200 adds an interesting twist to remote control--besides its dualband remote capabilities with 94 memory channels, the MW-1 wireless microphone controller could allow you to run this rig in the back of your motorhome, or just about anywhere else within a couple hundred feet of your wireless hand controller. For certain applications needing total portability of the controller, the FT-5200 has the capabilities.

The Kenwood TM-742/942 multibanders do something that no other units do—they split up into three units, consisting of the bright LCD triband head, connected to a thin controller module that goes nearby, and then connected to the main transceiver box that hides out of the way. This allows you to put the LCD head within easy view, promot-

ing driving safety. I like the idea.

The Alinco dualband DR-599 and DR-600 easily split apart and become remote controlled transceivers. The optional cable kit simply plugs in, and in less than five minutes you can bury the box below your seat and put the head unit up where you can see it and adjust it easily. But again, be sure to ground the head to ensure RF doesn't accidentally lock up your rig on transmit.

The Standard Radio dualband 560 has twin capabilities for remote-control operation. You could detach its head with the optional 13 ft. extension cable, or run everything off the supplied microphone which boasts a bright LCD frequency readout. In fact, an optional dual microphone cable allows for a second microphone to go somewhere else at your operating station. It's an interesting approach to remote-head operation!

For worldwide transceivers, only Yaesu offers a remote-head option on the FT-747 GX transceiver. The option-

heads might be the ideal transceiver for emergency command posts, large mobile homes, or maritime mobile installations where the skipper may use the radio on marine SSB from the bridge, and the hams use the radio down below when they get into port. A suction-cup, remote-head holder is a quick way to place the remote-control head--a rather large affair--just about anywhere you can see it and work it easily.

The new high-frequency SSB TS-50 from Kenwood is relatively small enough not to require a remote head. It's slightly larger than a 2M radio, so mounting this puppy won't take up much room on the dash.

For the Icom IC-728, this relatively small unit has been successfully hooked up to the AEA *Ham-Link* remote controller and works quite nicely with a little cordless telephone. In fact, any HF transceiver with computer-control interface capabilities may be run remote-control with the *Ham-Link* device from AEA.



The SGC HF remote head mounts on the dash for safe driving.

al cable kit would allow you to mount the remote head anywhere on the dash and hide the radio box up to 16 feet away.

The SGC Model 2000 combination marine/ham radio HF SSB has a unique remote-control capability--up to eight separate remote heads that might also double as an intercom. The SGC 150W transceiver with its multiple remote

While remote control of your dualband or HF transceiver sounds like the ultimate way to go in a cramped vehicle, here are some important considerations.

1. The remote head must be grounded. Even though the installation notes may not mention a separate ground for the head, it's absolutely necessary. An ungrounded head could lock up on high-power transmit, and once this happens, your equipment goes into meltdown if the fuse doesn't blow. Ground the remote head well!

2. The ads sometimes picture the remote-mounted transceiver going back in the trunk for safe-keeping. This could lead to problems. Trunk-mounting a 50W dualband mobile or a 100W HF transceiver would require enormous power feeds from your battery to the

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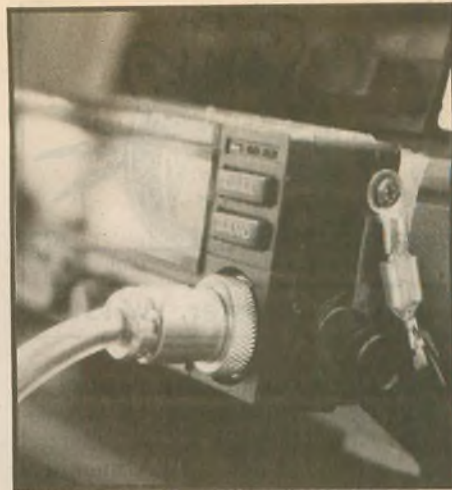
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trunk area. It is hazardous to be threading #6 gauge paired wires all the way to the rear of your vehicle. If something should short out those wires, you have a potential fire. Anytime you run extra-long power cables, always make sure to fuse both red and black wires directly at the battery.

For dualband mobiles, hide the remote mounted box up under the dash, or possibly in back of the front seats. Make absolutely sure the power lines and control cable won't get pinched. Same thing with the HF black box--keep those power cables and control lines from getting pinched, snagged, or cut.



A neat dual-radio mobile installation featuring two remote heads.



Note the ground connection to the remote head.

So next time someone says that they can't find a place for their dualband mobile or high-frequency transceiver under the dash, tell them about the endless possibilities of remote control. And just when you think you have run out of possibilities, you could even control your system with a simple cordless telephone hooked up to the new AEA Ham-Link remote controller. It works superbly!

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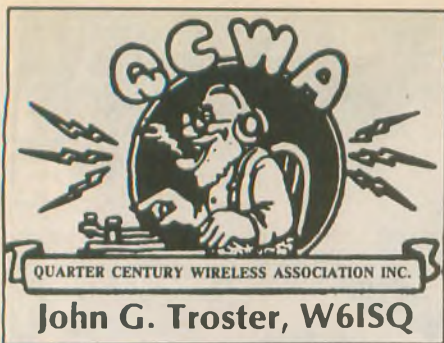
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tinique and Curacao. A station was set up at each port for the cruise guests to operate. They made a total of about 10,000 contacts!

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QOB recruiters

Speaking of recruiters, QCWA QOBs, board members Arch Doty, K8CFU, and Big John Edel, K8LBZ, helped man the QCWA booth along with local members at the Dayton Hamvention. Over 80 new QCWA members were initiated into the brother/sisterhood. Congratulations to all inside the booth and also to those outside the booth who had the good sense to throw in with us.

We have two winners

In our February column we said that we would ask our esteemed QCWA President Harry Dannals, W2HD, to write a letter of congratulations to the youngest person and the oldest person who joined QCWA between the time of publication of the spring and summer QCWA Journal.

The two winners were identified by Jan Haylor at QCWA HQ who kept track of the birthdays of all who joined QCWA in that time frame. The youngest to join was Gerard F. Dusa, WB8ADF, of Birmingham, Michigan, whose birthday is 29 July 1956. The oldest was Rexford M. Schino, KA9MBH, of Fontana, Wisconsin, who was born 12 January 1907! Thank you both for your membership. You have displayed the superior judgment in your selection of organizations to join, that we expect from QCWA members.

That is quite a range between those two birthdays—Gerard Dusa, 37, and Rexford Schino, 86. Forty-nine years difference in their ages, yet they are joining at the same time. What a great outfit! Rexford was older than Gerard is now when Gerard was born! Welcome to you both and please spread the word about the QCWA Fountain of Youth amongst your contemporaries.

Shiver Me Timbers

The Old Old Timers Club (OOTC), a group for amateurs who have been licensed 40 years and more, publishes an interesting monthly news gazette titled *Spark Gap Times*. Imagine my surprise when I got to page nine in the May issue to find a picture of QCWA Emeritus President Leland Smith, W5KL, as a young squirt. It is always nice to see a good picture of Leland, especially if it looks like him, which it did, but, in this picture he was wearing a navy uniform, and he's now a retired brigadier general of the US Marines. Gad Zooks. Does this require urgent and deep investigation? No doubt, Leland will have a good story to tell and it will have a happy ending. We will report information received periodically.

P.S. For you QOGs (Older Goats) interested in the OOTC, write 1409 Cooper Dr., Irving, Texas 75061-5527

Ethel Smith, K4LMB

Not many women brag about their age, but at the April QCWA board meeting, Director Ethel Smith, K4LMB, was wearing a T-shirt that said, "If things get better with age, then I'm approaching magnificent."

Ethel has reason to be proud of her many years of service to QCWA and to Amateur Radio. She was first licensed in 1936 in Wenatchee, Washington, with the call W7FWB. "Filled With Baloney" was the moniker she used, but anyone who knows her knows just the opposite is true. She went into traffic handling, became ORS and joined the Army Amateur Radio System in short order.

In 1939 she read an ad in *QST* promoting the ARRL publication *200 Meters and Down*, in which author Clinton B. DeSoto questioned just how

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many YL operators there might be out there. Ethel wrote a letter to the League suggesting that YLs write to her and perhaps consider the possibility of forming a YLRL of their own. This led to the founding of the YLRL.

When WWII broke out, her experience with AARS brought her an offer to work



Ethel Smith, K4LMB (Photo credit, Jim Walsh, W7LVN)

as a civilian for the Army Signal Corps at the Presidio in San Francisco and later at Fort Douglass in Salt Lake City, Utah. There she enrolled in electrical engineering at the University of Utah by day and worked a 4 p.m.-to-midnight shift at Fort Douglass by night. In 1943 she went to visit a Navy friend at Quonset Point, Rhode Island, and switched allegiances to the Navy. She worked in radio-radar at Quonset Point for a couple of years, then transferred back to "God's Country" where she worked in radar at Sand Point Naval Air Station in Seattle. After

VE Day she received an offer to work for the Naval Research Lab in Washington, DC in Special Research in electronics. In 1954 she joined the joint-services Army-Navy Electronic Evaluation Group (ANEEG). This led in turn to her work as head of the Navy ELINT laboratory at the Navy Scientific and Technical Intelligence center. She retired in 1970 after 28 years of civilian service.

As soon as the war was over and amateurs were permitted back on the air, Ethel became active in Amateur Radio affairs in the Washington, DC area. She formed the Washington Area Young Ladies Amateur Radio Club (WAYLARC) and organized the Washington TVI Committee to deal with that new scourge of Amateur Radio. When the local groups decided to put on a national ARRL convention, Ethel became involved in forming the Washington, DC Foundation For Amateur Radio (FAR) which would sponsor the convention. She has continued to serve with FAR in one capacity or another ever since. In addition to her activities on the FAR board of directors, she has also edited the Foundation's popular *Auto-Call* magazine for a total of 11 years.

True to her ORS background, Ethel still prefers CW. She has not been too active on the air in recent years because of her many commitments but when I phoned her recently I interrupted her code practice, planning to get back on the CW traffic nets. She has also started teaching code to a den of Cub Scouts.

There might be some who would say the QCWA board is nothing but grown up Cub Scouts, so maybe Ethel will keep us out of trouble. Her many continuous activities for the benefit of Amateur Radio have advanced the activity and provided inspiration for us all.

Next month we hope to go into tapes, books, and who was number 67? Until then 73 and 25, Jack, W6ISQ. WR

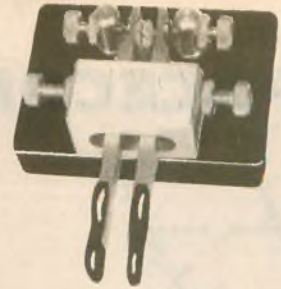
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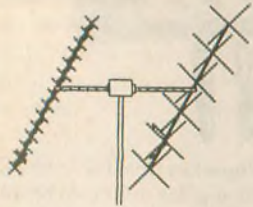
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Over the last several months we have been taking a serious look at the two most popular Russian Low Earth Orbit (LEO) satellites. Last column we gave RS-12/13 mode K a try, since the equipment needed should be readily available in most active radio amateurs' shacks. Mode K, with its 15M uplink and 10M downlink, offers some unique opportunities to the satellite user. The sensitive mode K receivers respond very well to power levels of 2 to 5W, making this satellite a favorite of QRP (low-power) communicators.

This month we are going to outline the station equipment, antennas and procedures needed to access the mode A (2M uplink - 10M downlink) transponder onboard RS-10/11. Mode A transponders are carried on both RS-10/11 and 12/13. However, the RS-12/13 mode A transponder has been off due to interference with other onboard systems from the COSMOS navigation satellite which shares the spaceframe. In addition, Russia's new RS-15, soon to be launched, will also have a mode A transponder onboard.

Mode A has been around since the first OSCARs carried onboard trans-

ponders. Since it is not all that difficult to generate the needed 2M uplink signal, mode A will (hopefully) be around for many years to come. A 2M HT and a receiver capable of receiving CW on 29.3-29.5 MHz is about as simple as it gets. There are many neophyte satellite operators (SATOPs) who are using 2M FM rigs for the uplink. By keying the PTT line, you can generate a readable (but chirpy) CW signal into the mode A receiver. Any of the older tube-type receivers (Drake 2B, 2C or R-4 series, HeathKit HR-10B, KnightKit R-100A, etc.), with the aid of an inexpensive 10M preamp (available from Advanced Receiver Research, P.O. Box 1242, Burlington, CT 06013), will be fine for 10M downlink reception. Any hamfest will yield some older receivers (and transmitters, for that matter) that can be placed into mode A or K satellite service.

Speaking of older tube-type transmitters: The E.F. Johnson 6N2 and the Ameco TX-62 transmitters will both generate good CW signals for the mode A uplink. These are only two of several crystal controlled transmitters from the 1950s and '60s, that featured an output on 2M. (Remember when Novices had 2M CW and voice privileges?) These recycled relics can be given a new lease on life by pressing them into service as mode A uplink transmitters. The bottom line: There is no excuse for not being able to generate a good mode A uplink signal using either equipment that you have on hand or that can be purchased inexpensively at a local hamfest.

Those of you who are active V/UHF DXers and weak-signal operators have a decided edge. Your current (multi-mode) equipment can be used to generate the 2M uplink signals necessary for mode A operation.

Antennas for mode A are not spectacular examples of engineering complexity. Using the simple mode A station at K7YHA, I have managed to work 36 states and Canadian provinces (27 confirmed to date) using a

2M J-pole antenna for the uplink and a converted CB vertical for the downlink. The CB vertical was recently compared to a 10M dipole (up 20 feet), that works even better on the downlink than the vertical under certain conditions. In addition, I have also used my Carolina Windom on the mode A downlink with good success. As can be seen, SATCOM antennas at my location are not major feats of mechanical and electrical engineering. My output power has ranged from 2W to 80W (more on this later).

Obviously, you are not going to be able to work the RS-10/11 bird if you don't know when it will be within range of your station. For this you need to rely upon the trusty shack computer and a satellite tracking program. I am currently using W9IP's *RealTrak* version 9.0 and am highly impressed with this tracking software. *RealTrak*, \$65, is available directly from Northern Lights Software, Star Route Box 60, Canton, NY 13617; 315/379-0161 or from R. Myers Communications, P.O. Box 17108, Fountain Hills, AZ, 85269-7108; 602/837-6492.

Another good sat-track program is *InstantTrack* (\$60) which is available from AMSAT-NA, 850 Sligo Ave., Silver Spring, MD 20910. If you buy your computer program from AMSAT, the funds go directly to support the amateur satellite program. The least desirable and most time/effort intensive method of obtaining pass information is to use the OSCAR-Locator found in the back of the ARRL's *Satellite Experimenter's Handbook* (\$20), available from the ARRL, 225 Main St., Newington, CT 06111. Note: OSCARLocator aside, the *Satellite Experimenter's Handbook* should be on every serious SATOP's bookshelf. The information contained in this book is "must reading" for the satellite user.

After you have the times of the next good passes for RS-10 (they normally run in sets of three, about one hour and 45 minutes apart, with one set in the early morning and the other set about 12 hours later in the early evening, on the East Coast), select your uplink and downlink frequencies and get ready for some fun. I find it best to listen for the 10M beacon (29.357 MHz) first and then move the receiver up in to the downlink passband of the transponder. The 10M beacon is an important indicator of how well you will receive the satellite's signals. In addition to downlink telemetry, the beacon occasionally provides special messages and greetings from the control station, RS3A.

Once you have found a clear spot on the downlink (between 29.360 to

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29.400 MHz), set your uplink transmit frequency by adding the 116.5 translation constant to whatever 29 MHz downlink frequency you've selected. This will get you in the ballpark on the uplink (Doppler shift not withstanding). (NOTE: this 116.5 MHz translation constant for mode A is standard for all current RS-series transponders.) Adding the appropriate translation constant to the selected downlink signal will greatly speed your efforts to communicate through the satellite transponder, not to mention reducing interference to other stations on the bird.

Here's how it works. Let's say you are receiving the beacon at 29.358.5 MHz, indicating that the apparent Doppler shift is +1.5 kHz. You now set your downlink receiver to a clear spot on 29.365 MHz. The computed uplink frequency should be $29.365 + 116.5 = 145.865$ MHz. Since the Doppler shift is a function of both the uplink and downlink paths, the actual uplink frequency will vary a couple of kilohertz plus or minus 145.865 MHz. At least you are close to the proper uplink frequency using this method.

Start sending a string of dits on the uplink and slowly move the transmit VFO around until you hear yourself coming back on the downlink frequency you've chosen. Remember, you won't be very far off frequency if you have done the proper math. Once you hear your own signal in the downlink passband, start sending CQ. The standard format is: "CQ RS CQ RS de (your call) K." If this doesn't produce any contacts after a few attempts, start tuning around and listen for others either sending CQ or in QSO. Once you find their frequency, select the uplink frequency (don't forget to add the 116.5 MHz translation constant) and send a string of dits (again) to zero your transmit signal with the receive frequency. Call the other station at the appropriate time.

All too often, discourteous SATOPs will be heard sending long strings of dits while swishing their transmit VFOs all over the transponder passband. This makes for some unnecessary QRM on the transponder. Calculate your proposed uplink frequency, and help reduce the interference on the birds.

One thing you will notice is the effect of Doppler shift on the downlink signal. This goes for all of the LEO birds as well as some of the high orbit satellites. This phenomenon is produced by the movement of the satellite relative to your station. One thing about LEO SATCOM, you tend to stay very busy! Between adjusting your transmit frequency (to stay on frequency with the station you're in QSO with) and watching the computer screen to see where the satellite is relative to your station (and the amount of time left on the pass), things never get dull!

SSB contacts on RS-10/11 are accomplished in much the same manner as CW contacts. Normally, SSB operators use the high end of the transponder and leave the lower segments to the CW operators (I guess that this is a holdover from the HF bandplans where the CW segments are in the lower portion of the bands).

