Emergency Communications • Public Service • International Friendship

Worldradio

Year 26, Issue 2

August 1996 • $1.50

Hamvention '96

Warren Ring, AB6QE
ring@hercules.cb.att.com

How can one can say enough about the Dayton Hamvention? Thousands of hams make the pilgrimage each year to see what's new, and to bring home their treasures.

Still others take their old, used equipment to sell, so they can buy newer gear. There's an atmosphere of excitement at Dayton that is unlike any other event in the world. There is so much to see at the Dayton Hamvention that one person can't possibly take it all in.

The Hamvention was scheduled three weeks later this year, in an effort to outwit Mother Nature, and the unpredictable April rains.

Calculations were right on the money. There were a few sprinkles on Friday, and nothing but partly sunny skies the rest of the weekend.

Dayton's flea market had some 4,000 spaces, sold out more than a month in advance, through which 30,000-plus visitors milled about. I noticed a proliferation of test equipment this year. The old Tektronix oscilloscopes that customer engineers used to carry around, were selling for only a few hundred dollars, much less than I paid for mine years ago!

When the doors to the indoor exhibits were opened, it was like entering Disneyland. Antenna farms were there, along with the latest HF and VHF equipment. Accessories? You name it. Lots of people even buy their year's supply of connectors at Dayton.

Yaesu was giving away baseball caps. Motorola was giving away spectrum charts. ICOM was giving away band plan posters. ***Worldradio*** was there, giving away sample copies of the magazine and offering discounts on subscriptions and books in honor of its 25th anniversary.

Terry Douds, WB8CKI, a bimonthly ***Worldradio*** columnist, was at the AMSAT booth demonstrating a program called Wisp, which automatically uploads and downloads packet messages between a ground station and various packet satellites.

The ARRL staff was handing out literature, selling ham radio study materials and answering questions.

Seminars abounded. I spent time in the Oklahoma City seminar, where a slide presentation on emergency communications used in the bombing disaster was given. Dozens of other seminars also took place on a range of topics including AMSAT, DX, Packet Radio, MARS, Antennas, AM, YLRL, FCC, ARRL forum, QRP, and many others. Truly, a full feature article could be devoted to each of these topics.

A Hamvention wouldn't be Hamvention without the strange, the bizarre, and the unexpected, and this year had its share. One entrepreneur had a supply of "Hard Times Hard Drives" clocks made from recycled 8-inch hard disk drives, only $29.

Woodhouse Communications displayed a vehicle equipped with uplink and downlink antennas on an azimuth/elevation mount. Woodhouse builds custom mobile communications facilities. Inside was a half rack of gear, including a TV monitor showing a weather-FAX photo. This "Mondo-Mitsu" has logged over 20,000 miles around North America, supporting events such as Sunrayce-93, -95, and the World Solar challenge. I saw a lot of hams drool over this mobile rig!

The Arrow Antennas exhibitors displayed what appeared to be a 2-meter, 4-element beam antenna on top of a 20-foot mast with elements resembling, of course, bright red arrows.

Noticeably missing this year were the crafts and homemade food booths. There were also very few computer vendors, although a friend of mine, Clyde Nimal, AA8LX, came home with 8 megabytes of RAM for his computer for $70. I was glad to see that Dayton is not turning into a computer and crafts show. But I did notice that, for the second time in as many years, there has been a

(please turn to page 12)

NEWSFRONT

Worldradio

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

2 Meter & 70 cm frequency threat

Amateur Radio operators are responding in unprecedented numbers to a potential threat to both the 2 Meter and 440 MHz bands.

During a 7 May 1996, communications industry working group which is preparing the United States' draft proposals for the 1997 World Radio Communications Conference, the Low Earth Orbiting Satellite industry (known as LEOs) presented a list of "candidate bands" for their potential shared use that included the entire 144-148 MHz and 420-450 MHz amateur bands. ARRL Technical Relations Manager, Paul Rinaldo, W4RI, was present at the meeting, and strongly protested the inclusion of the bands for consideration. He was told that any objections should be made in writing.

The League promptly did so, and asked for assurances that the bands would be stricken from the list of candidate bands for sharing with the satellite industry. When the Working Group would not provide that assurance, ARRL Executive Vice President Dave Sumner, K1ZZ, issued a "call to action" in the form of an editorial written for the July issue of *QST*. A pre-press version of his editorial which was released via packet radio and e-mail has resulted in an outpouring of comments from the amateur community.

In the editorial, Sumner pointedly says not to ". . . panic, and don't go ballistic." What amateurs should do is let the industry and government participants know that these bands cannot be considered as potential frequencies for mobile-satellite usage. The *QST* editorial is clear in urging commentors to be civil, and reminds everyone that our need is to educate and persuade. Written comments, (an original and one copy) should be sent to: Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Each comment needs to have written at the top "Reference No. ISP-96-005," followed by "Advisory Committee Informal Working Group 2A."

After receiving over a thousand comments in one week, the FCC has revised its procedures and asked that e-mail be sent to: **wrc97@fcc.gov** rather than to the individual participants.

The 2 Meter and 440 bands represent the mainstay of our local public service communications spectrum. As K1ZZ pointed out "No one with the slightest background in radio communications could possibly believe that a mobile-satellite service could be induced into either band without disrupting existing and future amateur operations."

Go write that letter or send your e-mail now.

Atlas . . . ?

Worldradio has received a copy of a letter from the law firm representing an Atlas Radio supplier which said that Herb Johnson confirmed to them that the business was closed and had no prospects to reactivate. The remaining assets were of little value. The company was "basically a research and development company which never got off the ground." Company bank accounts have been closed and any claims against them are considered uncollectible.

Worldradio tried to update information on the progress of O.M. Radio, but was unsuccessful in obtaining an update as of press time.

A few bricks short...

Some people never learn. One of these appears to be Bobby Lee Aguero, KE6VNU. Aguero, of Rocklin, California, has allegedly struck again at police radio operations in two states, and in both cases he has been caught, once by hams and the other assisted by hams, who were more than a bit angry over his activities.

Aguero, age 18, who was awaiting trial on earlier charges of interfering with emergency communications, now faces additional state charges of interfering with a police officer in the performance of his duties. Roseville, California Police Detective Mike Menz, formerly WD6DMP, says that Aguero allegedly identified himself as "The Phantom" while interfering with the police calls. He was caught on 17 April.

Menz says that similar charges against Aguero are pending as a result of another incident early this month in Seaside, Oregon. There he is alleged to have interfered with both police and fire calls. Reports say Aguero was using a handheld

(more NEWSFRONT, page 18)

Worldradio

August 1996 **Year 26, Issue 2**

Published monthly by Worldradio, Inc., 2120 28th St., Sacramento, CA 95818 USA; 916/457-3655.

Subscription Department: ***Worldradio,*** 1901 Royal Oaks Dr., Ste 190, Sacramento, CA 95815; 800-366-9192. N6WR@delphi.com

Periodicals Postage Paid at Sacramento, CA & additional offices.

POSTMASTER: Send address changes to Worldradio, Inc., P. O. Box 189490, Sacramento, CA 95818 USA.

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

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

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

Worldradio is an independent magazine not affiliated with any other firm, group or organization. Its pages are open to all.

SUBSCRIPTION RATES: $15* one year; $28* two years; $41* three years; $187* Life; (*$10 extra per year for surface mail delivery to non-US ZIPs. Please remit international postal money order. IRCs will be accepted.)

STAFF: Publisher—Armond Noble, N6WR; Editor—Lou Ann Keogh, KB6HP; Associate Editors— Norm Brooks, K6FO, Wendy G. Green; Advertising Director—Helen Noble; Advertising Manager—Rosalie Hernandez; Graphics Director/Advertising— Dianne Dunning; Circulation Manager—Marcia McZeek; Administrative Assistant—Beth Habian.

Publisher's Microphone

Just what is status? Is it being invited to Donald Trump's 500-foot yacht? Is it dinner at the White House? Those events might mean something to the easily impressed. Now we look at true status.

The latest to become ***Worldradio*** Superboosters (Lifetime Subscribers) are:

- **Jim Stafford, W4QO, Roswell, GA**
- **Dennis Schumm, WB8BFX, Dexter, MI**
- **Fredric Einstein, KB7UUC, Oak Park, MI**
- **Ron St. Laurent, ND5S, Okemos, MI**
- **Bela Lindenfeld, N8SHZ, Benton Harbor, MI**
- **Richard Fuller, AAØNU, Owatonna, MN**
- **Robert Hotz, W9CA, Oak Lawn, IL**
- **Allen Underdown, NØGOM, St. Charles, MO**
- **Dr. Mark Ewell, KC5IZN, Lawton,OK**
- **John Muhr, KT0F, Parker, CO**
- **James Eakin, W6SBY, San Lorenzo, NM**
- **Dennis Mangrobang, KQ6AG, Los Angeles, CA**
- **Sanford Simmons, WA6KHM, Los Alamitos, CA**
- **P. M. Tatsukawa, KE6OWT, Glendale, CA**
- **Lt. Col. Harry Hodges, WA6YOO, Escondido, CA**
- **Robert Beebe, W6SHF, Fremont, CA**

•

I'd like to thank the 853 subscribers who answered the survey we sent to a randomly selected 1,100. Such a high response to a survey is considered outstanding. The results will help us select articles to match the interests of our audience. The percentages of readers active in 6 modes and 23 activity fields will help guide us.

About one-third go on Field Day. (What's with the rest of you?) Actually that is huge multiple over the participation of amateurs as a whole.

About one-in-ten teach licensing classes. Good for you! CW attracts 42% and Packet 31%.

One-in-five are HF mobiling, 25% go in the HF contests, almost half are HF DXers, one-third like to build, 17% are QRPers, one-third are active in public service and and also emergency communication preparation. Over half are members of a radio club and 70% enjoyed the camaraderie of a convention or a hamfest in the past year.

While Extra Class amateurs make up 10% of the Amateur Radio population they are 38% of the ***Worldradio*** subscription roster. The Advanced licensees are 16% of amateurs and 29% of our subscribers.

One out of every sixteen ***Worldradio*** subscribers has a doctorate degree. Another one-out-of eight has a masters and another one-third have bachelor degrees.

•

It has occurred to us that such a fine group would enjoy meeting each other on the air in an organized manner. Not so much in a contest but more like the relaxed manner of the QCWA QSO Party or the Telephone Pioneer QSO Party. We could have contacts counting and multipliers multiplying to keep it all interesting. The first full weekend in June seems like a good time. We're open to any and all suggestions as to the rules and conduct of the QSO Party. Send your ideas to ***Worldradio*** QSO Party, 2120 28th St., Sacramento, CA 95818. Brilliant ideas will receive attribution here.

Under consideration at the present are breaking entries into three categories, (1) Big Guns, (2) Moderate Stations and (3) Basic Stations. Your input as to what levels of power and antennas make up the dividing lines are welcome.

To jazz up the multipliers game we're thinking that instead of just states as multipliers that we use the first two numbers of the ZIP code which would put six multipliers in California, five in New York, four in Pennsylvania, etc. Certificates would also be awarded by first two number ZIP, Canadian Provinces and countries.

We think the first name should also be part of the exchange. And, last but not least, do we have volunteers to assist in the log checking and standings work? Raise your hands, please.

•

This is a bad news, good news. Some 20 years ago I was teaching licensing classes. A lot of my students, after being licensed, went to the different area ham clubs. Sadly, their reception was less than wonderful (which happens all too often, in many areas). Now the good news, feeling rebuffed a lot of them got together and formed their own club. And an active Gung-Ho club it became! It has grown to well over 300 members, they have repeaters, go on Field Day and have a grand time. On 16 June they had a picnic celebrating their 20th anniversary with an HF and a VHF station set up in a city park. Congratulations to the River City Amateur Radio Communications Society. —*Armond, N6WR*

Ultra Compact Dual Band Handheld **FT-50R**

One tough little dual bander!

Features

- Frequency Coverage
  Wide Band Receive
  RX: 76-200 MHz, 300-540 MHz, 590-999 MHz*
  TX: 144-148 MHz, 430-450 MHz
- AM Aircraft Receive
- MIL-STD 810 Rating
- Digital Coded Squelch (DCS)
- 112 Memory Channels
- 12V DC Direct Input
- High Speed Scanning
- Alphanumeric Display
- CTCSS Encode (Decode w/FTT-12)
- Auto Range Transpond System™ (ARTS™)
- Dual Watch
- Direct FM
- High Audio Output
- ADMS-1C Windows™ Programmable
- Four Battery Savers:
  Automatic Power-Off (APO)
  Receive Battery Saver (RBS)
  Selectable Power Output (SPO)
  Transmit Battery Saver (TBS)
- Time Out Timer (TOT)
- 2.5 and 5 Watt Versions Available
- Optional Digital Voice Recording System (DVRS)
- Full line of accessories

"You notice how loud this HT's audio is?"

"Yeah, it's Mil Spec tough like a commercial HT."

"Easy to operate, small, great price!"

"Yaesu did it again!"

For the foremost in top-performing, durable, dual band handhelds there is one choice. The FT-50R. Manufactured to rigid commercial grade standards, the FT-50R is the only amateur dual band HT to achieve a MIL-STD 810 rating. Water-resistant construction uses weather-proof gaskets to seal major internal components against the corrosive action of dust and moisture. And, the rugged FT-50R withstands shock and vibration, so throw it in with your gear!

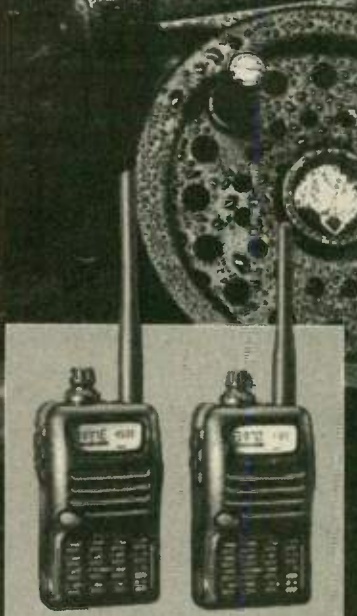
Dynamic and exclusive features set the FT-50R apart, too. Wide Band Receive includes 76-200 MHz (VHF), 300-540 (UHF), and 590-999 MHz*. Dual Watch checks sub-band activity while receiving on another frequency, then when a signal is detected, shifts operation to that frequency. Digital Battery Voltage displays current operating battery voltage. Digital Coded Squelch (DCS) silently monitors busy channels. Auto Range Transpond System™ (ARTS™) uses DCS to allow two radios to track one another. And, the FT-50R is ADMS-1C Windows™ PC programming compatible, too. To round out the FT-50R, it has four battery savers, and super loud audio—remarkable in an HT this size.

A reliable companion where ever you go, the FT-50R is one tough little dual bander with all the features you want!

YAESU

...leading the way.™

For the latest Yaesu news, hottest products, visit us on the Internet! http://www.yaesu.com



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

HARC — The Olympic Torch

Lorraine S. Matthew, N4ZCF

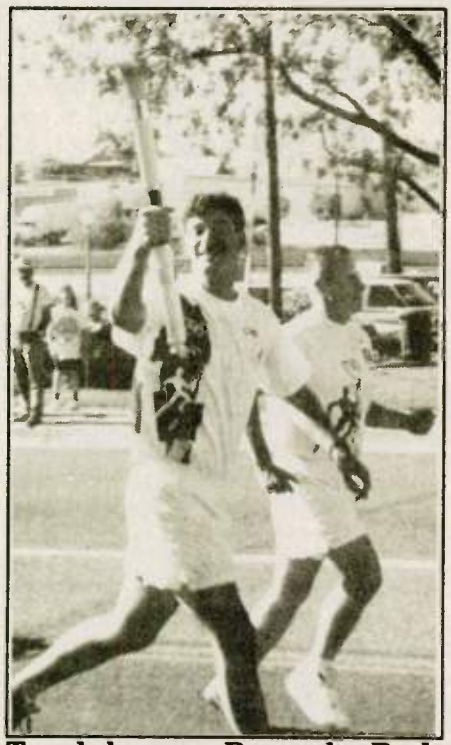
The Hualapai Amateur Radio Club (HARC) was privileged to be able to provide communications support for the arrival of the Olympic Torch at Kingman, Arizona. Since all the club members felt that this was a once-in-a-lifetime event, there was no question that HARC would be there. HARC's support was given by various members of the club beginning in the early evening of 30 April 1996, and ending during the morning of 1 May 1996. The Kingman arrival and departure ended Day 4 and began Day 5 of the torch-bearers' run.

The Torch Relay entourage was met about 20 miles east of Kingman by Bob Stout, KJ7HR, who joined them and guided them into the city. He kept the eager crowd informed of their progress. His job was made easier by the 15-foot-high electric torch erected by Citizen's Utilities on a 90 foot pole on top of Radar Hill, Kingman's highest spot.

With both the torch and the pole lighted, it would have been impossible for the runners relaying the torch to miss their destination.

While the people of Kingman waited for the evening arrival of the torch, they enjoyed other entertainment. A Parade of Beds, "flaming" bed races with an obstacle course, and the Route 66 Sock Hop.

Under the capable guidance of Charlie Ellis, W6PNM, HARC members coordinated all of the events in cooperation with local officials and organizers. Using simplex frequency 146.54 MHz, HARC members coordinated the progress of the parade. This same frequency was used as HARC members started, timed, and announced the places of the entrants of the bed races, also helping to maintain crowd control for the safety of everyone there.



Torch-bearer Rosendo Rodriguez carrying the torch in Kingman.

During the Route 66 Sock Hop, HARC gave half-hour updates on the progress of the torch. This information was most valuable since the torch relay caravan was about an hour behind schedule. Events were stretched according to the information relayed from the caravan via the KI7AX remote base. By using this base, the communications unit with the torch could talk to other units in Kingman via 440 MHz to the mountain and through the simplex frequency downtown. The N7SKO repeater was never tied up for the events of the evening. It was free to handle any emergency that might occur over its wide coverage area.

Rita Stout, KC7BAW, in addition to being at the center of the bed race, also handled all of the on-the-spot public affairs information. She carried HARC's torch-to-Las Vegas information to both television and the newspapers. Everyone was well informed thanks to Rita's doing her assignment so well.

Charlie Ellis, W6PNM made these comments following the events:

"It was interesting as we had never seen a 'bed race' and the sponsors, the Kingman Chamber, has never put one on; so they were not sure what they wanted us to do. They just knew they needed help.

"Drawing on our past experiences with the Andy Devine Days parades and the Soapbox Derbies we have worked in the past, we soon found what the communication and other needs were and provided the needed assistance. Prior to the start of the races, it was obvious that we would need communications between the

The official 1996 Olympic Torch Relay RV

What are your thoughts, opinions about Amateur Radio?

Write a letter and let us know and we'll place it in *"Off the Air."* That's your forum for expression.

finish line, the starting line, the announcer, and the scorekeeper. It wasn't long that a problem with the obstacle course made us aware that we needed communications there also."

Flexibility and creativity on the part of HARC members kept everything running smoothly and the information flow intact to all concerned.

The Olympic Torch did reach Kingman safely at about midnight and was honored as it reached the specially built stage at Locomotive Park. It and its entourage stayed overnight and toured Kingman as it left the city the following morning.

The relay entourage included two Georgia State Patrol cars, a pace car, torchbearer shuttle, media motorhome, command vehicle, shuttle vehicle, caravan services motorhome and other local vehicles as needed.

In Kingman two police vehicles and the historic Kingman City Police car were added.

The state of Georgia elected to have two of its state patrol cars meet the torch when it landed in San Diego and escort it every inch of the 15,000 mile 84 day run to Atlanta. For 84 days, 10,000 torchbearers will pass the sacred flame from torch to torch through 42 states and 29 state capitals.

In addition to Mr. Stout, Mr. Ellis, and Mrs. Stout, HARC members Ken Sundwall, KC7AIS, Bill Beaman, KAØIYS, Charles Bukoski, KC7BAY, Jack Jackson, KF7CL, Bob Dye, N7TXL, Bob Haddock, KC7PHF, Dennis Schroeder, N7ZXS, Carl Harnisch, KG7NU, Liz Jackson, KB7RGR and Bill Harrison, KB7USY, are to be thanked for their generous assistance to all of us in the Kingman area.

Congratulations to the Hualapai Amateur Radio Club for a job well done. WR

Special Events

Montauk Point Lighthouse

The Long Island DX Association will operate AC2P from 1400 UTC, 3 August to 1900 UTC, 4 August from the Montauk Point lighthouse at the far eastern tip of Long Island (FN-30) to celebrate the bicentennial of the old lighthouse. Operation will be SSB on standard IOTA frequencies; CW as announced. A special commemorative QSL card will be available with SASE from the CBA of AC2P.

Bemidji Centennial

The Paul Bunyan ARC will operate KAØKWM on 10 & 11 August, 1700-1700 UTC, from Bemidji, MN, the first city on the Mississippi and home of Paul Bunyan and "Babe" the blue ox. Frequencies will be 3.910, 7.250, 14.250 and 146.730. For certificate, send QSL and 9 x 12 SASE to Vern Skretvedt, KAØKWM, 908 Grant Ave., Bemidji, MN 56601.

Wings of Eagles Airshow

The Genesee Radio Amateurs Club will operate W2RCX on 17 & 18 August, 1300-2100 UTC at the 16th annual "Wings of Eagles Airshow," from the Genesee County Airport in Batavia, NY. Operation will be on 40 Meters at 7.250 ±20 and on 20 Meters at 14.250 ±20. For certificate, send QSL and 9 x 12 SASE to GRAM, P.O. Box 572, Batavia, NY 14021-0572.

Old Threshers Union

The Mt. Pleasant ARC will operate WØMME, 28 August through 2 September during the Midwest Old Threshers Reunion, to celebrate the rich agricultural heritage that attracts visitors from across North America to this area. Operation will be in the General potion of the 80-10 Meter Phone band. Information about this event may be obtained through the Internet: garymcme @interl.net

For a QSL card, send an SASE to Dave Schneider, WDØENR, 1675 Old Highway 34, Mt. Pleasant, IA 52641-9580.

Annual "Fly-in"

The Clark County ARC will operate W7AIA on 17 Aug (1500-2300 UTC) & 18 Aug (1500-2200 UTC), to help celebrate the Northwest Antique Aircraft Club of Vancouver, WA, annual "fly-in." Operation will be in the lower portion of the General Class bands and on 28.450 N/T 10 Meters, plus 2 Meters to be announced on 147.84(-).

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

Diamond Anniversary

The Santa Clara County Amateur Radio Association (SCARA) will operate W6UW, 17 August from 1600-2200 UTC to celebrate our 75th anniversary. Operation will be on the lower General Phone and CW portions of the 20-15-10 Meter bands. For certificate, send an SASE to SCARA, P.O. Box 6, San Jose, CA 95103-0006.

Vintage radios

The Albion ARC will operate KBØTLX from 1800 UTC, 24 August to 1800 UTC, 25 August to commemorate the Nebraska State antique tractor and horse plowing contest. Operation will be on 7.240, 14.240, 21.130, 28.330 MHz. Send QSL to Steve Wright, KAØVEU, 929 Park, Albion, NE 68620.

Herkimer County Fair

The Fort Herkimer ARC will operate KB2UYI, 1400-1900 UTC, 18 August, to commemorate the annual Herkimer County Fair in Frankfort, New York. Operation will be in the 20 Meter General Phone; 40 Meter Novice CW; 40 Meter General portion, and 2 Meters 145.110. For certificate, send QSL and an SASE to: John Reed, N2WTF, 617 Jeffrey St., Herkimer, NY 13350. WR

FCC RFI Policy

Last month we reviewed the news concerning cessation of the FCC's pilot RFI program in Tampa Florida, and the reasons therefor. Below is a copy of the official Public Notice on the new policy, which includes FCC Bulletin CIB-10 (CIB is the FCC's Compliance and Information Bureau). The information was released 5 April, but because it's "durable" and useful, I decided to publish it, albeit a bit late. In view of the content of the CIB Bulletin, in particular, it may be well for radio amateurs to obtain several copies of the Bulletin, which can be given to individuals who complain about interference from the amateur's transmissions.

"FCC Policy for Handling Complaints of Interference to Home Electronics Equipment.

"Each year the FCC receives thousands of complaints of interference to televisions, radios, audio systems, telephones, and other home electronics equipment. In most instances the FCC cannot resolve the problem because the cause of the interference is the design or construction of these products and not a violation of any FCC rule.

"To help consumers deal with these interference problems, basic information concerning interference solutions is now available on the Internet through the FCC Compliance and Information Bureau Home Page. This basic information includes the CIB Interference Handbook and the CIB Telephone Interference Bulletin. The CIB Interference Handbook includes a list of equipment manufacturers who provide specific assistance with interference problems. The list also is available through the Commission's Fax on Demand on 202-418-2830. Callers should request document number 6804.

"Involving dealers and manufacturers in the resolution process should give them knowledge of the problems and provide both the opportunity and incentive to protect their products through customer service.

"At the same time, however, it should be emphasized that the Compliance and Information Bureau will continue to take appropriate enforcement action where it has been determined that the interference is caused by violations of the Communications Act or the Commission's rules or policies.

FCC Bulletin CIB-10

What to do if you hear radio communications on your telephone?

"Interference occurs when your telephone instrument fails to 'block out' a nearby radio communication. Potential interference problems begin when the telephone is built at the factory.

"All telephones contain electronic components that are sensitive to radio. If the manufacturer does not build in interference protection, these components may react to nearby radio communications. Telephones with more features contain more electronic components and need greater interference protection. If you own an unprotected telephone, as the radio environment around you changes, you may sometimes hear unwanted radio communications.

"Presently, only a few telephones sold in the United States have built-in interference protection. Thus, hearing radio through your telephone is a sign that your phone lacks adequate interference protection. This is a technical problem, not a law enforcement problem. It is not a sign that the radio communication is not authorized, or that the radio transmitter is illegal.

"Because interference problems begin at the factory, you should send your complaint to the manufacturer who built your telephone. Use the attached complaint card to request

Amateur Radio Call Signs

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

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

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØCB	KIØDE		KBØWQF
1	AA1QA	KE1FB	N1XLL	KB1BYG
2	AB2BH	KG2HK		KB2ZEP
3	AA3OI	KE3WQ	N3XPK	KB3BPF
4	AE4VG	KT4RR		KF4KCB
5	AC5IG	KM5AP		KC5UUR
6	AC6VK	KQ6GU		KF6EHR
7	AB7RC	KJ7YN		KD7HFS
8	AA8XH	KG8XL		KC8EBP
9	AA9SL	KG9GP		KB9NUV
N. Mariana Is.	KHØZ	AHØAW	KHØFA	WHØABF
Guam	WH2V	AH2DB	KH2QG	WH2ANQ
Hawaii		AH6OP		WH6DBY
Amer. Samoa	AH8O	AH8AH	KH8DA	WH8ABF
Alaska		AL7QL		WL7CTL
Virgin Is.	WP2X	KP2CJ	NP2JI	WP2AIE
Puerto Rico				WP4NMF

Subscribe Here!!

If you received this copy of *Worldradio* and you aren't yet a subscriber ... this was your sample copy. We sent it to you to acquaint you with our reporting on this great activity. Amateur Radio is exciting, challenging, stimulating, satisfying and very rewarding.

You are cordially invitied to subscribe to, and be a part of *Worldradio.*

Yes ... I want to know even more about the wonderful world of Amateur Radio.

To facilitate faster handling of your subscription, please use this blank.

Name _____ **Call** _____

Address _____

City _____

State _____ **ZIP** _____

❑ NEW ❑ RENEWAL ❑ GIFT

12 issues	(Only $1.25 per issue)	$15.00*
24 issues	($1.17 per issue · save $2)	$28.00*
36 issues	($1.14 per issue · save $4)	$41.00*
Lifetime	(Be a WR super booster)	$187.00*

*(Non-U.S. ZIP: 1 year, $25 – 2 years, $48 – 3 years, $71 – Lifetime, $287)

Subscriptions may be paid in U.S. funds drawn on U.S. banks by International Money Order, VISA, AmEx or MasterCard. Canadian Postal Money Orders (in U.S. funds) are also acceptable.

❑ Check enclosed ❑ VISA ❑ MasterCard ❑ American Express

Card# _____ Exp. date _____

Signature _____

Please clip and mail to ... ***Worldradio***™

Note: New Address

1901 Royal Oaks Dr., Ste. 190 · Sacramento, CA 95815

For charge card subscriptions only, call **TOLL FREE: (800) 366-9192** weekdays, 8 a.m. to 5 p.m. Pacific time, or e-mail: N6WR@delphi.com anytime.

Thank you!

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

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

help. Follow the instructions on the next page.

"You can also stop interference by using a specially designed "radio-proof" telephone, available by mail order. A recent FCC study found that these telephones, which have built-in interference protection, are a very effective remedy.

"Interference problems in telephones can sometimes be stopped or greatly reduced with a radio filter. Install this filter at the back of the telephone, on the line cord, and/or at the telephone wall jack. Radio filters are available at local phone product stores and by mail order.

"To get started, follow these steps: If you have several telephones, or accessories such as answering machines, unplug all of them. Then plug each unit back in, one at a time, at one of your wall jacks. Listen for the radio communication. If you hear interference through only one telephone (or only when the answering machine is plugged in), then the problem is in that unit. Contact the manufacturer of that unit for help.

"Alternatively, simply stop using that unit, replace it with a radio-proof model, or install a radio filter. (NOTE: Only a very small percentage of interference problems occur in the outside telephone lines. Your local telephone company can check for this type of problem).

"Next, it's important to follow through and contact the manufacturer. Telephone manufacturers need to know if consumers are unhappy about a product's failure to block out radio communications. Also, the manufacturer knows the design of the telephone and may recommend remedies for that particular phone.

"To file a complaint, cut out the card below along the dotted line. Fill in the card and mail it to the telephone manufacturer. To help the manufacturer select the right remedy, mark on the complaint card what type of radio communication the phone is receiving. You can identify the type of radio communication by listening to it. There are three common types:

"1) AM/FM broadcast radio stations. Music or continuous talk distinguishes this type of radio communication. The station identifies itself by its call letters at or near the top of each hour.

"2) Citizen's Band (CB) radio operators. These radio operators use nicknames or "handles" to identify themselves on the radio. Usually, the CB operator's voice is clearly heard. You may also hear sound effects or other noises.

"3) Amateur ('ham') radio operators. Amateur radio operators are licensed by the FCC. They use call letters to identify their communications. The amateur's voice can be heard but may be garbled or distorted.

"Cordless telephones are low-power radio transmitter/receivers. They are highly sensitive to electrical noise, radio interference, and the communications of other nearby cordless phones. Contact the manufacturer for help in stopping interference to your cordless telephone.

"Final note: Current FCC regulations do not address how well a telephone blocks out radio communications. At present, FCC service consists of the self-help information contained in this bulletin.

"The FCC strongly encourages manufacturers to include interference protection in their telephones as a benefit to consumers. The telephone manufacturing industry has begun to develop voluntary standards for interference protection. The FCC will continue regular meetings with manufacturers and will closely track the effectiveness of their voluntary efforts.

"If you are not satisfied with the manufacturer's response, contact the Electronic Industries Association, 2500 Wilson Boulevard, Arlington, Virginia 22201, phone (703) 907-7500.

FCC denies W5YI petition

Citing overwhelming opposition, the FCC has denied a Petition for Rule Making, RM-8626, filed last year by Frederick O. Maia, W5YI, that would have prohibited one-way transmissions of bulletins and code practice — such as those aired by W1AW — on frequencies below 30 MHz. Maia had argued that such transmissions were outmoded and that some one-way, broadcast-type transmissions have interrupted two-way communications already in progress. Maia publishes the commercial newsletter the *W5YI Report*, manages the W5YI-Volunteer Examiner Coordinator and publishes training materials for amateurs.

When he filed his petition, Maia expressed concern over the level of anger directed at certain one-way transmissions. "The proliferation of these stations has caused chaos in the amateur community that has now reached crisis proportions," he said. The ARRL said that Maia's arguments were overstated and inflammatory, and the League urged the FCC "in the strongest possible terms" to deny or dismiss the petition without further consideration. The League cited W1AW's 65 years of free service to amateurs; other countries whose amateur societies also conduct informational bulletins on the air; the absence of any allegations that W1AW creates any significant interference to ongoing amateur communication; and the value of W1AW's bulletins in alerting amateurs to emergency situations. The League said that "any on-air anger perceived by Maia" ought to be the subject of FCC enforcement action, not rules changes, saying such situations were the direct result of the Commission "allowing abuses to continue for months and years" rather than addressing them in a timely manner in the context of the existing rules.

The ARRL also said that W1AW code practice as a free alternative to Maia's retail sale of code practice products "is sufficient rebuttal to the allegation that the code practice has 'outlived its usefulness'."

During the comment period, the FCC said it received 371 comments opposing Maia's request and 20 comments supporting it. While acknowledging some disagreement about the propriety of one-way transmissions on HF bands, the Commission said the overwhelming opposition to Maia's petition "persuades us that the amateur service community continues to view the one-way information bulletins and the text for telegraphy practice to be of great value to the service."

FCC establishes FRS

The Federal Communications Commission amended Part 95 of its

rules 10 May, to establish a new, unlicensed personal radio service, to be called the Family Radio Service (FRS). This service was created in response to a petition filed by the Radio Shack Division of Tandy Corporation, requesting that the Commission establish a new radio service aimed at providing small groups with an affordable and convenient means of direct, short range (up to one-half mile), two-way voice communication. FRS radios would use 14 channels in the 462 to 468-MHz band. Transceivers would have to be FCC-certified.

The Commission suggests the FRS could be used by hunters, campers, hikers, bicyclists and other outdoor enthusiasts to keep in contact with one another during outings. It could also be used by parents to keep in touch with children playing in the neighborhood, or families or friends to keep in contact with one another while at shopping malls, sporting events, amusements parks and similar locations. —FCC

The man behind the Story

The preceding item is the final action on a petition filed by Radio Shack in July, 1994, and first reported in this column in September, 1994. In the October, 1995, column we summarized the history of the citizens radio service, mentioning that the initial allocation to the General Mobile Radio Service (GMRS) at 460-470 MHz, in 1947, was due in part to the efforts of Al Gross, W8PAL, who had developed and demonstrated a UHF handheld transceiver.

Al Gross was awarded the VWOA (Veteran Wireless Operators of America) Marconi Memorial Gold Medal for Achievement at the VWOA's Annual Banquet on May 17, 1996; excerpts from the biography accompanying that award are quoted below.

"After completing college with a BSEE degree, Al worked in his small manufacturing firm on wired intercom systems. . . before World War II Al had developed a high frequency, hand-held walkie-talkie. During the war, Gross worked with the OSS (forerunner of the CIA) to develop a compact, portable two-way radio transceiver that was used for clandestine operations behind enemy lines. The transceiver was used for ground-to-air communications between agents and pilots in high-flying aircraft. This secret operation was declassified in 1976.

"Shortly before the end of the war, Al met George Stirling, head of the FCC Radio Intelligence Division, who suggested showing the OSS handheld walkie-talkies to the FCC Chairman and the Commissioners. Impressed by the demonstration, FCC Commissioner E. K. "Jack" Jett wrote the article Phone me by Air (*Saturday Evening Post*, July 28, 1945) and personal two-radio was born.

"After the war Gross formed his own company to market his inventions. He received two FCC licenses (W1ØXVX and W1ØXVY) in June 1945 for on-air testing and development of life-saving equipment for emergency use by the U.S. Maritime Commission and the War Shipping Administration. The U.S. Coast Guard, in 1948, contacted Gross' company to manufacture a version of this same hand-held transceiver, model TRC156."

Among his many awards over the years, Al prizes his honorary permanent membership in the ITU, conferred personally by Dr. Pekka Tarjanne, Secretary-General of the ITU, during the 9th Personal Radio Congress in Geneva on 21 May 1995.

We congratulate Al on his achievements and his well-deserved fame.WR

Hamvention

(continued from page 1)

computer show banner on the building across the street to the south of the arena coinciding with the Hamvention, and a number of hams have made it a secondary stop.

Another ham friend, Jim Yoder, KB8LDG, bought a Garmin model 38 GPS receiver for $200. This model is about the size of a small cellular phone, and has a built-in antenna. Jim noted that it must be placed on the dashboard when used in a car, but it shows his car's speed

Amid the crush at the *Worldradio* booth.

and location accurately while he drives down the freeway. The speed shown by the GPS receiver matches the speed indicated on his speedometer. Purchase of the receiver was obviously justified as a backup in case his speedometer cable fails! Seriously though, the price of GPS receivers seems to be dropping like prices of calculators, computers, and disk drives.

I have lived within driving distance of Dayton only a short time, but already have discovered a few tricks of the trade that will help you when visiting *any* hamfest. First, dress for the occasion, wearing blue jeans or slacks and comfortable tennis shoes. Sudden downpours are a fact of life in many parts of the country, so wear clothing you don't mind getting soaked.

Inside the Montero, showing WEFAX picture received.

Second, wear one of those belt clips for hanging key rings on, and clip a stubby umbrella to it. Also attach your HT's wrist strap if you plan to carry an HT with you. Put the HT on your belt, and use a speaker/mic if you want to communicate with others during the event. It's easy for an HT to "jump" off your belt in the hustle and bustle of the crowd. When I got out of my car and started for the shuttle bus, I felt something hitting my leg. It was my HT, dangling from my belt clip by its wrist strap. That was the first time I had ever dropped my HT from my belt, and it was saved from hitting the pavement or getting lost!

I also recommend taking a pair of sunglasses and a hat of some kind.

Next, stuff a couple of grocery-store plastic bags in your pocket, along with a small note pad and pen. As you make that "first pass" through the flea market, write down a description of what you see, the asking price, and the booth number for the items that interest you. Then you can more easily compare prices and quality of the items you see. When you make purchases, the bags will allow you to take small items

Montero equipped with az-el rotator for satellite links, built by Woodhouse Communication.

with you without your having to carry them in your hands. The object here is to keep your hands free.

Bus service from two nearby shopping malls to Hara Arena was excellent, with minimal delays, and the

cost of the bus service was included in the ticket price. I understand that bus service to the hotels was much less frequent, and there was a $3 charge per round trip. For those who wanted to park up close, there was a privately owned grassy field about a block to the south of the arena where people could park for $5.

Some things about Dayton don't change. The world-famous rib sandwiches and bratwurst are as good as you find at any county fair.

More solar panels than I know what to do with. Make an offer!
—photos by AB6QE

What an event it was! Dayton is a place where you can meet new people, renew old friendships, see new toys, find new bargains, and come home with a sore body, completely exhausted. Now, I wonder how soon I'll be able to buy next year's ticket?! WR

Forum Highlights, Hamvention '96

John F. Minke, III, N6JM

After many years as an April event, the Dayton Hamvention was moved one month later to May in hopes of better weather. However, the weatherman had other plans, and Chicago was closed due to fog for all those who made flight connections through there. By Friday morning everything was back on schedule.

In addition to the famous ***World-radio*** booth at the usual location in the Hara Arena (#49) there were the usual exhibitors and the forums. This year some of the forums were at nearby Meadowdale High School, which required much travel between the Arena and the school. Trying to juggle the schedule to attend the various forums with a minimum of interruption was difficult.

County Hunters

I chose to attend the county hunter's session, which was one of seven scheduled for Friday afternoon.

John Sebastian, N8BGF, was the moderator and said he has been county hunting since 1979, and enjoys it very much. Included in the forum were a group of speakers which included Andy Anderson, W3XE, whose subject was working counties via CW. "CW is a dying sport," he said. Andy reminded the crowd that the customary gathering spots of 14.056.5 and 7.039.5 MHz are the frequencies used by CW county hunters.

Pete Peterson, K4QFK, spoke on the Mobile Amateur Radio Awards Club (MARAC) awards offered for county hunting. Initially everyone works for USA-CA, the county award sponsored by *CQ*. MARAC sponsors many additional awards and plaques in support of the program. Pete said that not all county hunters are MARAC members, but all MARAC members are county hunters. County hunting enthusiasm was inspired several years ago by the late Cliff Corne, Jr., K9EAB, who was the first amateur to work another Amateur Radio station in every U.S. county. Other awards include "The Second Time Around Award." This particular award is, obviously, for those who have worked all of the U.S. counties for the second time. There is also an award for working DXCC, however, this is available only to those who work while mobile.

Pete awarded a "Last County Award" to John Peters, K1ER. The award, dated 27 January 1996, was in recognition for handing out the last needed county to 25 different county hunters. Incidentally, I am a DXer, and am new to the county hunting game. Although too late to mention the 1996 MARAC convention, the 1997 annual event will be in Orlando, Florida, the first week in July. MARAC is divided into six divisions and the national convention is held in early July every year.

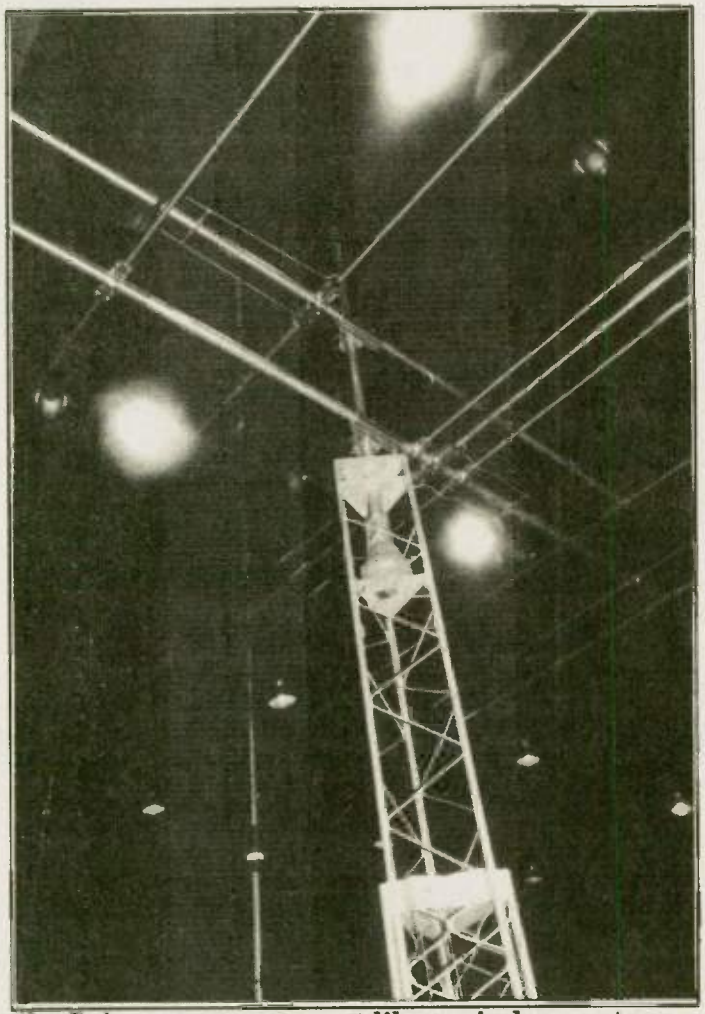
Carl Durnavich, KF9FU, discussed his favorite mode of county hunting, county hunting on spots other than the county hunters net frequencies. That is how Carl worked at least 500 counties on seven different bands. Working the state QSO parties is a good county source, and the best, according to Carl, is the California QSO Party, with the Pennsylvania QSO Party as another particularly good one. He also suggests that the operator look into the 10-10 nets on 10 Meters and pick up an ARRL Net Directory which may reference those counties which you still need. Carl needed some elusive counties in Nebraska and found them on one of the 75-meter traffic nets.

DX Topics

Several forums were held on Saturday, and one was on the subject of DX and included several presentations. The first speaker was Bill Kennamer, K5FUV, of the ARRL DX Desk, who discussed the growth in the DXCC program. Bill said it has been a lot easier to work DX during the last sunspot cycle than those of previous cycles. Regarding the growth in the RTTY DXCC recently, there have been in excess of 250 endorsements to the program, although new applications have not been significant.

Bill was asked about the growth of 5BDXCC (Five-Band DXCC) and he replied that it has been fairly consistent with 200 to 250 applications per year.

Sam Harrell, AL7EL, introduced team members of his 1996 Wake Island DXpedition where they operated as AL7EL/KH9. Sam's initial visits to Wake Island were strictly work related assignments, and any operating was done after hours. This experience laid the groundwork for the foundation for the Dateline DX Association and its DXpedition to Wake Island in February 1996.



Hy-Gain antennas sprout like an indoor antenna farm. *—photo by N6WR*

Another member of the team, Don Greenbaum, WB2DND, discussed operating from Wake Island. Using the contest logging program, "CT," they were able to log up to 400 contacts per hour at times. The pileups were very well behaved. The team at AL7EL/KH9 also used satellite and RTTY and almost everyone worked on those modes claimed it as a new one.

Youth in Amateur Radio

In any enterprise looking to the future, its young people are important. In Amateur Radio the presence of young blood is vital. This year's forum on youth was again moderated by Carole Perry, WB2MGP, and included several young amateurs speaking about their roles in Amateur Radio today.

Carole introduced her first speaker, Beth Harris, KJ7FC, from Cheyenne, Wyoming. She holds an Extra class ticket and is 15 years old. She was last year's recipient of the Hiram Percy Maxim Award. Formerly KC7AYH, Beth says that originally she didn't think that she would progress beyond that of a Novice.

Beth presented a video of the activities and operations of her high school radio club. Beth said that she has come to realize that Amateur Radio is a lifelong hobby. It has given her the chance to make many new friends and has even helped in "scoring points" with teachers, especially in geography.

The next speaker was 13-year-old Ken Fritz, N3WAX. Ken discussed how he got into Amateur Radio — he was introduced to the hobby at a Boy Scout camp. He is a member of Explorer Post #976 and the Marple-New Town Amateur Radio Club. In his concluding remarks, Ken urged everyone to support their local radio club.

The third speaker was Sam Garrett, AAØCR, from Missouri. Alert ***Worldradio*** readers will recognize this young man as the "Youth Forum" columnist. He will be leaving the column to enter college in the fall, which will be a full-time job. At age 18, Sam is a former speaker at the Hamvention Youth Forum, and this year discussed scholarships in Amateur Radio.

Students of any age can qualify for scholarships. Of the major scholarship programs, the first discussed was FAR, the Foundation for Amateur Radio, located in Washington,

D.C. This organization administers scholarships for 10-10 International, QCWA, and many others. Sam also discussed DARA (Dayton Amateur Radio Association), and the ARRL Foundation as places to apply for scholarships. He advised taking plenty of time and care in filling out the applications. Sam went on to say that he was not an expert on receiving the scholarship awards, but was an expert on applying for them.

The fourth to speak was Jeremy Graham, N9OWS, from Illinois. Jeremy is 14 years old and in the 8th grade. His subject was Boy Scouting in Amateur Radio. His troop is very much involved in Amateur Radio and the various merit badges associated with Amateur Radio.

He also mentioned JOTA, Jamboree on the Air. The remaining youth speakers included: Mike Ballbach, NØZTQ; Kirk Severson, KBØLNM; Ben Fenster, KBØOVM; and Mike Wiacek, N3PDO.

Geratol Net

Does this group consist of only those who have "tired blood?" Not at all. The Geratol Net is a group consisting of U.S. Extra Class licenses and Canadians who gather on the 75 Meter frequency of 3.767 MHz for the purpose of working states and other endorsements.

The session was mainly a social gathering, moderated by Dave Ertel, KJ8V, where attendees introduced themselves and their Geratol number, (which is the same number on their 75 Meter WAS assigned by the ARRL).

John Scott, WM9U, who handles the various Geratol certificates and endorsement programs, also spoke. Dan Henderson, WA4QQN, discussed the net's newsletter. Geratol Net members should contact Dan for additional information. The net also has its own QSL bureau for those who wish to exchange cards for contacts made between members. Run by Jon Kirkman, W4WDH, the bureau is located in the trunk of his car! The group later met for an evening dinner at the Red Rock Steak House, in West Carrollton, OH, a suburb of Dayton.

YLRL

The YLRL (Young Ladies Radio League) forum was narrated by Kay Eyman, WAØWOF, who just happens to be the "YLs on the Air" columnist for ***Worldradio***. It was her sad duty to report that John Hugentober, N8FU, had become a Silent Key the day before. He was the husband of Carol Hugentober, K8DHK, Vice President of the YLRL. Many of us also knew John via the 10-10 International Net, and his service to the ARRL.

Kay introduced the various YLRL officers and mentioned YLRL activities such as the YL Packet Net that has been operational for the last two years. Also mentioned was their scholarship fund with a goal of $3,600. The YLRL also has a "DX Adoptee Program" where stateside members can pay the dues, plus postage for YL Harmonics for a DX YL member.

Betty Strattan, W2PVS, spoke about the YLRL July convention to be held at the Omni Hotel in Albany, New York. A trip to the ARRL headquarters in Newington, Connecticut, is also planned. Kay asked members to promote YLRL at all conventions, and mention their net frequencies, such as 14.288 MHz at 1900 UTC on Wednesdays and the Tangle Net on 14.295 MHz at 1900 UTC on Thursdays.

The YLRL offers six different certificates for contacts with YL Amateur Radio operators. These include YLCC for contacting 100 YL operators; YLWAS for working a YL in each of the 50 states; YLWAC for working a YL in each of the six continents; YLDXCC for working a YL in at least 100 different DXCC countries; DXYL (available for YL operators only); and one for continuous membership.

Mary Harper, AD4HC, an Assistant Director with the ARRL Roanoke Division, maintains the YLRL membership database and discussed the benefits of recruiting new members. A complimentary copy of YLHarmonics, the official publication of YLRL is available for review. She suggested $2 to cover costs of mailing. She said that the greatest thing about YLRL is the friendship. It was suggested that YL operators get on the air the sixth day of each month and call "CQ YL" on all CW bands where the last two digits end in 33, such as 3.533, 7.033 and 14.033 MHz. Likewise for the phone bands where they end in 88, such as 14.288 MHz.

Visiting DX YL Therezinha Cardoso, PT2TF, explained that she had been sponsored 20 years ago by Grace Swenson, W1RLQ. She was then residing in this country for a time before returning to Brazil. She is presently working with the USA-CA program. Another DX YL present was Norika Tokura, 7K3EOP, who was a prize winner.

The Dayton Hamvention provides quite a show each year and its continued growth is a prime example that Amateur Radio is alive and working. See you next year! **WR**

Short news notes...

New call sign blocks issued for Puerto Rico

New call signs have been issued for Puerto Rico. On 7 May, the FCC issued call signs in Puerto Rico from one of the new NP3 blocks. For some time now, hams have been waiting for the FCC to begin issuing new call sign prefix blocks for areas in the Caribbean, Alaska and Hawaii that are running low on, or are already out of available call signs for higher class licensees.

ZS8, Marion Island

Chris, ZS8IR, is very willing (time permitting) to schedule QSOs with operators via the Internet. His e-mail address is:

cdebeer@cis.com.za

Chris gets his e-mail in batches via a satellite link. On an interesting note, you might want to look at a description of his stay on Marion Island which can be found with the following URL: http//cpcug.org/user/wfeidt/Contest/zs8ir.html

—Ohio/Penn *DX Bulletin*

FCC Isle office closes

The Honolulu office of the Federal Communications Commission has closed due to reorganization. Calls and correspondence should be referred to the: FCC - San Francisco office, 3777 Depot Road, Room 420, Hayward, CA 94545.

MFJ *HF/VHF* SWR Analyzer™ with RF Resistance Meter

Read your antenna SWR from 1.8-170 MHz . . . 10-digit LCD frequency counter . . . RF Resistance Meter™ . . . smooth reduction-drive tuning . . . simple-to-use . . .

MFJ-259 **$239.95** If you work with antennas, MFJ's revolutionary new *SWR Analyzer*™ is the best investment you'll ever make! Now you can diagnose a wide range of antenna problems instantly with one easy-to-use instrument.

What the MFJ-259 Does

The MFJ-259 gives you a complete picture of your antenna's performance anywhere between 1.8 and 170 MHz -- you can even check SWR outside the ham bands without violating FCC rules. Set the bandswitch and tune the dial--just like your transceiver. SWR is displayed instantly!

RF Resistance Meter™

Does 2:1 SWR mean 25 ohms or 100 ohms? *The new MFJ-259 tells you at a glance!*

Now you can measure RF resistance up to 500 ohms at minimum SWR -- instantly -- on MFJ's *exclusive* side-by-side RF Resistance and SWR Meters!

Take the guesswork out of building matching networks and baluns for your antennas.

Watch the effects of spacing on radiation resistance as you adjust your antenna.

Here's What You Can Do . . .

Find your antenna's true resonant frequency from the shack.

Tune the antennas on your tower and watch SWR change instantly as you make each adjustment. You'll know exactly what to do by simply watching the display.

Tune critical HF mobile antennas in seconds -- without subjecting your transceiver to high SWR.

Measure your antenna's 2:1 SWR bandwidth on a single band, or analyze multiband performance over the entire spectrum from1.8 to 170 MHz!

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

Adjust your tuner for a perfect 1:1 match without creating QRM.

And this is only the beginning! The MFJ-259 is really *four* test instruments in one: an accurate RF signal generator, a high resolution 170 MHz frequency counter, *RF Resistance Meter*™ and an *SWR Analyzer*™.

Free Manual

MFJ comprehensive 18 page instruction manual is packed with useful applications -- all explained in simple language you can understand! **For** free manual write or call MFJ.

Take It Anywhere

The MFJ-259 is fully portable, powered internally by 8 AA batteries or 110 VAC with MFJ-1312B, $12.95. It's in a rugged all metal cabinet that's a compact 4x2½x6¾ inches. Take it to remote sites, up towers, on DX-peditions -- anywhere your antennas are located.

For rough service, pick up a convenient **MFJ-29B**, $24.95, padded carrying pouch to keep your MFJ-259 close at hand and looking like new.

How Good is the MFJ-259?

MFJ SWR Analyzers™ work so good, many antenna manufacturers use them in their lab and on the production line -- saving thousands of dollars in instrumentation costs! Professional installers and technicians use them worldwide.

Get More by Paying Less

With the MFJ-259, you get full 1.8 to 170 MHz coverage, simple operation, instantaneous readings, a high accuracy frequency counter and MFJ's exclusive *RF Resistance Meter*™-- all for a low $239.95.

1.8-170 MHz *SWR Analyzers*™

MFJ-249 **$219.95** **MFJ-249** *HF/VHF SWR Analyzer*™ has all the features of MFJ-259 but less RF resistance meter. Includes 1.8-170 MHz *continuous* coverage, 10-digit LCD frequency counter and smooth vernier tuning.

MFJ-209 **$109.95** **MFJ-209** *HF/VHF SWR Analyzer*™ is same as MFJ-259 without LCD frequency counter and RF resistance meter. Has jack for external frequency counter. MFJ-249/MFJ-209 are 4x2½x6¾ inches and uses 8 AA cells or 110 VAC with MFJ-1312B, $12.95.

Carrying Pouch with Window

MFJ-29B **$24.95** **Tote** your MFJ-259/249/209 *SWR Analyzer*™ anywhere with this custom Carrying Pouch.