Finding your transmitted signal while operating SSB is a bit more challenging. Select your downlink frequency and apply the 116.5 MHz translation constant to the uplink frequency. To find your actual uplink frequency, transmit your call and a brief test message: "This is (your call) testing on RS-10." Remember to tune carefully, it's easy to miss your uplink frequency owing to some QSB (due to rotation of the satellite) on the downlink signal. Once you are on frequency, either call CQ (using the voice version of the CW format) or call the station that you are listening to.

One thing that will be very apparent is that the Doppler shift becomes quite pronounced as the satellite nears your location, necessitating constant shifting of the uplink VFO to remain intelligible to the other station. What usually happens is that both stations tend to wander around on the transponder quite a bit. To minimize this effect, carefully tune your

transmit VFO (while listening to the downlink) so you remain on frequency.

Transmit power should be adjusted to provide a readable downlink signal with minimum power output from your gear. The use of excessive power on the uplink causes severe ALC limiting action on the transponder. Actually, the RS birds have the transponders configured to provide a separate ALC action for each of the four 10 kHz segments of the transponder passband. This reduces the effects of one station (using excessive power on the uplink) ruining communications for everyone else on the transponder.

To find out exactly what kind of power was needed at my location, I conducted tests using RF power levels between 2 and 80W on the 2M uplink. If the bird is 15 degrees (or more) above the horizon, 10W of RF power is all that is required to maintain a readable 29 MHz downlink signal. Below 15 degrees, increasing uplink power from 10 to 20W resulted in a readable signal on the downlink. Increasing uplink power from 20 to 40W made no discernable difference until the bird dropped below 5 degrees. From that time until the satellite dropped below the horizon, uplink power was increased from 40W to 80W. No difference could be detected.

All this indicates that uplink power levels between 10 and 40W provide reliable communications through the RS-10/11 mode A transponder. These tests also point out the need for all SATOPs to constantly monitor their uplink power and use only enough RF power to reliably communicate through the transponder. Proactive power conservation on the part of the satellite user is standard procedure for all satellites, not just the RS birds.


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The sixth of each month is YL Activity Day. Call "CQ YL" on the hour, on any frequency ending in 88.

YLS on satellite

Carli Drake, WB1BTJ/1, is a member of Communittee Video Associates,

downlinking the program and rebroadcasting it on their repeaters. The program is *This Week in Amateur Radio* and is one-hour long. Carli is doing a five-minute segment, called "YL Spotlight," and she would like you to send her your YL news. If you have a satellite dish, or know someone who does, you can hear *This Week in Amateur Radio* with host Stephan Anderman, WA3RKB, at 5 p.m. (ET) on Spacenet 3, transponder 21, 5.8 wideband audio on Saturday. Ask your local radio club to downlink the program for rebroadcast.

YL Asian '93 meeting

At the close of YLRL's 50th anniversary convention in Hawaii in 1989, three of the European YLS there decided it would be nice to have a YL convention in Europe. Raija Ulin, SM0HNV; Kerstin Bengtssen, SM5EUU; and Sheila Gabriel, G3HCQ, talked it over and started making plans. The result was YL World, held in Stockholm, in June of 1991. This was the first international YL meeting held without affiliation to any group. It was held just to foster friendships among YLS.

At the Stockholm meeting, Hiromi Hishiki, JJ1CAS, said, "It is my dream that someday you will all come to Japan." And so, two years later, 29



Miyo, JF3MVF, and Jiro, JA3UB, Miyoshi are two active DXpeditioners.

DX YLS from Germany, Switzerland, Korea, Italy, Norway, Finland, Sweden, Netherlands, Wales, the US and New Zealand met over 50 Japanese YLS in Osaka for the first Asian YL meeting on 3-5 April 1993. The organizers of this very successful meeting were Kyoko "Miyo" Miyoshi, JR3MVF; Nozomi Gohara, JH3SQN; Hiromi Hishiki, JJ1CAS; Hiroko Inui, JH3CIB; Taeko Shirasu, JR3HII; and Nobuko Uchiyama, JR6XIX. Many other Japanese YLS helped to make this an exceptional meeting.

The meeting was held at the International House, which has a very nicely equipped club station, JI3ZAG, so we could keep skeds with the OMs at home and do a bit of DXing. Kurt Bindschedler, HB9MX, who has over 1,400 confirmed YL contacts and keeps up with YL operating events, had a great signal into Osaka, and we talked to him each afternoon.

Registration opened at noon on 3 April and each attendee received a bag loaded with gifts, including a beautiful scarf with call signs of all the registered YLS printed on it. In the afternoon, a Japanese tea ceremony was scheduled for small groups of three or four YLS to learn about and participate in this traditional activity.

That night, a welcome party was held, with dinner and several slide presentations of past YL DXpeditions. Miyo Miyoshi, JR3MVF, talked about her DXpeditions to Vietnam, Laos, and the Philippines, with her OM, Jiro, JA3UB. Miyo has operated as DX3UB, 4U1ITU, BT4YL, and XW3YL. Jeanie Parker, WA6UVF, talked about the BT4YL operation; Nobuko Uchiyama, JR6XIX, talked about the 8Q7YL operation, and Greta Hubacher, HB9ARC, showed slides of her Swiss canton. The 10 Korean YLS were a sensation in their traditional dress, the *chima-chogori*,



Christa Elksnat, DJ1TE; Gertrud Szyza, DK8LQ; Lia Zwack, WA2NFY; Friede Meissner, DK6FM; Kay Eyman, WA0WOF; and Raija Ulin, SM0HNV, at the kimono party at the home of Ken, JH3SQM, and Nozomi, JH3SQN, Gohara, in Kyoto.

a non-profit group. CVA provides a weekly videotape on current Amateur Radio activities that is distributed to cable access channels. Recently they have begun a program on satellite TV on the Spacenet 3 satellite, transponder (channel) 21, on 5.8 wideband audio.

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and several Japanese YLs wore beautiful kimonos.

The next morning everyone gathered for the official meeting, and each YL was presented with a beautiful station plaque with her call sign. Each YL introduced herself, with many YLs using a second language for this international group.

Later that afternoon, we visited Osaka Castle, and in the evening, a spectacular OM-YL banquet was held. Sayoko Aoki, JJ3WWS, and Hiroko Inui, JH3CIB, were the MCs, and

there were prizes for everyone. Both the Korean YLs and the European YLs sang beautiful songs in their native languages, and everyone joined in singing a German song and then "Sakura, Sakura," in Japanese. YLs in kimonos, Korean, and European traditional costumes added to the festive spirit.

There were 40 Japanese and seven DX OMs at the banquet. Among those present were Isaji Shima, JA3AA, president of JARL; Manami "Shima" Shimazaki, JQ3EEL/

V63SM, who promised to listen for YLs from Micronesia; and Taizo Arakawa, JA3AER, whose other calls include N2ATT, HS1TA, 9V1PJ, 9M2BL, and GW0RTA. Taizo and Yoko, JG3FAR, are currently living in Wales and were home for a visit. And almost everyone there thought the OM of Dieu Wildeboer, PA3CEB, had arrived because her daughter Marja Wolf, PA3CIS, was dressed in men's clothing for the banquet and was very dashing, to say the least! (please turn to page 67)



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BASIC deviation

Computers offer an ideal way to monitor the world. Their micro-processors are always looking for input and instructions as to what to do with it. Over the years it has become relatively simple to add a few sensors and the right instructions to get computers to react to their environment.

Take automotive computers, for example. Their performance and reliability has been so good that you hardly hear about them anymore. Yet, they're still there, continuing to do whatever it is they're programmed to do.

Consequently you've seen, and will continue to see, interface devices and

software that will turn computers into test sets that will measure and display practically everything electronic. In future columns we'll probably discuss ways to interface our computers with the "real world." This month, however, let's forego any interface problems and still see how to use a computer as a piece of test gear. Call it "a poor computerist's FM deviation alignment tool."

Years ago I joined a crowd of hams who enjoyed taking CB radios out of

the 11M band by converting them for use on 10M. The fun part was turning them into FM rigs, and maybe even giving them transmit offset so they could be used on the local (or even distant) 10M repeater.

The whole idea was appealing, because for less than \$50 you could have a 20W 10M FM mobile transceiver which was deceptively disguised as a CB rig back when CBs were a dime a dozen. Furthermore, the only real test equipment you needed

```

10 CLS: PRINT "FM DEVIATION TOOL, BY KD5DL"
20 PRINT:PRINT " USE THIS GW-BASIC PROGRAM TO SET FM
TRANSMITTER DEVIATION."
30 PRINT "SEE COMPUTERS & BASIC STUFF, AUG 93
WORLD RADIO, FOR DETAILS."
40 PRINT:PRINT:INPUT "WHAT IS THE DESIRED DEVIATION
(KHZ)? ",D
50 A=D/.00240483
60 PRINT:PRINT "USE ";A;"Hz AUDIO AND TUNE DEVIATION FOR
BEAT NULL."
70 PRINT:INPUT "DO YOU WANT COMPUTER AUDIO AT THIS
FREQUENCY? ",A$
80 IF A$="Y" OR A$="y" THEN SOUND A,.01:PRINT:PRINT
"PRESS ANY KEY TO STOP SOUND" ELSE GOTO 110
90 A$=INKEY$: IF A$="" THEN 90
100 SOUND 0,1
110 PRINT:INPUT "DO ANOTHER? ",A$: IF A$="Y" OR A$="y"
THEN CLS: GOTO 40
120 END
    
```

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was another 10M receiver, a voltmeter and a method to set the transmitter's frequency deviation.

Deviation meters were things for the electronics technician. If you bought one it cost too much, and if you built one you needed to have its meter calibrated. Consequently, most experimenters simply set the deviation control using the TLAR ("that looks about right") method.

But deviation could also be set, very accurately, using the Bessel Null Method and nothing more than an audio oscillator. This method called for modulating the transmitted signal at a specific frequency while listening for a beat frequency null in a monitor receiver. When the deviation control nulls the beat, the alignment is done. It's that easy.

The relationship between audio frequency and deviation has to do with something called the Bessel Function of the First Kind of Integer. More specifically, the deviation frequency divided by one of the Bessel values, 2.40483, results in the audio frequency to use to find the null. For example, if the desired deviation setting is 5 kHz, then $5 \div 2.40483$ gives 2079.15 as the modulating frequency.

Now, without modulating the transmitter, and with its deviation

control set to minimum, key up and tune the monitoring receiver to within 100 Hz or so of the transmission frequency. You should hear a distinct, low-frequency beat note in the receiver. Next, modulate the transmitter with 2079 Hz audio. Listen again to the beat note (not the 2079 Hz audio) in the receiver and slowly advance the transmitter's deviation control. Stop when you hear the beat note fade into its first null. That's it! Your rig is now set to 5 kHz deviation.

Ideally, this method should be done with a calibrated audio oscillator set to an amplitude just below the clipping level. You can use a computer to calibrate the audio oscillator or, in a pinch, use the computer's audio straight.

This month's BASIC program allows you to determine the Bessel Null frequency and, with GW-BASIC and an IBM compatible computer, generate the calibrated audio frequency.

Charger feedback

Fred Charavay, W8IHJ, writes that he has been using a NiCd charger similar to the one in our June column, except that he limits the current at the first stage with a 7812 regulator and sets the charge voltage with a following LM317T adjustable voltage regulator. He writes:

"I usually set the current from 100 to 200mA. The voltage is set by adjusting the 317 pot. I use a fully-charged battery, and adjust to about 10-20mA. (Mark this pot setting for the different batteries.) No need to measure the actual voltage.

"Now the battery will start charging at the limited current rate and gradually go to 10-20mA, or a nice trickle . . . If the battery does not go to the low point, a shorted cell is indicated."

He adds, "This is the only method I know that will definitely indicate the battery has been fully charged to its present capacity."

Fred's letter answers another reader's question: a 10-20mA charge rate is about right for a AA NiCd trickle charge. The rule of thumb is to use about .03C to .05C rates for maintaining a trickle charge, where C is the battery's rated working capacity.

Such a trickle charger could be built for a car's glove box or trunk and could be used to keep a spare battery fully charged for "emergency" situations.

It's a matter of style

Another reader took me to task for

Old hams never die—they just QSY.

the way I write programs, especially where I use several statements per line. When he "rewrote" the programs in the conventional style, he experienced a number of unexpected errors.

My programming style may be a little unconventional to some of you, but if you type them in exactly as they are listed, barring any typographical errors, the programs do work.

The main reason I try to cram as many program statements as I can onto a single line stems from years of working with computers with rather limited memory (in some cases 500 bytes or less). I remember at times

having to steal subroutines resident in other programs just to be able to get a program to fit the limited memory. Believe me, every byte counted!

The other reason I take shortcuts is to get program listings to fit the printed page without introducing too many errors. In the old days I discovered that the number of typing errors seemed exponentially proportional to the size of the listing. I think that if I keep a listing relatively short, then you will probably be more inclined to use the program and understand how it works.

Then again, it could have a lot to do with my BASIC deviation.

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A great adapted packet setup—you may already have it in your shack!

Did you know that if you are using an IBM-PC or compatible and are running *Windows 3.0* or above you have a fine adaptive setup that can be used by a person with physical disabilities to operate CW and digital modes?

Yes, the terminal program supplied with *Windows* works great for packet or other modes when used with the KAM or KPC-3 TNCs, and its function keys are mouse-controlled, so a person with very limited hand function can use a trackball, headstick, or other adaptive hardware to bypass many keystrokes. What may have been a tedious or impossibly slow task for a person with limited hand movement can now be a breeze if the program's *function* keys are set up to do the jobs of streamswitching, connect to nodes, setting CW speeds, send-

ing strings of text, and so on. Advantages are:

1. Windowed operation. Perform other tasks, such as word processing, with your packet window running on another part of the screen.

2. No extra software to buy if you are already using *Windows*.

3. Configure as many terminals as you want, so you have one for CW, another for AMTOR, several for different types of packet operation, and so on.

4. Function keys show at the bottom of the window. These may be configured to allow streamswitching, mode changes, connects to specific nodes, and so on.

Getting started

To set up a terminal program, here's what you do:

1. Start *Windows* and select TERMINAL from the ACCESSORIES section of the PROGRAM MANAGER.

2. When the terminal comes up, click on SETTINGS.

3. Click on TERMINAL EMULATION, then click on GENERIC.

4. Click on OK, then click on SETTINGS again.

5. Click on COMMUNICATIONS, then click on 1200 (or whatever baud rate that you have already assigned to your TNC), 8, 1, PARITY None, Xon/Xoff, and COM1. Then click OK.

6. Save the configuration that you have made so far as KAM.TRM. Do this by choosing SAVE AS from the FILE menu, then typing KAM.TRM and choosing OK.

7. Test the configuration by closing, then opening KAM.TRM to see if

it "talks" with your TNC. You may not have any other terminal program running at the same time, or the COM port will be engaged and you will see an error message. Note: If you are using COM 2, 3, or 4, choose that port from the COMMUNICATIONS menu.

8. When the TNC signs on, you will see packets scrolling on the screen. Press ENTER to get the CMD: prompt. If you cannot get a CMD: prompt, close and re-open the terminal or click HANGUP from the PHONE menu and press ENTER again.

Configuring the function keys

Before you configure the function keys, you need to do a little planning. Let's say that most of your activity will be on 145.05. The first screen that comes up should then have function keys that will easily connect you to the nodes, PBBs, or call signs that are active on 145.05.


1. Choose FUNCTION KEYS from the SETTINGS menu of KAM.TRM.

2. Click on KEY LEVEL 1.

3. Use the mouse to place the cursor in the KEY NAME box next to F1. A local node that you want might be TLAN, so you type TLAN in the box.

4. Use the mouse to move the cursor to the COMMAND box just to the right. Type C TLAN^M and click on KEYS VISIBLE, then OK. The FUNCTION KEYS box will disappear and the terminal screen will be up with function keys visible, though only the first one will have an entry (TLAN). Click on TLAN and the connection will be made. (Use the node of your choice instead of TLAN.)

5. Next, configure a function key to



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connect to a favorite PBBS. The one I use is WB0GDB, so I would create a function key by using the mouse to place the cursor in the box next to F2, then I type WB0GDB and move the cursor to the box just to the right, where I type C WB0GDB^M.

6. Now how about some commands? Configure the next several keys to tell the PBBS what to do:

Key name	Command	Description
LIST	L^M	Lists messages
RM	RM^M	Reads message to you
BYE	B^M	Disconnect

... and so on. You get the idea! Remember to include the ^M as part of any command that would ordinarily require a carriage return. ^M takes the place of "ENTER."

7. If the PBBS commands took up all of the function keys at the bottom of the screen, don't worry; just bring up the FUNCTION KEY menu again and click on LEVEL 2. Now you have another set of blank keys to fill!

8. Next, you may wish to set out some keys to be used for control of the TNC:

Key name	Command	Description
COMMAND	^C	Changes TNC to command mode
CONVERSE	CONVERS^M	Changes TNC to converse mode

IDENTIFY	ID^M	Forces an ID packet
BEACON ON	B 0/120^M	Turns on VHF beacon
BEACON OFF	B 0^M	Turns off beacon
HF-A	"A^M	Changes to HF radio, A stream
VHF-A	A^M	Changes to VHF radio, A stream
UNPROTO ID	UNP ID^M	Inserts "ID" in place of CQ
CW 20	CW 20^M	Changes mode to CW 20 wpm
EXIT MODE	^CX	Exits mode; return to packet

Got the idea? You can set up separate terminal files for each mode if you want, and the FUNCTION KEYS can even be used to send longer strings that contain information such as your name and QTH. A longer "brag" can be sent as a text file using the TRANSFERS menu at the top of the screen.

A person with quadraplegia or severe arthritis might have a large collection of short text files that could be sent during a QSO to avoid fatiguing

the wrist and fingers. And files containing hundreds of keystrokes can be sent with only a couple of mouse clicks.

Windows is a truly versatile program, and it has adaptive possibilities for ham operators with disabilities, but it is not the only software out there! Many other programs offer user-tailored features, and some even incorporate rig control. But if you already have Windows, you may want to take advantage of its fine terminal programs written specifically for Windows operation, especially if you like to use your computer for other things, then check quickly into what's happening on the band!

If you have successfully tried the Windows terminal with other TNCs besides those made by Kantronics, or if you have found other off-the-shelf software that is easily adaptable to help persons with disabilities, I'd like to hear from you. My packet address is WA0TDA @ BBSGDB.MN.USA.NA.

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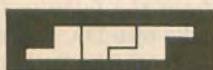


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Worldwide DX CONTESTING



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August is a traditional vacation month in many countries and the contest calendar is not crowded. There are three noteworthy events but, unfortunately, two take place the same weekend.

August

7, 8 August — Romania (YO) DX Contest

14, 15 August — European DX-Contest (WAEDC) CW Weekend

14, 15 August — Keymen's Club of Japan (KCJ) Contest

European DX Contest (WAEDC)

For dedicated contesters on the US East Coast, the highlight of August is the CW weekend of the WAEDC (formerly WAE) which begins at 1200 UTC on Saturday, 14 August and ends at 2400 UTC on Sunday, 15 August. The WAEDC phone weekend is the second full weekend in September.

Although there is a 36-hour operating period, single operator stations may only operate for 30 hours. The six hours of non-operation may be taken in one, but not more than three periods at any time during the contest, but must be clearly indicated in the log. A contest QSO can only be established between a European and a non-European station using the usual six-digit exchange, RST plus QSO number beginning with 001. We do

not have space for the complete rules, but an official WAEDC log sheet and a copy of the rules may be obtained by sending an SASE to K4IIF.

This contest offers DXers a good chance to work some of the less common European countries and prefixes from the following WAE country list: C3, CT1, CU, DL/Y2, EA, EA6, EI, F, G, GD, GI, GM, GM (Shetland), GU, GW, HA, HB, HB0, HV, I, IS, IT, JW (Bear), JW (Spitzbergen), JX, LA, LX, LZ, OE, OH, OH0, OH0M, OK, ON, OY, OZ, PA, SM, SP, SV, SV5 (Rhodes), SV9 (Crete), SV (Athos), T7, TA1 (Europe), TF, TK, UA1,3,4,6, UA2, 4K2, UB, UC, UN, UO, UP/LY, UR/ES, YO, YU, ZA, ZB2, 1A0, 3A, 4J1 (M-V), 4U (Geneva), 4U (Vienna), 9H. It's possible that additional prefixes will be added to this list for the new republics formerly part of Yugoslavia.

Since the death of DL3RK, the address of the WAEDC Committee is P.O. Box 1126, D-74370, Sersheim, Germany.

Keymen's Club of Japan Contest

Whereas many CW contesters in the east will be active in the WAEDC the second weekend of August, the brethren in W6, W7, VE7 and other western reaches will have their beams pointed toward the Pacific for the 14th KCJ Contest which is a 12-hour event from 1200 UTC Saturday, 14 August to 1200 UTC Sunday, 15 August 1993. The KCJ 'test is a single op, CW only run with contacts to be made between JAs and non-JAs. QSOs between two non-JA stations are invalid. JA stations will send RST plus prefecture/district code. Non-JA stations will send RST plus continent code. For complete, detailed rules send SASE to K4IIF. Yasuo, JA1DD, of KCJ provided us with a generous supply of

rule sheets which we'd like to distribute to all interested contesters.

In the 1992 contest, N6TR had the highest score among non-JA stations, followed by fellow Californian N6AA in second place.

The rule sheet also shows the Japanese prefecture and district codes, and the prefixes for each. This will be valuable to DXers interested in Japanese DX awards.

Romanian DX Contest

The Romanian DX Contest takes place 7, 8 August 1993 beginning at 2000 UTC on Saturday and concluding at 1600 UTC on Sunday. Do not limit yourself to YO contacts only. This contest follows a worldwide format and allows both CW and SSB QSOs. The exchange is RS(T) plus ITU zone, except that YO stations send their county abbreviation instead of their ITU zone. ITU zone maps may be obtained by sending an SASE to the ARRL.

For DXers, this is an opportunity to listen for some of the less common YO prefixes as well as the worldwide activity. Complete details may be obtained from the Romanian Amateur Radio Federation, P.O. Box 05-50, R-76100 Bucharest, Romania.

1992 Results

Worldwide South America CW Contest. Top non-South American stations in each contest category were: 7 MHz — LY2BAI; 14 MHz — UT4JWC; 21 MHz — HA8VK; 28 MHz — YU7SF; and single op multiband — HA5LZ. Are all the good CW contesters from eastern Europe?

Top scoring South American stations included: 7 MHz — PY2HF; 14 MHz — LU1ICX; 21 MHz — PP1CZ; 28 MHz — no entry; and single op multiband — LU1EWL.

The new address for the WWSA contest committee is Caixa Postal 282, 20001-970, Rio de Janeiro, RJ, Brazil.

Colombian Independence Day Contest. HK3NTI writes that the 1992 Colombian Contest was the same day as the Barcelona Games Contest which resulted in less activity than in 1991. Winners in each contest category were: single op, single-band — OA4UN/YV6 on SSB and OG7NW on CW; single op, multiband — DK0BB on SSB and VK2APK on CW; multi op, multi-band, single TX — HK3SB on SSB and no entry on CW. K3ZO received a diploma for his checklog.

Contesting from the Islands. One of the biggest thrills of a DX contester's life is operating from the "other end" during a major DX contest. For W/K/VE contesters, the most conven-

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---	---	---

ient way to be the cause of contest pileup is a contestpedition to one of the semi-rare islands of the Caribbean. With the 1993-94 DX contest season just around the corner, it's time to start planning if you hope to operate from the Caribbean during the CQ Worldwide phone and CW DX contests this fall, or the ARRL DX contests in the spring.

Before you can operate from somebody else's country, you must obviously have a license. To get you started, this column will follow with addresses and, where possible, phone numbers, of licensing authorities for many of the most popular Caribbean island countries. This information was gleaned from three years of correspondence with contestpedition operators who were willing to share their knowledge and experience with their fellow amateurs.

In re-reading our letters, we found occasional contradictions. Two sources would differ on the exact address for the telecommunications officer who issues the licenses for a particular country. When this happened, we chose to use the most recent letter, assuming that it was probably more current than an earlier letter.

The most direct approach is to begin by writing to the officer in your target country. However, it's possible to get some of the necessary materials right here in the US, which has its advantages. For example, the international department at the ARRL has much useful information on applying for licensing in other countries. An SASE to the League is a good start and, if you haven't definitely decided which country to visit, you can ask for information on up to three countries per SASE, allowing a large envelope and sufficient postage.

Another example of a useful stateside source is the *Caribbean Licensing Guide* which can be purchased for a very reasonable price from Craig Maxey, WB7FRA.

When you write, remember that you are not doing them a favor by offering to operate from their country. They will be doing *you* a favor to allow you to operate. Begin your correspondence at least three months in advance, longer if possible, and always include an SASE if you have stamps for the country, or SAE and IRCs or "green stamps" if you do not. Prepare to pay by postal money order, not personal check. Always enclose a copy of your US license when you start the correspondence. If you are acquainted with a radio amateur who lives in the country, and he will be your middleman, it can be extremely helpful.

Now that the preliminaries are out of the way, here is the "hard copy,"

the addresses of the licensing officers for many of the most interesting countries, as obtained from testers who have visited and operated from each. Where telephone numbers with the area code 809 are shown, a direct dial call is as easy as dialing a friend in another state.

Anguilla, VP2E. Go to Radio Anguilla in person.

Antigua and Barbuda, V2. See or write to Telecommunications Officer (Mickey, V2AR), Public Works Building, St. Johns, Antigua.

Aruba, P4. SETAR, Plaza Henny Eman 3, Oranjestad, Aruba.

Bahamas, C6A. Bahamas Telecommunications Corp., P.O. Box N3048, Nassau, Bahamas; 809/323-4911, Attn. Charles Kemp.

Barbados, 8P. Telecommunications Engineering Office, Ministry of International Transport, Bridgetown, Barbados, Attn. Miss Roach; 809/426-2669.

Bonaire, PJ4. Write to Landsradio, P.O. Box 103, Curacao, Netherlands Antilles.

Belize, V3. Readers have sent two addresses. We are not sure which is current. Try Office of Telecommunications, P.O. Box 310, Belize City, Belize, or Belize Telecommunications Authority, P.O. Box 603, Belize City. Direct-dial phone is 011-501-2-30852.

Bermuda, VP9. Dept. of Telecommunications, P.O. Box HM 101, Hamilton HM AX, Bermuda; 809/292-4595; FAX 809/295-1462.

British Virgin Islands, VP2V. Telecommunications Officer (Radio), Ministry of Communications, Works and Public Utilities, Government of the British Virgin Islands, Tortola, BVI.

Curacao, PJ2. Landsradio, P.O. Box 103, Willemstad, Curacao, Netherlands Antilles.

Dominica, J7. Minister of Communications, Government Headquarters, Roseau, Commonwealth of Dominica, West Indies. The phone number for

the Dominica Amateur Radio Club is 809/448-8533.

St. Martin, FS. CGRP, Boite Postal 75, 94002 Creteil Cedex, France.

Grand Cayman, ZF. Postmistress, GPO, Georgetown, Grand Cayman, British West Indies.

Grenada, J3. Radio Officer, Ministry of Telecommunications, Scott Street, St. Georges, Grenada; 809/440-2271.

Guadeloupe, FG7. PTT Centre, Highway West of Pointe A Pitre, Guadeloupe.

Jamaica, 6Y. Posts and Telegraphs Dept., P.O. Box 7000, Kingston, Jamaica, Attn. Mr. Matheson.

Montserrat, VP2M. Via VP2MO, P.O. Box 113, Plymouth, Montserrat, West Indies.

St. Kitts, V4. Mr. Christian Dove, Police Headquarters, Basseterre, St. Kitts, West Indies; 809/465-2241.

St. Lucia, J6. Alvin Myers, J6LA, Main Police Station, Bridge Street, Castries, St. Lucia, West Indies.

St. Maarten, PJ8. Landsradio, P.O. Box 103, Willemstad, Curacao, Netherlands Antilles.

Turks and Caicos Islands, VP5. Radio Frequency Assignment Committee, c/o The Administrator, Grand Turk, Turks and Caicos Islands, British West Indies. The following may also be helpful: Mike Scism, VP5P and Jody Millspaugh, VP5JM.

Trinidad and Tobago, 9Y. Director of Telecommunications, 9597 Frederick Street, Port of Spain, Trinidad.

Next month we will have the names, addresses and phone numbers of hotels and guest houses in the Caribbean which have been used successfully by Amateur Radio operators in the past.

From the mailbag

de Bill, K7JYE. "Just read your new column in *Worldradio* — GREAT. Without your column I wouldn't have known that the All Asian results were out, or where to get them. Thanks again for sending me a copy. Maybe you can print the full results next time! The VK/ZL is another pretty good contest, but we never see the results in our Amateur Radio magazines. Maybe you can print these also?"

It's a matter of space, Bill. If there is enough interest, it will be no problem to print the results. — K4IIF. WR

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QRP
Richard Fisher, K16SN
1940 Wetherly St.
Riverside, CA 92506

This month we dip into the QRP mailbox:

From Mike Wood, N6MVE, Vacaville, California

"The prospect of homebrewing a very simple transceiver has always been a goal, but it's very intimidating without a step-by-step set of instructions. Even the alleged 'simple projects' I've seen so far assume some building experience.

"I'm quite sure there are others in the ranks who yearn for a couple of very simple projects. In the future, maybe you could bring a few more of us into the homebrew QRP world by developing a project that would assume complete ignorance on the part of the builder. Possibly the key might be for you to suggest one of your favorite kits available on the market and walk through it with us step by step.

"Hopefully my suggestion is within the scope of your column. But if not, please keep us in mind if the chance comes along."

Mike, there are some great projects available for the beginning QRP homebrewer, and your suggestion of a simple building project is well within the scope of the column. Last month we looked at the Lectrokit "Spider" transceiver, featuring a simple, well-designed circuit accompanied by an excellent set of step-by-step instructions.

But if even that is a little beyond your comfort zone for an inaugural homebrew project, stay tuned. QRP Home-

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brew 101 is in the works and will take center stage here in the not-too-distant future.

From Dan Lakenmacher, N5UNU, Houston, Texas

Dan writes that he has been "passively interested in QRP" because he finds some aspects of CW challenging, "and my vision makes small calibrated dials a sure problem.

"I think there may be a lot of other hams who, like me, don't need quite as miniaturized a transceiver as those available and who would like to operate on voice. Possibly a larger frequency readout would draw an unacceptable amount of energy?

"In any case, please tell me what is out there that I should consider. Someone mentioned a Ten-Tec Argonaut."

The Ten-Tec line has long been recognized as one of the real workhorses of QRP. A call to the company put me in touch with Paul Clinton, WD4EBR, who kindly gave a mini history lesson on Ten-Tec's solid state, 80 through 10M CW and SSB, 5W transceivers. The Argonaut 505 was introduced in 1972, followed by the 509 in 1975, and the 515 in 1980. In 1991 the Argonaut II, Model 535 brought Ten-Tec back into the QRP market. A detailed look at the Argonaut series is in the works for an upcoming Worldradio QRP column. Argonauts from the '70s and '80s are occasionally available on the used-gear market and are much sought after by QRPers. So be on the lookout, Dan. Any readers who have recommendations for other user-friendly gear or testimonials on the Argonaut series are encouraged to drop me a line.

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From Bob Schnick, KA3YJG, Erie, Pennsylvania

"Here's my QRP story: I first got interested in QRP as an alternative to the big-power station. I move around frequently and needed something portable and innocuous. I enjoy the thrill of working stations using 4W—a bigger kick is when the other station is running less power than I am.

"Running QRP has made me a better—I hope—operator. I know I've learned much from operating this way. Generally, QRP operation seems more relaxed than QRO. I find I have quality QSOs, not just the usual RST, QTH, rig and WX stuff. The other QRP operators I've worked have been warm and patient operators.

"I'd like (Worldradio's QRP column) 'to be of use.' I don't know if talking about satellites or packet radio interests you, but as a QRPer, they are not of much use, especially if I need information on satellite operation or packet; I will look to a feature named thus. Construction, antennas, operation, reviews of new QRP equipment, upcoming contests are all welcome topics.

"Enclosed is a picture of my station—an MFJ 9030 QRP rig and MFJ 971 tuner. I also use a Heathkit HW-9 for 80, 40, 20 and 15.

"If space allows, you might comment on the various QRP clubs and their excellent newsletters/journals, especially G-QRP, Michigan QRP Club and QRP ARCI."

I'm reading you loud and clear, Bob, and agree that QRPers are some of the finest radio amateurs around.

The menu for the column in coming months touches on many of the areas that interest you. There are several construction projects already on the agenda, a continued look at kits, and we'll get into antennas, too.

On the contest front, why not give QRP ARCI's Summer Daze Sprint-SSB a try this month from 2000 to 2400Z 8 August. We'll be taking a special look at working the ARRL's November Sweepstakes. Keep an eye on this column for periodic contest calendar updates.

As for QRP clubs, the definitive round-up is in the works. An excellent suggestion, indeed. Thanks!

From Ken Brown, KV5A/9, West Frankfort, Illinois

Ken writes that he has an HW-8 and would like to find out about modifications, especially for putting it on 10M and 160Ms, and for increasing the audio output. Also, he cites an oft-heard lament: "A better VFO."

Read on, Ken.

**From E. Russell Cox, K8JC,
Saginaw, Michigan**

"I am relatively new to the ranks of QRP and enjoy the concept and challenges of this aspect of the hobby. I look forward to the QRP column—it's usually the first thing I read.

"I have a problem. Maybe it's common with a few other ops. Maybe through the column you can help. I recently purchased an HW-8 transceiver. It's mint—no modifications in it, so I get to do it all.

"However, I just cannot locate an HW-8 modification manual. I know they exist, but are out of print. I wrote to several folks, but my mail was just returned to me as not deliverable or not available. Maybe if you know of a way to get reprints, you might mention that in a future column. I know it couldn't hurt."

You guys are not alone. The search for the elusive HW-8 modification manual is becoming as legendary as the quest of the Holy Grail. Well, let's start here and now to track some down.

Advertisements for The HW-8 Handbook appeared in QRP Amateur Radio Club International's QRP Quarterly as recently as 1991, so there must be some dogeared copies around, even though the handbook apparently is not in production anymore. "The book is 56 pages and is a collection of modifications for Heathkit's HW-7, HW-8 and HW-9," the 1991 ad said. Anyone with a source for even one copy of The HW-8 Handbook is encouraged to contact me, and we'll get the ball rolling. Meanwhile, I'll join the search from here.

**From David Goldblatt, KA1DPW,
Sharon, Massachusetts**

In a long, interesting letter, David writes: "I come from New Haven, Connecticut, where I was licensed as WN1NDH in seventh grade, but didn't pass the upgrade test at the end of the two-year term. I was off the air until 1979, when I got tested by an old roommate at college for Novice as KA1DPW."

David has "acquired recently the latest Argonaut II, an A&A Engineering 30M QRP rig, and the MFJ 20M QRP rig with the audio filter and matching tuner.

"... The bottom line: I am anxiously awaiting my comeback on HF after being off for about 10 years," due to antenna restrictions.