Made with a special foam-filled fabric, it cushions blows, deflects scrapes, and protects knobs, meters and displays from harm.

Clear protective frequency display window and cutouts for knobs let you use it without taking it out of pouch. Fully-adjustable webbed fabric carrying strap has snap hooks on both ends. Wear around waist or over shoulder.

Keep your analyzer safe and looking new!

MFJ-29, $19.95, no window or cutouts.

Dip Meter Adapter

MFJ-66 **$19.95** **Plug** a dip meter coupling coil into your *MFJ SWR Analyzer*™ and turn it into a sensitive and accurate bandswitched dip meter.

With a dip meter you'll save time and take the guesswork out of winding coils, measuring inductance and capacitance, measuring velocity factor and electrical lengths of coax. Determine resonant frequency of tuned circuits and measure Q of coils. Set of two coils cover 1.8-170 MHz depending on your *MFJ SWR Analyzer*™.

Free MFJ Catalog

Write or call . . . 800-647-1800

10-160M *SWR Analyzer*™

MFJ-207 **$79.95** **If** you're an HF man, this compact MFJ-207 *HF SWR Analyzer*™ will help you build 10-160 Meters antennas that'll make working DX almost routine.

Just plug in your coax to find the SWR of any HF antenna on any ham band 10-160 Meters. Has jack for external frequency counter. 7½x2½x2¼ inches.

2 Meter *SWR Analyzer*™

MFJ-208 **$79.95** **MFJ-208** 2 Meter *VHF SWR Analyzer*™ finds the SWR of any antenna from 138-156 MHz. Jack for external frequency counter. 7½x2½x2¼ inches.

For Commercial VHF Radio

Same as MFJ-208 but for commercial VHF. **MFJ-217**, $79.95, covers 30-50 MHz and **MFJ-218**, $79.95, covers 150-170 MHz.

440 MHz *SWR Analyzer*™

MFJ-219 **$99.95** **Read** SWR of any antenna 420 to 450 MHz -- just plug coax of your antenna into SO-239 connector, set frequency and read SWR. Uses microwave integrated circuits and microstrip technology. Jack for external frequency counter. 7½x2½x2¼ in.

MFJ-219N, $99.95, sames as MFJ-219 but with "N" connector.

MFJ-219/218/217/208/207/203 uses 9 volt battery or 110 VAC with MFJ-1312B, $12.95.

Bandswitch Dip Meter™

MFJ-203 **$99.95** **The** MFJ-203 is a sensitive *Bandswitched Dip Meter*™ that covers all ham bands from 160-10 Meters. There are no plug-in tuning coils to keep up with or break.

Has detachable coupling coil, dual FET oscillator, op-amp meter amplifier and jack for external frequency counter. 7½x2½x2¼ in.

MFJ Antenna Bridge

MFJ-204B **$79.95** **Great** for determining feedpoint resistance of antennas and for designing impedance matching networks. Measure RF resistance up to 500 ohm. Covers all ham bands 160-10 Meters. Built-in resistance bridge, null meter, tunable oscillator-driver, frequency counter jack. 7½x2½x2¼ inches. Use 9 volt battery or 110 VAC with MFJ-1312, $12.95.

Nearest Dealer/Orders: 800-647-1800
Technical Help: 800-647-TECH(8324)

• 1 year unconditional guarantee •30 day money back guarantee (less s/h) on orders from MFJ • FREE catalog

MFJ ENTERPRISES, INC.
Box 494, Miss. State, MS 39762
(601) 323-5869; 8-4:30 CST, Mon.-Fri.
FAX: (601) 323-6551; Add s/h

MFJ . . . making quality affordable

Prices and specifications subject to change © 1995 MFJ Enterprises, Inc

MFJ-989C 3 KW Antenna Tuner

More hams use MFJ-989s than any other 3KW tuner in the world! Why? . . . Because MFJ uses super heavy duty components to make the world's finest 3 KW antenna tuner . . .

In Stock at ham dealers everywhere!
Call your dealer for your best price

$349.95 MFJ-989C

- *New for 1996 -- MFJ AirCore™ Roller Inductor*
- *Super Heavy Duty Components • Made in U.S.A.*
- *Handles 3000W PEP SSB*
- *peak/average Cross-Needle SWR/Wattmeter*
- *Antenna Selector • Balun • Built-in Dummy Load*

More hams use MFJ-989s than any other 3 KW tuner!

MFJ uses super heavy duty roller inductor, variable capacitors, antenna switch and balun to build the world's most popular 3 KW antenna tuner.

The rugged MFJ-989C handles 3 KW PEP SSB and covers 1.8 to 30 MHz, including all MARS and WARC bands.

MFJ's new 1996 AirCore™ Roller Inductor, three-digit turns counter and spinner knob gives you exact inductance control for absolute minimum SWR.

You can match dipoles, verticals, inverted vees, random wires, beams, mobile whips, shortwave -- nearly any antenna. Use coax or balanced lines.

You get everything you've ever wanted in a high power, full featured, antenna tuner -- widest matching range, lighted Cross-Needle SWR/Wattmeter, antenna switch, built-in dummy load, balun, convenient flip-stand -- all in a sleek, compact cabinet.

MFJ builds the world's most popular 3 KW antenna tuner using these **super heavy duty** *components . . .*

MFJ *AirCore*™ Roller Inductor

MFJ's exclusive *super heavy duty AirCore*™ Roller Inductor has an air core that can't burn up! You get ultra high-Q, the lowest loss, highest efficiency and highest power handling of any roller inductor in ham radio.

MFJ's exclusive *Self Resonance Killer*™ keeps potentially damaging self-resonances away from your operating frequency.

Large, self-cleaning wiping contact gives excellent low-resistance connection without arcing or contact burning.

A *solid* ¼ inch brass shaft with self-align bearings gives smooth non-binding rotation.

Some competing "legal limit" tuners use a lossy, low Q, solid core with erratic electrical contacts and have potentially damaging self-resonant frequencies. This can cause excessive heating and can destroy the core.

***Massive* Transmitting Capacitors**

Look inside . . . you'll see two *super heavy duty* transmitting variable capacitors that can handle 6000 volts. Extra wide (0.27 inch) stator plate spacing gives you arc-free operation.

Specially shaped plates give low minimum capacitance when unmeshed. This and a hefty 250 pf maximum give you an extremely wide matching range -- even on 160 and 10 Meters.

The nearest competing "legal limit" tuner has variable capacitors physically *much smaller* than the MFJ-989C's. Theirs is rated at 4500 volts -- a full *25% less* than the MFJ-989C. Theirs is more likely to arc -- *not what you want in a "legal limit" tuner!*

***Super* Antenna Switch**

The MFJ-989C *super heavy duty* antenna switch is made of *two* individual *ceramic* wafers wired in parallel. Extra wide spaced, heavy duty contacts handle extreme voltages and currents. *We've never burned one up!*

You can select two coax antennas (directly or through tuner), balanced line/random wire, or built-in dummy load.

3 KW *Current* Balun

MFJ's *super heavy duty* 3 KW *current* balun for balanced lines uses *two* giant 2½ inch toroid cores. It's wound with *Teflon®* wire connected to high voltage *glazed ceramic* feedthrough insulators.

The MFJ-989C lets you safely operate high power into balanced feedlines without core saturation or voltage breakdown.

Some "legal limit" tuners have inferior *voltage* baluns with smaller diameter toroid cores and use soft plastic feedthrough insulators that can arc and melt.

More reasons why the MFJ-989C is the world's finest 3 KW tuner . . .

***Built-in* Dummy Load**

A full size 300 watt non-inductive 50 ohm dummy load is built into the MFJ-989C.

You'll find it handy for transmitter tuning, testing and repairing your rig, setting power level, adjusting your mic gain and more.

Some "legal limit" tuners *don't* have a built-in dummy load. They want *you* to pay for an external dummy load that just gets in your way.

Lighted *Cross-Needle* Meter

MFJ's lighted *Cross-Needle* SWR/Wattmeter lets you monitor SWR, forward and reflected power *simultaneously*. Read both peak and average power in two power ranges.

Sleek and Compact

The compact MFJ-989C slides right into your operating position -- you'll hardly know it's there. It's just 10¾x4⅓x15 inches. *Do you really want a bulky "legal limit" tuner that's bigger than your amplifier?*

***Superior* Cabinet**

The MFJ-989C's *premium*, low-profile all-aluminum cabinet has a sub-chassis that adds strength and RFI protection.

Every cabinet is chemically treated and has a tough, scratch-proof vinyl cladding -- not paint that can scratch or chip off. You won't find a tougher, longer-lasting finish anywhere.

Detailed logging scales and legends are *permanently* silk screened on *real* aluminum front and back panels -- they aren't decals or glued-on paper strips that can peel off.

***Superior* Construction**

Every MFJ-989C uses PEM nuts (*not* self-tapping screws), wing-nut for ground post (*not* a cheap nut), fire-retardant epoxy glass PC board (*not* canvas based), heavy guage wire throughout (*not* small guage), locking compound on nuts/bolts (*not* loose hardware).

***No Matter What*™ Warranty**

Every MFJ-989C is protected by MFJ's famous one year *No Matter What*™ unconditional warranty. We will repair or replace your MFJ-989C (at our option) *no matter what* for a full year.

Others may give you a *limited* warranty on defects in material and workmanship.

But what do you do if your "legal limit" tuner burns up and they say, "Sorry, your *limited* warranty does *not* cover that."

***Outstanding* Customer Service**

We're here to help keep your MFJ-989C performing flawlessly -- *no matter how long you own it* -- just call 800-647-TECH(8324).

Call your dealer for your *best* price

In stock at ham dealers everywhere!

Order today or pick one up at your favorite dealer or hamfest -- no shipping, no waiting.

Free MFJ Catalog
Nearest dealer/Orders: 800-647-1800

76206.1763@compuserve.com FAX: (601) 323-6551
•1 year *unconditional* warranty •30 day money back guarantee(less s/h) on orders from MFJ •**Add s/h**

MFJ MFJ ENTERPRISES, INC.
Box 494, Miss State, MS 39762
(601) 323-5869; 8-4:30 CST Mon.-Fri.
Prices/Specs subject to change ©1996 MFJ, Inc.

MFJ . . . the world's most trusted name in antenna tuners!

transceiver to interfere with police calls while standing on a motel balcony over the weekend of the ARRL Northwestern Division Convention in Seaside. Other hams at the convention helped police locate Aguero. He was detained and then released on his own recognizance.

Back in January, Aguero was arrested on similar charges in California. Police allege he interfered with law enforcement radio communication systems in Sacramento County and Roseville, California. During that interference, dispatches from Roseville Police turned up on Sacramento County Sheriff's Department radios, and vice versa.

Detective Menz says that a misfiling by the local district attorney's office had delayed prosecution on the January charges. Now authorities plan to pursue prosecution on both the January and April incidents. Menz said Aguero faces at least two counts of interfering in California. Aguero could get up to one year in jail on each count. He said local agencies also might try to bring federal charges.

Aguero has again been released on his own recognizance on the latest California charges. He is under a court order that forbids his having a scanner or radio transmitter in his possession. Authorities say that they can and will put him in jail immediately if he is caught with either device.

Sister Alverna injured

Courage Handi-Ham's Educational Coordination Sister Alverna O'Laughlin, WAØSGJ, is recovering from injuries she received 31 May in an automobile accident. Sister Alverna, the 1988 recipient of the ARRL International Humanitarian Award, was on her way to the ARRL Dakota/Midwest Divisions convention in South Sioux City, Nebraska, when the accident occurred. She suffered a badly broken leg which required surgery, and is expected to be in a cast for several months.

Sister Alverna, a member of the Francisan Order, will recuperate at Assisi Heights, her order's mother house. She is reported to be in good spirits. Cards, letters, QSLs (but no calls please) may be sent to: Sr. Alverna O'Laughlin, WAØSGJ, Assisi Heights, Third Floor Health Care, Rochester, MN 55903. Sister Alverna is planning on getting on 2M FM in the Rochester area in the near future.

Guinea-Bissau

Dave Bendt, KC9IM, was due to leave the U.S.A. on 18 July for a two-year assignment in Bissau, Guinea-Bissau with the U.S. State Department. "I should be on the air as J52IM (hopefully) in mid-August when my equipment catches up with me. The Embassy has told me already that there should be no problem in obtaining licensing. I'm taking an A4S and an R7 (same as when I was TL8IM and plan to be active on 10-40M. When I am not in contests I can usually be found on the 236 DX Net, the EU DX Net, or the 10M PT DX Net. QSLs will be via Howard, KB9XN."

6-meter beacon

The SK3SIX beacon has gone QRT on 6 Meters due to severe damage to its antenna system and failure of the control circuits. SM3EQY and SM3JGG have brought the transmitter down from its mountaintop location overlooking much of Sweden and are working on a new keying system. When service is finished and the new antenna is installed, the beacon will returned to service.

A group of Dutch radio amateurs will activate the Republic of Georgia during the coming E-skip season, from 14-26 June. They will be in grid square the LN21 on the air with the prefix 4L. Listen for them on 50.123 MHz on SSB.

Also, the U.S. Island Directory and island list is now available on the World Wide Web thanks to WD8MGQ. There are two versions of the island list to choose from. The "master" version is the most detailed.

Senate connection

There's a ham radio connection in the recent announcement that Kansas Governor Bill Graves has named Lt. Governor Sheila Frahm to succeed Bob Dole in the U.S. Senate. Sheila Frahm is the sister-in-law of ARRL Midwest Vice Director Bruce Frahm, KØBJ.

Shiela Frahm is a Republican, and will serve in the Senate at least until November, when Kansas voters will choose a candidate to fill the last two years of Dole's term.

Ariane 5 fails

The rocket that will carry AMSAT's Phase 3D ham satellite into orbit has failed its first real test. Ground controllers blew up the Ariane 5 minutes 40 seconds into the flight at an altitude of about 12,000 feet as it veered off course.

The 4 June launch began at 12:33 UTC, from the European Space Agency's Kourou launch facility in French Guiana. Ariane 501 carried a group of four scientific satellites known as "Cluster" which were, of course, destroyed as well. No Amateur Radio satellites were aboard.

An upcoming Ariane flight is due to carry Phase 3D later this year.

Oldest Bird found

The *ARRL Letter* reports that Justin Dennis, KAØHKV, of Atkins, Iowa, was the grand prize winner of Quest 43. That was Bird Electronic Corporation's year-long competition to locate the oldest working Model 43 Thruline Wattmeter.

Bird says Dennis' Model 43, serial number 71, manufactured in 1952, still delivers accurate RF power measurements 44 years later. Dennis said he bought the unit from a friend for $15. It earned him a 24 carat gold-plated Model 43, a $1,000 gift certificate and a brand new Model 43.

25 Years Ago

Armond Noble, N6WR

It was the beginning of ***Worldradio***. We had mailed an announcement describing what the magazine would be to a carefully selected 5,000 amateur who were active in what our avenues of focus would be.

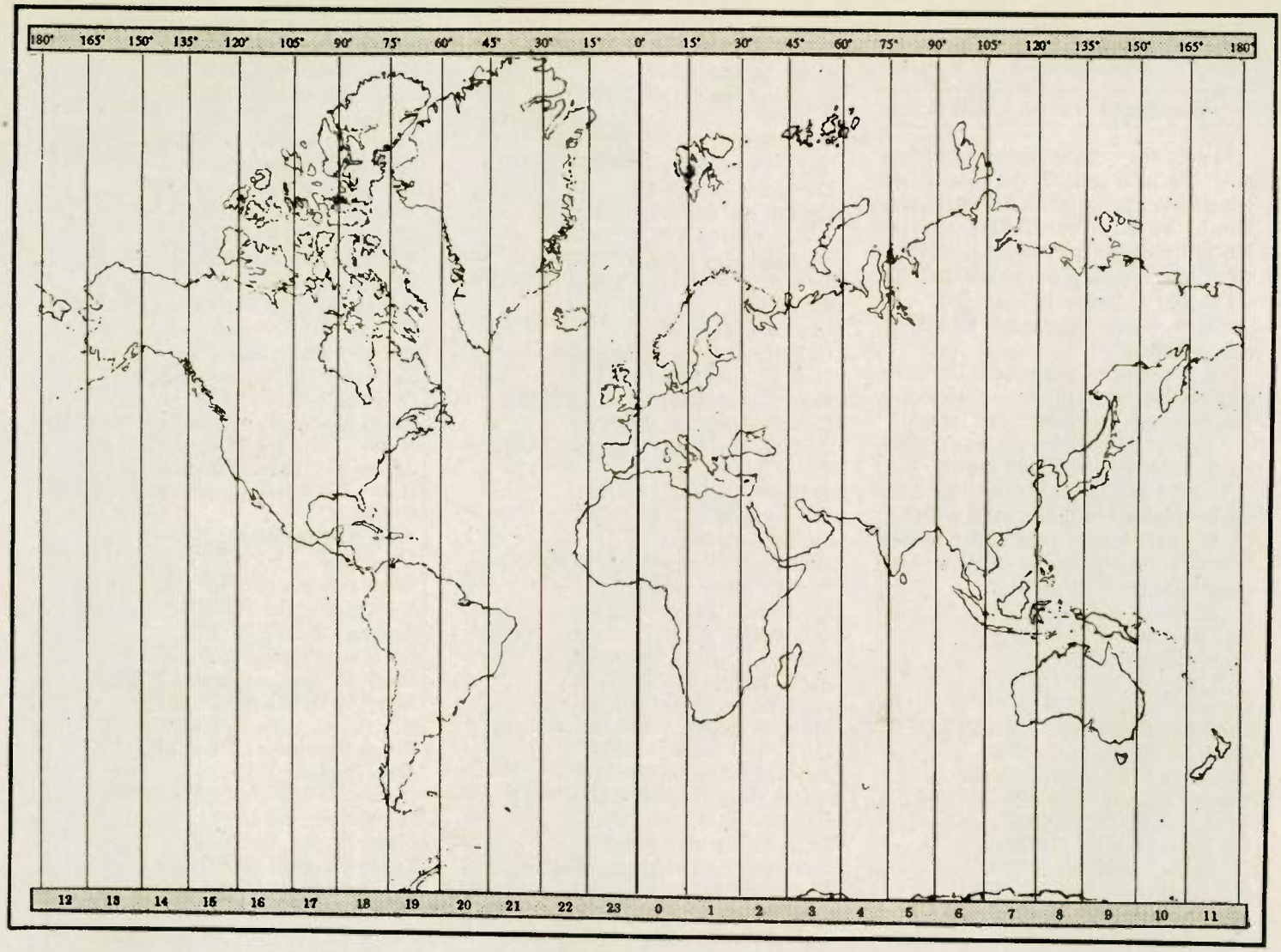
Displayed below are our first subscribers, those who made ***Worldradio*** possible.

As a sense of responsibility usually comes through maturity, many you see here are now Silent Keys.

Among the listed may be an amateur who could have been your "Elmer" back then. You will also see those who were motivated while in their early years and are now the leaders in Amateur Radio. Our gratitude to:

Dr. H. Chester Moore, K6ICZ
Neil Sweeney, WB6UZY
Stan Kellogg, W6KPR
C.J. Munsey, K6IV
Everett Taylor, W6DOR
Dr. Edward Abernethy, WA5OWO
Dr. John Dillon, WA6EWV
Julius van Dongen, WA6FOX
Gerard de Buren, HB9AW-WA6QAU/3
Dr. Anson Hyde, W4QCG
Dr. Robert Kurth, W5IRP
Dr. Peter Labowskie, KØVCZ
Charles Polzer, S.J., WA6ZWL/
Mike Marum, WA7NES
Stewart MacKenzie
Dr. Benjamin Parker, K8YZQ
Oliver Swan, W6KZK
Rev. William Skylstad, K7NKL
Dr. H. Gordon King, WB4BAP
William Page, WB4LWX
Dr. Phillip Miller, WB6QQO
Dr. Frank Stanton, W6DQG
Dr. Malcolm Young, WAIQZ
Prof. L.H. Montgomery, WA4UDB
Leo Campagna, K1TEO
Dave Bell, W6BVN
Dr. Louis Levy, II, WA5IEV
Ben Lane, W7FNE
Dr. Walter Shriner, W9CBG
Bill & Leona Hudgins, W4YY-K6TTT/3
Manuel Riguero, YN1HK
Bill Heller, W3BVL
Paula Gale Own
Dr. F.H. Lindenfeld, WA8LHM
Henry Bray, WA7JAQ
Bill Toussaint, VR5LT
Ernest Berlucchi, W2GHB
Dr. Eugene Simon, W2KOY
Thomas Green, K7MEZ
William Westbrook, K3SLP
Katherine Butler
W.V. Wilson, WB4QFH
Arthur Ross, W5KR
Everett Plumer, CPA, WB6VVT
Jack Connell, W6VVM
Dr. Felix De Pinies, WB2QMU
Vernon Penner, W3BT
Dr. John Lynch, WA3FZZ
Robert & Erica Moore, W3AXR-WN3NOK
Ted Hollinsworth, VE3PG/W4
David Flinn, W2CFP
Dr. Edmun Burroughs, K2QKS
LeRoy Youngs, WA,YVT
Dr. Mark Rubright, KØRZL
Dr. Bill McGrannahan, KØORB-KØVRB
Rev. John Hennessy
Ralph McDonough, WA8KPN
Henry Gepke, WA7HFG
Paul Weisz, W3JNO, W3JNO/VP7
Gabriel Gargiulo, WA1FGJ
James & Joan Phelps, W6LLF-WN6CXO
A. Nash Williams, W6HCD
Dr. Georg Mirus, DL1MM
Dr. Ivan Shultz, WØFDM
Dr. Charles Zwisler, Jr., KØKLY
Roy Alciators, W5RU
Dr. Morton Jacobs, KØEPJ
G.L. Black, WA5GFS
Stanley Coutant, WA6BLK
Jack Chapman, VE4AE
Dr. William Olson, K6CVK
Maurice Kogen, WA9QDO
Dr. Ernest Izumi, W1TBI
Edward Vallerga, W6WDY
Sister Mary Becker, WA6CCR
V.E. Neilly, W3LNW
Dr. John Irwin, K6SE/5
Lawrence Le Kashman, W9IOP
Kenneth & Dori Leiser, W9DOR-W9VNG
Ernest Zumbrunnen, WB6UOM
Jukka Heikinheimo, OH2BR
Ed Gribi, WB6IZF/9V1QF
Sally Sliger, WB4NDX
Don Kellis, K6AWH
Stuart Cowan, W2LX
Capt. Loyd Davis, W8VDA/4
Taylor Sutliff, K8YFT
Herman Greve, W9EWC
Bill & Rose Ellen Bills, WA2FGS-W2CDZ
David Packard, HL9KQ
George Sturgen, WØIUW
Al Smith, WA2TAQ
Capt. Thomas Pollock, WB6ZYE
Col. E.S. Van Deusen, W3ECP
MSgt Eber Dieh, W7AMM
Dr. Harold Berk, WB2LCZ
Dr. William Sprague, WA6CRN
Glenn Baker, W6JZC
MSgt Bruce Cushman, K1DYA/VE2
Ernie Bracy, W1BFA
John Rice, WB9CSP
Robert McNair, W6MPZ
John Abbott, W6OZL
Walter Garber, Jr., W1DQK
C.E. Chamney, KØDQK
Julius Wenglare, W6YO
Doug Stivison, WA1KWJ
Carrie Lynch, WA4BVD
Brother Bernard Frey, WA1FKE
William Glenn, Sr., WB4FOD
Henry Polorny, KØHWD
Michael Smith, WB6LXH
Al Shawsmith, VK4SS
Frank Leverrier, VK2ADE
Gustav Kueher, HR2GK
Dr. Stephen Pakula, W6MED
Ruth Brown, K7WRS
Clarke Paige, W1CGY
Marion Henson, W6NKR
Leonard Dolton, W6DYA
David & Jane Reichlein, W7GVG-W7LXQ
Dorothy Bush, WAØVNE
Dr. Tadakazu Sekine, JA5CK
Dr. F. de Boer, PAØMT
Sister Margaret Mungovan, WA2CQV
Sister Catherine Pfleger, WN2AVI
James Kirkgaser, WA2ELA
Dave & Doris Conkling, WA6IQK-WN6EOO
Fred Barnes, WA8PCT
Mick Mickie, HE9GWY
Ward Jensen, WØTLE
John Hadynski, W6BDI
Anthony Pita, XE1CCP
Carol Ann Gawle, WA1LGU
Dr. Anthony Lombardi, KP4BRJ
Mary McDonough, WA1AN
Rev. Leonard Bose, W6BSO
Berge Bulbulian, WB6OSH
Jean Perkins
Dr. Dallas McCauley, WB6MGB
Roy Ferren, K6RA
Marie Sutter, WA8LJF
Larry Morgan, W7FOQ
Roy Tucker, K6UZB
Fr. Joseph Walsh
Rev. John Stanley, VU2IE/K4ERO
Fr. Clem Wottle, W5SBJ
Brother Robert Kreutzer, W8GYR
William Hammer
Sister Mary Cletus, WAØJIE
Dr. Cheter Cassel, WA4YBZ
Thomas Montambo, K8CBL
Brother John Bauer, S.J., W8CQB
Domenic Pallotto, W9BOX
Joseph Falletta, Jr., WB6UDO
Sister Alverna O'Laughlin, WAØSGJ
Walter Thain, C.T. WB4KKB
Rose Ann Barbarite, W3FUS
Dr. Charles Meistroff, W4TFA-K4KMN
Fr. Aidan Schaefer, W8BPQ
Eddy Pollock, W6KHS
Dr. Sheldon Finkel, WB4LHH
Phillip Sager, WB4FDT
Dr. Edward Hicks, WB4DAL
Carl Sletten, W1YLV
Dr. Stephen Gumport, WB2RVU
Byron Sharpe, W9BE
Dr. Bradford Bennet, K4MR
William Cunniff, KØVVW
H.R. "Duke" Ellington, W6OZD
Dr. Ralph Jensen, W6LVC
Maurice Piroumian, WA6OPB
James Gagliolo, WB4JME
Rev. John Stitz, KØVZJ
Danville Webber, W1PCD

WR



Contact All Time Zones

Armond Noble, N6WR

To help commemorate 25 years of ***Worldradio***, we announce a new award to be known as "Contact All Time Zones" (CATZ).

RULES

The start date for valid contacts is 01 July 1996 at 0000Z.

The world is divided into 24 time zones. Each time zone is 15 degrees wide. For the sake of this award, half-hour zones and out of zone artificial time changes will be ignored.

This award is based on the true 15 degrees each, world map 24 time zones.

The applying station must have one (two-way) contact on Amateur Radio allocated frequencies with a station in each of the world's 24 time zones. Contact with one's own nation does not count.

The operator applying for the award must have made all 24 contacts from a location within the same country.

The award may be endorsed as the applicant wishes in regard to band and/or modes.

APPLICATION

The applying radio operator must be in possession of 24 QSL cards, one from each of the time zones.

A list shall be made showing each contact's call sign, date, band, mode and the time zone starting with the prime meridian (0°) and moving eastward.

There is a fee of $5 to cover the cost and mailing of the 8 x 10 certificate (mailed unfolded).

It is not necessary to mail your QSL cards to ***Worldradio***. Send a statement signed by two other licensed radio amateurs (General Class or above) that they have inspected and verified the required QSL cards.

The application should be addressed to CATZ Award, ***Worldradio***, 2120 28th St., Sacramento, CA 95818.