"I hope to do some building. I got a 10M Fireball transmitter kit and an Oak Hills Research QRP Directional Wattmeter kit."

Regarding the Worldradio QRP column, "I like seeing pictures of other people's QRP stations, portable stations, compact-hidden low-profile stations, and hearing how people travel



Here's a look at the tidy QRP setup of Bob Schnick, KA3YJG. That's an MFJ 9030 transceiver sitting atop an MFJ 971 tuner.

with their mini-stations; how they set them up when they get there and stories of people's successes using QRP."

Amen, David. And here's an open invitation to any QRPers who'd like to

share their success stories, station and operator photographs and news and views of any other aspect of low-power operation with other Worldradio QRP readers. Drop me a line at the address at the head of this column. QRP is a world of great ideas. Why not share them?

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Catalog of the month

This month's catalog suggestion is from FAR Circuits, the Dundee, Illinois, company that has made a name for itself by producing printed circuit boards for dozens of homebrew projects appearing in publications ranging from QST, CQ and 73 Amateur Radio Today magazines, to QEX, Communications Quarterly and W1FB's "QRP" and "Design" notebooks. The catalog is available free by sending an SASE to FAR Circuits, 18N640 Field Ct., Dundee, IL 60118. WR

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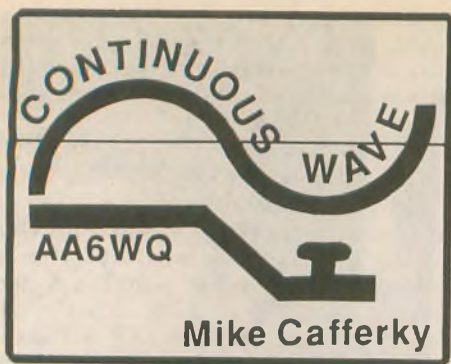
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Preparing for your code test

The registration table at the Morse code testing site was the hub of emotional dynamics. I noticed some people did not have the required documentation in hand and were fuming that an exception was not allowed for them. One, a lawyer, threatened the volunteer clerk with a law suit. Impatient people prodded those in front, declaring that they did not want to be late for their test. Some, like robots, handed in their documents and their money to the clerk. Two or three class clowns joked from the back of the line.

Looking into the eyes of these people I wondered who was really prepared for this code test. Although the outward behavior gave only a clue about their chances of success, the scenes they made encouraged me to study what works. Here is what I found.

Anything can happen during your code test: The test equipment may break down, the tape recorder may not be loud enough, it may eat the tape, someone may cough, sneeze, shake your table, or bump your chair. It doesn't matter—you are still responsible for doing your best. Your best chances for success are in being prepared in your code copying skills and being adjusted to the emotional dynamics present during the testing process.

The best advice on preparation for your next code test is to *be prepared*. By this I mean practice until you get your code speed up to 3 or 4 wpm above your expected test speed. It is best to spend a little time *every day* with the code rather than a longer period of time one day of the week. Avoid long practice sessions focused on random letters and numbers. Instead, practice with life-like call signs, names, punctuation, signal reports, weather reports and radio model numbers to get used to letter/number combinations.

About two weeks before you expect to take the test, do several "code sprints" every day. These are 30-second practice drills at about 7-8 wpm over your target test speed. The

short bursts of code help build your powers of concentration during a period of higher anxiety. As you hear the code sounds, just relax and let your learning take over. If you have not learned to copy code in your head, it is best to *not* try to make sense out of the characters until you have finished the test. You will miss letters and numbers during these sessions, but the experience forces you to keep going when you make mistakes. Don't do these code sprints the day of the test, as this may throw off your rhythm for the test speed. Always end a code sprint drill with several minutes of copying code at your target test speed.

Test day

The day of the test arrange with a friend to conduct a "mock test" in the morning or an hour before the test. If you really mess up during this practice test, was it because of anxiety or lack of copying skill? If it is the latter, you may not be able to correct that in a few hours of cramming.

When you leave home to go to the testing site, take two pencils or pens in case one fails you during the test. Be aware that the registration process can be a bottleneck: get there early. Have something to do while you wait to keep you focused for the test. Avoid talking with other hams about their advice on taking tests. It's too late for this. Avoid talking with others who are dealing with their own test anxiety by boasting about their exploits and code speed; their anxiety can hook your anxiety and create problems for you during the test.

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Just before the test, size up the others taking the test: Avoid sitting next to the class clown or the angry person even if they are your best friends: They may act out at the last minute as their anxiety peaks. This, however rude it sounds, can distract you and others. If someone who is acting out tries to talk to you, give him a blank look. Be polite but do not try to return a comment. Doing so will take your mind off its focus.

During the test sit near the audio output of the test equipment: If you cannot hear the code, you can't copy it. If you are given earphones, ask to have them tested. When you are sure your head phones work, take two or three deep breaths to calm your nerves.

During the first part of the test it may seem like the code is faster than you had expected. If you are prepared well, chalk this up to test anxiety. If you realize you made a mistake in preparing for the wrong code speed, this is no time to repair the damage.

As code keeps coming at you, keep going even if you make a mistake. You will have time for corrections just before you give the test paper to the examiner. If you miss a letter, leave a blank space or two to fill in later. Above all, avoid trying to correct letters on the spot. This takes valuable time and it takes your mind off the incoming code.

After the test

Relax. You have done your best. Now carefully read through the text you copied, checking for spelling errors and missing characters. If there is a letter you have missed, make an educated guess rather than leave it blank. Mentally click through the various letter possibilities to see which one fits best. Eliminate those which are obvious misfits.

If you need to test again

If you do not pass the test, analyze your test paper to see the types of mistakes you made. If you have large blank spaces on your page, you may have been immobilized by anxiety. Or, it may be that you were really not prepared for the speed of the test. If you have a lot of letters on the page but too many errors or too many missing letters, you probably had a difficult time sustaining your concentration.

Good luck!

WR

LAW OF AVERAGES: If you have one foot in a bucket of ice water, and the other in a bucket of boiling water, on the average you're quite comfortable.

—The Microvolt



How are you when it comes to reciting quotations from *Alice in Wonderland*? Remember the one where the Walrus said, "The time has come to talk of many things, of shoes and ships and sealing wax, of cabbages and kings"? I must confess, I remembered the part about "cabbages and kings," but I needed some help with the rest of it.

So let me play the part of the Walrus and say, from my perspective, it's time to talk of many things, mainly propagation modes.

First and foremost is the fact that RF can be returned, either reflected or refracted, by the ionosphere. There are two levels where this happens most of the time, the E-region up around 110 km altitude during the day and the F-region up around 300 km, day or night.

And you know all about hops, the basic E and F-region hops from one's transmitter to the ionosphere and then back to ground level some distance away. As a practical matter, one should keep in mind that the F-hops are about twice as long as E-hops, roughly something like 3,500 km instead of 1,750 km.

With ground reflection, one's RF can take off again for another hop or so. What'll it be, another E or F-hop? It all depends! As you know, E-hops are the sort of thing that happen when the sun's high in the sky. So if one end of your path is in daylight, you can expect the path to end with an E-hop. It might just start out with one too if you're where the sun's rising in the sky.

The various combinations for two-hop modes are shown on the left-hand side of Figure 1. We can identify them quite simply, say F-F for the first one, E-F and F-E for the next two. But what's the next one where an E-layer reflection hop has been slipped in be-

tween two F-hops? In ionospheric circles, that's called an "M-mode," probably "M" for middle. Anyway, it's an interesting possibility as it adds to the path length without any additional losses due to ground reflection and absorption in the D-region.

But how would an E-layer slip in between two F-hops, you ask? Well there is the elusive but well-known sporadic E-layer, noted as Es in the literature. It seems to be more of meteorological origin than anything else and has a life of its own, showing up largely in the summer months.

And there's also the possibility of an auroral E-layer, formed at the usual E-layer heights by auroral electrons raining down on the polar atmosphere. Again, the auroral E-layer is well-known but rather than a meteorological origin, its presence is related to geomagnetic activity, solar flares and coronal holes.

With this limited vocabulary, one can start to offer up ideas about more exotic modes of radio propagation. But before discussing various possibilities that might seem "far out," let me take a different turn and talk about RF coming from a satellite. Here, I have in mind the 29.4 MHz signals from the Russian spacecraft, RS-10 and RS-12. They're up at 1,000 km, orbiting the earth and sending signals down toward the ionosphere.

And some of those signals can penetrate the F-layer and reach the E-region and even the earth's surface, as shown in Figure 2.

No matter where it originates, all RF that finds its way into the lower ionosphere follows the same rules of the game, the laws of Maxwell. One word of explanation: By "lower ionosphere," I really mean the region below the F-layer peak. That's the region where we use RF to communicate with each other, so this "universal truth" says nothing more than earth-based and satellite-based communications follow the same rules when it comes to skip, hops and so forth.

Refer to the right-hand side of Figure 1 to see how signals from spacecraft might undergo hops, either E, F or M, in combinations. But there is one thing implicit in the propagation modes with signals from spacecraft: They must first penetrate the F-layer. After that, what happens to the reflected RF depends on the critical frequencies in the ionospheric regions it encounters. That's also true of RF that starts from ground level.

Since satellite signals come from a moving source, by listening to them we're able to probe the ionosphere "on the fly," as it were. True, you have to know where the spacecraft is coming from at any given time, but after that,

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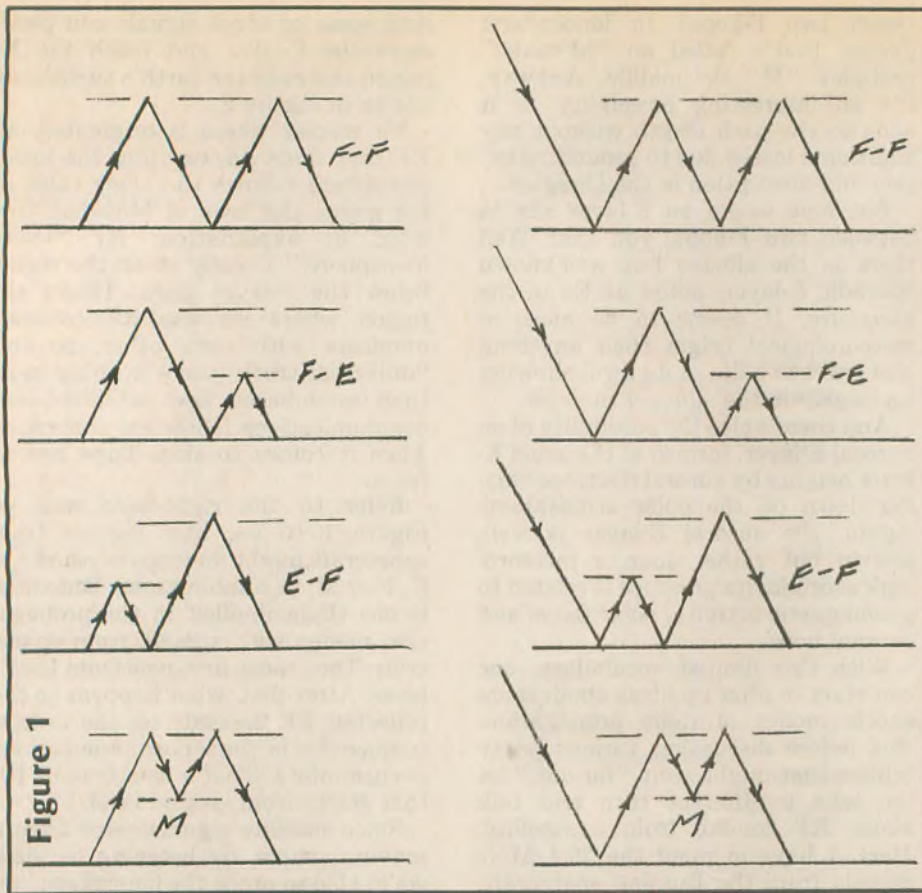
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only a single coaxial cable to the transceiver. Our relays are available in one of two styles Wired or Wireless. The Wireless style uses a separate coupler module installed near the radio. The coupler combines the RF signal and the relay energizing voltage to allow the coaxial cable to carry both signals simultaneously yet independently. The remote relay has a built-in coupler that separates the RF signal from the energizing voltage permitting the relay to transfer its contacts when the energizing voltage is injected into the coupler. This permits existing systems to be expanded with little modification. For more information, call or write for Catalog #IN84.



penetrate it and even reach the ground. Though a rectangular plot, sort of a "flat-earth representation," was not what you expected in looking at the results of a calculation where spherical symmetry was involved, rest assured, the results are correct as all the numbers were "crunched" with the problem expressed in spherical coordinates. It was solely for a matter of convenience that the results were presented as a display in rectangular coordinates. After all, think what a shrunken figure there'd be when the F-layer is only 300 km above the surface of the earth with a radius of 6,371 km. You'd have to look at the figure with a magnifying glass. This way, we can "square up" the display and even use different scales, vertically and horizontally, to our advantage.

But all this is at a price, as the distortions which result hide some of the results. For example, take the first point where the RF hits the ground. The figure shows that RF hits the ground about 3,300 km from the point right below the satellite and all the other rays at higher radiation angles miss the earth. That's a way of saying that the last incident ray is making a grazing contact with the earth.

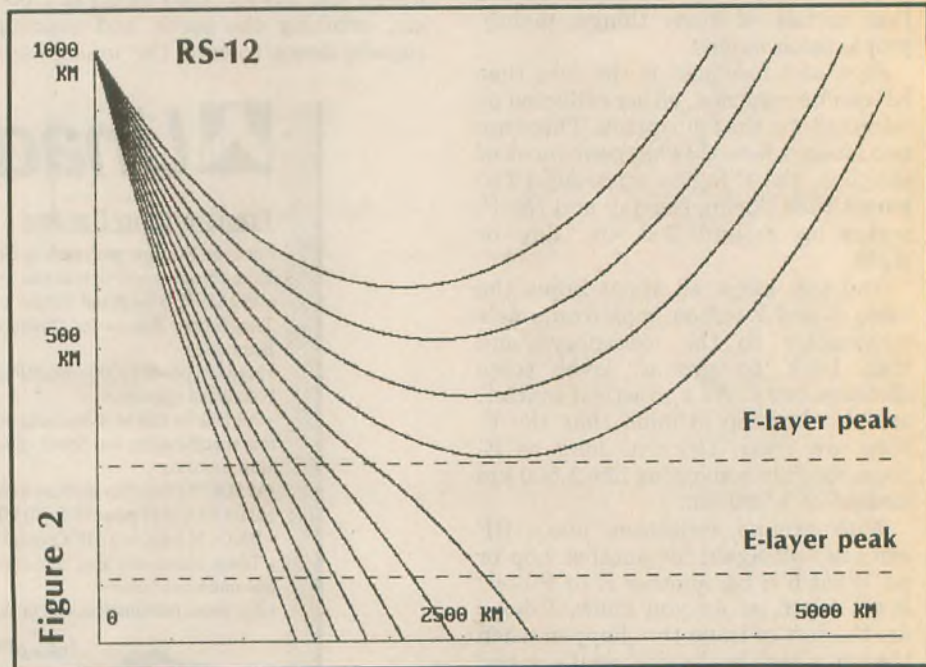
Now that we have the satellite's RF

it's just a matter of listening to the signals, listening hard and trying to find the message they hold.

But first those signals have to reach you, so let's look at getting them through the ionosphere. Rather than get too specific at the outset, you at one location and the satellite at another, let's just look at what happens to RF radiating downward toward the earth. To work that out in detail, we need to know the frequency from the spacecraft, the critical frequency (foF2) of the F-layer and then trace out ray paths for a range of angles in the downward direction.

That's the inverse problem of RF coming from our antennas and heading upwards. True, there's a radiation pattern for our antennas which affects the outcome when we go on the air. For spacecraft, HF antennas are chosen to be more like the mythical isotropic radiator, radiating in all directions. Since the methods are the same, we can present the results with only a minimum of explanation. And even that is something of a simplification, as there's none of the structure above the F-layer like we have below it, E and D-regions. Let's look at the result in Figure 2.

The figure shows the result of ray tracing where the radiation angle is stepped in 2-degree increments. So there are rays that are reflected by the F-layer peak as well as those that



reflecting off the ground, we can go on and see something of the results that come from having a moving source of radiation. The simplest place to start is with the F-F satellite mode at the top of the right-hand side of Figure 1. To do that, you have to think of yourself somewhere on the earth and the satellite going by, overhead. For a specific case, think that you're located right under the satellite at the start

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and it's moving from right to left, passing over you.

According to Figure 2, you should hear the satellite as long as you're within its "footprint." But once the satellite is about 3,300 km from your location, those signals should end. Now look at the right-hand side of Figure 1. That tells you that as the satellite moves along, you should hear it again after the signals have completed one hop, then lose the signal but regain it after the second hop was completed.

Believe it or not, that's just how it happens. Last fall, I sat here around my noontime, listening to RS-12 on N-to-S passes. The CW beacon signal would come to an end when it went over the horizon, only to return as the satellite went south toward the equator and beyond. I like to say that experience involved my hearing "the

sound of skip" and then "the sound of hop," for obvious reasons. But, for N-S passes in the middle of the day, it was regular as clockwork! You could just sit there and hear one hop, even two hops, come and go.

If you ever had any doubts about hops in the ionosphere, that would make a believer out of you! But the numbers work out too! As you know, in order to have a hop, there must be enough in the way of electrons in the F-layer to refract the signal and return it to the earth. "Electrons per cubic meter" is not the most common phrase in one's vocabulary, at least if you're an Amateur Radio operator. Our jargon deals with frequencies instead, so we can translate the electron density into critical frequencies.