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

Awards

UMA/RACES Members Service Award

M. Denis Dandeneau, K1STB

James Hopkins, K1VFM; Denis Dandeneau, K1STB; Chet Browning, N1BQW, and Al Pacheco, WA1IIN, were awarded citations for their dedication of 20 years of service to the EMA/RACES organization of the town of West Warwick. They are the original members of the team and are still active on a weekly basis with nets on both 2 Meters and 220 MHz for training and equipment tests.

The team has built the EMA organization up to 30 active members, and redesigned the emergency operations center, which can be used as a command post for any emergencies that may occur. The agency is under the control the police department and gets many calls to assist at large commercial building fires, occupied dwelling fires, and assist at parades and marathons in the town, needless to say this is a very active and positive group of dedicated volunteers.

The EMA team also teaches classes on how to become an Amateur Radio operator and has classes which are held in the EOC (Emergency Operations Center). Plans are in the works for additional classes for Novices and Technicians.

The EOC has the capabilities to transmit on all amateur frequencies up to 440 MHz and has communications equipment to talk to the state capital on CDSTARS system, and radios on police, fire and local government frequencies. The EOC is a secondary back up communications center for any of the town municipal agencies.

The above named amateurs are all certified by the American Red Cross in Shelter Management, Small Burn Out, Damage Assessment, CPR and First Aid. In addition, Denis Dandeneau, K1STB is certified as Administering a Small Disaster Operation (ASDO) by the Red Cross, and is the West Bay Disaster Coordinator for the Rhode Island Chapter American Red Cross.

Pictured from left to right: James Hopkins, K1VFM; Denis Dandeneau, K1STB; Captain Brousseeau — West Warick Police Department; Chet Browning, N1BQW, and Al Pacheco, WA1IIN.

Product Review

Firestik Antenna Co. — 2-meter antenna

Jim Keightley, NF7D

The product review in the April edition by Gardner L. Harris, W6AXM, brought back many memories of mobiling experiences from the late 50s and early 60s. During some of that time, I was driving long haul, cross country. I operated quite a bit of mobile using a Galaxy V MKIII. That 400-watt transceiver really seemed to pack a punch when it came to mobiling and stood up to the constant jolting. The antenna that I most often used was the Hustler and I could usually be found on 75 and occasionally on 20.

However, I no longer drive long haul and the short trips that I make around the area lend themselves to VHF and UHF mobile where the contacts are quickly established with a short call on a nearby repeater. Because of this and other features of VHF/UHF, I am hooked on these bands for my present mobile operations.

I have tried several different brands of VHF antennas with varying degrees of success. Most recently, I have been using the Hustler CG 144 mobile and found it to be an outstanding whip for my use. True, it is a bit of a windjammer but its gain offsets this disadvantage.

However, a friend of mine, Russell Dunam, KC7MGL, recently told me that Firestik Antenna Company, an extremely well-known manufacturer of CB antennas, was now offering a 2-meter, 5/8-wave mobile and I was very interested.

In addition, the antenna seems to be nearly indestructible.

When these antennas arrived, the first thing that came to hand was the catalog. Not only does it have the entire product line, it also has pages of valuable information about mobile antennas in general. In addition to that, free is a very good price.

The antenna itself was vac-packed to facilitate display in retail outlets. These units are constructed of what is obviously high quality material. The mast is of very strong fiberglass, extending upward from a standard stud mount that will fit the usual ball or trunk lip mount. In addition, there is a ton of different mounts available in every conceivable configuration. Those will also work. The electronic part of the antenna consists of a small coil near the bottom with the loaded element spiraling upward around the fiberglass mast to the tip. Shrink tubing covers the entire length. There is a tip cover with markings identifying the manufacturer and the fact that it is a 2-meter antenna.

These antennas are intentionally shipped slightly long physically, allowing the user to "prune to fit" the frequency. I think this is a good feature. It has been my experience that each installation is slightly different and should an antenna be a bit short, I have found it difficult to "stretch" to fit.

I installed the Firestik to the existing ball mount on my pick-up and was very pleased with the looks. The manufacturer had sent me a red antenna that matched the color of my truck and it looked like it belonged there. However, the "proof of the pie is in the eat'n" so I quickly got the Bird Wattmeter out and trimmed the antenna to frequency. This was very easy to do and required only about ¾" cut off the top. When finished, there was only about half a needle width of deflection on the meter.

I used the antenna around the local area for several days, trying to set up a fairly reliable comparative test with other hams and was finally able to do so when a friend, Jim Bertalotto, KB7RKS, happened to be leaving the area. When he had gotten far enough away to be fairly difficult to hear mobile to mobile, I had him pull off the road and stop. He then took a critical listen to my signal on the Firestik. At that point, I changed to the CG 144 and again asked him to listen and compare what he heard to the first antenna. Then I switched to a standard, magmount quarterwave. When I did that, we lost contact and I quickly changed back to the Firestik.

We repeated the test three times and I never told him which antenna he was listening to at the moment. The same mount was used on all tests, the doors of the truck were always closed to minimize all possible sources of variation and we made sure both vehicles were not moved during the comparisons.

In the final analysis, the CG 144 seemed to have a slight advantage in signal strength over the Firestik. However, there is a real advantage with this fiberglass antenna in that it is much shorter and clears the overhead at the local drive-up, etc. It also keeps itself in the vertical even at the highest speeds. I like that because I have a strong suspi-

cion that when the whips fold back over the metal bodies of the vehicle, there is some serious detuning.

Another local ham bought two of the Firestiks as well as a co-phasing harness and mounted the antennas near the roofline of his pickup. He had some difficulty in getting the SWR down until I pointed out that the cabling length in the supplied harness was for 11 meters. The correct length was then calculated and adjustments were made. The SWR fell to what it should be. I am not sure that I would want the directivity that such an array will display when operated on 2 Meters but I will be the first to admit that the system he is running is really working well and Bob, KC7MGM, has a big signal into the repeater. It is hard to knock success!

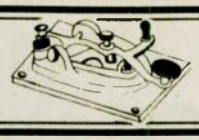
In the end, I really like this antenna. It has a big signal that is very reliable and the results of the test are repeatable. To be sure, the test runs were mostly unscientific but I am not prepared to drive the distance to an antenna range with field strength meters and the other associated gear. The bottom line is that the antenna works well, better than the size would have led me to expect.

In addition, the antenna seems to be nearly indestructible. I was doing some late night repairs to an FM broadcast transmitter. I was backing out of a winding driveway (it was very dark) and I got off to one side of the drive and saplings grabbed the Firestik. The tree bent and gave way to the whip! Now, this is my kind of antenna — and under $20!

You can reach Firestik at 602/273-7151 (fax 602/273-1836 or e-mail them at Firestik@primenet.com Their mailing address is Firestik Antenna Company, 2614 E. Adams, Phoenix, AZ 85034. Their tech support is outstanding and you can use the same phone numbers. They also have a policy of prompt shipment from the factory. The folks that I have talked to on the phone were helpful and friendly, which is very important to me.

Being something of an "antenna tinkerer," I enjoyed trying this antenna out. For years, I have run a Hy-Gain Hy-Tower for HF. However, it won't load on 30 or 17 Meters. I have been reading about an antenna offered by B & W that works on all bands and my interest is piqued so I may do some trading and I will let you know what I find. Want to by a used Hy-Tower? 73s WR

Silent Keys



Harry Thorpe, W4TQA

Harry was born in December, 1907 in Sioux City, Iowa, and attended school there.

His first job was selling the Crosley "Band-Box" radio in the 1920s throughout the Dakotas. In other words, he was a "drummer."

He became interested in ham radio through a childhood friend, and eventually became licensed in 1933. He also held commercial radio-telephone licenses

He spoke to the airship *Hindenburg* on CW the night before she burned at her mooring mast in Lakehurst, New Jersey, in 1937.

When WWII started Harry went to work for the FCC (current name) and was assigned to the listening post at Kaneohe on Oahu in Hawaii. Harry was credited with providing much vital information concerning Japanese movements. He was able to copy code at 55 wpm.

After the war, Harry was assigned to Indianapolis where he helped apprehend illegal radio stations and operators.

Following this, he was assigned to Washington, and concluded his career there in 1950. After retirement Harry and his wife Inez moved to Orlando, Florida.

His present ham call, W4TQA, was issued at that time and was a Class "A" call. When the FCC restructured the call sign system, he became an Advanced Class.

He was a member of the ARRL, Bahia Shrine and the QCWA. He became a Silent Key on 23 May 1996. Harry was a good friend and will be missed! *—submitted by Gerald Skinner, K4LVZ*

Walter Britton, W9LYR

Walt became a Silent Key on 17 October, 1995, of cancer.

He was 6' 6½" tall, slim, blue eyes, and dark blond hair. He always wore a bow tie, very likable, handy and intelligent — always repairing everything for everyone. He was born 15 May 1921, in Elizabeth, New Jersey. Walt attended/graduated from local schools there. His ham license W2LIQ was received on 17 May 1938 — at the age of 17.

Walt was a Sergeant in the Army during WWII and worked as a Radar Repairman in the Pacific theater. He was part of the invasion of Saipan. His favorite island was called "Mog Mog." He received the Bronze Star when everyone was pinned down by a Japanese machine-gun nest, all of the officers were killed which left Walt as senior ranking person. He ordered an assault up the hill which was successful but he rarely spoke of his award due to his grief at the many lives lost.

His service ended in 1946 and he headed back to Weston Instrument Corp. in New Jersey where he worked on naval contracts. Later, he worked for a company called Chatham Electronics — which patented several of Walt's inventions. In 1959 he was transferred to Detroit, Michigan and became W8CYU.

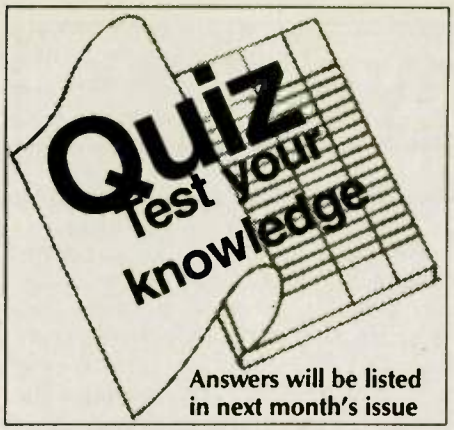
In February, 1979, Walt and his family moved to Montello, Wisconsin, and went in to his own business known as Britton Mobile Offices, Inc. — selling and leasing mobile offices.

His hobbies were Amateur Radio, hunting, fishing, woodworking, and cooking. He was president of a QCWA chapter in Rio Rancho, NM; president of the Montello Rotary Club (1981-82); a Boy Scout coordinator and held memberships in radio clubs from New Jersey to New Mexico.

Walt is survived by three sons, Curtis, Walter, and Roger and a daughter Donna and two stepdaughters, Stephanie and Janet. He will be sorely missed by many hams in the U.S. and abroad. *—submitted by Harry Gage, N5WIZ*

•••

When submitting silent key information to ***Worldradio,*** please include your name, call sign and telephone number.



1. What are the frequency privileges authorized to the Advanced operator in the 75-meter wavelength band?
A. 3525 kHz to 3750 kHz and 3775 kHz to 4000 kHz
B. 3500 kHz to 3525 kHz and 3800 kHz to 4000 kHz
C. 3500 kHz to 3525 kHz and 3800 kHz to 3890 kHz
D. 3525 kHz to 3775 kHz and 3800 kHz to 4000 kHz

2. What are the frequency privileges authorized to the Advanced operator in the 40-meter wavelength band?
A. 7000 kHz to 7300 kHz
B. 7025 kHz to 7300 kHz
C. 7025 kHz to 7350 kHz
D. 7000 kHz to 7025 kHz

3. What are the frequency privileges authorized to the Advanced operator in the 20-meter wavelength band?
A. 14000 kHz to 14150 kHz and 14175 kHz to 14350 kHz
B. 14025 kHz to 14175 kHz and 14200 kHz to 14350 kHz
C. 14000 kHz to 14025 kHz and 14200 kHz to 14350 kHz
D. 14025 kHz to 14150 kHz and 14175 kHz to 14350 kHz

4. What are the frequency privileges authorized to the Advanced operator in the 15-meter wavelength band?
A. 21000 kHz to 21200 kHz and 21250 kHz to 21450 kHz
B. 21000 kHz to 21200 kHz and 21300 kHz to 21450 kHz
C. 21025 kHz to 21200 kHz and 21225 kHz to 21450 kHz
D. 21025 kHz to 21250 kHz and 21270 kHz to 21450 kHz

5. What is meant by automatic retransmission from a repeater station?
A. The repeater is actuated by a received electrical signal
B. The repeater is actuated by a telephone control link
C. The repeater station is actuated by a control operator
D. The repeater station is actuated by a call sign sent in Morse code

6. What is the term for the operation of a repeater whereby the repeater station is actuated solely by the presence of a received signal through electrical or electromechanical means, without any direct, positive action by the control operator?
A. Simplex retransmission
B. Manual retransmission
C. Linear retransmission
D. Automatic retransmission

7. Under what circumstances, if any, may an amateur station automatically retransmit programs or the radio signals of other amateur stations?
A. Only when the station licensee is present
B. Only if the station is a repeater or space station
C. Only when the control operator is present
D. Only during portable operation

8. Which of the following stations may not be automatically controlled?
A. A station transmitting control signals to a model craft
B. A station in beacon operation
C. A station in auxiliary operation
D. A station in repeater operation

9. What is meant by repeater operation?
A. An amateur radio station employing a phone patch to pass third-party communications
B. An apparatus for effecting remote control between a control point and a remotely controlled station
C. Manual or simplex operation
D. Radio communications in which amateur radio station signals are automatically retransmitted

10. What is a closed repeater?
A. A repeater containing control circuitry that limits repeater access to certain users
B. A repeater containing no special control circuitry to limit access to any licensed amateur
C. A repeater containing a transmitter and receiver on the same frequency, a closed pair
D. A repeater shut down by order of an FCC District Engineer-in-Charge

11. What frequencies in the 10-meter wavelength band are available for repeater operation?
A. 28.0-28.7 MHz
B. 29.0-29.7 MHz
C. 29.5-29.7 MHz
D. 28.5-29.7 MHz

12. Which of the following repeater operating and technical parameters are not the responsibility of the area frequency coordinator?
A. The repeater effective radiated power
B. The repeater transmit and receive frequencies
C. The repeater Height Above Average Terrain (HAAT)
D. The repeater call sign

13. What frequencies in the 23-cm wavelength band are available for repeater operation?
A. 1270-1300 MHz
B. 1270-1295 MHz
C. 1240-1300 MHz
D. Repeater operation is not permitted in the 23-cm wavelength band

14. What is an open repeater?
A. A repeater that does not contain control circuitry that limits repeater access to certain users
B. A repeater available for use only by members of a club or repeater group
C. A repeater that continuously transmits a signal to indicate that it is available for use
D. A repeater whose frequency pair has been properly coordinated

15. What frequencies in the 6-meter wavelength band are available for repeater operation?
A. 51.00-52.00 MHz
B. 50.25-52.00 MHz
C. 52.00-53.00 MHz
D. 51.00-54.00 MHz

16. What frequencies in the 2-meter wavelength band are available for repeater operation?
A. 144.50-145.50 and 146-148.00 MHz
B. 144.50-148.00 MHz
C. 144.75-146.00 and 146-148.00 MHz
D. 146.00-148.00 MHz

17. What frequencies in the 1.25-meter wavelength band are available for repeater operation?
A. 220.25-225.00 MHz
B. 220.50-225.00 MHz
C. 221.00-225.00 MHz
D. 223.00-225.00 MHz

18. What frequencies in the 0.70-meter wavelength band are available for repeater operation?
A. 420.0-431, 433-435 and 438-450 MHz
B. 420.5-440 and 445-450 MHz
C. 420.5-435 and 438-450 MHz
D. 420.5-433, 435-438 and 439-450 MHz

19. What is meant by auxiliary station operation?
A. Radio communication from a location more than 50 miles from that indicated on the station license for a period of more than three months
B. Remote control of model airplanes or boats using frequencies above 50.1 MHz
C. Remote control of model airplanes or boats using frequencies above 29.5 MHz
D. Transmission of communications point-to-point within a system of cooperating amateur stations WR

Station Appearance

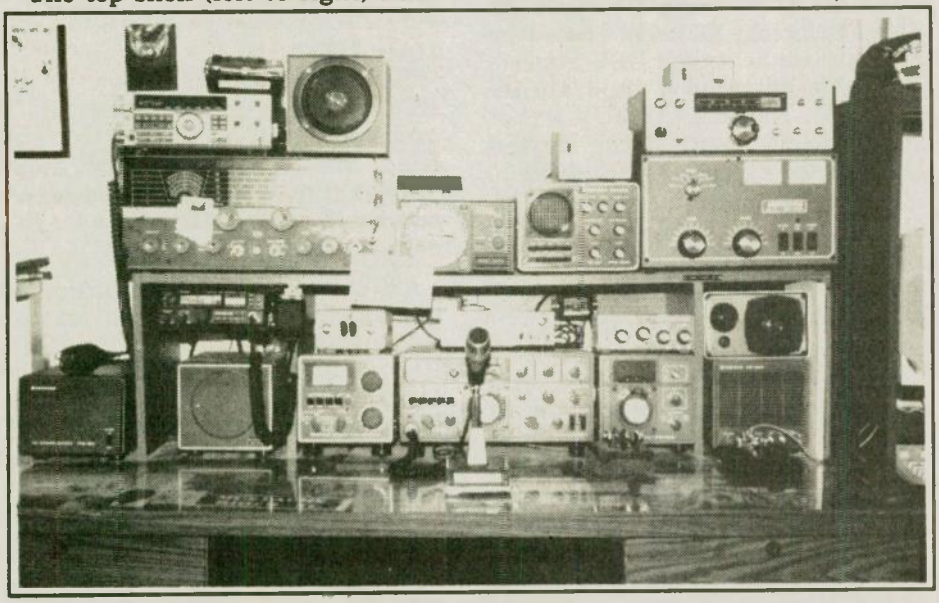
Ronald A. Perkins, AA7ZW

Send Worldradio a picture of your shack and the staff will choose a winner to receive a free one-year subscription to Worldradio!

Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.

Here is my modest station located in Sahuarita, Arizona.

The top shelf (left to right) holds a Kenwood TS-440S — GE tape player; audiovox speaker; MFJ 12/24-hour dual LCD clock; Staco power supply; Argonaut QRP rig with crystal calibrator by Ten Tec; Hallicrafter SX110 AM-CW receiver; Yaesu C-1000 SDX rotator; Yaesu YO-100 monitor scope; Ameritron AL 811 amplifier.



Bottom shelf (left to right): Kenwood PS-30 power supply; Kenwood TR-751A all-mode 2-meter; PS-520 speaker; Heathkit HB-1410 electronic keyer; Kenwood SW2000 SWR power meter; Autek Q71A SSB/CW/AM filter; speakers for the TR-751A; Kenwood AT-200 antenna tuner; TS-820S; VFO-820; SP-820 speaker.

I run a TS-50 mobile and a TM-241A and an Icom 227N 2-meter mobile. The antenna system consists of a Diamond 7-22A vertical for 2 meters; KLM 2M-14C circular polarized; Mosley TA-33 triband; and an 80-meter dipole. This is all in a 45-foot tower by Rohn. A Hustler 5 BUT is roof-mounted at about 20 feet.

My biggest thrill in radio was hearing W5LFL on board the shuttle *Columbia* — the first ham in space. I have it on tape safely tucked away. WR

Amateur "Hi"

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

Eating and talking using microwaves

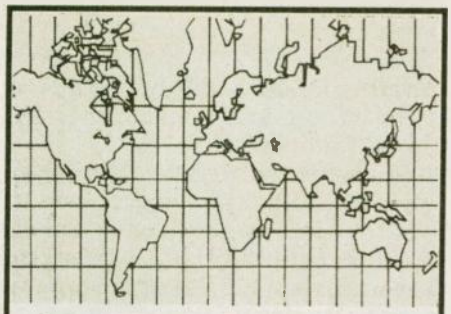
Eric E. Boyle,

My brother and I were over at my dad's house eating supper one day and needed to warm something up in the microwave. My dad is a prospective ham, and both my brother and I do our best to answer his questions and make sense of everything for him. However, this particular night he asked a question to which we just could not relate.

While waiting for dinner to be cooked he was going through the *Now You're Talking* book we gave him and trying to make sense of the frequencies and band divisions. Dad asked me to explain what two meters was, then the 440 MHz band, and then he looked again and asked what this 1200 MHz "thing" was.

I told him that this "thing" was the microwave band and that as hams we were allowed certain spots on the microwave portion of the airwaves to experiment with. He still did not understand, so while getting the food from the microwave oven in the kitchen I told him that the microwave oven operated on similar frequencies that hams use.

After a puzzling look and somewhat of a brief silence my dad shouted back in a serious tone, "Yeah, but the danged microwave oven doesn't talk to you." I could see it was going to be a long study session explaining this one. WR



DX WORLD

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

W-100-N

Congratulations to the following DXer for completing the necessary requirements for ***Worldradio's*** *Worked 100 Nations Award* (#507):

George E. Harmon, W5RUK

George worked all of the nations listed on the current list, except for eight. The nations he missed were Bhutan (A5), Turkmenistan (EZ), St. Pierre (FP), Liechtenstein (HBØ), North Korea (P5), Laos (XW), Burma (XZ), and Yemen (FO). The staff at ***Worldradio*** congratulates George on the fine business effort.

Vietnam (3W)

Toly, 3W5RS, has been active on CW and has made contacts on 20, 30 and 40 Meters. Try looking for Toly between 14.006 and 14.016 MHz after 0600 and 1300 UTC; 21.004 to 21.026 MHz from 1000 to 1200 UTC. On 19 April a DXer in California worked 3W5RS on 80 Meters near 3.504 MHz at 1400 UTC. Toly's 40 Meter activity is near 7.005 MHz between 1530 and 1700 UTC.

A station signing with 3W5FM has also been active, although the only CW spots found in the newsletters were 14.016 MHz at 1615 UTC on 1 May and 21.018 MHz at 1100 UTC on 26 April. Most of the reports of this one were on SSB. Look for 3W5FM between 14.182 and 14.195 MHz between 1200 and 1700 UTC. He has also been reported on RTTY.

There were two other reports from Vietnam, those being 3W6FM on 14.195 MHz at 1315 UTC on 2 May and 3W6GM on 14.197 MHz at 1500 UTC on 5 April. No other information is available and the calls may have been a copying error.

Libya (5A)

On 14 May 1996, the DXCC Desk approved all the 5A1A operations. The activity from Tripoli Radio Club began 13 July 1995 by a group of Ukranian DXers (UT3UX, UT2UA, UT3UY, and UX4UMI), who worked through 25 July 1995. CW contacts are handled by Vlad Vladov, LZ2UA, with SSB contacts handled by Stefean Horecky, OM3JW. Those who have already sent their QSL requests please do not send a duplicate request. Toly Kirilenko, UT3UY, was at the QRZ DX Booth at the Dayton Hamvention filling out QSL requests.

Any contributions for the 5A1A operation should be directed to Dan Whitsett, W4BRE. Checks should be made out to 5A1A DXpedition.

Clipperton Island (FO)

According to *Ohio/Penn DX Bulletin* Jay Kobelin, WA2FIJ, has shown an interest in returning to Clipperton Island, perhaps around March 1997. He is trying to keep costs down by looking for DXers, or friends of DXers, who have access to boats capable of making the trip. The last trip was on an 88-foot power vessel which was expensive. More than one vessel may be considered and must be capable of carrying enough gear, personnel and be safe. If interested, or if you know of those who can help, please contact Jay via the Internet at pcb4u@ix.netcom.com.

Thailand (HS)

Several calls from Thailand were found in the DX newsletters this past period that include the following:

HSØZAA	14.019 MHz	1500 UTC
HSØZBG	14.175 MHz	1300 UTC
HSØZBI	14.035 MHz	1515 UTC
HS1NGR	14.199 MHz	1645 UTC
HS1OVH	14.010 MHz	1400 UTC
HS3OM	14.266 MHz	1545 UTC
HS7ECI	7.011 MHz	1230 UTC
HS8FZ	14.177 MHz	1515 UTC

Also from Thailand is Neiro Baratta, HSØ/IK4MRH, operating from Phuket Island (AS-053). He was reported on the IOTA frequency of 14.260 MHz around 1830 UTC on 16 April. Other reciprocal calls include HSØ/G4UAV on 20 Meters between 14.175 and 14.208 MHz after 1245 UTC; and HSØ/G4DZC near 14.176 MHz at 1115 UTC.

Italy (I)

The Italians have run out of the IK prefix and will now use the IZ prefix followed by three-letter suffixes. However, this does not apply to calls that would normally be assign as IS or IT prefixes.

Sardinia (IS)

425 DX News says that during the month of August several of the Sardinian islands valid for IOTA EU-165 will be activated by Davide Cavanna, IMØ/IK1TKS. These islands include San Pietro, Piana, Ratti, and Calavinagra. Individually, these islands all qualify for the Italian Islands Award (IIA). Other activity from this DXCC country includes calls such as the following:

ISØBDF	14.010 MHz	1945 UTC
ISØLYN	18.071 MHz	1615 UTC
ISØMVE	18.076 MHz	1600 UTC
ISØOMH	10.105 MHz	2300 UTC
ISØQDV	14.080 MHz	1815 UTC
ISØYWA	14.085 MHz	2200 UTC

ISØOMH was also reported on 7.001 MHz at 0200 UTC and 18.073 MHz at 2015 UTC. All the activity was on CW except those in the RTTY segment of 20 Meters.

Mount Athos (SV/A)

The ARRL Membership Services Committee (MSC) has received a 9 to 7 favorable recommendation from the DX Advisory Committee (DXAC) to make no change in the status of Mount Athos on the ARRL DXCC Countries List. The Awards Committee reported a unanimous vote to MSC in support of the DXAC to make no change at this time. Since the DXAC and the Awards Committee are in agreement in their recommendations to the MSC, the matter is decided.

Iceland (TF)

A few calls were reported from Iceland during April and May. They usually go unreported as most DXers consider Iceland as routine DX.

TF3DX	7.005 MHz	0000 UTC
TF3FT	3.799 MHz	0200 UTC
TF3GB	14.019 MHz	2045 UTC
TF3GC	14.025 MHz	0115 UTC
TF3GD	7.008 MHz	2215 UTC
TF3TF	7.050 MHz	2345 UTC
TF5TQP	7.015 MHz	2130 UTC

On SSB TF3GC was reported near 14.191 MHz at 2315 UTC on 9 April.

Chagos (VQ9)

Ron Marra, AA5DX, is presently on Chagos for a few months signing with VQ9DX. The latest *Callbook*™ shows VQ9DX being assigned to Gary Storm and probably is not up to date. Ron has been found on both CW and SSB. For a CW contact look for him near 7.008 MHz around 0100 UTC, 10.102 MHz at 1200 UTC, or 14.021 to 14.025 MHz from 1400 UTC. His SSB activity has been in the lower portion of 20 Meters between 14.173 and 14.176 MHz after 1600 UTC.

Keeping him company is Mike Eakins, KB7HO, operating as VQ9HO, and also has access to the club call of VQ9IO. However, no reports were found for this one. Also on 20 Meters, CW VQ9LV has been active and found between 14.012 and 14.027 MHz between 1230 and 1500 UTC, plus 21.010 MHz at 1100 UTC. His SSB spot was 14.200 MHz at 1945 UTC. On 17 Meters CW VQ9VQ was found on 18.071 MHz at 1245 UTC on 19 April.

On 16 April, a VQ1LA was reported by a DXer in New Hampshire near 14.010 MHz at 1800 UTC. No other information is available.