I've said that in order to get one's RF back from the F-layer, the transmitter frequency must be less

than three times the critical frequency of the layer, foF2. Remember that? It's the old "rule of three" for oblique reflection from the F-layer.

RS-12's beacon is at 29.4 MHz so its RF can make hops within the ionosphere if the critical frequency at reflection/refraction points is about 10 MHz or better. That's no problem to the south of my QTH, as the critical frequencies in the equatorial regions are 10 MHz and better during the day. To get back to me, the RF from RS-12 had to punch through the F-layer, as shown in Figure 2, and yet hit the ocean at just the right angle for a hop. That proved to be a bit harder for the first hop, as it was half as frequent as the second one. But it did happen, no doubt about it.

Once the second hop came through, the angle problem was no longer apparent as RS-12 was south of the densest portions of the equatorial ionosphere and the signals from RS-12 were essentially continuous, right past the tip of South America and toward Antarctica. How about that? Sort of "QRP DX from on High"!

There are other aspects of HF propagation that one can observe, even study, using RS-12. I won't say that it's an ideal device for experimentation; it goes its way and does its own programmed thing. But it is regular as clockwork, has a path which is only inclined by 11 degrees from the N-S direction and the plane of its orbit slowly shifts in local time. So if one is patient and lies in wait, as it were, it can be used as a probe to demonstrate some of the "secrets" of HF propagation, right while you listen!

Now that I'm satisfied that I have a handle on the southern portion of those noontime N-to-S passes, I'm working on the northern part. That has proved interesting as, being in a polar orbit, RS-12 came out of the early morning darkness over Mongolia and glided down to my QTH from the polar cap. Monitoring its signals from over the polar cap on that part of the passes in November has shown something new and exciting. Stay tuned, as they say in Radioland. WR

If you desire *anything* but put hardly any effort to it, what you get will be *hardly anything*. W7NUN

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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention

Final arrangements for the 10-10 Convention, to be held in Wichita, Kansas, on 25 and 26 September 1993 are being made and it looks like a great time is being planned for 10-10 members. The 10-10 Convention is being held in conjunction with the Kansas State ARRL Convention which will provide 10-10 members the additional benefit of attending all of the ARRL Convention activities, workshops, forums and programs.

10-10 will have a forum at 10 a.m. on Saturday, 25 September which will report on the 10-10 board meeting, also being held in Wichita just before the start of the convention. A special forum is being held at 2 p.m. on Saturday, the 25th, to formulate responsibilities and standard operating procedures for all 10-10 chapters. This is a very important step to bring all chapters in line with a single operating procedure. If you are a chapter head or certificate manager and are planning to attend the convention, make this a must on your list of things to do. If you are a CH or CM and are not attending the convention, please see if someone from your chapter is attending and have them attend this important meeting. You may also send your suggestions to Director Jack Miller, W9WYN, #06894, P.O. Box 123, Brookfield, IL 60513. Jack will see that your suggestions are heard.

A gala 10-10 banquet is scheduled for Saturday night. Plan to attend the banquet and enjoy a wonderful evening with all your good 10-10 friends. For a registration form and additional convention information, send an SASE (#10 size) to Ed Redwine, K5EJR, #11843, convention chair-

man, 9 Yellowrose Lane, Augusta, KS 67010. Plan now to attend this every-other-year event. See you all in Wichita!

Contest results—CW Contest

The contest results for the 10-10 Spring CW QSO Party are in and W5RAN, #1125, received the top score with 91 Qs and 121 points. The district winners were:

District	Call	QSOs	Points
2	KF5UN/2	14	26
3	WK3P	6	11
4	KJ4RV	53	89
5	W5RAN	91	121
6	K6PZE	13	22
7	KB7PIY	11	14
8	W8PJY	19	34
9	KC0OZ	17	27
0	K0PVI	24	45
DX	VK3YU	27	50

Note that there were no logs received from the first district.

The Possum Trot Chapter took the highest score out of the 16 chapters who submitted logs. Possum Trot submitted 24 logs for a total of 1,030 points. Although band conditions were not the best during the contest weekend, all had a good time. We thank John Hugentober, N8FU, #16154, and the Cincinnati Area 10-10ers for a great job in scoring the contest.

Contest results—SSB Contest

The 10-10 SSB QSO Party held on the weekend of 6-7 February 1993 produced some great scores. A near record of 643 logs were received including reports from 62 chapters. There was also a strong DX participation with 62 logs received from 10-10 DX stations. The top ten worldwide were:

No.	Call	QSOs	Points
1	VP2VF	897	1680
2	KC6QXU	910	1630
3	WN9P	806	1448
4	WA5JDU	810	1370
5	W7LD	748	1365
6	KB6NAN	731	1327
7	K0LT	682	1187
8	KC5CP	656	1160
9	KF5SB	629	1123
10	WW1E	617	1097

Congratulations to Dirk, VP2VF, on his win. This is an amazing win for Dirk, as it was the very first time he had competed in a 10-10 contest! Congratulations also to the City of Lights Chapter for their overwhelming win

with a total of 73 logs received from City of Lights chapter members.

The next 10-10 SSB QSO Party will be the weekend of 7-8 August 1993. Plan to participate and be sure your dues are paid up so you can submit your log. This contest was scored by the Colorado Bighorn Chapter, and a big thanks go to them and to Don Zielinski, K0PVI #9902, chairman of the scoring committee for their work in scoring a big contest with 643 logs.

Help

The Peach Tree Chapter of 10-10 would like to update chapter records that were wiped out in a computer crash when former Chapter Head N5SGC's computer was hit by lightning. If you have a Peach State number, please send a postcard to Jim Whittlesey, KC4RHW, #57051, 612 Redbud Lane, Oliver Springs, TN 37840-2316.

Also, as certificate manager (US, Canada, Caribbean and South America) for the Springbok Chapter, Jim needs Springbok numbers in the 100 to 200 block that are missing. If you have a Springbok number between 100-200 send your number to Jim.

Wanted—a volunteer

10-10 is looking for a volunteer for the 1000+ BAR Manager's position. This is a very time consuming job and although a computer is not mandatory, it would aid in keeping the records. If you are retired or have free time available, and are interested in becoming a 10-10 "volunteer," send your application to: John Ellison, W0ERZ #5145, director, Operations Committee, 2 Douglass Lane, St. Louis, MO 63122. Please include a copy of your paid-up dues card or a copy of the address label from the latest copy of the 10-10 International News with your application.

Highest number

The highest 10-10 number issued through the end of May 1993 was 64468, issued to Ricky Miller, KD4OKG, of Prestonburg (Floyd County), Kentucky. We are getting close to the next 10-10 milestone of number 65000! It may have been issued by the time you read this. 10-10 just keeps on growing!

The 10th annual 10-10 Reno Bash

The weekend of 12-15 August will be the 10th annual gathering of a group of 10-10 paperchasers. The group will be staying at the Reno Circus Circus as before and everything is very informal. Make your own reservations in Reno and join this friendly group of 10-10ers. There will be the usual 10-10 Paperchasers Net meeting on Saturday.

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Where's the Fun?

The 10 meter test had started, and I expected the band to open about the time I arrived at the motel. Rig and gel cell were in the trunk. Maxi-J was right beside. I rolled up inside the launcher pail. Room with a view. Maxi takes off from the balcony sloping down to a tree. His tail slips under the door. And I'm 59 in Japan. info

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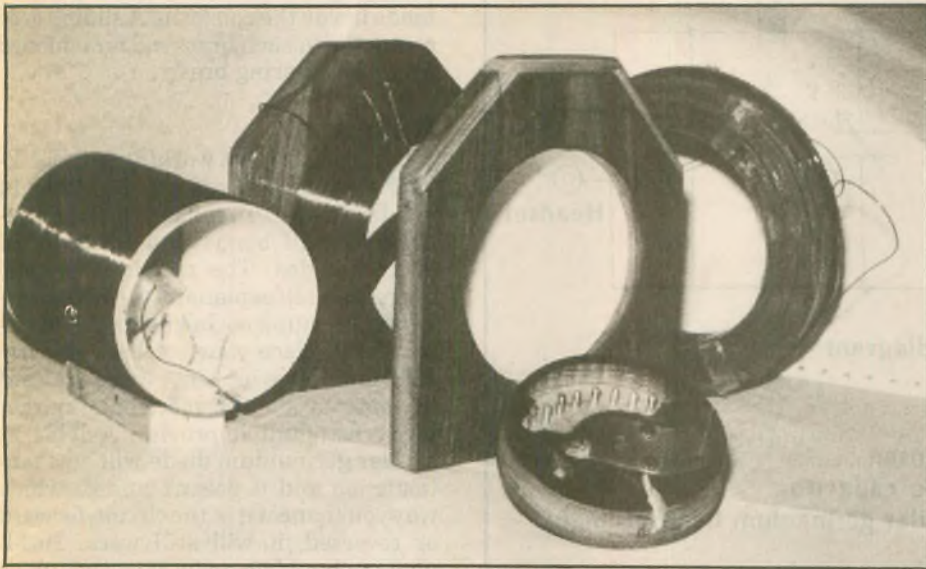
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CONSTRUCTION



Far left, L-2 coil end routed out for connecting coil taps. Rear right, coil of enameled wire for winding L-1 and L-2.

The oatmeal box receiver

ALLEN R. BREINER, W3TI

I have no idea how long the Quaker Oats Company has been selling their Oatmeal products, but the label on the round tubular container states "For over 100 years." However, I do know that during the early years of wireless communications the oatmeal box had

been the foundation upon which many aspiring shortwave listeners and Amateur Radio buffs, including myself, had

built their first crystal set receivers. My first oatmeal box set was made around 1928 and the idea and schematic came out of the 1911 edition of the Boy Scout Handbook which still adorns my bookshelf. The receiver described here is of an advanced design and it really works.

Construction

Oatmeal box coil forms are great if you must adhere to authenticity. We found that the material thickness in Quaker's present container is much thinner than the real oldies and becomes rather delicate when all that copper wire is wrapped around it. So right from the start we substituted by using 4 in. diameter white PVC sewage disposal pipe. Visit your friendly neighborhood plumber for a 12 in. piece of scrap or cutoff left over from a previous job. Be sure to get the 1/16 in. thin-wall variety.

Use a hack saw or hand-held electric jig saw and carefully make the following cuts. Cut the pipe into two 5 in. lengths. Set one aside to be used for L-

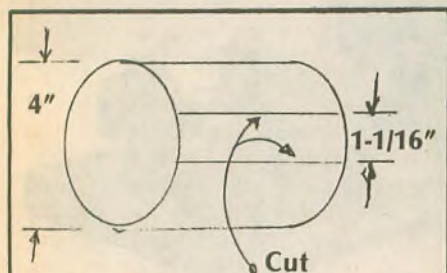


Figure 1

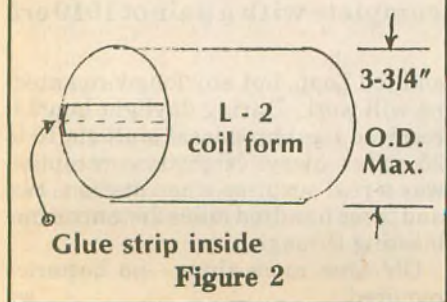


Figure 2

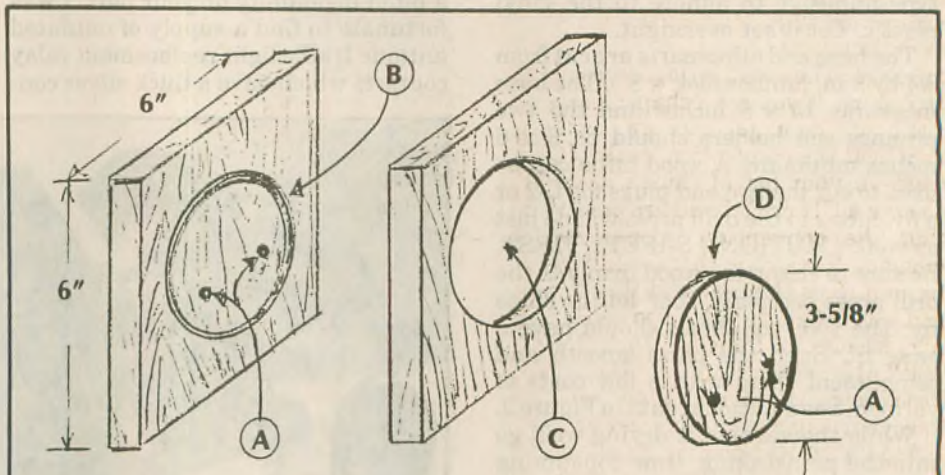


Figure 3

3A Drill 3/16 in. holes for brass slide rods.

3B Cut a groove 1/4 in. deep to hold the end of L-1

3C Cut out with lathe or fly cutter. 4 in. PVC (L-1) should have a snug fit.

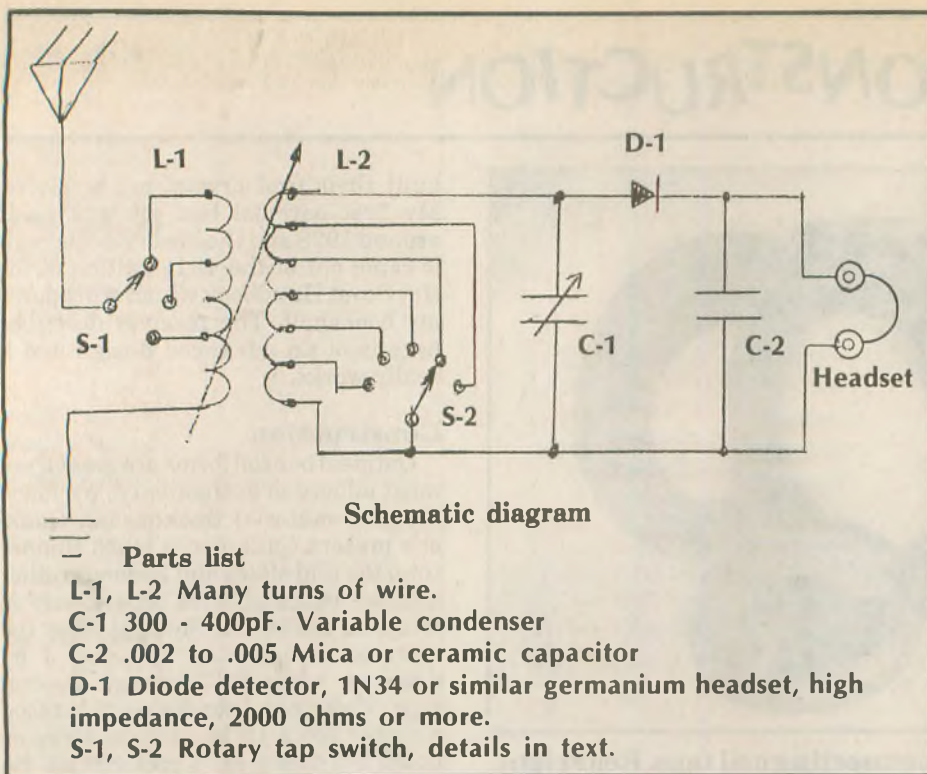
3D Two required. Cut to fit inside L-2 coil form.

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1, the primary coil. Use a combination square on the remaining piece, scribe two parallel lines 1 1/16 inches apart (1 1/16") as shown in Figure 1. Cut along these lines but do not discard the piece you cut out. Then squeeze the coil form so the cut sides butt together. Use wire or tape to keep it from springing apart. The outside diameter should be no larg-



er than 3 3/4 inches (3 - 3/4") and should slide loosely inside L-1, the antenna coil. Retrieve that strip you cut from L-2 and glue it inside the coil form as shown in Figure 2. Use an epoxy resin type adhesive to adhere to the vinyl plastic. Let it set overnight.

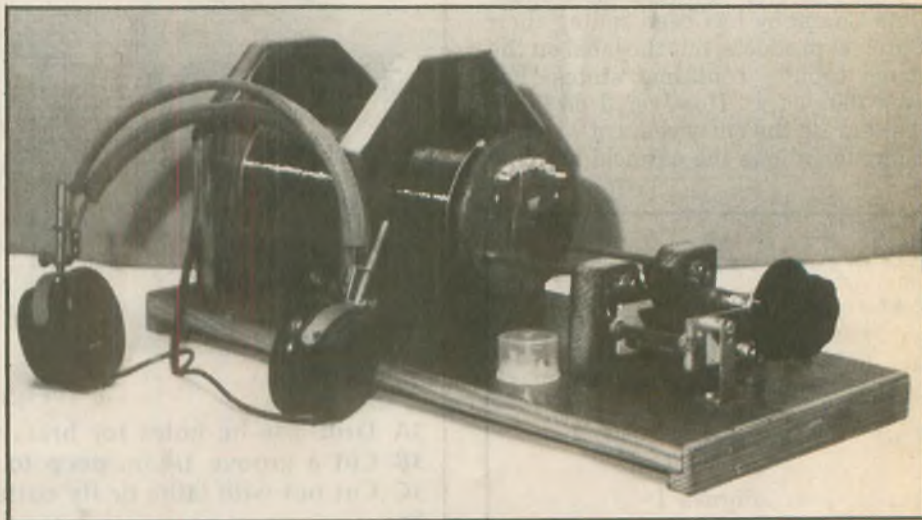
The base and other parts are cut from 3/4 by 8 in. lumber (3/4" x 8"). The base measures 15 x 8 inches and the two primary coil holders should be 6 x 6 inches minimum. A wood lathe can be used to cut the two end plugs for L-2 or a fly-cutter in the drill press will do just as well. CAUTION - SAFETY FIRST. Be sure to clamp the wood firmly to the drill press bed plate, then let the chips fly. The PVC coil forms should have a snug fit. Sand the parts smooth and compliment them with a few coats of varnish. See additional data in Figure 3.