Cambodia (XU)

Mike, VS6WV, is presently operating from Cambodia as XU6WV, and should be there for the next two years. Mike is looking for contacts on 40 and 80 Meters, both CW and SSB. Mike has been very active on 20 Meters SSB and found between 14.189 and 14.196 MHz from 1200 UTC. He has also been reported on 30 Meters on 10.103 MHz around 1630 UTC. Two other calls were reported in April and May, that include XU1CJF on 21.295 MHz at 1230 UTC and XU1FL on 21.255 MHz at 1200 UTC.

New Zealand (ZL)

During the IOTA contest last July, Ken McCormack, ZL1AIH, on Kawau Island (OC-201) was worked. I had mentioned a ZL6WA that I worked from that area. His card offered the following information. ZL6 calls are used only by special NZART stations. Please try NZART, P.O. Box 40-525, Upper Hutt 6415, NEW ZEALAND.

Marion Island (ZS8)

Ohio/Penn DX Bulletin informs us that Chris de Beer, ZS6RI, is on his way to Marion Island. Chris will be on the island until next June or July 1997. His call sign will be ZS6IR and he plans to be active on CW, SSB and RTTY, 6 through 160 Meters. He was to have been active in the May 1996 *CQ* Worldwide WPX Contest.

IOTA

The Polar Bear Express DXpedition is to leave Conchrane, Ontario, on 3 August. The DXpedition will operate "railway mobile" over the Ontario Northern Railway to the end of the line at Moosonee, near the mouth of the Moose River at James Bay.

From there the team will continue to one or more off shore islands in James Bay. These islands will be Northwest Territories (VE8). This will qualify for a new IOTA island group. Look for them between 4-6 August. The following is a portion of the IOTA islands that were found on

the bands during the month of May:

EU-034	Muhu Island	ES1QD/Ø
EU-037	Oland Island	SM7DLZ
AS-006	Hong Kong Island	VR2BH
AS-105	Jebu Island	DSØDX/2
AS-118	Kubbar Island	9K2HN/P
NA-036	Vancouver Island	VE7IU
OC-006	Island of Tasmania	VK7RX
OC-139	Kangaroo Island	VK5ACY
OC-154	Troughton Island	VK8AN/6

Interested in working islands? Try *Island News* edited by Vance LePierre, W5IJU. The newsletter is published every two weeks and is available for the subscription rate of $24 at P.O. Box 701, Fernandina Beach, FL 32035-0701. Make checks payable to V. LePierre.

Annual IOTA Contest

During the last weekend in July of each year the RSGB sponsors an annual IOTA contest. Stations operating from islands are encouraged to hand out points as they count 15 points each. Long Island (New York) types have a chance to be popular as all contacts you make are worth 15 points each to those who work you. Get in the contest and enjoy the fun. Following is a list of possible island groups, with call sign where known, that will be active in the contest. This is only a partial list as there are bound to be some surprises.

EU-010	Outer Hebrides Islands	GMØWDY/P
EU-040	Berlenga Island	
EU-091	Grand di Porto Cesareo	
EU-095	Planier Island	F5CCO
EU-111	Monach Island	GM5VG/P
EU-120	Isle of Wight	G3WOI
EU-124	Welsh Islands	GW4VEQ
EU-150	Insua Island	
AS-067	Uji Archipelago	JI6KVR/P
NA-126	Nova Scotia South	
NA-144	North Channel Islands	

DXCC Applications

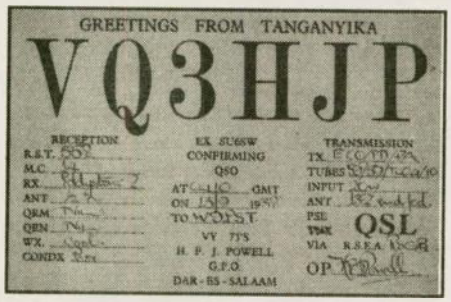
The DXCC Desk reports that the number of unprocessed applications at the end of April 1996, was 317 (19,064 QSL cards). During the month, 653 applications (32,350 QSL cards) were received for endorsements and new awards. Applications being sent out at the end of the month were received about a week earlier. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed.

Cards for Scarborough Reef, (BS7), and Pratas Island, (BV9P), are now being accepted by the DXCC Desk. This has resulted in a large number of applications being received during the month. However, the number of cards per application is the lowest it has been in four years. There are now 329 countries on the DXCC Countries List. As of April 1996, it requires 320 current countries for Honor Roll status. Deleted DXCC countries do not count for Honor Roll.

Antique QSL Department

A search in the archives brings these oldies submitted by Bob Truhlar, W9LNQ, some years back. The cards are from the estate of the late Roy Weisbach, W9UX. The cards date from the 1930s when Roy was using the call of W9PST. XU8NR was busy on the bands from Shanghai working DXers of the day.

Operated by Gene Goss, who held the stateside calls of W6OMZ and W5DBQ, he gave Roy a signal report of 559X on 20 Meter CW. I've forgotten what "X" means. It could have indicated his signal had key clicks or the signal was rockbound (quality of



crystal control). Modern radios have all but eliminated these problems. The date was shown as 9/2/38; most likely the month was September and not February in the year 1938. Whatever happened to Gene is not known. His W6OMZ call has been reassigned and a search for him on the CD-ROM produced nothing.

The second card is from VQ3HJP in Tanganyika and was operated by H.F.J. Powell, formerly SU6SW. The date of this contact was 13 September 1938. The antenna was 132 feet and end fed, also known as a Zepp.

QSL Routes

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

9M6AG	—JA9AG	GU/DL4OCM	—DL4OCM
9M6BH	—KU9C	HBØ/HB9LEY	—JH1BSE
9M8QQ	—DF5UG	HR1LW	—JA1LW
9M8X	—KU9C	HZ1TA	—OE6EEG
9N1HP	—JA1OEM	I5JHW/IA5	—I5JHW
9N1RHM	—KV5V	IA5G	—I5JHW
9Q5MRC	—G3MRC	IBØ/IK0HWI	—IKØHWI
9U5CW	—EA1FFC	ID9/IT9JPK	—IT9JPK
9U5DX	—F2VX	IG9/IK4NYV	—IK4PLC
9V1ZW	—JA9IFF	II1ARI	—I1JOJ
9Y4/DJ4XN	—DJ4XN	II2M	—IK2SGC
9Y4/HB9TU	—HB9TU	II3T	—IV3TAN
A35IG	—JA3IG	IL7/I6JSH/	
A35MN	—DF8AN	JOTPYH/VGO/	—IK8MWK
A61AF	—OK1CZ	IL7/IZ8ADX	—IK8MWK
A92FZ	—W3HCW	IMØ/IK2MRZ	—IK2MRZ
A92GD	—K1SE	IQ9IB	—IT9KDA
AX2ITU	—VK2PS	IR2Y	—IK2QEI
BOØKS	—BV2KI	IR5R	—I5JHW
BO1/JP1RIW	—BV2KI	IR8ANT	—I8ACB
BVØCTU	—BV3FG	IR9B	—IT9STX
BV4OQ	—W2HCW	IU1L	—IK1NLZ
BV9P	—KU9C	IU7G	—IK7RWD
C31LJ	—VE3GEJ	J28JA	—F5PWH
C53HG	—W3HCW	J28JJ/7O	—F6HGO
C56/KC4YDP	—KC4YDP	J48ISL	—SV2AEL
C6AGN	—KA1DIG	J56CK	—I4LCK
C6AIE	—WZ8D *	J73MF	—W2AH
CN2AF	—EA5ADD	JA6VZB/6	—JA6VZB
CN8SH	—IK0ZKK	JG8NQJ/JD1	—JA8CJY
CO1OAT	—CT1ESO	JI6KVR/6	—EA5KB
CO4OTA	—CT1ESO	JW6VM	—LA6VM
CS5EWA	—CT1EWA	JX2GV	—LA2GV
CT3FN	—HB9CRV	JX7DFA	—LA7DFA
CT8FMX	—CT1FMX	K4ZLE/VP9	—K4ZLE
CT8T	—CT1DVV	KG4GC	—KQ4GC
CW6V	—W3HNK	KHØ/XE2T	—JH1AJT
CX6VM	—W3HNK	L4D	—LU4DLL
CYØAA	—VE9AA	LT5E	—LU1EYW
D2EV	—DL3KBQ	M0AAV	—G4PLY
DL1DA/HI8	—DL1DA	N6S	—N6KM
DL5PV/HI7	—DL5PV	NH6D/KH4	—KL7H
DSØDX/2	—HL1XP	OA4SS	—KB6J
E3A30	—G4OEP	OD5RQ	—GØDBH
EA1AAD/P	—EA5OL	OH/K8MN	—WA8JOC
EA4EHE	—EA1EHE	OM8M	—OM3RM
EA4ENK	—EA5OL	P29VH	—VK4FW/VK4CRR
ED1IDM	—EA6ARM	P29VR	—W7LFA
ED1IUP	—EA1CAI	P4ØR	—NK4U
ED1RUA	—EA1BEZ	PA3ERL/6Y5	—PA3ERL
ED2CLU	—EA2CLU	PJ2J	—K1CPJ
ED3ELZ	—EA3ELZ	PJ5AA	—W1AF
ED4IDS/1	—EA4ENQ	PP2ZDX	—WD6L
ED4SEG/1	—EA4ENQ	PYØFF	—PY5EG
ED6IRM	—EA6ARM	PYØTI	—PY1UP
ED6ZXN	—EA6ZX	PY2ASF	—N9STL
ED7ILC/LM	—EA7URS	RØ/UR8LV	—UR7LD
ED7SPI	—EA7PY	R1ANZ	—RU1ZC
EG1ITA	—EA1JJ	R3CH	—RA3YA
EG1ITD	—EA1CSB	R3IOTA	—RW3GW
EG1ITU	—EA1KK	SU1EA	—OE6EEG
EG1ITV	—EA1BEZ	SV5/DL8SET	—DL8SET
EG1UIT	—EA1BT	SV5/SM7DAY/P	—SM7DAY
EG2ITU	—EA2CMW	SV5/SVØHZ	—DJ8MT
EG3ITD	—EA3GDE	SV8/G3SWH	—G3SWH
EG3ITU	—EA3BT	T3ØBH	—ZL1AMO
EG3UIT	—EA3AM	T32BE	—WC5P
EG4ITU	—EA4ENQ	T7/IK6BMU/RUM	—IK6BMU
EG5ITD	—EA5AR	T9/OI6XY	—OH3GZ
EG5ITO	—EA5HQ	T91EZC	—HAØHW
EG5ITU	—EA5OL	T94KM	—HAØHW
EG5UIT	—EA5GRC	T94KW	—HAØHW
EG6ITU	—EA6YX	T95MNR	—HAØHW
EG7ITU	—EA7CWA	T96RN	—HAØHW
EG8ITU	—EA8BWW	T98PSR	—F1PSR
EG9ITU	—EA9TQ	TA1/K4UEE	—NK4U
EG9UIT	—EA9PY	TH5CHY	—F6IUI
EJ7NET	—EI6FR	TI2WR	—KØDQI
EM1ØC	—UY5XE	TJ1AU/RA	—I2EOW
EM1KA	—9H3UP	TK/DK7YY	—DL7UTA
ET3KV	—DL1JRC	TL8ED	—F5SEC
EU1ØC	—SP8JM	TL8MS	—DL6NW
EW1ØA	—F6AML	TMØIMD	—F6KLS
FG5GZ	—F6CLK	TM1MA	—F5TKA
FG5XC	—F6HSI	TM5CHY	—F6IUI
FM5DN	—KU9C	TO3R	—F6KLS
FOØYOS	—JA3IG	TR8DF	—F5SWB
FO5PI	—F5OTZ	TT8BP	—IK5JAN
FO5PO/VO	—N6VO	TU2DP	—K4MQL
FP5CJ	—F6FNU	TZ6FIC	—F6KEQ
FP5EJ/EL	—K2RW	TZ6VV	—AAØGL
FR5ZN	—F6FNU	UB3IDX	—N5FG
GM5VG/P	—GM3UTQ	UR8LV/RØ	—UR7LD
GM6MD	—GM4FDM	US1I	—N5FG
GU/DG4YIE	—DG4YIE	US1IDX	—N5FG
GU/DL1FDH	—DL1FDH	V31MD	—K2MDM

V47KJI	—W2BJI
V47NZ	—NØBSH
V59X	—V51CM
V63JZ	—JA7FWR
V63NN	—JE7JRZ
V19NS	—VK9NS
VK9WH	—VK9NS*
VK4ALF	—AA6BB
VK6ISL	—I1HYW
VK7DI	—VK3UX
VK8NSP	—VK4AAR
VK9CA	—AE4EZ
VK9CR	—DK7NP
VK9GA	—PA9GIN
VK9XH	—JA1CMD
VK9XL	—UAØZDA
VK9XM	—JA1BK
VK9XY	—DK7NP
VK9XZ/6	—VK6UE
VP2MDY	—NW8F
VP5/K8JP	—K8JP
VP8BPZ	—DA4RG
VP8CSA	—DL1SDN
VQ9LV	—KY3V
VR2GO	—KU9C
VR2NR	—WA3RHW
V86AK	—JA2EDO
VU2ABE	—JA4DOB
VU2JBS	—VK9NS*
VU2JC	—KZ1L
VY7JA	—VY1JA
X5ØA	—YU7KMN
XE2Z	—AA6BB
XUØHW	—HAØHW
XU1CJF	—JRØCGJ
XU2UN	—SP5AAS
XU3UN	—SP5AAS
XU5UN	—SP3AAS
XU6WV	—KØTLM
XU7VK	—HAØHW
XU96HA	—HAØHW
JN/TZ/X	XX9AS/AW/ —KU9C
Y24AO/HBØ	—DJØXC
Y32IH/HBØ	—DL3HYL
YE8T	—YB5NOF/8
YI9CW	—SP5AUC
YM2ZW	—OK1TN
YO6JN	—KU9C
ZA1AJ	—OK2ZV
ZC4EE	—G4SSU
ZF2KV	—NØKV
ZF2PA	—W5ZPA
ZK1PYD	—K8PYD
ZK1WTS	—WT8S
ZK1XB	—HB9DKX
ZK2YY	—JA3IG
ZL8RI	—ZL2HU
ZP5/K4UEE	—NK4U
ZS8IR	—ZS6EZ
ZW9C/ØX/8P	—PS8DX
ZX5E	—PP5ZYZ

Note: *Please QSL direct only; do not QSL via the bureau.

If my history is correct, the term Zepp is derived from those old trailing antennas used in those old zeppelin airships. The whereabouts of this operator is also unknown. The VQ3 calls are now 5H.

W9DXCC

This is a reminder to you W9 types of the W9DXCC DX Convention and Banquet that it will be held at the Holiday Inn in Rolling Meadows, Illinois, Saturday, 7 September 1996. It is sponsored by the Northern Illinois DX Association. For more information contact Phil Camera, KB9CRY, at 708/343-1696.

QSL Information

A request was received looking for the route for T3ØBH. The route for this one is ZL1AMO and is included in the QSL routes. When requesting QSL information from me, please provide an SASE. The same also applies when sending QSL requests to managers.

QSL addresses

3W5RS	—P.O. Box 303, Vung Tau, VIETNAM
A61AN	—Naser Fekri, P.O. Box 53656, Dubai, U.A.E.
BV5CQ	—Jimmy Lou, P.O. Box 1031, Changhua, Taipei, TAIWAN
E21CJN	—Thasm, P.O. Box 25, Klongtuey, Bangkok 10110, THAILAND
ET3BN	—Peter, P.O. Box 150194, Addis Adaba, ETHIOPIA
HSØ/ G4UAV	—Tony Waltham, P.O. Box 2008, Bangkok 10501, THAILAND
JT1AT	—L. Dash, P.O. Box 1023, Ulan Bator 46, MONGOLIA
LX2AA	—Giancarlo Paul Bavassano, P.O. Box 1888, L-1018 LUXEMBOURG
P29VH	—Bill Horner, VK4FW, 26 Iron St, Gympie, Queensland 4570, AUSTRALIA
VK9CT	—Oceania DX Group, P.O. Box 929, Gympie, 4507 Queensland, AUSTRALIA
XU8WV	—Mike, P.O. Box 2011, HONG KONG
ZD7KT	—Ken Thomas, P.O. Box 68, Jamestown, ST HELENA ISLAND

Did you receive a sample copy of this magazine? If so, don't miss out on subscribing. Turn to page 9.

DX Prediction — August 1996

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

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

WEST COAST

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

CENTRAL USA

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

EAST COAST

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

Many thanks to the following contributors: G3ZAY, W6KBC, Northern Arizona DX Association (W7YS), Western Washington DX Club (WAØRJY), American Radio Relay League (K5FUV), *425 DX News* (I1JQJ), *DX News Letter* (DL9GOA), *The Ohio/Penn DX Bulletin* (KB8NW), *Island News* (W5IJU), *The Low Band Monitor* (KØXCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

My first month of retirement has been a whole new world. I had the privilege of taking a Tiger cruise aboard the USS *Nimitz* from Pearl Harbor to San Diego since my son is assigned to one of the squadrons out of NAS Lemoore. He liked to get up early around 0530. That's some retirement! Of course, a visit to the MARS station was in order and they phone-patched me home. After the cruise it was straight to the Dayton Hamvention.

Have a good summer and don't be surprised if you hear me operating from an IOTA island. 73 de John N6JM. WR

QSL managers

1995 CQWW SSB Contest

Call	Mgr	Call	Mgr
UAØQJG/Ø	UA1AGC	US1ØØIJ	US9IJ
UA1OLM/P	RA1OA	US1ØØITU	F5MKD
UA2FO	DL1FCM	US1L	UR4LRQ
UA3YX/KC4	UA3XBY	UTØH	UT1HT
UA9CUA	W3HNK	UTØI	UT2IZ
UEØAMF	UAØTD	UT1ØØHD	UT3HD
UE1ADV	RZ1AWA	UT1ØØII	RB4IWN
UE1AGL	DL7UET	UT1ØØIZD	UT7IZD
UE1AYA	RZ1AYA	UT1ØØND	UT7ND/
UE1CXO	RZ1CXO		UB5NED
UE3IRC	RK3IXX	UT1ØØUDX	UT5UDX
UE3RZZ	RU3RR	UT1ØØUR	UT3UR
UE3YWH	RK3YWH	UT1ØØWL	UT1WL
UK5ØG/I	RW6HS	UT1ØØWW	UT1WW
UN5ØP	RL8PY	UT1ØØZZ	UT1ZZ
UN7ID	G3UKH	UT2ØØM	UR4MWD
UP5ØE	UN2E	UT7I	UT2IO
UP5ØFB	UN8FB	UUØØJN	UU9JN
UP5ØJ	UN8JA	UU1ØØJL	UU4JL
UP5ØP	UN7PM	UV1ØØMP	UV7IM
UP5ØV	UA9AB	UW1ØØGA	AA4VS
UP5OA	UN5A	UW1ØØGW	UR7GW
UR1ØØEDX	UR5EDX	UX1ØØFF	OE5EIN
UR1ØØIF	UR8IF	UX1ØØHX	UX3HX
UR1ØØIX	URØIX	UX1ØØIQ	UX2IQ
UR1ØØIY	US7IG	UX1ØØKN	UXØKN
UR1ØØIYU	US7IGF	UX1ØØLA	UX1LA
UR1ØØLWB	UR7LD	UX2ØØM	DL3BQA
UR1ØØIX	URØIX	UX1ØØUO	PA3BUD
UR1ØØMP	UR3MP	UY1ØØBA	RB5BA
UY1ØØCC	UY3CC	VK6AUU	RA3AUU
UY1ØØUA	UT5UPA	VK6ISL	I1HYW
UY1ØØCC	UY3CC	VK9CJ	DJ9HX
UZ1ØØAP	UY5AP	VK9XA	JA2NVY
UZ1ØØGG	URØGG	VK9XH	JA1CMD
UZ1ØØXE	UY5XE	VK9XI	DJ9HX/
UZ1ØØYY	UY5YY		JA1CMD
V21AK	WA4WTG	VK9XRS	ND3A
V21CW	KA2DIV	VO2WL	WAØPUJ
V26A	WB3DNA	VP2E	WB5CRG
V26AK	WB2P	VP2E/N4BS	WB4CKO
V26B	WT3Q	VP2ECW	N6CW
V26B	N3ADL	VP2EFO	W8TPS
V26DX	N3ADL	VP2ENR	YU1NR
V26E	AB2E	VP2MES	N3LKB
V26R	KA2AEV	VP2MH	KC4DWI
V26R	KA2AVT	VP5/JH7MQD	JA7BG
V26RN	KR2J	VP5/WB2YOF	N2VW
V26T	K3MQH	VP5BB	AA3B
V26TS	KF3P	VP5DD	KB4QKP
V26U	WA2UPT	VP5FOC	N9DX
V29PE	G3DLH	VP5J	KF6UM
V29W	KD6WW	VP5T	N2VW
V31DX	AA6BB	VP5WW	KB4QKP
V31ML	N5FTR	VP8CIL	GØEHR
V47BW	VE3BW	VP8CRR	G4SGD
V47KP	K2SB	VP8CRS	GØFMX
V47NR	YU1NR	VP8CRT	G4XYG
V47NS	W9NSZ	VP8CSA	DL1SDN
V47XC	GØIXC	VP9NC	WB2YQH
V47YR	YU1NR	VP9RND	WB2YQH
V63KZ	JAØVSH	VQ9KC	AA7AN
V63MK	JA6EGL	VQ9VQ	KD4NSG
V63YT	JA1SCJ	VR2EZ	G4DEZ
V73C/T	N4GAK	VR2NR	WA3RHW
V73GT	WF5T	VR2RJ	JH1BED
V73JA	JA3JA	VU2JPS	VU2AU
V73WP	JA1WPX	VU2NCD	DL5NC
V73X	N4GAK	VU7GW	W1CER
V85GA	DL7UBA	VX1XY	VE1XY
V85HG	JH7FQK/	VX2WW	VE2PEP
	AA6BB	VY1ISL	NL7TB
V85NL	JA4ENL	VY2KX	VE7XF
VA2MCZ	VE2ZQK	W1ØØJWA	LY1DS
VA9DH	VE1DH	W5IJU/CY9	WA4DAN
VEØGAG	VE1FO	WHØABC	JR6ØCL
VE1S	VE1AL	WH2M	JA7FWR
VE2NR	WA3RHW	WH2M	JE7RJZ
VE2QRZ	WB2K	WP3/WX9E	WX9E
VE8YEV	VE8NC	WP4Q	KP4CKY
VF1L	VE1AL	WR1J/WHØ	7J2YAA
VG2M	VE2AHC	X5BYZ	YU7KMN
VI5ØPEACE	VK4CHB	X85COL	XE1BEF
VK4ALF/9	AA6BB	XE1UFO	N5OZY
XE3/NE8Z	K8LJG	Z32MW	DL1FDD
XE1VIC	KV8U	Z32XA	KM6ON
XF4RTD	XE1TD	Z38/DL2SCQ	DL6DK
XJ1CWI	VE2CWI	ZA1A	I2MQP
XJ2CO	VE2CO	ZA1AB	OH1MKT
XJ2EQ	VA2RC	ZA1MH	YU5FCA
XJ3HO	VE3HO	ZA1Z	HB9BGN
XL2MCZ	VE2QK	ZB2CN	DJ9WH
XM3XN	VE3XN	ZB2FX	G3RFX
XN8DXA	VE1RU	ZC4C	OK1RI
XO51TED/4U	VO1TED	ZC4DX	G4MRF
XO5TX	VO1TX	ZC4EPI	G0MRF
XT2DM	F5RLE	ZC6B	K9JJR
XT2DP	WB2YQH	ZD7JP	N5FTR
XT2GA	F5RLE	ZD7WRG	WA2JUN
XU1FL	I8KUT	ZD8ØV	G4ZVJ
XV7SW	SM3CXS	ZD88V	G4ZVJ
XW7SW	SM3CXS	ZD8KJ	GØFXQ
XX9TTT	DK5WN	ZD8Z	VE3HO
XZ1A/X	JA1BK	ZFØR	ZP6XR
YBØASI	WA4FVT	ZF2AY	K9LA
YBØRI	YBØHZL/	ZF2DR	K5RQ
	N6QLQ	ZF2DX	K1KNQ/
YB7JAL	KD7YO		KG6AR
YB8SUN	YB8UMX	ZF2HH	WAØACI
YE17PKB	YC9BMU	ZF2RF	K4UVT
YE5ØINA/5	YC5BLD	ZF2RR	N8SR
YE5ØINA/8	YB1PR	ZF2SE	WV1X
YE8I	YB8NA	ZF2VV	NX1L
YE8SUN	YB8UMX	ZK1PN	OH5UQ
YE8TI	YB8UMX	ZK1UDS	WB6UDS
YI1HK	SM3DBU	ZK2VJ	G4ZVJ
YJØARE	GØREP	ZK3RW	ZL3AMO
YL1ØØJN	YL2JN	ZK1VAW	N6VAW
YNØTI	TI2YO	ZL7CW	WB8YJF
YQØTO	YO5KAU	ZL7PYD	K8PYD
YS1ZKR	N2MIP	ZL8/G4MFW	KA1JC
YS1ZV	KB5IPQ	ZP6ØPAZ	ZP5AA
YS4/TI5NW	WB3LUI	ZS5OA	WA3HUP
YTØAT	YU1SZ	ZS75SAAF	ZS6BCI
YT5ØAT	YU1SZ	ZS9ØRI	ZS6WB
YT5ØS	YU1SQR	ZS95RWO	ZS1ACP
YT5ØTY	YT7TY	ZS95RWR	KK3S
YT9N	YU7FIJ	ZS9F	KK3S
YUØHQ	YU7GMN	ZT8BBB	EI9GP
YU5ØAAV	YU1AAV	ZVØTI	PT2GTI
YU5ØBM	YU1BM	ZV5LL	PP5LL
YU5ØBO	YU1BO	ZV5SG	PP5SG
YU8DX	DJØIT	ZWØC/X	PS8DX
YV5ANF/P	YV5ECY	ZW2EPA	PY2YW
YW5LO	WS4E	ZX2A	PT2BW
YW5P	YV5FGL	ZX3T/1	PY3TD
YZ5ØAA	YU1FD	ZX5LL	PP5LL
Z31JA	WA4JTK	ZX7JP	PR7CB

THERE SHOULD BE 45 MINUTES WARRANTY LEFT ON THIS 24 HOUR CLOCK-- IT ONLY RAN FOR 23 HOURS AND 15 MINUTES!

Look for the
HRO Home Page
on the World Wide Web
http://www.hamradio.com

ANAHEIM, CA 92801
933 N. Euclid St.
(714) 533-7373
(800) 854-6046
Janet, WA7WMB, Mgr.
Near Disneyland

BURBANK, CA 91506
2492 W. Victory Blvd.
(818) 842-1786
(800) 854-6046
Eric, KA6IHT, Mgr.
Victory Blvd. at Buena Vista
1 mi. west I-5

OAKLAND, CA 94606
2210 Livingston St.
(510) 534-5757
(800) 854-6046
Mark, KE6OFP, Mgr.
I-880 at 23rd Ave. ramp

SAN DIEGO, CA 92123
5375 Kearny Villa Rd.
(619) 560-4900
(800) 854-6046
Tom, KM6K, Mgr.
Hwy. 163 & Claremont Mesa

SUNNYVALE, CA 94086
510 Lawrence Expwy. #102
(408) 736-9496
(800) 854-6046
Ken, K1ZKM, Mgr.
KDM@HAMRADIO.COM
Lawrence Expwy.
So. from Hwy. 101

NEW CASTLE, DE 19720
1509 N. Dupont Hwy.
(302) 322-7092
(800) 644-4476
Bob, WN3K, Mgr.
RT.13 1/4 mi., So. I-295

PORTLAND, OR 97223
11705 S.W. Pacific Hwy.
(503) 598-0555
(800) 854-6046
Earl, KE7OA, Mgr.
Tigard-99W exit
from Hwy. 5 & 217

DENVER, CO 80231
8400 E. Iliff Ave., #9
(303) 745-7373
(800) 444-9476
Joe, KDØGA, Mgr.