While the varnish is drying we'll go into the painstaking, time consuming part-winding the coils. Eighteen or 20 gauge wire should be considered. Other wire sizes may be substituted with varied results in frequency coverage. Enamelled or cotton covered wire will do nicely. I used number 20 enameled copper because I had a 1000 ft. roll in the junk box. Approximate length required is about 275 feet for both coils. From my wire chart number 20 gauge goes about 324 feet per pound. A word of caution: Be sure you wind both coils in the same direction. Should one be reversed the inductive coupling will cancel out and you will receive nothing.

The number of taps on each coil is not critical. Four, five or six-use your own judgment. The rotary tap switches are

formed from sheet spring brass. Fifteen or 20 thousandths (.015 to .020) brass shim stock will do the job and is available at any auto parts store.

The coil tap contact points will take a bit of ingenuity on your part. I was fortunate to find a supply of outdated antique traffic light replacement relay contacts which have a thick silver con-



Loose coupler crystal receiving set complete with a pair of 1910 era Baldwin headphones.

tact surface. An excellent substitute are 8-32 round head brass screws. Just file the heads flat. Oval or pan head screws will not have sufficient metal remaining after being filed.

Inductive coupling between L-1 and L-2 is made variable by sliding L-2 in and out of the stationary coil L-1. The two slide bars are made from 3/16 in. diam-

eter brass rod available at hobby supply shops, auto supply stores and your friendly neighborhood welding shop. The tuning capacitor, C-1, is connected to the ends of each brass rod. Coil taps and rotary tap switch contacts of L-2 are all made inside the coil form. A sliding type contact with each brass rod is fashioned from sheet spring brass.

Wiring

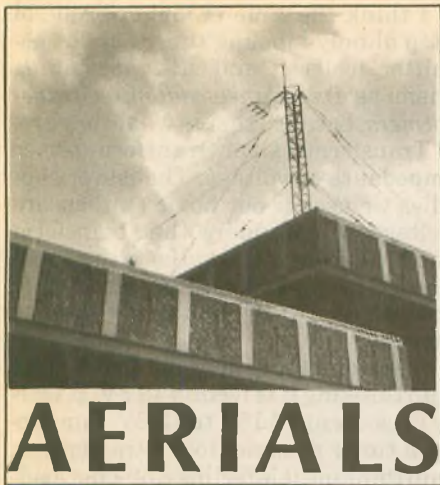
Since you are not working with UHF-VHF frequencies, use number 16 or 14 insulated wire. To make it look antiquish make all bends and turns at 90 degree angles. The simple schematic diagram is self explanatory. A cat's whisker and a chunk of Galena for the detector would place your set back to early 1910 era. However, since these are hard to come by on the electronic market today we shall improvise. A 1N34 or similar germanium diode will do a fantastic job and it doesn't matter which way you connect it in the circuit, forward or reversed, it will still work. Headphones should be a few thousand ohms impedance for best results. They have a habit of showing up at hamfests and flea markets at bargain prices. Since this is a high-impedance circuit, the 8-ohm variety of headphones will leave a lot to be desired for good reception.

Use the basic circuit but don't hesitate to experiment and substitute parts. When completed you can say, "I built it just like in *Worldradio* magazine," except for the antenna-I used my 80M

end-fed Zepp, but any longwire antenna will work. During daylight hours it received local broadcast stations 10 to 25 miles away. Nighttime reception was a real surprise when stations two and three hundred miles distance came blasting through.

Oh! One more thing—no batteries required.

WR



AERIALS

LIL PADDLE

A dipole low to the ground is, for DX, bad news indeed. For example, at one-quarter wavelength above terra firma, the radiation goes straight up (and straight down). Any of your precious power that does make it to some other continent has been sharply attenuated by the many trampoline-like bounces it has taken to get over to Hans' QTH. Each bounce, striking earth and the ionosphere, leaves some power behind.

Those amateurs fortunate enough to have antennas mounted at great height get the DX because, their angle of radiation being lower, it takes fewer "hops" to get somewhere, resulting in less loss.

But for those who must keep a low profile, in more ways than one, all is not lost. And this method does not entail absorbing the output of a Chilean copper mine into your backyard.

There is an antenna which, for some totally inexplicable reason, does not receive its just due. It has valuable properties for which it has never gained its well-deserved acceptance.

This practically unknown marvel is the HF discone. No, you don't need 50 radials or anything like that. Three pieces of wire will do just fine. The highly attractive virtue of the HF discone is that (for basically a vertical antenna) a big ground system is just not needed at all.

Let's take a look. Picture the garden variety dipole. There it is. Let's say it's running east and west, a half-wavelength long and fed smack dab in the center with coax.

First, we're going to make this dipole only one-quarter wavelength long. We'll feed it in the center (of the 1/4-WL wire) but do *not* cut the antenna wire. The center conductor of the coax will go to that short dipole (uncut).

Next, take two more wires, each one-quarter wavelength long. Picture now a "V" upside down. Or, an "A" without the little bar. Actually the wire, instead of two quarter-wavelengths could be just

one wire a half-wavelength long. The tip (apex) of the "A" goes to the shield side of the coax. One way of accomplishing this is to use a center insulator like a Budwig and use a 90 degree coax connector. The feedline comes straight down.

There it is. Not much more than one-quarter wavelength above ground. The two wires come down at 45 degrees each. Put your ear down to your shoulder and it looks like the letter "K."

Naturally, for your own particular location, there may have to be some fine trimming of the top wire and/or the hanging wires. You may find it works better if the bottom wires are at right angles to the top wire. You may find that making the bottom wires, instead of an "A" (minus the bar), an enclosed triangle may work better.

Also, you may find, as I did, that really running the top wire out a long way proves to be effective. The great time saver in all this was the use of the MFJ Antenna Analyzer that told me exactly at what frequency I was resonant as I trimmed or lengthened.

Let me know your results. Another hidden antenna that shows promise is an 8 ft. piece of wood used as follows: Stand it up vertically, perhaps tying it to a fence post. At the 4 ft. level attach a Budwig connector. From the connector run a wire up the wood and a wire down the wood.

The top wire will run up the wood for four feet. Then the remaining 12 feet, six inches will run on an angle down to the fence. The downward wire will travel four feet down the board and then horizontally along the ground (a few inches above) attached to the fence.

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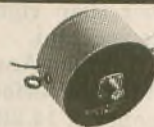
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another 12 feet, six inches were added at the bottom of the 4 ft. wire and run in an opposite direction than the other (what would appear to be) radial wire.

Doing the same (adding another section to the top wire) resulted in a disaster, and it was removed. So, the bottom looks like two radials going out. The advantages of this configuration are (1) not showing a lot of aluminum to the neighbors, and (2) the feedpoint is four feet above ground rather than right down there warming the zucchini.

Again, using the MFJ Antenna Analyzer enabled me to trim this to perfection at my favorite frequency of 14.200 which is where I test all my antennas. I can sweep the band with this fine instrument and not cause an iota of interference. It is interesting to watch the dip as you come to resonance. Should it be too sharp, like a baseball falling off a table, that is not good. Should it be a long, totally flat trough across an entire band one should pause with concern.

On the Yagi front, huzzahs and even plaudits to Telex/Hy-Gain for changing the way of measuring (placing them at a disadvantage in the ever-spiraling dB one-upmanship taking place) and for creating their new antennas in menu fashion. You may adjust for your actual preference whether it be for maximum forward gain or for front-to-back or for greater bandwidth.

Next month we'll have some figures for wire Yagis you can hide in your garage.

(Kurt and Lil go by their special monikers so they can beg you to buy their latest book, AERIALS II, and not feel sheepish when they see you at Dayton.)

A letter to Kurt

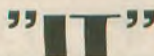
Scott Ketcher, KF7XD, of Tucson, Arizona, wrote an article for his local newsletter, *Solid Copy/Intermod*, May issue. He then sent it to Kurt and I saying, "The subject of the article is so in line with your thinking that I thought you'd like a copy of it."

If you miss seeing

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Tomfoolery—not

Several weeks ago I went to the air show at Davis Monthan AFB. The static displays were great, the Thunderbird's performance spectacular, and the weather ideal. It was a wonderful way to spend a Saturday afternoon, and the price was right.

When I was walking around, I came across a military communications vehicle sprouting a long vertical antenna. I asked the operator about the radio connected to it and he told me it covered 2-30 MHz, the full HF band.

When I asked if the tuner used for loading the antenna was automatic or manual, he said he didn't know, but it didn't make any difference anyway because tuners just fool the transmitter.

Finally, I thought, I have located the source of the "Tuner Fools The Transmitter" school of thought; the military still teaches it!

That brought to mind my own military flight training. I was taught that upper sideband was developed for airplanes and lower sideband was developed for submarines. They did the job of convincing me to always select USB for airborne HF communications even though the reason was flawed. In the military, the end justifies the means.

ANTENNA OPTIMIZERS

AO 6.0 automatically optimizes antenna designs for best gain, pattern, impedance, SWR, and resonance. AO optimizes cubical quads, phased arrays, interlaced Yagis, or any other arrangement of wire or tubing. AO uses an enhanced, corrected MININEC algorithm for improved accuracy, assembly language for high speed, and protected mode for high capacity. AO features stunning 3-D radiation patterns, 3-D geometry and wire-current displays, 2-D polar and rectangular plots with overlays, automatic wire segmentation, automatic frequency sweep, symbolic dimensions, symbolic expressions, skin-effect modeling, current sources, polarization analysis, near-field analysis, up to 450 pulses, and pop-up menus. AO 6.0, \$100. AO-Pro 6.0 (5700 pulses), \$600. 386+387 or 486DX and VGA required. MN 4.5 (256 pulses; any PC; no optimizer, 3-D patterns, or assembly language), \$50. GUY 1.0 (guy-wire modeler), \$25.

YO 5.0 automatically optimizes monoband Yagi designs for maximum forward gain, best pattern, and minimum SWR. YO models stacked Yagis, dual driven elements, tapered elements, mounting brackets, matching networks, skin effect, ground effects, and construction tolerances. YO optimizes Yagis with up to 50 elements from HF to microwave. YO runs hundreds of times faster than MININEC. YO is calibrated to NEC for high accuracy and has been extensively validated against real antennas. YO is intuitive and highly graphical. YO 5.0, \$75. YOC 5.0 (assembly language, much faster), \$100. NEC/Yagis 1.0 (professional accuracy reference), \$50.

YOC and NEC/Yagis require a math coprocessor; MN and YO come with both coprocessor and noncoprocessor versions. All except AO run on any IBM PC compatible with graphics. All programs include extensive documentation. Add 7.25% CA, \$5 overseas. Visa, MasterCard, U.S. check, cash, or money order. 3.5" or 5.25" disk.

Brian Beezley, K6STI
507 1/2 Taylor, Vista, CA 92084
(619) 945-9824, 0700-1800 Pacific Time

I think the time is long overdue to stop blindly labeling tuners as "transmitter foolers," and start describing them as *impedance matching transformers*, because that is what they are.

Transformers can transform either impedance or voltage. The power supplies we use for our home stations are voltage transformers that transform the 115V from a wall outlet to the 13.8V needed by our radios. They also rectify that 13.8V to DC, but that's another story.

A power supply does not fool a radio into thinking it is feeling 13.8V. It really does change 115V to 13.8V. Similarly, a tuner does not fool a transmitter into thinking it is feeling a 50-ohm load. It really does change the antenna system impedance to 50 ohms. What it doesn't do is make a low shortened antenna perform as well as a high half-wave antenna, but that, too, is another story.

If we are to endorse Truth in Lending and Truth in Advertising, then we should also endorse Truth in Describing, and that's no fooling! WR

DX WORLD

(continued from page 37)

tributors: K1ER, K2JFE, WA4DAN, K5BDX, AA6AB, W6IL, K6VX, AA7AN, N7VVD, KA8RAM, NE8Z, American Radio Relay League, K5FUV, Northern Arizona DX Association, W7YS, Western Washington DX Club, WA0RJY, Southern California DX Club, KN6DV, Western New York DX Association, KB2NMV, Salt City DX Association, KB2G, *CQ Ham Radio*, *The DX Magazine*, VP2ML, *Long Skip*, VE3IPR, *The W6GO/K6HHD List*, *The Long Island DX Bulletin*, W2IYX, *QRZ DX*, W5KNE, and *The DX Bulletin*, VP2ML.

Several DXers on holiday take their radios with them, particularly the IOTA types. Check the IOTA frequencies (14.260, 21.260, 28.460 and 28.560 MHz) for a possible new one for you. WR

"Tiny Tim" contact

May's construction project, entitled "The Rebirth of 'Tiny Tim,'" concluded with an invitation to direct any questions or comments to the author, E.C. Van Der Eecken, K6QGH.

Interested readers may write to K6QGH at 3161 Fidler Ave., Long Beach, CA 90808-3435.

The author has also noticed a schematic error: The plate blocking capacitor just ahead of C2 is designated as a .01uF; it should be a 500pF at 20kV, a type commonly known as a "doorknob capacitor," one common to high voltage supplies in older TV sets.

CONTESTS

Maryland-DC QSO Party

The Antietam Radio Association of Hagerstown, MD, is sponsoring this event from 1600Z 14 August to 0300Z 15 August and from 1600Z to 2359Z 15 August.

Rules: Stations may be worked once per band using each mode. CW QSOs in the CW band only. Non-Maryland stations must work Maryland stations; Maryland stations may work anyone. Portables and mobiles that change Maryland counties during the contest count as a separate station in each new county of contact. No repeater QSOs count. Other HF and VHF contacts do.

Exchange: Signal report and QTH (county for Maryland stations; state or province or, if DX, country as QTH for others).

Suggested frequencies: SSB—3.92, 7.23, 14.26, 21.37, 28.38, 50.15 and 146.55 MHz; CW—3.643, 3.701, 7.06, 7.126, 14.04, 21.115, 28.04 and 28.115. CW is suggested on the odd half hours: 1730, 1930, 2130 UTC, etc.

Scoring: Each Maryland county, Baltimore city and DC are multipliers. QSO points-10 points for contact with any club station; five points for contact with any mobile station; three points for QRP stations or Novice/Tech on CW; two points for CW contact with a Maryland station; one point for any other valid contact.

Special note: Points are cumulative. Example: A CW mobile contact is worth five points (three for mobile + two for CW).

Final score: Add up all QSO points and multiply by the sum of all the multipliers (maximum of 25 multipliers possible, each multiplier may be claimed once only and do not repeat on

different bands). Mobiles may add 100 bonus points to their final score for each county outside their home from which 20 QSOs were made.

Awards: Official, limited-edition Maryland-DC QSO Party Watch will be awarded to the top Maryland winner and the top non-Maryland winner. Certificates will be awarded to the high score verified from each US state and Canadian province. In addition, there will be awards to the top 10 MD-DC logs; high scoring MD club station, high scoring DC club station; high scoring Maryland mobile; high scoring YL (in and out of MD); and high Novice/Technician (in and out of MD). A certificate of participation will be awarded to each station not winning an award but with at least 50 QSO points in entry. Also, certificates will be awarded to the top three SWL logs and top three QRP entries (no state restriction). Logs should be mailed to the contest chairman by 10 September. Indicate on your entry if you are competing in a special operating class (Mobile, Club, Novice, Technician, QRP, etc.).

Mail Logs to: Antietam Radio Association, P.O. Box 52, Hagerstown, MD 21741. Please include an SASE if you wish a copy of the contest results.

Direct any questions to WA3AAT or WA3EOP, contest co-chairman

New Jersey QSO Party

The Englewood Amateur Radio Association Inc. invites all amateurs the world over to take part in this 32nd annual event from 2000 UTC Saturday 21 August to 0700 UTC Sunday 22 August and from 1300 UTC Sunday 22 August

to 0200 UTC Monday 23 August.

Rules: Phone and CW are considered the same contest. A station may be contacted once on each band, phone and CW are considered separate bands. CW contacts may not be made in phone band segments. New Jersey stations may work other New Jersey stations. General call is "CQ New Jersey" or "CQ NJ." New Jersey stations are requested to identify themselves by signing "DE NJ" on CW and "New Jersey calling" on phone.

Suggested frequencies: 1.810, 3.535, 3.950, 7.035, 7.135, 7.235, 14.035, 14.285, 21.100, 21.355, 28.100, 28.400, 50/50.5 and 144/146. Suggest phone activity on the even hours: 15/10M on the odd hours (1500 to 2100 UTC); 160M at 0500 UTC.

Exchange: QSO number, RST and QTH (ARRL section or country), New Jersey stations will send county for their QTH.

Scoring: Out-of-state stations multiply number of complete contacts with New Jersey stations times the number of New Jersey counties worked (maximum of 21). New Jersey stations—W-K-VE-VO QSOs count as one point; DX stations count as three points. Multiply total number of points by the number of ARRL sections (including NNJ and SNJ). KP4, KH6, KL7, etc. count as three-point DX contacts, as well as section multipliers.

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

Logs: Must also show the UTC date and time, band and emission and be received not later than 18 September. The first contact for each claimed multiplier must be indicated and number and a check list of contacts and multipliers should be included. Multi-operator stations should be noted and calls of participating operators listed.

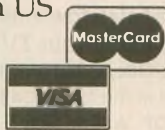
Logs and comments should be sent to: Englewood Amateur Radio Association, Inc., P.O. Box 528, Englewood, NJ 07631-0528. A #10 SASE should be included for results.

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

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HAMFESTS



California

THE LIVERMORE AMATEUR RADIO KLUB is sponsoring the East Bay Area Radio/Electronics/Computer Swap Meet on 1 August from 7 a.m. to noon at Las Positas College. Features include covered spaces in event of rain, refreshments and free parking. Admission is free. Sellers pay \$10 space fee. Talk-in on 147.045(+) from the west and 145.350(-) PL100 Hz from the east. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves or leave message at 510/783-2803.

Hawaii

The EMERGENCY ARC, along with the HONOLULU ARC, MAILE REPEATER CLUB, AND LEEWARD ARC, will sponsor a picnic and swapmeet on 7 August at Richardson Field (Pearl Harbor). Set-up is at 9 a.m. and BBQ activities will start before noon. All are welcome and island visitors are encouraged to come. For further information contact Eric Johnson, AH6MQ, at 808/734-1760.

Illinois

HAMFESTERS RADIO CLUB is holding their 59th annual Hamfest and Computer Festival on 8 August from 8 a.m. to 3 p.m. at the Will County Fairgrounds in Peotone. Features include handicap accessible air-conditioned building, food and beverages, swappers' row and plenty of parking. Admission is \$4 in advance and \$5 at the gate, children under 12 admitted free. Vendor set-up time is 6 a.m. Talk-in on 146.64(-), 146.94(-) and 146.52 simplex. Contact David F. Brasel, NF9N, Hamfesters Radio Club, 7528 W. 109th Pl., Worth, IL 60482; 708/448-9432.

THE WESTERN ILLINOIS ARC is holding a hamfest on 15 August from 8 a.m. to 2 p.m. at the Eagles Alps Lodge in Quincy. Features include tailgating, vendors, ARRL table and VE exams. Admission is \$2.50 in advance and \$3 at the door. Talk-in on 147.63/03 and 146.34/94. Contact Rod Simon, N9MCX, c/o WIARC, P.O. Box 3132, Quincy, IL 62305.

Maryland

THE MOOSE ARC is holding a Ham and Computerfest on 22 August from 8 a.m. to 4 p.m. at the Loyal Order of Moose, Towson Lodge 562. Features include indoor tables, blacktop tailgating and parking, food and refreshments. Admission is \$4, children under 12 admitted free. Tables are \$10 plus admission, tailgating is \$5 plus admission. Talk-in on 145.33 and 224.12. Contact Nick Nickles, WZ3J, Loyal Order of Moose, Towson Lodge 562, Moosefest, 8801 Mylander Lane, Towson, MD 21286; 410/668-2363.

Minnesota

THE LAKE OF THE WOODS REPEATER ASSOCIATION is holding a hamfest on 28

August from 10 a.m. at Roseau High School Gym. Features include demos, seminars, refreshments, dealers, flea market, auction, banquet and VE exams. Admission is \$5 in advance for hamfest only and \$11 in advance for hamfest and banquet. Vendor set-up times are Friday evening and Saturday 8-10 a.m. Talk-in on 147.69/09 and 146.40/147.00.

Missouri

THE ST. CHARLES ARC will hold Hamfest '93 on 22 August from 9 a.m. to 2:30 p.m. at Blanchette Park in St. Charles. Features include free parking with handicap access, prizes, vendors, forums, food, bingo and cake walk. Admission is free. Outdoor flea market spaces are \$2 and up. Vendor set-up time is 6:30 a.m. Talk-in on 146.06/67. Contact Scott Schultz, N0UVM, 241 Burning Leaf Dr., St. Peters, MO 63376; 314/928-7267.

New Jersey

THE SOMERSET COUNTY ARS is holding their annual HamFest on 28 August from 8 a.m. to 2 p.m. at the Manville Civil Defense Building in Manville. Features include door prizes, coffee, soda, snacks and free frequency and deviation measurements. Admission is \$4 per person, XYLs and harmonics under 12 admitted free. Indoor spaces are \$20, outdoor spaces \$15. No tailgating. Vendor set-up time is 7 a.m. Talk-in on 448.175(-), 224.88(-), 146.52 simplex. Contact Ron, N2RPK, at 908/685-1191 or Pete, WA2OCN, at 908/722-2890.

New Mexico

THE DUKE CITY HAMFEST will be held 21-22

August from 9 a.m. to 4 p.m. Saturday and 9 a.m. to 3 p.m. Sunday at the New Mexico Army National Guard Armory in Albuquerque. Features include outdoor swapfest, indoor facilities, prizes and VE exams. Talk-in on 147.10(+). Contact Jay Miller, WA5WHN, P.O. Box 6552, Albuquerque, NM 87197-6552.

New York

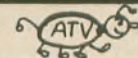
THE WESTCHESTER EMERGENCY COMMUNICATIONS ASSOCIATION is sponsoring the ARRL Eastern New York Section Convention on 8 August at the Westchester County Center in White Plains. Features include forums, commercial sales floor and a large, indoor flea market. Admission is \$5. Commercial space is \$20, flea market space is \$10. Tables are \$10 each. Contact Jeanne Raffaelli, N2NQY, WE-CAFEST '93, 544 Manhattan Ave., Thornwood, NY 10594; 914/962-9666.

THE TOMPKINS COUNTY ARC is sponsoring the Finger Lakes Hamfest on 21 August from 7 a.m. to 3 p.m. at the Armory in Ithaca. Features include refreshments, paved outside flea market and VE exams. Admission is \$4 in advance and \$5 at the door, under 18 admitted free. Indoor tables \$7, flea market space \$2. Vendor set-up times are Friday evening and 6 a.m. Saturday. Talk-in on 146.37/97. Contact Ross, N2ISU, TCARC, P.O. Box 4144, Ithaca, NY 14852-4144; 607/257-3511.

THE YONKERS ARC is holding their Hamfest/Computerfest '93 on 29 August from 9 a.m. to 3 p.m. at the Yonkers Municipal Parking Garage in Yonkers. Features include food and refreshments, free coffee, sanitary facilities and free

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Maryann (WB6YSS)

tune-up clinic. Admission is \$5, XYL, YL and kids under 12 admitted free. Vendors \$10 with pre-registration, \$14 at the door. Vendor set-up time is 7:30 a.m. Talk-in on 146.865(-), 440.150(+), 146.52 simplex. Contact John, WB2AUL, at 914/963-1021 or Jim, N2ONM, at 914/969-5182.

Ohio

THE PAULDING COUNTY ARG is holding their third annual hamfest on 8 August from 8 a.m. at the Paulding County Fairgrounds. Features include overnight camper parking, hourly door prizes, 50/50 drawing, food service and VE exams. Admission is \$3, children under 12 admitted free with one adult. Inside tables \$10, outside spaces \$4 plus admission. Vendor set-up time is 6 a.m. Talk-in on 146.865-, 444.225+. Contact KB8MAF, PCARG Inc., 14043 CR 111, Paulding, OH 45879; 419/399-3641/4507.

THE WARREN ARA is holding a hamfest on 15 August from 6 a.m. to 3 p.m. at the Trumbull Branch Campus of Kent State University in Warren. Features include air-conditioned exhibit area, five-acre flea market, meeting rooms, forums, food and refreshments, free parking and VE exams at 10 a.m. Admission is \$4, under 12 admitted free. Exhibitors \$8 per table, flea market \$3 per space. Talk-in on 146.37/97 and 448.00/443.00. Contact Al VanSlyke, N8IKX, Warren ARA Hamfest, P.O. Box 809, Warren, OH 44482; 216/889-3378.

THE UNION COUNTY ARC will sponsor their 17th annual Marysville Hamfest/Computer Show on 22 August at the fairground in Marysville. Features include overnight camping with electric and water hook-ups, commercial vendors and VE exams. Admission is \$4 in advance and \$5 at the gate. Outside flea market spaces \$5. Contact Don Sabins, N8MGJ, 15704 Jolly Rd., Marysville, OH 43040; 513/642-0475.

Pennsylvania

THE MID-ATLANTIC ARC will hold a hamfest on 8 August from 8 a.m. at the Bucks County drive-in theater in Warrington. Admission is \$4 per ham. \$3 for each tailgate space. Vendor set-up time is 7 a.m. Talk-in on 147.66/147.06 and 146.52. Contact Rob Vann, MARC, Box 352, Villanova, PA 19085; 215/384-3163.

THE DELAWARE-LEHIGH ARC is holding its annual hamfest and computer show on 15 August from 8 a.m. at the Career Institute of Technology in Easton. Features include contesting, computers and packet, demo ham station, electronics test bench and VE exams. Admission is \$3 in advance and \$4 at the door, spouses admitted free. Inside vendors \$15, tailgaters \$7 (\$6 in advance). Vendor set-up time is 6 a.m. Talk-in on 146.70(-). Contact Bill Goodman, K3ANS, Delaware-Lehigh ARC, RR 4 Greystone Building, Nazareth, PA 18064-9211; 215/253-2745 office or 215/258-5063 home or DLARC answering service at 215/820-9110.

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Tennessee

THE SHORT MOUNTAIN REPEATER CLUB is holding a hamfest on 29 August from 7 a.m. to 3 p.m. at Cedars of Lebanon State Park in Lebanon. Food and drinks available. Admission is free. Outdoor facilities only. Exhibitors bring your own tables—space available on a first-come basis. Talk-in on 146.91. Contact Mary Alice Fanning, KA4GSB, 4936 Danby Dr., Nashville, TN 37211; 615/832-3215.

YLS ON THE AIR

(continued from page 47)

After a visit to the Icom factory on Monday morning, the meeting came to an end, but the good time continued. Special sightseeing had been arranged in Nara and Kyoto for those who could stay over. It was a great privilege to see shrines, temples, dances, tea ceremonies, and other events that would not have been possible without the efforts of so many Japanese YLs, who not only pre-arranged all the details, but also spent their days and evenings with us.

Very special evenings were spent in the homes of Nozomi Gohara, JH3SQN, and Takako Takeuchi, JR3HGX, in Kyoto. We had a kimono party at Ken and Nozomi's, where all the visitors had a chance to be dressed in a kimono, and on another night there was traditional music. Takako and her OM also had a wonderful party for us in their home. Some of the group then went on to Tokyo and were

West Virginia

THE TRI-STATE ARA is holding a hamfest on 7 August from 8 a.m. to 3 p.m. at the civic center in Huntington. Features include handicap access, flea market, dealers and VE exams. Admission is \$5, 12 and under admitted free. Tables \$6 at the door, \$5 in advance. Talk-in on 146.60/146.76. Contact Alan, N8LNS, at 304/736-9303 or Bill, KF8QK, at 304/522-1933 or write TARA, P.O. Box 4120, Huntington, WV 25729.

warmly hosted by Fumi Abe, JA1AEQ.

The purpose of this meeting was to give YLs a chance to make friends from around the world and to contribute to international friendship, and that goal was certainly achieved. It was a perfect time and place for making friendships and for enjoying them.

The German song that we sang at the banquet was, "Wunn and Wo?" translated as, "When and where will we meet again?" There are currently plans for a meeting in Berlin in 1996, with Gertrud Szyza, DK8LQ, as the organizer. And the Korean YLs announced plans for a second Asian YL meeting in Seoul in the near future. After that, wunn and wo? WR

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RTTY contest software

Versatility is the new watchword for the new *RTTY* by WF1B contesting program. Version 2.09 of the *RTTY* contesting program includes a new DXpedition mode; this is in addition to the already supported contests of CQWW, ARRL, BARTG and SARTG. *RTTY* has become the de facto standard for *RTTY* contesting due to its singleness of purpose. It is an *RTTY* contesting program written for *RTTY*ers and designed by an experienced *RTTY* contestor.

Recently, the Howland Is. Expedition Team, operating as AH1A, used *RTTY* to work hundreds of people on *RTTY* during the expedition. This new DXpedition mode also facilitates active amateurs using *RTTY* for daily use. Expedition support is included with every copy of *RTTY*.

The popular HAL PCI-3000 support has once again been improved. *RTTY* will now automatically detect its presence. Additionally, new support has been added for the AEA AMT-1 AMTOR terminal unit. The programmable buffers have many new buffer tags for greater flexibility.

Currently supported hardware includes the

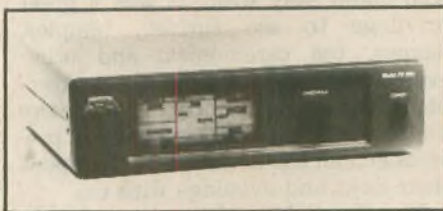
HAL PCI-3000, MFJ-1278, PK-232, KAM, AMT-1, UTU, and even the "old style" terminal units such as the ST-6 and HD-3030. Computer requirements are an IBM-PC compatible computer with 640K, and a hard drive is recommended.

A computerized telephone BBS is available for downloading new releases, enhancements, and upgrades. A full fact sheet is available upon request. Retail prices: US/VE send \$41.95; DX send \$44.95, US funds. RI residents add sales tax. Ray Ortgiesen, WF1B, Wyvern Technology, Inc., 35 Colvintown Road, Coventry, RI 02816-8509; *CompuServe*, 73750,2177; telephone, 401/823-7889.

AEA controller

Advanced Electronic Applications, Inc. (AEA) has just introduced its latest multi-mode data controller, the PK-900.

The PK-900, boasting a powerful triple pro-



cessor system, provides the following features: all standard amateur digital modes; dual simultaneous ports; PACTOR option; large, back-lit LCD display; 9600 bps G3RUH/ K9NG plug-in option board; direct

digital synthesis AFSK tone generator; six selectable receive modem tone pairs, from 170 Hz to 1000 Hz; packet and AMTOR maildrop; 16 gray shade WEFAX (with optional software) and much more.

The suggested list price is \$549. For a product data sheet and a list of authorized dealers, call AEA's literature request line at 800/432-8873. Advanced Electronic Applications, Inc., P.O. Box C2160/2006 196th St. SW, Lynnwood, WA 98036; 206/774-5554 sales.

AEA Windows data controller

Advanced Electronic Applications (AEA) has introduced PC-Pakratt for *Windows*, the only data controller program for *Microsoft Windows* on the market today. AEA's latest addition provides a true *Windows* application for controlling its entire family of data controllers, including the new PK-900, DSP-1232 and DSP-2232, as well as the industry standard PK-232 and PK-88 controllers.

PC-Pakratt works under *Windows 3.1* and can run two AEA controllers simultaneously. It includes all the features of standard control programs such as split screen operation, on-screen status, file transfers, macros, QSO logging, helpful help, on-screen parameter lists and much more.

To connect with AEA for more information on PC-Pakratt for *Windows*, call 800/432-8873. Advanced Electronic Applications, Inc., P.O. Box C2160/2006 196th St. SW, Lynnwood, WA 98036; 206/774-5554 sales.

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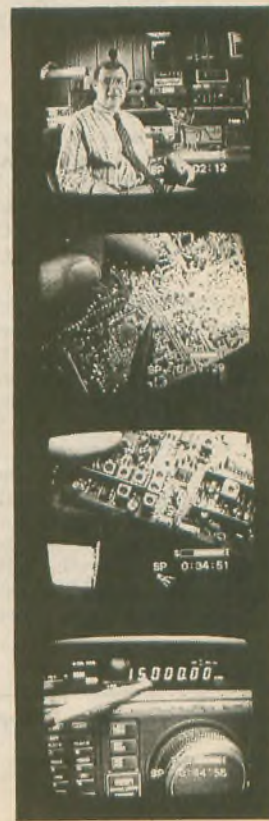
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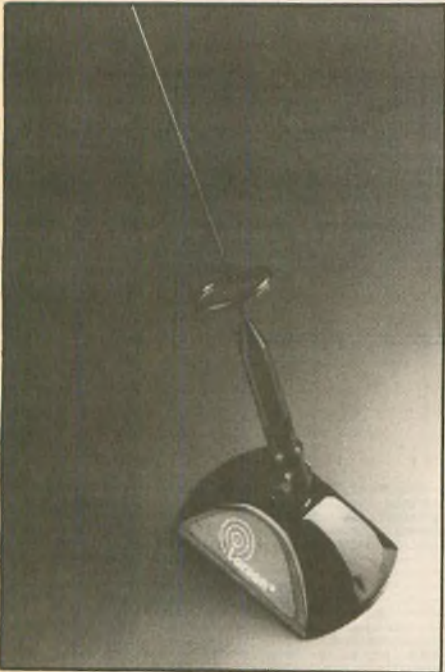
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Larsen on-glass antenna

Larsen Electronics' new KG 1290 is the first on-glass antenna for amateur application in this frequency band. Engineered for ham use in North America and Japan, the unit covers bandwidth from 1235 to 1432 MHz with a VSWR reading below 1.5:1. Using a collinear design featuring a half-wave over quarter-wave, the antenna produces 3dBd gain.



Exceptional performance stems from the patented Kulglass design that places the radiating antenna circuitry in the outside coupler (not inside the vehicle) to maximize efficiency. Model KG 1290 also features a Kulrod copper plated whip which lets transmit power become signal, not heat resistance. Also used are Belden RG 58/U cable, Amphenol TNC or MPL connectors and 3M's finest adhesive for secure on-glass grip. Color is black. Suggested retail is \$59.95.

For further information, contact Larsen Electronics, Inc., 3611 NE 112th Ave., P.O. Box 1799, Vancouver, WA 98668; 206/944-7551; FAX 206/944-7556.

Quarterly key journal

Tom French, W1IMQ, has begun publication of a quarterly journal directed to the interests of telegraph instrument collectors, and particularly key collectors. *The Vail Correspondent*, a small-format (5.5 x 8.5 in.) magazine, includes articles, photos, and collecting tips contributed by its readers. It also offers a free "unclassified ad" in each issue to its subscribers.

W1IMQ has been collecting keys for many years (he specializes in McElroy instruments) and is the author of several books on the subject. He established the *Correspondent* as a collector's forum for sharing the latest historical research information on keys and collecting in a timely and accessible format.

The name of the journal, of course, recognizes the contributions of Alfred Vail, Samuel Morse's partner, in the development of the American electromagnetic telegraph.