NEW LOCATION!

PHOENIX, AZ 85021
1939 W. Dunlap Ave.
(602) 242-3515
(800) 444-9476
Gary, WB7SLY, Mgr.
1 mi. east of I-17

ATLANTA, GA 30340
6071 Buford Highway
(770) 263-0700
(800) 444-7927
John, KB4NUC, Mgr.
Doraville, 1 mi. no. of I-285

WOODBRIDGE, VA 22191
Washington D.C. area
14803 Build America Dr.
(703) 643-1063
(800) 444-4799
Rick, AAØQB, Mgr.
Exit 161, I-95, So. to US 1

SALEM, NH 03079
Boston, MA area
224 N. Broadway
(603) 898-3750
(800) 444-0047
Chuck, KM4NZ, Mgr.
CLW@HAMRADIO.COM
Exit 1, I-93;
28 mi. No. of Boston

AZ, CA, CO, GA, VA residents add sales tax. Prices, specifications, descriptions, subject to change without notice.

12 Store Buying Power!

HAM RADIO OUTLET®

WORLDWIDE DISTRIBUTION

KANTRONICS

True Dual Port Simultaneous HF/VHF Operation

KAM PLUS

NEW KAM Plus features 128K RAM, EPROM space for 1 MB, on-board clock, expanded personal mailbox and Pactor! And G-TOR!Operating modes include CW/RTTY/ASCII AMTOR/PACKET/PACTOR/WEFAX Terminal programs available for PC, Commodore and Macintosh computers.

Call For Our Special Price!

KPC-3/KPC-9612

A high-performance, low power TNC, for new and experienced users. Features dual level command set with 23 and 130 commands, respectively. Battery backed 32K RAM expandable to 512K. PBBS includes two-way forwarding, message header editing, remote sysop access and KA-NODE.

Call For Special Low Price!

MFJ

Call now for all MFJ products...
Wattmeters, dummy loads, coax switches, keyers, clocks, speaker and mics, software, books and more!

MFJ-949 E 300 Watt Tuner

Built-in dummy load
New peak and Average Lighted
2-color Cross-Needle SWR/Wattmeter
Built-in antenna switch, balun
Covers 1.8-30 MHz

All MFJ Packets Stocked!

MFJ-1278 B

All 9 digital modes
Easy Mail™ Personal Mailbox
20 LED Precision Tuning Indicator
Includes free power supply

One Year Unconditional Guarantee

US TOWER

Shown with Optional Rotor Base

MA-40

40' Tubular Tower
REG. $809 **SALE $679**

MA-550

55' Tubular Tower
Handles 10 sq. ft. at 50 mph
Pleases neighbors with tubular streamlined look
REG. $1369 **SALE $1069.95**

TX-455

55' Freestanding Crank-Up
Handles 18 sq. ft. at 50 mph
No guying required
Extra-strength construction
Can add raising and motor drive accessories

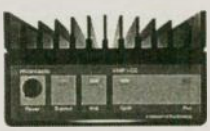
Towers Rated to EIA Specifications
Other Models at Great Prices!
SALE $1499.95

COAST TO COAST FREE SHIPPING

UPS - Most Items Over $100

Rapid Deliveries From The Store Nearest To You!

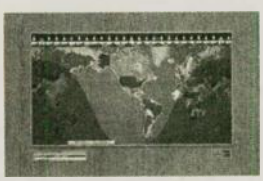
concept



VHF/UHF Solid State Amplifiers

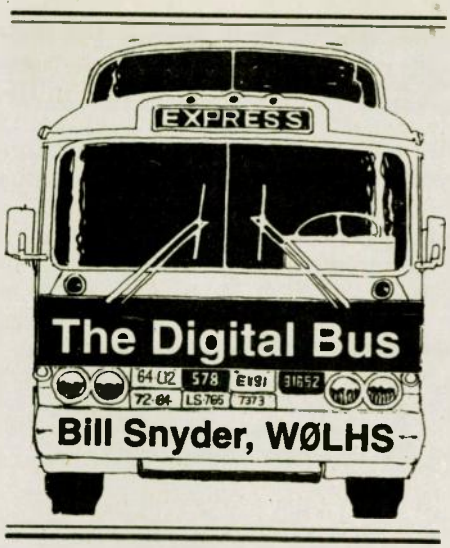
Contemporary design, quality and a 1 year warranty on parts and labor. 1 year on the RF Final transistors.Most amplifiers have GaAsFET receive pre-amps and high SWR shutdown protection

GEOCHRON



Detailed illuminated map shows time, time zone, sun position and day of the week at a glance for any place in the world.Continuously moving - areas of day and night change as you watch.• Mounts easily on wall. Size: 34 1/2" x 22 1/2".

Reg $1295. SALE $999.95



A few years ago, when I was chasing RTTY DX (the sun spot cycle was producing high numbers in the solar flux department at that time), I subscribed to a nifty publication listing QSL managers for DX stations. It was called "The W6GO/K6HHD QSL Managers List," and it was produced by Jay and Jan O'Brien, W6GO and K6HHD. I thought that the GO List was discontinued some time ago when packet clusters became fashionable. I had forgotten the nifty tabloid completely, when lo and behold a sample copy of a new "GOLIST" arrived in the mail from a new publisher. The funny part of this happening is this: I had just tossed out all the old issues a few days before.

Now that the new cycle has begun to shape up the Heaviside layer for juicy DX transmission, the new QSL manager list will be welcome in many shacks. It comes in various versions: a disk for DOS IBM compatibles, two packet cluster subscriptions, and, of course, the printed edition. The new address is: DX Enterprises, Post Office Box 2306, Paducah, KY 42002-2306 USA. If you are in a hurry try the phone number 502-898-8863 for Nancy and Paul Smith, KB4RGW/AE4AP, the publishers.

Where the old W6GO list was tabloid sized, the new version is letter sized and more convenient to use. I think some of the type might even be bigger for old hams' eyes, but I'm not sure.

While I am on the subject of DX, the conversation at a recent ham breakfast switched from pretty girls to the DX cluster. We don't have very good cluster service where I live, so I am not well acquainted with its use. But one old time DXer had some strong feelings about clusters: "I don't like cluster stations," he said, "they just generate pile-ups that are worse than before they came on the scene. I call them, 'Pile-up Musters,' for when they go into action they blow the bugle for every Tom, Dick and Harry to join in the chirping mess. The other day, for example, a guy in a rare ZL zone was listening 10 up on the CW band. I first heard him early when the DX gang was thin. Then suddenly, the mob spread out for at least 40 and hammered away like there was no tomorrow — which, I guess, there wasn't. It took me nearly two hours to get him, and I did it by going up to the very top frequency of the pile. I think I was nearly 50 up, and it was all caused by the cluster's clarion call!"

I recall my 1948 African adventure days in Kenya and Tanganyika, when Bob Leo, now W7LR, and I had the AM phone guys spread out from one end of the 10-meter band to the other, all splattering at us with every watt they could muster. We were operating on a frequency below the American phone band, and so we worked split frequency. I went on the air many days by simply saying, "VQ4EHG is standing by for a call." Yes, gang, 10 Meters instantly came to life! And without the help of any or all "Pile-up Muster" SYSOPs.

Circus days

When I was a kid I lived three blocks from the circus grounds. When every circus came to town there was a big circus parade to rouse the town's citizen to come to the afternoon show. The parade went right by our house going downtown, and a block away coming back to the tent show lot. Just watching the colorful parade wagons and animals (camels, ponies, and elephants) passing by was enough to make me a circus fan for life.

As I grew up, I learned we kids could "work" our way into the circus show by getting to the grounds early in the morning while the big tents were being put up.

The circus "big top" tent was ringed with audience seating that needed to be erected, and so a bunch of kids were hired for grunt work. So, my friends and I arrived on the circus grounds early in the morning, found the man who did the hiring, and then we spent the morning lugging seat jacks and lumber, enough to build a house, from the circus seating wagons into the arena tent.

It was also possible to work one's way into the evening show, too. There the "boss man" would require us to put something of value, a hat for example, into the big gunny sack he carried. Then he would give us a ticket for the evening show. After the show was over we carried the seating lumber back to the wagons for transport to the next city. The "hostage hat" would then be returned to the owner when the work for the evening was finished. The really wise-guy kids would buy a 10 cent sailor hat at the dime store, put their name on it with India ink, wear it for a few days to give it that lived in look, then toss it in the sack, go to the show, and never reclaim

the 10 cent chapeau after the performance. Those wise guys always looked at dumb kids like me, we carried the seat lumber and reclaimed our hats, as stupid. But I was a real circus fan, and just spending a few hours in the back yard of a circus was part of the fun of working.

So today, at the urging of Jim Romelfanger, K9ZZ, the editor of the "Wisconsin Smoke Signals" (a ham newspaper), and Maury Mead, W9FCB, a genuine circus fan, I attended the summer season opening day of the Circus World Museum in Baraboo, Wisconsin. If you have ever been inoculated by the circus virus, it is one of the greatest places on earth for a circus fan to spend a day. Besides a dandy little one-ring circus which performs twice (and in some months, three times) daily during the summer, there are 150 historic circus wagons on display, and demonstrations of old-time circus music and train-loading routines to watch. All I could think of while I was wandering through the big shed that houses many of the wagons, was wondering many of the colorful wagons had rumbled past my growing-up years home.

The CWM circus wagon collection is hauled by train to Milwaukee each July and the ensuing "greatest circus parade in the world" brings back memories for the old folks and dazzles both the young and the old.

The hams of the Baraboo area now operate a special event station aboard the circus train while it hauls all the parade wagons to Milwaukee. Maury and Jim, both of whom have made the Milwaukee radio trip, introduced me to Robert King, KA9GNY, a skilled wood carver, who works restoring the carvings on the antique circus parade wagons at Baraboo.

In Bob's ham shack there are some of his carvings that are not for circus wagons, and I was amazed at his artistry with wood and knives. He showed me ducks, loons, and other wild life carvings that are beautiful.

The Circus World Museum is owned by the nonprofit Wisconsin Historical Society and is definitely worth a day-long visit even if you have to go out of your way to do it. Just hearing the great band wagon of the Royal American Shows and the Bell Wagon of the Ringling Brothers show play circus tunes is a musical thrill you can't find anywhere else in the world. Information can be obtained by writing Circus World Museum, 426 Water Street, Baraboo, WI 53913-2597.

License plates

A few months ago I got in trouble by quoting Bob Burchardt, AB5QH, who said he sent ham call license plates to a western ham radio museum and never heard from them again. Well, that's not quite true — Bob heard, by irate letter, from the museum shortly after my column appeared in ***Worldadio.*** Bob also received his donated plates back in a hurry. Bob then promptly shipped the plates to Bonanzaville, PO Box 719, West Fargo, ND 58078-0719 where they will become part of a ham radio exhibit building which is in the planning stage. In the meantime, Bob's plates will be part of a display in the Bonanzaville Auto Museum. If you have any old ham call license plates you would like to donate the Cass County Historical Society's pioneer village of 42 historic buildings, please send them to the above address. The older the date on the plates, the better. I'm putting one of my 1952 WØLHS tags in the display, for although I am no longer on the Historical Society's board of directors, I still volunteer my services at Bonanzaville throughout the year.

When I think of that 1952 plate, I remember all the lobbying the ham community did with the North Dakota legislature to get the bill passed. I was working in California when all that legislative pressure was going on, but my home state ham friends kept me posted on their efforts. It was the first of such "vanity" plate laws to be passed in the state, and the fee still remains very low for Amateur Radio operators who want to take advantage of the law.

AB5QH, in his letter to Bonanzaville says, "Please note that the New Mexico, N5EZK plate, was issued as a 'personalized' plate versus an amateur plate. This was an attempt by New Mexico to raise the prices from two dollars to fifteen dollars and the hams revolted. The following year they said 'amateur radio' once again."

EAVESDROPPINGS

I HAVE SO MUCH TROUBLE COPYING CW — IT'S JUST LIKE IT WAS IN CODE . . . I HAVE BEEN TYPING FOR 35 YEARS AND I STILL HUNT QND LECK. . . WORKING THIS BAND WITHOUT CALLING CQ IS LIKE GOING FISHING WITHOUT BAIT. . . I FIND I CAN SEND BETTER CODE WHEN THE SIDETONE IS TURNED ALL THE WAY DOWN. . .THE WAY THINGS ARE GOING, A COMPUTER IS OUT OF DATE THE DAY THE PC BOARD IS SOLDERED, OR SLIGHTLY BEFORE . . .

Thanks to W5VPF, K7WUW, KJ5ZN, K9ZZ, KA9GHY, and W9FBC for help.

Write me: Bill Snyder, 1514 So. 12th St., Fargo, ND 58103-4134. Packet address:WØLHS@WØLHS.#SEND.ND.USA.NOAM. 73 and DIT DIT. WR

FM & REPEATERS REPEATERS REPEATERS

BILL PASTERNAK
WA6ITF
28197 Robin Ave. • Saugus, CA • 91350
(Internet)billwa6itf@aol.com;
(AOL)BILLWA6ITF
(MCI e-mail) 805/324-1437
(24-hr voice/fax) 805/296-7180

Attack of the killer satellite service

If the Low Earth Orbiting Satellite industry has its way, your favorite 2-meter and 70 centimeter repeaters will disappear from the air sometime after the turn of the century. The LEO industry is going to the 1997 World Radio Communications Conference (WRC-97) with every intention of having hams, their repeaters and all other modes removed from those bands to make way for expanded LEO operations.

The American Radio Relay League was first to learn of what some hams are now calling the "Attack of the Killer Satellite Service." According to ARRL Executive Vice President Dave Sumner K1ZZ, the League got wind of the proposal at a communications industry working group (known as IWG-2A) that is preparing draft US proposals for the 1997 World Radiocommunication Conference. The working group had before it a list of "candidate bands" for low-earth orbit mobile satellites which, to the utter astonishment of hams on the committee, included the entire 144 and 420 MHz Amateur band allocations, among others.

The list of candidate bands was submitted by little LEO industry representatives at a meeting of IWG-2A on 7 May. ARRL Technical Relations Manager Paul Rinaldo, W4RI, was present and, as you might expect, he strongly objected to the inclusion of these two bands. But the LEO industry refused to budge. It said that it had no intentions of rescinding its spectrum grab demand and told Rinaldo that objections should be submitted in written comments.

The ARRL did so on 15 May. At the same time the ARRL advised the industry participants in IWG-2A along with its chairman, Warren Richards of the Department of State, that if assurances were not received that the bands would be dropped from the list of candidate bands there would be no choice but to advise members in the July issue of *QST* that the bands were under threat. No such assurances were forthcoming. Instead, the ARRL was told that as long as little LEO allocations requirements remained unsatisfied, everything had to remain on the table.

This response was not acceptable says Sumner. Accordingly, when the July *QST* went to the printer on Tuesday, 28 May, it included an editorial asking the nation's amateurs to write and defend the two bands. Sumner says that his editorial speaks for itself, but it is worth emphasizing that there is no reason for panic.

"What we are dealing with is an ill-considered industry effort that is in its early stages; there is no reason to believe there is any government support for any move against these two amateur bands. Our mission is to quash the idea before it goes any further. An outpouring of thoughtful comment by amateurs, explaining why the public interest would not be served by the introduction of commercial services into these bands, will go a long way toward ensuring the desired outcome."

The American Radio Relay League is asking radio amateurs across the United States to help defeat a threat to the two most heavily used amateur VHF and UHF bands by filing your own comments to the working group. Here are the key addresses, including those of the mobile-satellite industry folks who seem to have started the ruckus:

Cecily C. Holiday, International Bureau, FCC, Washington, DC 20554; choliday@fcc.gov; fax 202/418-0748.

Warren G. Richards, Chair, IWG-2A, Department of State, CIP 2529, Washington, DC 20520; richardswg@ms6820wpoa.us-state.gov; FAX 202/647-7407.

Tracey Weisler, FCC Rep., IWG-2A, International Bureau, FCC, Washington, DC 20554; tweisler@fcc.gov; fax 202/418-2824.

Mary Kay Williams, Final Analysis, Inc., 7500 Greenway Center, Ste. 1240, Greenbelt, MD 20770; fax 301/474-3228.

Leslie Taylor, President, LTA, 6800 Carlynn Court, Bethesda, MD 20817; ltaylor@lta.com; fax 301/29-3148.

Dave Sumner adds that when filing comments, that we hams be civil.

"Don't abuse people who are simply doing their jobs. We have to get across that casting covetous eyes on amateur bands is counterproductive, and contrary to the public interest. To accomplish this we need a lot of comments, including yours. But remember that the objective is to educate and persuade, not to intimidate. We don't need to. The facts are on our side," Sumner says.

To monitor the FCC's ongoing WRC-97 preparations, visit its WRC-97 home page at: http://www.fcc.gov/ib/wrc97/. Remember, only you and your typewriter (or word processor) can help fight off the "Attack of the Killer Satellite Service" and keep your favorite repeater on the air.

Go away, Foret

Because the FCC successfully invoked an anti-indecency broadcast rule in a personal communications related case, Irvin J. Foret, KB5UJD, has voluntarily agreed to give up hobby radio for the rest of his life.

Foret is a Metairie, Louisiana, Technician Plus ham whose license was suspended for two years by the FCC following allegations of interference to Amateur Radio operations in the New Orleans area. In early May after several weeks of bargaining, Foret reached a settlement with the FCC to end the enforcement proceedings against him.

The crux of the deal is that Foret has agreed to immediately surrender his Amateur Radio license for life and permanently divest himself

of all electronic equipment capable of transmitting on the ham bands. Foret has also agreed to never again apply for any FCC license or permit — regardless of the service. He has also agreed to abstain from participating as a third party in any communication in the Amateur Radio service and is even barred from transmitting on CB. He must also pay a $500 forfeiture to the FCC.

But there is a lot more; something that may give the government some new leverage in cleaning up other interference cases in the New Orleans area. The Commissions' original action against Foret came on April 5th, after FCC personnel monitored and documented his radio transmissions in December, 1995, and January, 1996, on several frequencies including the New Orleans 146.85 MHz, W5MCC repeater. The FCC said some of Foret's transmissions on 29 January 1996, constituted willful or malicious interference to the transmissions of other Amateur Radio stations. As such, they were in apparent violation of FCC rules.

Later, during an inspection of his station, the FCC said, Foret had been: "lacking in candor and misrepresented material facts to Commission personnel by stating that he did not make the transmissions the Commission observed."

The FCC most powerful charge against Foret — and the one that could have cost him tens of thousands of dollars in fines was the allegation that some of his transmissions were unidentified, included music or were obscene or indecent, the alleged indecent transmissions occurring at a time when there was a reasonable risk that children were in the audience, a direct violation of the so-called "safe harbor rule."

For those of you who have never heard of it, the "safe harbor rule" defines what is considered as being legally indecent language and limits its transmission by those licensed in the broadcast service to a period from 10 p.m. to 6 a.m. The government says that these are the hours when young children are not necessarily going to be listening to the radio or watching television and therefore are not likely to be exposed to such language.

This is the same FCC regulation used against the owner of a chain of radio stations that air "shock jock" Howard Sterns' program. Had the FCC pursued Foret using only the "safe harbor rule" he could easily have been left impoverished. I suspect that Foret realized that it was better to capitulate, which he did.

The core of the agreement with Foret does not end with his decision to voluntarily surrender his ham radio license. He has also to cooperate fully with all government officials in connection with any ongoing or future administrative or law enforcement investigations involving ham radio operations by others. In simpler terms, Foret will become a witness for the government in any proceedings that it may undertake against other hams who may have been involved in the same or other rules violations of which Foret may have knowledge.

If it does, many ask "who will be next?"

The agreement between Foret and the FCC does not prohibit him from engaging in otherwise lawful transmissions over land mobile radio facilities as part of his work. But as far as any other form of radio communications is concerned, Irvin J. Foret, soon to be the ex-KC5UJD, is now banned for life.

Not counting the two-decade-long confrontation between Richard Burton ex-WB6JAC (which is a story unto itself), the punitive action against Irvin Foret — and agreed to by him — has to be one of the harshest regulatory enforcement actions taken against a radio amateur in years. As a result, hams nationwide are wondering if this signals the beginning of a government crackdown on those who violate the Amateur Service Part 97 rules. If it does, many ask "who will be next?"

SPOC plans made public

If there ever is a "single point of contact" between the repeater coordinators and the FCC, it probably will not resemble the form suggested at last October's repeater coordinators conclave in St. Charles, Missouri. The coordinators have finally released several documents that detail their desires; what they are asking is for ARRL funding and almost complete autonomy.

Basically, the coordinators have decided to form a national umbrella group called the National Frequency Coordinators Conference or simply NFCC. It's similar in many ways to the National Conference of Volunteer Examination Coordinators except that NFCC will concentrate on issues of interest to repeater owner operators and the coordinators that assign them their operating frequencies.

NFCC has completed a proposed Memorandum of Understanding that will be submitted to the American Radio Relay League. The League's Board of Directors will then vote on the proposal when they meet next summer. Until that time, the NFCC will continue to work on defining its role in coordination issues and the part it will play in overall ham radio society.

For those who are interested, I have posted the three documents released by the NFCC formation committee to the General Interest Ham Radio Files section of the Ham Radio Club bulletin board on America Online. To reach it, you must be an AOL subscriber. Sign on, use the keyword command, and type in the word "ham" followed by a carriage return (or click on the OK icon). When the ham radio bbs screen appears, click on the icon "ham radio software exchange."

For ease of reference they are simply listed as SPOC.001 (Letter of Memorandum and Understanding), SPOC.002 (NFCC Articles of Incorporation) and SPOC.003 (NFCC Proposed By-Laws). An in-depth article on the formation of the NFCC will appear in a future edition of ***Worldradio***.

New repeater council formed by merger

Two northeastern repeater coordinators have merged to form a single new coordination body. On February 1st, Pennsylvania's TPARC Coordinating Committee merged with Southern New Jersey's ARCC repeater coordination group to form one new organization known as ARCC TPARC, Inc. This ends a year of confusing circumstances in Eastern Pennsylvania and Southern New Jersey. The new organization's address is P.O. Box 3006, Maple Glen, PA 19002. **WR**

YLs on the Air

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

YLs on the Air

A DXer said recently that the day he worked the last country on the ARRL DXCC countries list was the saddest day of his life. The challenge and the thrill of the chase were gone. But there are still a lot of happy DXers looking for YL contacts, because so far no one has worked YLs from all the countries on the current ARRL DXCC list.

Lenny Mendel, K5OVC, and Don Widel, K9ECE, have confirmed contacts with YLS in over 290 countries and are at the top of the list. Several YLs, including Mary Ann Crider, WA3HUP, Ruthanna Pearson, WB3CQN, Elizabeth Anderson, VE7YL, and Nellie de Lazard, XE1CI, are not too far behind them. Most of the countries that Lenny and Don need have never had any YL operations, but YLs have been working on that problem through the years. Iris Colvin, W6QL, has operated from many exotic locations and who can forget the 50,000 mile trip of Darleen Souligny, WA6FSC, (now Darleen Magen, WD5FQX), in the early 1970s, as we tracked her around the world by the pile-ups she was creating every time she got on the air?

Mary Lou Brown, NM7N, has led all-YL DXpeditions to several rare locations; Nellie de Lazard, XE1CI, (the only person to have worked all-YL 5BWAS) operated from four DX countries last year, and Ruth Geering, IT9ESZ, has just completed another DXpedition, this time to Tunisia.

The other operators in this DXpedition were Slavek Zeler, OK1TN, Rudy Touzin, OK2ZZ, and another YL, Renata, OK1GB. They totaled 15,002 QSOs, between 3 and 12 April, 1996, at 3V8BB, the club station at the university in Bir el Bey, about 30 km from Tunis, the capital city.

Ruth joined them on 4 April and found Slavek and Rudy at work, one on CW and one on SSB. She writes, "A quick unpacking of the baggage and I was seated right away in front of the station and with my heartbeat accelerated, I worked my first QSO from 3V8BB. What an emotion, friends!"

Their location was ideal as it was right on the beach, and there were

Ruth Geering, IT9ESZ, with a student from Bir el Bey.

antennas on the roof, which included a 4-element and a 6-element beam, plus a Windom for 40 and 80 Meters. They had two rigs, an ICOM 706 and a 726, and used a one-kilowatt amplifier. The operating schedule was worked out, with Slavek and Rudy on duty during the night. Ruth and Renata would leave about midnight and then come on in the morning while the OMs slept.

The first days were especially hectic, and Ruth writes, "The pile-ups were always tremendously present on the bands and the (on air) behavior of the operators was often deplorable, except for the JA, W/VE OMs and the YLs, of course. The lack of discipline made it often hard for us to operate. But as a YL operator, I tried to be courteous and to never forget that, after all, it's a hobby for all! Of course, we understood the rush for the 'new one' and tried to give all the same chance to get a contact, especially the QRP stations. We were not allowed to operate on the WARC bands and the 2 Meter band isn't yet possible."

On Easter morning, the ICOM 726 crashed. Rudy worked on it without success until finally on Monday evening, he managed to find and repair the damaged part. They literally jumped for joy when it started working again.

The pile-ups grew less hectic, but there were always plenty of calls. On Tuesday, the 9th of April, several German YLs came on the 20 meter band with good signals and there were also several European and many W/VE YLs. The 9-day DXpedition was wonderful, with very good teamwork and fellowship and lots of laughter. There were 3,611 QSOs with North America; 930 QSOs with Italian stations; 1,010 QSOs with Czech stations; 1,244 prefixes worked, and 142 countries. QSLs go to the OK-DX Foundation, Box 73, 29306 Bradlec, Czech Republic. Stay tuned because Ruth is headed for San Marino in September, another "new" YL country.

Unlike Ruth, who is a seasoned DXer, Hazel Schofield, TN7OT, was a bit surprised at the reaction when she got on the air from the Congo last year. Hazel, AL7OT, and her husband Bill live in Alaska and had always talked about doing mission work when their five children were grown. So when that time came they spent a short time in South America and then went to the Congo for a longer stay, where they worked with the Aka pygmies.

Hazel took a new Kenwood TS-50, two 6-volt batteries hooked to a solar panel, an MFJ Versa II tuner, and a dipole so that she could be in contact with their friends and family in Alaska, but getting a license

proved to be very difficult. She wrote a letter explaining the purpose of Amateur Radio and how it can help in disasters, especially in remote regions, but the authorities in Brazzaville couldn't understand why she wanted a license. She made many trips and was even called before the District Surveillance of the Territory, where she was interrogated for some time. Finally, after paying $370, plus "tips," the license was granted. Hazel wasn't given a call sign but was told, "Use whatever you want." Although she was told there were two other amateurs in the Congo, she was never able to find them.

Having lived with no telephones, and at times no mail service, at last Hazel was ready to try to make contact with the friends and family in Alaska. She strung a dipole between a coconut palm and a mango tree, using TV twinlead cut for 20 Meters, and tried her new radio. She first talked to Peter, ET3BN, in Ethiopia, on 14.240 MHz, and then Gerald Brooks, W1IDP, in Beverly, MA, on 14.239.

She was very excited to reach the U.S. and as she tuned across the

Hazel Schofield, TN7OT

band, she ran across the Butterfly Net on 14.226 MHz. Hazel writes, "After that, I don't know exactly what happened but three hours later, I had talked to 136 people. I was completely overwhelmed."

In August, one of Hazel's daughters was planning a trip to the Congo but at that time there was no mail service and no way to coordinate the details. Then she made contact with Cheri Worley, WL7MA, who called her daughter on the phone to verify her flight schedule to the Congo. This was Hazel's first contact with Alaska although she had heard stations before. It seemed she always had good propagation to every part of the world except Alaska.

Hazel was able to keep weekly skeds with Harold Faust, KC8KB, in Wisconsin to maintain contact with the mother of one of the missionaries. She had 918 QSOs in six months, and worked 47 states, most of Canada, Australia, New Zealand, Japan, several islands in the Pacific, and other countries in Asia, Europe, and South America. Hazel writes that she doesn't know when she'll be serious about DX again!

Both YLRL and CLARA offer certificates for working YL DXCC, with endorsements available for each additional 10 countries. It's harder than you might think to earn these certificates, but it's definitely a lot of fun. Each YL group around the world offers at least one certificate for working YLs so be on the lookout. I just received new information on the Buckeye Belles' beautiful certificate which will be in a future column. If you need the rules for it or any of the others now, drop me a line. WR

Computers & Basic Stuff

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

BASIC Grid

Have you ever entered a VHF or UHF contest? There are a number of interesting contests held throughout the year, sponsored by the ARRL and *CQ Magazine* and other individuals and organizations. Some of the big ones are the ARRL VHF/UHF All-Band Spring Sprint, the ARRL January and June VHF QSO Parties and the *CQ* World Wide VHF Contest.

All seem to have one thing in common — they ask for a "Grid Locator" exchange.

If you don't already know what a Grid Locator is, it is a four- or six-character identifier that corresponds to a specific area on the earth's surface. A four-character identifier narrows the location down to a 1-degree by 2-degree area (approximately 9,500 square statute miles, or less, depending on location) while a six-character identifier homes in on an area measuring 2.5 x 5 minutes of arc (about 16 square miles, or less).

Of course, before you can exchange your Grid Locator, you have to know what it is. That's where this month's BASIC program can help.

The Grid system, called the Maidenhead System in Europe, cuts the world through its poles into 18 slices, and cuts each slice into 18 smaller segments. The slices are 20 degrees wide, and are lettered sequentially beginning at the 180 degree meridian and moving eastward. Segments are 10 degrees tall and are also lettered sequentially, going northward from the south pole.

The first two letters in the system identify these larger (950,000 square mile) areas. Each Grid is further divided into a hundred smaller, one degree by two degrees rectangles. The second pair of characters, numbers 0 to 9, are also sequential from west to east and from south to north.

For contest purposes, the Grid system stops with these four characters. But most people add a third set of characters to break the one-by-two degree grid into even smaller rectangles. This last set of characters, letters again, establish grid locations to within 2.5 vertical minutes of arc by 5 horizontal minutes (about 16 square miles). In some cases these final 2 characters are printed lower case.

Since the Grid system is referenced to geographic coordinates (the 180 degree meridian and the south pole), we need to know our geographic coordinates before we can find our Grid Locator. We can't always use our neighbor's coordinates; in some cases he can live next door to you and still be in an entirely different Grid.

Most maps have the geographic references (lines of latitude and longitude) printed on them, and it is relatively simple to derive a "close approximation" to a QTH latitude and longitude. The popular *HamCall™* CD-ROM also gives QTH latitudes and longitudes, but in my case, at least, they are inaccurate.

If you have access to a GPS receiver, use it instead. An airplane pilot or boating acquaintance might have one and can help you plot a more precise location.

A city or county map can help too, especially if it shows an airport or the location of a FAA navigation aid, such as a VOR or TACAN station. Chances are someone at the airport, or a FAA Flight Service Station employee, can give you a very accurate "fix" on the known latitudes and longitudes of these points. All you need to do then is find your north or south and east or west distance vectors to derive your own fix.

Here's how it works: Assuming you are in the Northern and Western Hemispheres (eg. North America), for every statute mile your live north of the reference fix add .869 minutes of arc to the reference latitude. Remember, there are 60 minutes to a degree, so if you go over 60, you add a whole degree and reset the minutes to zero before resuming your count.

Likewise, if you live south of the reference fix, subtract .869 minutes for every statute mile you go south.

East and west is a bit trickier, since a minute of latitude is .869 miles only at the equator. It gets smaller the further north or south you go, becoming zero at the poles.

BASIC can help here. Using the formula MIN=SM*.869/COS(4*LAT

```
 10 CLS: PRINT "GRID LOCATOR":REM BY KD5DL, 8/96 15 PRINT
" <TYPE 999 TO QUIT>":PRINT:PRINT 20 INPUT "LATITUDE (DD.MMM)"
;B: GOSUB 220; A=B+90 30 INPUT "LONGITUDE (DDD.MMM) ";B:
GOSUB 220: S=64 40 B=180-B: F=1: D=360: E=20: GOSUB 180:T=48 50
U$=CHR$ (S+F): B=B-20*(F-1)
 60    F=0: D=20: E=2: GOSUB 180
 70    W$=CHR$(T+F): B=(B-2*F)*60
 80    F=1: D=120: E=5: GOSUB 180
 90    Y$=CHR$(S+F): B=A
100    F=1: D=180: E=10: GOSUB 180
110    V$=CHR$(S+F): B=B-10*(F-1)
120    F=0: D=10: E=1: GOSUB 180
130    X$=CHR$(T+F): B=(B-F)*60
140    F=1: D=60: E=2.5: GOSUB 180
150    Z$=CHR$(S+F): PRINT
160    PRINT "GRID LOCATOR IS: ";U$;V$;W$;X$;Y$;Z$ 170
       PRINT: GOTO 20
180    FOR C=0 TO D STEP E
190    IF B>=C AND B<C+E THEN 210
200    F=F+1: NEXT C
210    RETURN
220    IF B=999 THEN END
230    K=SGN(B): D=INT(ABS(B))
240    E=(ABS(B)-INT(ABS(B)))*10/6: B=K*(D+E): RETURN
```

ATN(1)/180) gives the number of minutes for a given number of statute miles (SM) at any latitude (LAT). For example, 3 SM at 40 North (or South) Latitude is equal to 3.869/COS(4*40*ATN(1)/180), or 3.403 minutes of arc. Add this to the reference fix if you are west of it or subtract if you are to the east.

Here's an example: J.Q. Hamm lives about 25 miles southeast of Washington, PA, where all his buddies claim to be in Grid EN90. But J.Q. is pretty far out of town, and a Grid map shows he is very close to the juncture of what would be Grids EN, EM, FN and FM. He can't be sure which one he is really in.

He calls nearby Washington County Airport and learns that its location is 40-08.2N and 80-17.4W. He next finds the airport on the county road map, and he determines that his house is on a vector 10.5-miles south and 16-miles east of the field.

Converting 10.5 statute miles to minutes (10.5*.869) puts him 9.1 minutes south of 40-08.2, or at 39-59.1N. Then he multiplies, 16*.869/COS(4*40*ATN(1)/180), and finds this vector puts him 18.1 minutes east of the airport. He subtracts 18.1 from the reference 80-17.4W to get 79-59.3W.

His home, then, is located at 39-59.1N and 79-59.3W. Finally, he loads and runs this month's BASIC program, entering his latitude as 39.591 (using a decimal point to separate degrees from minutes) and his longitude, 79.593. If he entered the program and his coordinates correctly he'll find his Grid Locator is actually FM09AX. Although he borders EN90, he is in an entirely different grid than those for his buddies to the north, to the west and, of course, over in Washington.

That's all there is to finding a Grid Locator. Follow the same simple steps and you should be able to find your station coordinates to within a tenth of a minute of arc (around 600 feet or so) for an accurate Grid Locator position.

The program uses only two routines.

One converts the latitude and longitude, which are entered as degrees and minutes, into decimal degrees referenced to the 180 degree meridian and the south pole. After a coordinate is entered (with a decimal point separating degrees from minutes, and with south latitudes and east longitudes entered as negative numbers), lines 230 and 240 change it to decimal format.

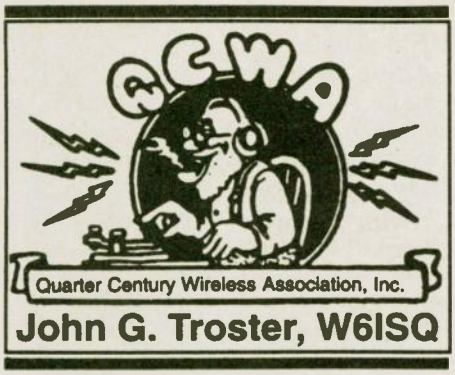
Line 20 adds 90 to the latitude to make it a positive number with respect to the south pole. Line 40 likewise changes the longitude to a positive number.

The other routine, contained in lines 180 through 210, keeps count of the number of times the grid divisions are changed before the geographic coordinate fits within set parameters. The routine is accessed six times, with the variables F, D and E changing the parameters each time.

F is the count factor, and it increases with each parameter pass. When a coordinate meets the conditions set in line 190, F is added to the variables T or S to return an ASCII character string for each of the six passes.

Line 160 groups and prints the ASCII characters as a Grid Locator designator. Line 170 returns to line 20 to begin the process all over again, in case you're interested in converting other geographical coordinates to Grid (for friends or for a contest "rover" operation).

That's it for this time around. Until we meet again, stay radio active. See you in a couple of months. WR



John G. Troster, W6ISQ

Call to action

Now is the time for all good hams to come to the aid of our bands. If you did not read Dave Sumner's "It Seems to Us," fish out the July *QST* and read it pronto. It has to do with the low-earth orbit satellite ("little LEOs") commercial service selecting 144-148 MHz and 420-450 MHz as frequencies they would like to use for pagers, telemetry monitoring, etc. Dave details the issues and it's a Big Bell alarm matter you'll want to be fully aware of. Almost all amateurs who are on the air have two-meter capability. For some, with restricted living space, etc., two-meters and/or 440 is the only amateur band they use.

If you have attended any one of our conventions lately, you've seen that at least half the attendees carry a holstered two-meter handheld. This is the band that carries the weight of amateur emergency, search and rescue, and the public service missions of Amateur Radio.

True, some garbage may transpire on two meters, but it would be a very serious blow to the full range of public services offered, and used, by amateurs. What to do? 1) Read the K1ZZ July editorial in *QST*. 2) Send your comments via e-mail to: wrc97@fcc.gov or U.S. Mail: Office of Secretary, FCC, Washington, DC 20554. Each comment should have at the top: "Reference No. ISP-96-005" and "Advisory Committee Informal Working Group." 3) Tell them how important two meters is to you and Amateur Radio, how valuable it is to your community emergency system. 4) Your letter doesn't have to be long or detailed. To the point is best. Just let 'em know that amateurs consider invasion or sharing of these bands is contrary to our historic FCC 97.1 mission.

If two meters and 70 centimeters go, what's next? Participate in this battle. Take it as a personal challenge to put your back to the wall for the benefit of all amateurs. Protect your investment! Do it now — and spread the word to your buddies and at your club.

QCWA at Dayton

The QCWA boys "done good" at Dayton! Jack Kelleher, W4ZC, our next president was there on the job already. So were Directors Gary, WAØRWS; Big Jawn, K8LBZ; GM BJ, W7LVN; even candidate Tony, K4KYO. Along with Dayton Chapter 9 president Harold Callahan, W8GNV, and Bill Newell, W8LIL. The fellows at Chapter 9 had the booth decorated and ready for the out-of-town officers. A really "live wire" chapter says BJ. They also arranged the annual dinner session.

President Lew McCoy, W1ICP, was also at the booth — but not all the time. He had to divide his presence between ours and the *CQ* Magazine booth about 75 feet away, but around a corner. His McCoyship couldn't observe the QCWA booth directly, so periodically McCoy was seen to sneak under the *CQ* tables and step out into the aisle to bring the QCWA booth under full observation, or so I was told. Things went well and the boys signed up more that 30 new QCWA members and received 20 renewals. McCoy was pleased.

JBBeadle Society update

Sam Samson, W7KVX, sent copies of three JBBeadle signatures. "I retired as an FBI agent but had only limited document examination experience — nevertheless I would observe the following. All three signatures are different. All three signatures are in a female hand." Sure enough, the first one dated 1939 has a small "D" behind the signature. The second, dated 1942, did not have the usual curved connecting line between the "JB"and the "BB," and the signature sloped to the right. And the last one dated 1947 looked like the familiar JBB. Hmmm.

Mick McDaniel, W6FGE, sent in copies of five JBB signatures from 1935, '38, '44, '46 and 1947. Four of them look like the usual JBB, but the 1944 signature has a heavy right lean and clearly not the same as the others. Mick remarks, "I suspect that this forgery (1944) was a result of the real Beadle being away in the service during WWII." He adds, "commercial licenses of the 1940s period were signed by a person named Floure." Well now. It does appear that several FCC folks were signing the tickets. And JBB was apparently signing only amateur licenses.

My Editor

"This is Lou Ann Keogh. How may I help you?" says a lilting, mellifluous voice, and you're happy you called. I'm referring to my boss, the editor at ***Worldradio***. What she says after that is usually in just as nice a voice, but it may be, "Hey, you're late again, fella. How come?" Lou Ann was born in San Diego and grew up in Alpine, 30 miles to the east. When she was nine, her big brother Stephen was a Boy Scout and was learning about radio and Morse Code from a local radio operator, Dr. Tom Bornowski, W6TBI.

Lou Ann was fascinated too, and wanted to learn the code and theory just like her brother and the boys. But of course, she was only a girl and a kid at that, and the boys didn't want her around messing things up. She got what she wanted anyway by sneaking into her brother's room when he was away and listening on his Hallicrafter receiver. She didn't know what the dials were about, but she twisted and turned and eventually got to where she could tune in pretty well. But trespassing will out — she forgot to set the dials back where her brother had left them and got caught! So much for Amateur Radio at that point.

She was graduated from El Cajon Valley High School, went off the University of Arizona, and began pre-med studies. However, at the start of her junior year, she was hit by a car and badly injured. When she did resume college, she went to

Sacramento State and took up psychology. There she married and had two children, Andrew and Jennifer. The family moved to Brazil on a USAID mission to the Ministry of Education and Culture and lived in Brasilia, staying three years. If you happen to speak Portuguese, here's someone you can talk to. Lou Ann picked it up while there, and speaks it almost like a native, or native Norte Americana, anyway.

In Brasilia, one of their neighbors was an American lady who was a licensed amateur and active running phone patches to her family in the states. This rekindled Lou Ann's interest, but the time still wasn't right. Youngest son Matthew arrived and shortly thereafter the family returned to Sacramento. That was in 1976.

At one of the local county fairs, Lou Ann happened to meet the late Lou Potter, K6VT, who was manning an Amateur Radio booth. He spoke about the amateur classes conducted in town and Lou Ann had her chance at last. She enrolled in the Novice Class. The best time to study books and code was when she was up at night after taking care of the baby, and it wasn't long before she passed the Novice exam and became WD6AIV. A few months later she went to San Francisco and passed the General Class and a month after that she got her Advanced license.

She loved DXing, but felt her call was too long for chasing the elusive DX in pileups. So she contacted the FCC in San Francisco and asked if she could take the Advanced exam again and get a better two-by-two call which the FCC had begun to issue. The FCC examiner hawed and hummed, and finally replied that he didn't see anything immoral or illegal in taking the exam again to get a new license, so a few days later Lou Ann took the Greyhound to San Francisco and re-took the Advanced. It worked. In due process she received her present call, KB6HP.

She had a TS-820 and a quad, but, she relates, at first she was very timid and did a lot more listening than calling. Timid or no, she managed to get most of DXCC as a General licensee. Her marriage broke up about this time and she had to settle for reduced amateur activity with an Atlas 210X and long wire, and, of course, two meters. She was always active in various VHF repeater groups, particularly the famous Grizzly Peak VHF ARC, and made many friends over the air. She thereby met Edward J. Keogh, WB6ETN, and subsequently they were married. Sadly, he became a silent key in '82.

Lou Ann had first met Armond Noble, owner-publisher of ***Worldradio*** when she was newly licensed. In 1985, he offered her a job editing and she's been on the editorial staff ever since.

Lou Ann is now on 10 through 40 Meter phone with a TS-430S and KT-34A and a 40M inverted V. She's also on 220 FM though the local AA6IP repeater. She used to be pretty active in the local emergency services groups, but now with work at the magazine, is pretty much limited to public service events to keep up those skills.

Jean Mercer, Lou Ann's mother, was an organist and loved the Saturday broadcasts from the Metropolitan Opera; so Lou Ann grew up listening to classical music as well as her brother's ham radio. She extended this musical exposure to activities while in college, in back stage work in the local opera. This appreciation continues and she makes the trip to San Francisco Opera whenever she can. Perhaps that accounts for her musical telephone-answering voice! Lou Ann also loves cats and dogs, and when she talks on the phone she may have one cat perched on the back of her chair, another in her lap and one sitting on the desk staring at her computer.

Lou Ann closes by inviting anyone having a story about Amateur Radio to send it in. Even an idea, just drop her a note or e-mail, and talk it over. She can give suggestions and how-to information, to write for publication. Well, as I said in the beginning, Lou Ann is known for her a gracious telephone manner. BJ Walsh, W7LVN, our QCWA General Manager calls her just to hear her greetings!

There you are gang. Give Lou Ann a call, if you can hum a short aria from Boheme, or a leitmotif from The Ring, you'll get a happy answer. Note: I have a bet with her of one chocolate soda, that she will not get more than three calls from readers who wish to hear her melodic telephonic greetings. BJ Walsh not counted. Of course, Don, W6EEN, will sing a whole Verdi opera and probably extol the virtues of cats. So are there two more of you out there, or are you gonna let me have the soda?

'Til next time, then. 98! Jack, W6ISQ WR

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

Free messages to Bosnia

Army MARS is pleased to announce that free MARSgram messages may now be sent to the military personnel deployed to Operation Joint Endeavor in Bosnia. After months of coordination, the following Joint Endeavor addresses can receive messages from family and friends:

- APO AE 09779 Zagreb, Croatia
- APO AE 09780 Sarajevo, Bosnia-Herzagovina
- APO AE 09781 Split, Croatia
- APO AE 09782 Kiseljac, Bosnia-Herzagovina
- APO AE 09789 Tuzla, Bosnia-Herzagovina (previously authorized)
- APO AE 09793 Taszr, Hungary

Army MARS continues to serve military personnel wherever they may be for all services.

To send a message, the name and address of the sender, the full name and address of the recipient, and a message of 50 words or less are all that are needed. It's simple — and rewarding to both parties — try it, you'll like it.

For further information or to send a message, please call: Lorrain S. Matthew at 520/565-2876 or e-mail: lorimatt@aol.com or call your local MARS member.

Dayton

Interoperability — emergency communications — These were the often recurrent terms used at Dayton this year. Already some results have been seen from the meeting of the three MARS Chiefs. Agreements have been reached and put into practice that have been awaited by the membership. Notably, interservice traffic handling has been made easier by the availability of the Navy's list of ships able to receive MARSgrams. Without this list, Army MARS members and Air Force MARS members had to accept and transmit all Navy traffic whether it could be delivered to the ship or not. This created problems and extra work for all concerned. Now that list is available to all services and the transshipment of messages is far more efficient.

Most notable of the agreements from Dayton combined the need for interoperability and the support of emergency communications. Immediately after the Dayton Hamvention meetings closed, the MARS community was plunged into Grecian Firebolt 96 (GF96).

This emergency communications exercise has been described as the largest, most comprehensive exercise in which Army MARS (or any other MARS organization) has participated. GF96 involved multi-tasking, multiple agency support with each agency having protocols of its own, EEI reporting, network modification, emergency operations reporting, resource reporting, and many opportunities in which the MARS member had to exercise his or her own initiative.

This is the first time that multi-service MARS support has been used to this extent. All of these factors, of course, are exactly what every MARS member can expect in a real emergency.

Among the plaudits from the agencies which were supported in this exercise are the after-action reports which are still being studied — such was the complexity of this exercise. Many of the successes and many of the lessons learned will be incorporated into the Army MARS Emergency Oplan for future guidance in both actual and practice emergency operations.

The current Oplan 2-95 formed the basis for much of the activity for GF96; but GF96 went so far beyond the scope of Oplan 2-95 that many changes will be made. Oplan 2-95 had very little interoperability built into it, and modes of operation developed in the few months since it was written need to be incorporated

into it. Thus the need to study the after-action reports is paramount.

Another unique assignment for Army MARS occurred during the quarterly FEMA exercise held 1 June 1996. For the first time in its history, according to the Western Area Directors, Western Area Army MARS was invited to act as the FEMA Auxiliary check-in station for the Western United States. Check-ins from all agencies were sent through the Western Area Emergency Command Net which met on the two FEMA frequencies instead of on MARS frequencies.

This was a unique opportunity for Army MARS and success in the operation was the result. It was this operator's privilege(?) to work the 10 MHz frequency from 2 a.m. to 5 a.m. on Saturday, 1 June, in support of this operation.

Emergencies and volunteer member initiative can arise during the usually happy activity of handling morale traffic.

Wil Schroeder, AAT9AJ/AAMØPP from California sent me this report:

"On the evening of 13 May 1996, at 1945 local time, I received a MARSgram on the AT9TCS BBS from Buc Humbert in Okinawa for Mrs. Humbert in Camarillo.

She lives a few blocks from this station. I telephoned her and she was very happy to hear from me. She asked me if she could send a message back to him.

Of course, I said I could. While copying the message, I realized it had to be of a priority or higher precedence. She mentioned that magic word 'emergency' relating to their son. She had been trying to reach her husband by phone with negative results. She contacted the ombudsman at Port Hueneme CBC Base who could not help either. I placed the priority message on the BBS. I then told her that I would be in contact with Okinawa on the phone patch frequency in the next afternoon. Realizing how urgent this was, I then decided to get on the phone patch frequency to possibly reach ABM2US in Okinawa at 2015 local time. I did so and asked Pedro, the operator, if he could try the phone number Mrs. Humbert gave me. He also had no luck; so he called the unit and was informed that Buc Humbert was deployed and would not return until Thursday.

We passed the info to the Chief Petty Officer on duty who said he would contact the husband and have him call home immediately. He obviously did so as the man called home twenty minutes later. He is on his way home. I was given permission to use actual names by Mrs. Humbert. All together, it took one hour and twenty minutes to reach him and have him talking to his wife."

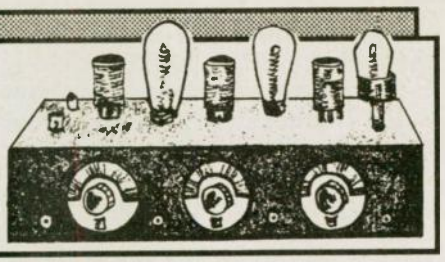
Several significant factors exist in this "job well done." Full Army-Navy cooperation made the contact possible. Volunteer member initiative was carried out without thought to the red tape which might have been needed.

Mr. Schroeder's only thought was to help this lady and her family. He had placed the original message but knew that the situation demanded a faster means of contact than the message route. He had phone patch capability and used it very capably.

This is the spirit which drives all the MARS services today. This is the spirit which will drive MARS well into the future.

With this spirit, MARS moves on proud, professional, and ready. WR

Old-time Radio



Those noisy old monsters!

Russ Rennaker, W9CRC

Just when Amateur Radio switched from CW to "RTTY" is not clear, but following WWII there was a massive switch by the telecommunications industry from wire-line-telegraphy to the teletype system that had been developed during the war.

At about the same time Amateur Radio operators became interested in the new method of communication. All they needed was a Terminal Unit (TU), a device to interface the teletype machine to their radio set, and of course a teletype machine itself.

As new models of the teletype machines came on the market the older replaced ones came on to the used equipment market. Amateur operators snapped them up in quick order. But the so called terminal units were not so plentiful and amateurs began developing their own. There were a dozen or more versions of this device. Every week a new diagram for a TU was run in the Amateur Radio magazines. They were all based on the toroid coil, commonly used in the telephone industry for loading voice circuits, and widely available.

Of course this was long before the advent of the transistor and common vacuum tubes were used in the TUs. The idea was to transmit two different frequencies, combinations of which formed letters.

At first, a shift in the radiated signal to obtain the proper signal was employed. This was called FSK (Frequency Shift Keying). The most common amount of shift was 170 cycles, but others were used. It made no difference what frequencies were used so long as the difference was 170 cycles.

But this shift was difficult to obtain in some of the amateur transmitters on the market at that time. Then someone discovered that transmitting two audio tones of different frequencies would provide the same result. This was called AFSK (Audio Frequency Shift Keying). AFSK was practical for any of the current ham transmitters and required no alternation to the transmitter. Simply feed the tones from the TU into the microphone input to the transmitter and you were on RTTY.

Following WWII, there were several companies manufacturing teletype machines. There was the German originated Kleinschmidt; quite popular in the early days. And several others. But the most popular in the telecommunications business was the one produced by the Teletype Corporation.

These machines, by and large, were noisy and required lots of maintenance, especially oil — the smell of oil and the noise became a part of the ham RTTY enthusiasts shack. I remember the Model 101, used by Western Union in the early days. The carrier flew back and forth at a high rate of speed and provided noise to approximate a machine shop. But the Teletype Corporation provided a sound-insulated cover for their machines that helped some.

There were many models of these machines over the years. The most popular for Amateur Radio use was the Model 15. They had been widely used by the Bell Telephone system and as newer models became available discarded ones fell into the hands of the Amateur Radio operators.

The first time that I ever saw an RTTY station was that of an old friend of mine, with whom I had worked for many years in the broadcasting industry. We lived only a few miles apart and our families visited often. One time my friend Gerald Smith, W9JGB, said he had something to show me . . . and there it was a Model 15 and a homemade TU actually transmitting and receiving "typewriter like" messages from other hams. It was amazing. I had long been a CW hound and 20 or 25 words per minute was about all I ever achieved. Here we were rattling away at 60 wpm with no visible effort.

Of course I wanted to get on RTTY as soon as possible. W9JGB said he would build me a TU if I could get hold of a Model 15. It so happened that the neighbor next door to me worked for Bell Telephone Company. I asked him how I could go about obtaining a used Model 15. He said he would work on it and let me know. About a week later I had a telephone call. The man said he had heard I needed a Model 15 and if I would go to such and such an address there would be one available for me. It all seemed terribly mysterious but I drove to the location and a man I had never seen before opened his garage door and proceeded to carry a Model 15 out to my car. That's how I became involved with RTTY. The year was 1950.

In the years following, I built many TUs, each more complicated than the other. I went from the Model 15 through many other models. But my finest achievement was the Model 19. This consisted of the teletype printer itself plus a tape perforating attachment. Now I could type onto the tape and run the tape through the printer to transmit. Then I got hold of another tape perforator called a TD (tape distributor). Now I could type on tape while I was receiving on the printer, then transfer the tape to the attached tape machine and run it through the printer.

I made up tape reels of cardboard and printed up a lot of information on these tapes, and could run them through the printer as needed. That corresponded to the so-called buffer files on our modern day computers. At that time I was writing articles for a ham magazine about the early days of radio and so I decided to put some of these "stories" on reels of tape. My stories became quite popular with the younger set of amateurs and they started calling me "Russ the story man." Then when I went to computer I transferred all those tapes to my computer disk drive, and still run them from time to time.

It was an interesting transition from those old mechanical monsters to the computer age. I was still using the machines long after most everyone else had gone to computers. I finally decided to get into the twentieth century with everyone else. Of course the computer is a lot more flexible in operation, but that old Model 19 and my extra tape perforator with my home-made reels was pretty modern by any standard.