Of particular relevance to *The Vail Correspondent* is the fact that it was Vail who invented the key—which Morse called a "correspondent." The January 1993 issue contained a piece on the early work by Vail and Morse, as well as an in-depth article on Brown Bros. keys.

A subscription (four issues) is \$10 in the US (foreign, write); a sample copy is \$2. TVC, Box 88, Maynard, MA 01754.

Texas Towers tubing

Texas Towers has announced their recent expansion into the aluminum tubing market. Their large stock includes many popular telescoping sizes perfect for amateur antenna construction, specifically for construction techniques made popular by readily available Yagi design software.

The drawn tubing is constructed from 6063-T832 alloy (40,000psi typical yield

strength). This tubing has a bright finish identical to what commercial manufacturers are using in their antenna kits; and it is available in 1/8 inch increments designed specifically to telescope, making antenna construction a snap! It is available in 6 and 12 ft. lengths. The 6 ft. lengths may be shipped by UPS.

Also available is extruded tubing made from 6061-T6 alloy (40,000psi typical yield strength). This tubing is designed specifically for use in large antenna booms. A smaller solid size is also perfect for use as elements for VHF and UHF antennas. This extruded aluminum tubing is available in six, 12 and 24 ft. lengths.

Texas Towers has tried to fill a need in the market for reasonably priced aluminum tubing for Amateur Radio construction projects and has made a significant investment in order to assure that all sizes are readily available. For more information, please contact Texas Towers, a division of Texas RF Distributors, Inc., 1108 Summit Ave., Suite #4, Plano, TX 75074; 214/442-7306.



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VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

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.

p/r=pre-register

w/i=walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
Arizona				9/14/93	New Carlisle	219/654-3007; or KK9T 219/654-8084	p/r
9/4/93	Tucson	Joe, K7OPX 602/886-7217	w/i	Kansas			
9/25/93	Tucson	Micki, AA7RR 602/883-8305 or 883-0202 after 11 a.m.	p/r; w/i	9/2/93	Great Bend	WA0PSF 316/792-5363 days, 316/792-4249 eves	w/i OK
Arkansas				Kentucky			
9/18/93	Mountain Home	Gerald, WM5W 501/430-5123	p/r	9/25/93	Louisville	Otis, AA4HJ 502/969-7332	w/i only
9/11/93	West Memphis	Gene, AB5BL 501/739-4029	w/i OK	9/11/93	Middlesboro	Andrew, WB8WEZ 606/248-0046	w/i OK
California				Maine			
9/11/93	Adelanto	Arnie, NF6I 619/241-4732	w/i OK	9/24/93	Alfred	N1KMZ 207/985-4825	
9/19/93	Berkeley	Gary, N6YBD 510/530-0544	w/i only	Maryland			
9/18/93	Culver City	Walt, KM6MQ 714/373-6077	w/i only	9/22/93	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref.
9/4/93	Cupertino	408/243-8349	w/i OK	9/5/93	Landover	Freddie, NG3G 202/546-9348 or 301/773-2898	
9/19/93	Eureka	707/826-0767	w/i OK	9/18/93	Laurel	WB3GXW 301/572-5124 after 6 p.m.	p/r pref.
9/25/93	Fairfield	Jerry, AA6NO 916/662-0801	w/i only	Michigan			
9/7/93	Fremont	KJ6EP 510/791-6818	w/i only	9/11/93	Dearborn	Stan, K8SB 313/676-6248	
9/30/93	Long Beach	W6LRF 714/847-6370; N6LUH 310/592-1713	w/i OK	Missouri			
9/11/93	Modesto	W6XK 209/883-2968	w/i	9/4/93	Antonia	Jim, WA0FQK 314/942-2268	no w/i
9/11/93	Novato	415/883-9789	w/i OK	9/9/93	Des Peres	Grant, KA0YYI 314/567-8777 24 hrs.	p/r only
9/4/93	Ontario	Harry, KM6LO 818/810-0442	w/i OK	9/23/93	Seneca	Les, AA0GY 417/781-4331 (d), or 417/776-8420 (e)	w/i OK
9/11/93	Redding	Kenna, KR6M 916/243-6339		9/11/93	Sullivan	N0GLN 314/764-2777	p/r only
9/18/93	Redwood City	408/255-9000	w/i OK	Nevada			
9/4/93	Riverside	909/780-2680	p/r pref.	9/18/93	Minden	W7QO 702/265-3430	w/i
9/18/93	Sacramento	Lyle, AA6DJ 916/483-3293		9/11/93	Reno	WS2Z 702/851-1176	w/i
9/11/93	San Jose	AA6IY and KG6XF 408/255-9000		New Jersey			
9/11/93	San Pedro	N6DYZ 310/325-2965	p/r pref.	9/18/93	Bayonne	Bob, N2IYY 201/435-5953	w/i OK
9/18/93	Stockton	Ed, N6XMA 209/952-5996	w/i only	9/16/93	Bellmawr	WA2VQG 609/546-7710	w/i
9/11/93	Sunnyvale	408/255-9000 24-hr.	w/i only	9/11/93	Cranford	24-hr. hotline: 201/377-4790	
9/25/93	Vacaville	Irene, KK6XB 707/446-8376	w/i only	9/8/93	Fort Monmouth	MARS 908/532-5354	w/i
9/11/93	Willits	Don, WA6ACX 707/459-3980	w/i only	9/18/93	Pennington	AA2F 609/737-1723	p/r pref.
Colorado				New York			
9/11/93	Denver	Glenn, W0IJR 303/360-7293, 24-hr. message	w/i OK	9/4/93	Carmel	Mike, AJ1J 914/644-5546	p/r pref.
9/4/93	Pueblo	719/948-2291	w/i OK	9/14/93	Hicksville	Bob, W2ILP 516/953-7895	w/i only
9/18/93	Westminster	AA0BZ 303/421-2795; N0HNR 303/278-4280	p/r or w/i	9/5/93	Yonkers	AC2V 914/237-5589	w/i OK
Connecticut				North Carolina			
9/26/93	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i	9/12/93	Hendersonville	W2YTO 704/891-4359	p/r pref.
9/22/93	Shelton	WJ1T 203/283-1044	w/i pref.	9/11/93	Leicester	Larry, WB4PLA 704/683-1400	w/i OK
Florida				9/12/93	Salisbury	Isabelle, AB4UX 704/284-2414	w/i OK
9/13/93	Dunedin	Marv, WC2G 813/938-7810	p/r or w/i	Ohio			
9/18/93	Melbourne	WB9IVR 407/724-6183	w/i OK	9/4/93	Cincinnati	Herb, WA8PBW 513/891-7556	w/i OK
9/28/93	New Port Richey	Marv, WC2G 813/938-7810	p/r or w/i	9/11/93	Van Wert	KA8IAF 419/795-5763	p/r only
9/11/93	South Miami	Ross, AC4KZ 305/233-7462	w/i OK	9/16/93	Youngstown	James, N8IRL 216/534-1394	w/i ltd.
Georgia				Oklahoma			
9/11/93	Augusta	Jim, N4JA 404/790-7802	w/i	9/17/93	Pawhuska	KY5J 918/337-4335, or WT5Z 918/287-3665	w/i OK
9/26/93	Sandy Springs	John, AB4GK 404/381-5291	w/i OK	Oregon			
Idaho				9/8/93	Roseburg	KB7CMB 503/672-5997	w/i OK
9/11/93	Boise	W7JMH 208/343-9153	w/i	Pennsylvania			
Illinois				9/18/93	Beaver	KF3V 412/843-6560	p/r
9/25/93	Alsip	Ron, K9FYG 708/597-2491	p/r; w/i	9/4/93	Erie	W3CG 814/665-9124	w/i
9/21/93	Aurora	N9AKE 708/892-1252	w/i pref.	9/2/93	Levittown	K3TX 215/946-1040, or 736-3333	p/r pref.
9/12/93	Bloomington	Ken, NX9M 309/662-3910	w/i OK	9/18/93	McKeesport	WB3M 412/672-0915	p/r
9/18/93	Godfrey	KF9F 618/466-2306	p/r no-code	9/3/93	Nazareth	Robin, WA3T 215/820-9110	w/i
9/18/93	Loves Park	Paul, WB9HGZ 815/987-6754	p/r; w/i	9/22/93	Oakdale	KC3RJ 412/279-8756	p/r
9/11/93	Oak Forest	David, NF9N 708/448-9432	w/i	Indiana			
9/5/93	Paris	WO8X 217/463-2213	p/r; w/i	9/11/93	Hammond	Gerard, KE9I 219/845-8513	w/i
Indiana				9/15/93	Indianapolis	Jack, AA9BO 317/251-6000	p/r only
9/11/93	Hammond	Gerard, KE9I 219/845-8513	w/i	9/10/93	Logansport	Bill, WA8HSU 219/722-1338	w/i OK
9/15/93	Indianapolis	Jack, AA9BO 317/251-6000	p/r only				
9/10/93	Logansport	Bill, WA8HSU 219/722-1338	w/i OK				



**Craig A.
Campbell,
NØGTI/9**

STATION APPEARANCE

Send Worldradio a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.

Winners will also receive a top quality, Laserjet-printed copy of the DXCC and WAS BeamHeadings list (a \$15.95 value) compliments of Jack Hurray, W8JBU.

This month's winner is Craig Campbell, NØGTI/9. Ahhh, the memories...

Before I say anything about the equipment, let me tell you a little about myself. I am 40 years old and have been interested in radio since I was about 12, but didn't discover shortwave until I was 17. I used to stay up late at night and listen to distant AM broadcasters on my grandma's old Stewart Warner tube radio in the upstairs room of her old farm house. I could really pull in the DX. Later, I DXed the shortwave bands and then discovered the ham operators. I thought I lacked all the right stuff to ever become one, so I remained an SWL until I was 33, at which time I jumped in with both feet. Glad I did!

The equipment from left to right was mostly purchased used. PK88 with dumb terminal, Ham 4 rotor, UHF IC45A, VHF all-mode IC290A,



ICPS15 power supply, Icom 720, HF rig, Bearcat 300 scanner, Heath Watt SWR meter, Heath paddle, and one tube 4CX250B amp. Of course, I have a trusty oil lamp for emergency lighting and a deep-cycle battery to run the entire station.

Three years ago I finally moved to this rural QTH in Illinois and kept my old call from Iowa. I'm very happy to have enough room where I can string

up as many antennas as I care to. I have nine different antennas from 70cm to 160M, all fed with coax, but I would like to try ladder line sometime. I repair video equipment for a living and have always repaired my own gear when it breaks.

I enjoy a long ragchew on CW or phone and also work some DX contacts, and yes, I still do a lot of SW and MW listening!



Amateur "Hi"



Chuck Nice, N4MIS, is this month's winner. This story lends a whole new meaning to SWL...

I had just finished working a new DX station and went next door to join my wife and neighbors. My wife

greeted me with the exact words I had just said to the DX station: "Ken, this is N4MIS. You are 5 by 9, QSL."

We all laughed when she explained that I was coming in on her hearing aid!

Date	City	Contact	Notes	Date	City	Contact	Notes
9/2/93	Philadelphia	ND3Q 215/482-0386 or 215/879-0505	p/r pref.	9/25/93	Memphis	Win Guin, W2GLJ 901/754-4552	w/i OK
9/19/93	Uniontown	WB3DOD 412/246-2870	w/i	9/2/93	Morristown	Roy, KF4CB 615/586-3491	w/i OK
Rhode Island				Texas			
9/9/93	Providence	NN1U 401/231-9156 or 401/454-6848	w/i OK	9/14/93	Houston	ND5F 713/464-9044	p/r pref.
9/25/93	Slatersville	Bob, W1YRC 401/333-2129	w/i OK	9/11/93	Midland	KT5G 915/694-9450	w/i OK
South Carolina				9/25/93	San Antonio	K5JWK 512/657-1549	w/i
9/18/93	Charleston	Pat, AC4IH 803/553-3871	w/i	9/18/93	Tomball	Paul 713/351-8930	
9/11/93	Greenville	John, ND4N 803/288-0136	w/i OK	Vermont			
9/18/93	Sumter	Dan, WB5SGH 803/775-9106	w/i	9/18/93	Berlin	WB1AJG 802/433-6172	p/r pref.
South Dakota				Virginia			
9/11/93	Rapid City	NUØF 605/348-6564	p/r pref.	9/25/93	Roanoke	Fred, KZ4Y 703/366-6266	w/i OK
Tennessee				9/24/93	Stafford	David, K9MX 703/659-6241;	w/i
9/24/93	Carter County	Joe, K4BKI 615/543-4022	w/i	9/11/93	Williamsburg	Jim, N4LZJ 703/786-8012	
9/3/93	Chattanooga	Art, WB4BGX 615/886-4714	p/r pref.	Washington			
9/6/93	Chattanooga	Alan, WA4QCH 404/866-1200	w/i OK	9/25/93	Bremerton	Dave, AA7IA 206/698-9205	w/i
9/25/93	Greeneville	Jack, K4EPC 615/638-7056	w/i OK	9/28/93	Stanwood	Don, KO7I 206/652-0248	w/i
9/4/93	Henry County	Mackie, AA4YF 901/247-5489	w/i OK	Wisconsin			
9/12/93	Jasper	Charles, KD4XX 615/942-5116	p/r pref.	9/11/93	Oak Creek	Norman, KB9QL 414/764-5998	w/i OK
9/18/93	Knoxville	Ray, N4BAQ 615/688-7771	p/r pref.				
9/13/93	McMinn County	Evan, WA4PNI 615/263-9300	w/i OK				

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THE SPEC-COM JOURNAL is published bi-monthly, 6 times per year. Dedicated to Fast Scan Television but committed to covering slow scan television, facsimile, RTTY, ASCII, AMTOR, packet radio, satellites, TVRO and all other specialized modes of communication. Now with thicker, color enhanced issues. Back issues and sample copies \$3.50 ppd. Annual subscriptions: USA \$20, Canada/Mexico \$25, foreign surface \$30. MC/VISA add 5% and Iowa residents add 4% for tax. KAOJAW has now joined WBOQCD to co-publish the SPEC-COM Journal for specialized amateur enthusiasts. **MEMBERSHIP SERVICES**, P.O. Box 1002, Dubuque, IA 52004-1002; 319/557-8791. F194

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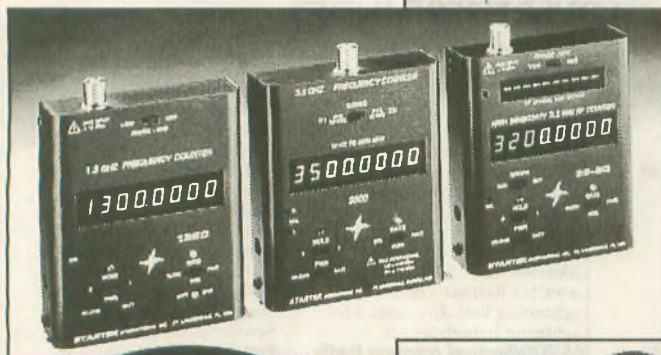
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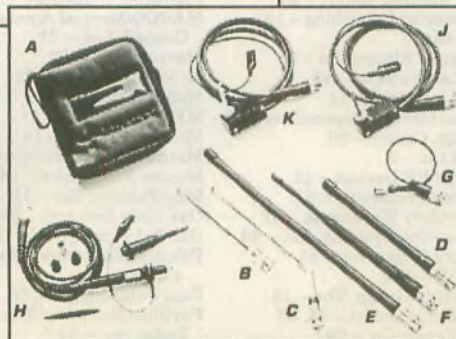
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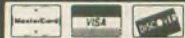
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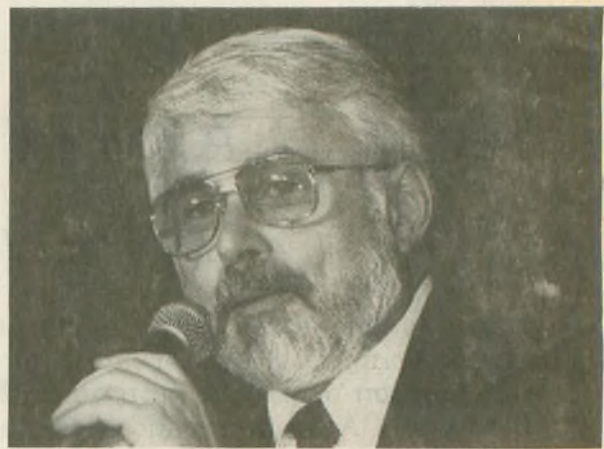
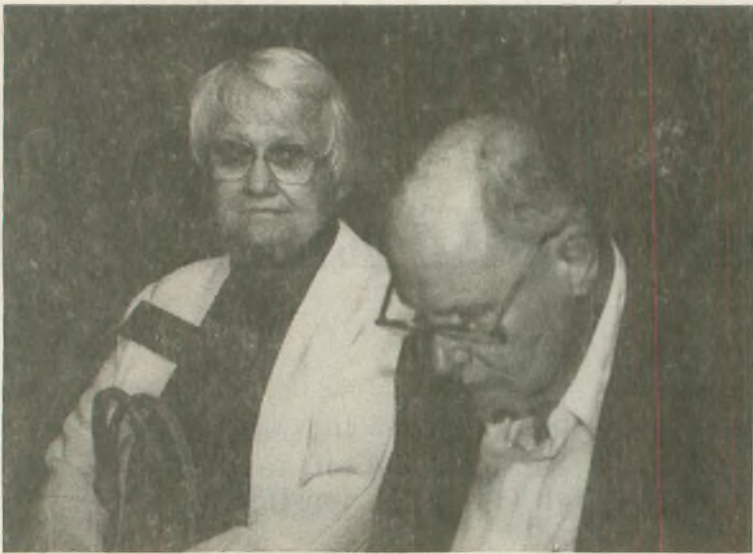
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