I almost wept the day I dismantled my machine and put the parts at the curb for the garbage truck to pick up. WR

Visit Your Local RADIO CLUB

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

ALASKA

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

ARIZONA

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

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

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

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

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-). 5/97

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. 4/97

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

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

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

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.110 MHz. 6/97

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

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

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

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico. 9/96

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

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

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./7 p.m., Kaiser Hosp., Bldg. 2, San Rafael, CA. (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 8/96

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036. 2/97

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

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

North Shores ARC. Meets 1st Tues./ monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 274-8468. 9/96

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

Palos Verdes ARC. Meets 3rd Wed./ monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Herb Clarkson, KM6DD, (310) 377-6342. Rptr. 145.38(-) PL 100. 11/96

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

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AKR 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 10/96

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830. 10/96

San Gabriel Valley Radio Club, Inc. P.O. Box 86, Monrovia, CA 91017-0086. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 285-9281. 12/96

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

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

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

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

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

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/97

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

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

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

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

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./ monthly, CD Hall in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/96

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

Vaca Valley Radio Club. Meets 2nd Wed./ monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Alan McCarthy. (707) 446-0200. 5/97

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

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

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

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

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

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

CONNECTICUT

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

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 8/96

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

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

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

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/97

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

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/97

HAWAII

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

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

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 282-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 7/97

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

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+) (114.8PL), 224.68(-). 11/96

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 7/97

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

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

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

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-). 11/96

MAINE

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

MASSACHUSETTS

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

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

MICHIGAN

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

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

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

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

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

MINNESOTA

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

MISSISSIPPI

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

MISSOURI

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

NEVADA

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

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

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330. 11/96

NEW HAMPSHIRE

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

NEW JERSEY

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

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 144.40 9 p.m. Wed. 5/97

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

NEW YORK

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

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

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

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

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

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

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

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club net: 145.495(-) rpt. Tues., 7:30 p.m. Info: Dan Grabel, N2FLR, (914) 723-6625. 2/97

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

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

NORTH CAROLINA

Stanly County Amateur Radio Club. Stanfield, NC. Meets 4th Thurs./monthly, 7 p.m. Talk-in 146.985(-) for location. Wed. net 9 p.m. 146.985(-). Fri. tech net 9 p.m. 147.390(+). Phone: (704) 888-4815. 5/97

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m. County rptr., 146.715(-). 9/96

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

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

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (513) 563-7373. 11/96

Lancaster & Fairfield County ARC. Meets 1st Thurs./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info net Mondays, 8 p.m., K8QIK/R 147.03(+) rptr. BBS 145.53. 8/96

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

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brenda, KB8IUP, 866-5928. 11/96

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 2/97

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

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.36(+) MHz. Info: (503) 385-9497. 6/97

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

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

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 8/97

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

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 10/96

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/97

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

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

RHODE ISLAND

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

TEXAS

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

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

VIRGINIA

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

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

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/97

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

WEST VIRGINIA

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

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

Search And Rescue Communications

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

You know the drill. You work hard and get everything finished so you can relax and do something enjoyable; and just as you sit down to relax, the world as you know it changes dramatically. I spent last Saturday getting caught up on a lot of little things that had been on the "to do" list for months. Finishing up a large number of them, I'd cleaned up and prepared to do some serious relaxing. Then the world changed. The storm came from out of the west and I discovered that at a wind speed of 67 miles per hour, the antennas would no longer remain atop the tower.

The microburst that hit the neighborhood also wrecked some trees, various sheds, and campers. A lot of shingles were dislodged and a few windows were shattered. As suddenly as it hit, it was gone. The wind speed indicator dropped to zero, the clouds moved east and calm was restored. Now it was time for the cleanup. It is amazing how many different ways a couple of Yagi antennas, some j-poles, and coax can find to intertwine. Nearly two hours later, all was kind of back in operational shape and I was at least back on the air. So much for a relaxing evening.

In the almost 10 years at my home, this quick wind gust was the highest I've recorded. It doesn't mean it will never happen again, or that another gust won't hit tomorrow at 70 or 75 m.p.h. The lesson is that we cannot be prepared for everything, but we need to be prepared.

Last year I spent a week at youth camp with one of my kids. It takes me several hours to get all my gear loaded and I've often had others tell me that I'm "well prepared." Some have even told me: "I don't know why you bring so much stuff, you never seem to need it." Yet when the tents blew down in a storm, I dug out a roll of twine. When someone poked a hole in their gas tank, I found a couple of metal screws and rubber washers to effect a temporary patch. Several friends who also seem to get dragged along to various youth camps and activities also come prepared — it seems to be our nature to think dark thoughts of what MIGHT happen.

On one such venture, my friend Dave decided to swing off a dirt road to bypass a large mud hole — only to drop into a much larger mud hole cleverly disguised with grass and sagebrush. Not to worry, he had chains and jacks and in no time we were on our way — only to find some other travelers stuck and less prepared. They were also glad Dave was "over" prepared.

Preparedness is often an untested thing. When the wind took care of my antenna farm, I thought nothing of digging out the gin pole, climbing belt, and safety rope to begin the task of repair. My neighbor was amazed that I had gear available for such an event. I didn't plan on high wind, it was just gear I knew I needed to take care of any problem that might occur on the tower and I had learned what I needed through previous events of lack of preparedness.

Preparation (as I know I've written in past columns) happens by observing others and sometimes being caught unprepared. I was once headed to a meeting with a public safety agency and had a flat tire — no big deal, you just put on the spare. Easy task unless you're in a dress uniform and discover the mechanic used one lug nut that was larger than the other four. Easy unless you have a standard lug wrench that fits only one size lug nut. I never travel now without a star lug wrench, the kind that fits several sizes and gives you enough torque to loosen lug nuts put on with an air wrench.

In recent months there have been stories from all over the country dealing with searches for people missing and unprepared. Whether it was a medical emergency ("I left my medication home"), or simply get-

ting lost ("I took the wrong trail and kept going. I thought it would lead me out of the mountain"), most of the time it involves a lack of preparation. Whether it is traveling in an area more difficult than expected, hiking without a map, leaving home without telling others of the travel plans, or not taking enough food and water, sometimes lack of preparation is fatal.

Your job as a communicator is first, to take care of yourself, and second, provide a service to the ongoing event. Leaving home without an antenna is not usually fatal, but limits your ability to provide service. Setting out to set up a field camp (on foot) is another story if you leave without shelter, food, and water. And yes, some communicators have arrived on site without gear, expecting, I suppose, the search base to have materials to lend.

If you leave home without it, three things can happen: 1) You'll be lucky and everything will go well; 2) You could experience a range of inconvenience from mild to severe, but you'll live to tell the story; or 3) Your friends will get to attend your funeral and tell everyone what a great person you were.

Please take a little time to be aware of where you're going, what supplies you might need, and then pack on the safe side! You cannot take it all, but you can exercise your mental ability and over prepare. When ever I am asked for an opinion concerning the gear someone has brought to an event, I never laugh if the whole vehicle is stuffed. People who laugh and poke fun at preparedness have never spent the night in a cold, rainy dark place, glad for an extra blanket and something with which to start a fire.

Many well-prepared people have good experiences and seldom experience inconvenience — the reason is simply they prepared and were able to deal with the unexpected.

Ya gotta talk!

News item: Millions of gallons of water flood Rexburg (Idaho) and all bridges leading into Madison County are destroyed. Schools are flattened and county agencies are notified. It could have happened but it was only a drill. According to the Associated Press report, county agencies realized just how unprepared they were. "This scared us to death," said Ricks College Administrative Vice President Jim Smyth. "A lot of our solutions don't hold up with something of this magnitude."

One sentence from the story caught my attention: "Organizations also worried about how they would communicate with each other." How many similar articles have you read with similar comments? I recall years ago talking with Lois Clark McCoy (of California SAR, NASAR, and Urban SAR fame) about communications and she pointed out in many events that communication was the key to success or failure.

Some years ago the airport switched from a UHF-FM repeater system to a trunked system. Local police agencies are looking toward encrypted, frequency-hopping systems. A number of businesses are trashing their in-house systems in favor of cellular service. It is no longer possible to interface to these organizations and their complex radio systems. I read an Internet comment last month from a fellow who argued that Amateur Radio was no longer a national resource. He claimed that agencies could simply hook up to a satellite and communicate instantly. I don't think so! Can you imagine the cost to a county (large or small) to effect coverage via satellite for a small emergency — let alone a large one?

As public service agencies invest in complex communications systems, the need is even greater for Amateur Radio involvement for times of emergency. The day-to-day needs of agencies may require encryption and sophistication, but the disaster needs involve simple coordination and links between agencies — agencies that would normally not require links and message relay. Getting Amateur Radio involved with local agencies begins with two issues. First, is your local group prepared to get involved, and second, do your local agencies understand the difference between day-to-day needs and disaster needs?

The first topic has been covered in past columns and I won't cover it now. Making an agency aware of disaster needs is great if the officials involved have been through a disaster — most haven't. A large number of officials, when asked, will point to a recent table-top exercise and show how they "communicated" with no problem — they just passed messages into the "simulated" comm room and that was that. No problem. Many disaster planners and agency representatives do not have a clue as to how messages get delivered or how comm systems work. This is your job, to create a learning situation where you can get involved and SHOW your skills. You may need to start by being that "simulated" comm section and wait for the day the exercise moves off of

the table and into reality.

It seldom works if you march into the mayor's office and "expose" the city's lack of disaster communications ability. What works is to patiently beg to attend the mock tabletop exercises and then get your foot into the door when the exercise moves outside to simulate an earthquake or airport disaster. You and I both know the value of Amateur Radio because we live it, we operate it, we prepare to use it, and we know our potential. Most city officials simply worry who is going to win the next election.

You have to be prepared, on site, and ready to jump in when the exercise discovers the VHF-FM police system cannot contact the trunked 800-MHz airport system and when someone realizes the medical examiner isn't on anyone's system. That's when you calmly whisper in the incident commander's ear that you have people at each location and can handle the messages. That's when YOU smile and say "No problem." One warning to you Amateur Radio operators: Once you have proved your ability, it takes a lot of people, effort, and work to keep prepared. When other agencies learn the value of Amateur Radio, you'll quickly get more requests than you can handle! Expect it, plan for it, and be ready. It is OK to align yourselves with one or two agencies to start with, and, as your group grows in experience and preparedness, support other groups.

If you tackle more than you are able to support, your image quickly tarnishes and it takes a lot of work and polishing to get your reputation shiny again. Just take it slow, grow as your membership grows, keep your training program active, and keep your members involved and informed.

SAR Skills

The National Association for Search and Rescue (NASAR) has a great outline for skills needed for qualification as a SAR technician. In the upcoming months I'll list some of the qualification areas that may give you some training ideas. You may not be an expert in these areas but you should be able to find someone with a local SAR group that has experience and is qualified to teach your group at least the basics.

This month's area is basic survival. The NASAR standard is to:

- list and prioritize the necessities of life — describe the four parts of the initial response to a life threatening situation
- define a "comfort zone expander" (to increase one's ability to react positively to stress
- list at least five ways to control fear — explain the survival situation plan (STOP — Stay, Think, Observe, Plan)
- define a "positive mental attitude"
- differentiate between the requirements for short-term survival and long-term survival
- list three situations commonly encountered on SAR missions that may lead to a survival situation
- describe how the human body loses heat (radiation, conduction, convection, evaporation, respiration)
- describe the basic water and chemical needs of the body, and — list the average daily food and water requirements for the human body.

Some of you are saying "why bother" with knowing all the above stuff. The answer is that the more you understand the basics and the processes involved, the better you are able to properly prepare. If you understand mental and physical aspects of survival, you will know what to bring and how to react to life-threatening situations.

Communications standards?

An interesting inquiry came from California asking about certification specifically for communicators. The NASAR standards apply to SAR people in general and don't address specific functions such as communicator. Do you have any ideas? I would invite you to put on your thinking caps and suggest criteria for certification in communications. You might consider the basics as well as specialty areas. Do you think operators should be certified in first aid?

I don't have the OK to print the name (and affiliation) of the person that asked, but the concern was the lack of any national-level certification. If operators from one area travel to another area, the lack of common standards would be a problem in recognizing skills and, as the inquiry stated, "beyond our county, our members will not be viewed as what they are: highly trained and motivated emergency response volunteers."

A national-level certification program (ARRL or NASAR?) might be a great boon in recognizing trained and qualified operators. Please let me know your thoughts by e-mail (jw@desnews.com) or regular mail. Until next month, enjoy the summer and watch out for high winds! WR

Linda Reeder, N7HVF

HANDI-HAM Camps are Fantastic

The Courage HANDI-HAM System is a non-profit organization dedicated to helping persons with physical disabilities earn their Amateur Radio Licenses. Because many HANDI-HAMS cannot read regular print books, they provide adapted study materials like tape cassettes, computer disks, and even some Braille materials. A unique opportunity awaits members who attend a week-long camp and learn Amateur Radio during a Radio Workshop session.

One of the instructors, Dr. Dave Justis, KNØS, makes representations of circuit components out of cardboard and wire. This is a great help to an individual who is visually impaired! Dr. Dave is an emergency room physician in Apple Valley, Minnesota, one of many volunteer "Elmers" who give a week of their time for each camp session. Classes cover all levels of amateur licensing.

Our day goes something like this: We start with a good breakfast, then attend classes from 9 a.m. to noon. Besides lots of hard work we love to have fun, so after lunch we have recreational activities until 3 p.m., then it's back to class until 5 p.m. After dinner there are seminars, more fun activities and sometimes another class session. Then on Saturday the VEs come to test. HANDI-HAMS highly recommends that the students study before coming to camp. There is so much material to cover that a person cannot expect to learn it all in one week. Besides, studying before camp increases your chances of passing the exams. Believe me, I know!

The people enjoyed the camp so much that just recently classes were added for those who were not upgrading. A computer class and an operational skills class are also being offered. HANDI-HAMS places a high value on students learning proper on-air operating skills. There was some excitement this year at the California camp in the operational skills class when they made a contact with the Kennedy Space Center in Houston, Texas, on 20 Meters. The OP instructor came running in to the computer class and said if we wanted our turn at talking with the Space Center to hurry and get in the radio room. I am so excited to be getting a QSL card from them.

For the past four years, I have been one of the No-Code instructors at the California Camp. This year I decided to take the computer class because just recently I bought an AST desktop computer. There is so much to learn, such as DOS commands and Word Perfect. I learned many of the DOS commands and some about Word Perfect. I also learned how a blind person can access the Internet by way of DOS.

Recreational activities are superb. We rode on the pontoon boat on Lake George. I remember the first time I rode on the pontoon boat eight years ago, talking to an amateur station in England while boating on the waters of Lake George. Another activity was going to Itasca State Park where the Mississippi River begins. They had us walk across the bridge. There is a wooden bridge you can walk on or you can cross by walking on the rocks. That was pretty scary, but it was fun. Of course, there are a lot of fun activities at the California camp as well. One year we went to Downey, California, and climbed on a replica of the space shuttle. That was quite an interesting experience. This year Bill Pasternak, WA6ITF, came to speak to our group. He was really great.

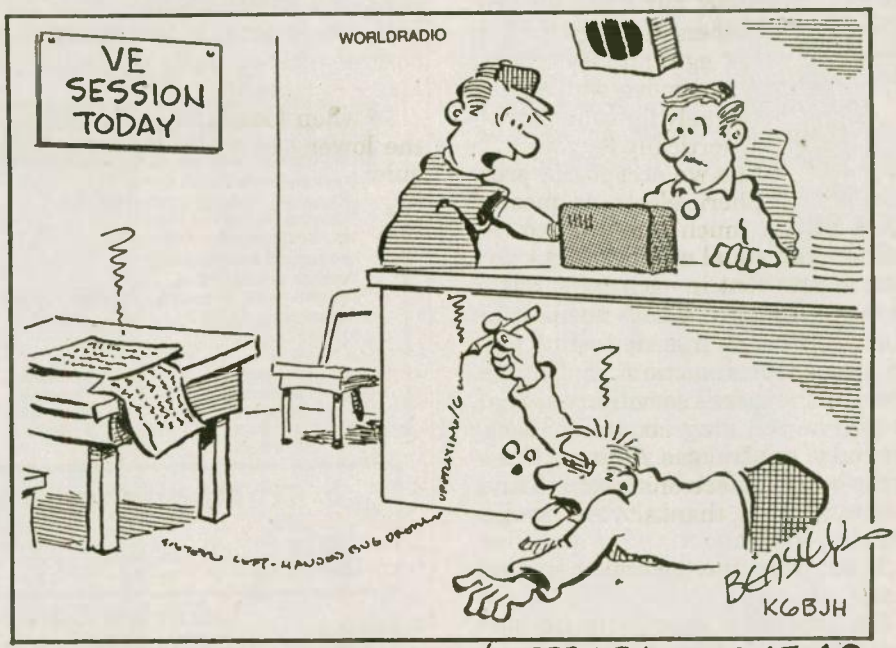
HANDI-HAMS were given a donation for the California camp of a three element tri-band beam antenna and tower. We also put a G5RV up so we could get on 40 Meters. This gift was given by Wendell Chapman, W6VIF, from Arcadia, California. Two years ago, Janet, KØJE, and Janice, KØJA, Robidoux and Ev Anderson, WBØIAT, donated a Rohn tower and a tribander at Courage North. It is 50 feet up. Now both camps have excellent ham stations. Thanks so much for your generous gifts.

HANDI-HAMS has truly enriched my life.

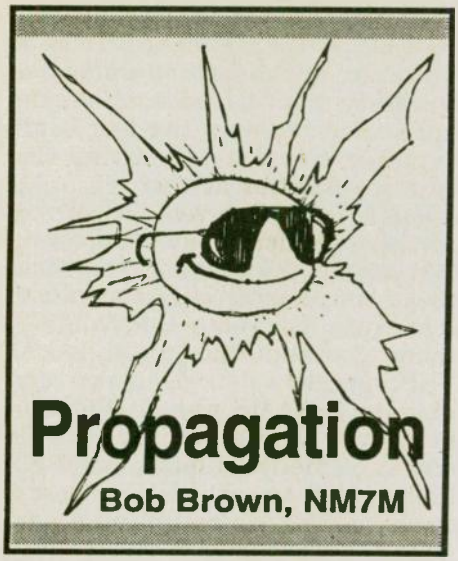
•••

Do you have a physical disability or know someone who does? Contact the Courage HANDI-HAM System for information on learning Amateur Radio.

Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
(612) 520-0515
handiham@mtn.org WR



GOOD GRIEF, SAM--- THIS THING'S BEEN RUNNING AT 40 WORDS PER MINUTE, NOT 20!



"Everything changes; nothing is forever!" That's one of life's lessons that we're reminded of, again and again. I won't belabor the point by citing all the different ways that old adage is driven home to us in our personal lives. Instead, I'll take it over to a physical setting, including the ionosphere that we depend on, and dwell on the degree of change, as we see it unfold before our eyes. That is an important idea as it brings us to the need for observations, the one thing that our understanding depends on.

At this point in time, we're all involved in radio propagation. We make our own observations about that, whether the band is open or not. We don't dwell on the basics of propagation, say the electron densities up there that refract our RF and move it ahead. But others did work on that problem, years ago, and we accept their findings and move on, sending our signals obliquely for communication instead of vertically for scientific purposes. While we accept the presence of ionospheric electrons, most of us don't pay much attention to the fact that an equal number of positive ions are present in each cubic meter of the ionosphere. That's the case as Nature loves charge neutrality just like it abhors a vacumn. But in the ionosphere, there's something else we should be thinking about, the background of neutral gas. After all, that's where those electrons and positive ions came from, thanks to solar radiation.

At any rate, having staked out the major players, I think it's fair to say most amateurs think primarily of ionospheric electrons when it comes to propagation, only giving grudging thought or consideration to positive ions because they take away electrons by the recombination process, especially at night when the sun is down. The neutral atoms and molecules which outnumber electrons and ions by anywhere from a 1,000:1 to 1,000,000:1 are just not given much thought at all. And that's too bad as they're really important.

But if amateurs are remiss in not thinking about the neutral atmosphere, not to worry; others have been concerned and have worked out the main features of the atmosphere — the pressure, density and temperature variation with height — starting with crude, mechanical methods anchored, if you will, right here on the ground. I won't go into all the details but photographs of meteor trails, for one thing, have helped to establish the density of the upper atmosphere and the anomalous propagation of sound, going back to sounds of artillery fire in WWI, helped to unravel the temperature variation with height.

Following WWII, other ground-based experiments were undertaken, now with the use of balloons and rockets. So there were pressure measurements on rocket flights tracked by radar as well as experiments with falling-spheres ejected from rockets and sound observations of explosions by rocket-borne grenades. An interesting extra bonus from sound and meteor studies was how they showed the presence of winds at high altitude, even large wind shears over a small vertical distance, and those have been confirmed by studies of the distortion of chemiluscent trails of vapor released by rockets.

So when looked at in those ways, the lower atmosphere is not just a quiet system, sitting there and waiting to be ionized at sunrise. We know from all the weather systems that it is moving down here close to ground level and the experiments I'm talking about also show it moves horizontally at speeds from 10 to 100 meters/second up to around the 100 km level. So it should come as no surprise that it's moving at even higher altitudes too but let's just keep the discussion at low altitudes for the moment, not going higher than the E-region. That's where a transition starts that's worth noting and I don't want to pass it up, unmentioned.

That transition is around 100 km, called the turbopause, and below it, nitrogen and oxygen molecules are well-mixed by turbulence coming up from weather systems below. Ionospheric electrons, not being very massive, are in there too and travel around at high speed, making many collisions with the abundant neutral species. The positive ions, equal in number to the electrons but less abundant than the neutrals by more than a factor of a thousand, are not major collision partners for electrons. But collisions between positive ions and neutrals are very important and with the two partners being equally massive, the positive ions are strongly affected by collisions with the more abundant neutral species. Indeed, the neutral species can drag along, as it were, the positive ions by frequent collisions.

Ionospheric electrons are carried along too, being on "short leash" due to their strong electrical attraction to positive ions. As a result of that strong coupling between gas and ionization at those low altitudes, it is possible to use ionization as a "tracer," picking up the motions of meteor trail ionization by radio echo techniques and inferring the motions of neutral gas up to 100 km altitude. The radio technique, being operable day and night, yields far more in the way of data than occasional photographs of meteor trails, thus allowing the separation of prevailing winds from the variations with seasons.

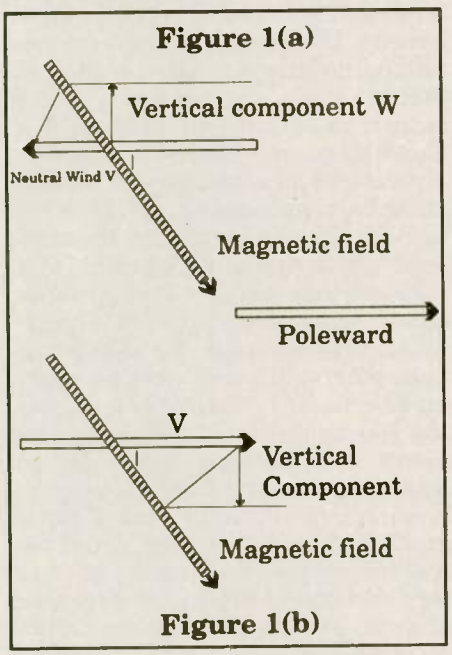
The turbulent mixing of constituents starts to diminish above the turbopause, with atomic oxygen appearing as a result of dissociation of

oxygen molecles by solar UV and the various constituents start to be sorted out by the effect of gravity. And the degree of coupling decreases with increasing altitude, the gas thinning out and the charged particles, electrons and positive ions, begin to show effects from the presence of the earth's magnetic field which pervades the entire region. Thus, magnetic effects come into their own when the charged particles are free from collisions with neutrals, to the extent that they can carry out gyrations about the field. Put another way, magnetic effects become important for the charged particles when the mean distance between collisions is greater than the circumference of an orbital motion.

Now the mean free path, the distance between collisions, increases from about 1 meter at 100 km altitude to 1 km at 300 km altitude so one can see the coupling becomes more tenous above the E-region. To give those ideas further meaning, the size of orbital motions around field lines are in the range of centimeters and meters for electrons and positive ions, respectively. So above the E-region, electrons and positive ions are tied together by both electrostatic attraction and held like beads or rings on magnetic field lines. But that doesn't mean that neutral particles can't affect them, only that the neutrals can shove them up and down field lines but not much across field lines.

At this point, I can hear you saying "What in blazes does all this have to do with propagation?" My reply, "Lots!"

For example, one of my last columns had to do with something termed "excess system loss", the amount by which signals are weaker than you might calculate, using all you know about the ionosphere. Well, "all you know" is the catch. Put it another way, there may be a lot you don't know when making those calculations as current physical reality may be different from your assumptions. For example, there are day-to-day changes in the ionosphere, say fluctuations in the F-region critical frequency about the averages from long-term ionosonde observations. But it is not out of the question for the ionosphere to change because of unusual neutral winds affecting the distribution of ionization. We can show that easily by using what was just discussed, winds pushing ionization up or down field lines. Those possibilities are illustrated in Figure 1 where the geomagnetic field slopes down toward ground, as in the Northern Hemisphere, and neutral winds are considered, equatorward in case (a) on the top and poleward in case (b) on the bottom of the figure. In case (a), the equatorward wind has a component of velocity upward along the field line and could drive local ionization upward by collisions while the poleward wind in case (b) has a component downward along the field line and could drive ionization to lower altitudes.



So the level of ionization at a given height above ground would depend to some extent on the neutral wind there. A more interesting situation would be when contrary winds exist, a shear like that mentioned earlier, with a wind blowing poleward above another wind at a lower altitude blowing toward the equator. In that case, ionization would be pushed down from above and pushed upward from below, the resulting motion of ionization would form of a new, enhanced layer of ionization in the spatial region between the two wind components and would last for the duration of the wind shear.

That is one aspect of the formation of sporadic-E layers which you may have heard about, strong wind shear compressing ionization into a thin layer about a km thick and extending over a 100 km or more. VHF operators find Es layers very exciting, when high levels of ionizations from wind shears raise MUFs and support DX propagation at 50 MHz and above. But HF operators consider them just a nuisance, the strong ionization at E-region altitudes shunting downward their RF signals aimed at DX, resulting in short E-hops where long F-hops had been hoped for. So steady winds can affect how ionization is spread around the ionosphere but steady winds are not the whole story.

The neutral atmosphere, being a fluid, can support oscillatory, wave-like motions. In a sense, it's like the situation where a cork bobs up and down while floating in water. Thus, small "parcels" of air can bob up and down, gravity and buoyancy tending to restore or return them toward their equilibrium positions when displaced slightly above or below those positions. We are already familiar with sound waves, compressions and rarefactions of gas propagating sound at audio frequencies. Of course, there are sound waves at higher pitch than the audio range we're used to, say used in dog whistles, and at lower frequencies too, something like the deep rumbles of sound that come from mechanical disturbances, earthquakes or volcanic explosions, which give rise to disturbances of long wavelength.

Beyond those wave motions where we have some experience or about which we have reasonable intuition, there are other waves in the in weather systems which develop in the neutral atmosphere. The book *A Field Guide to the Atmosphere* by Schaeffer and Day, and published by Houghton Mifflin Company, gives examples of wave formations where the moisture in clouds serves as the tracer for the gas motions. So with that as background, you shouldn't be surprised when you're told that wave motions can exist in the high atmosphere, well above weather systems. But what might surprise you is that the wave motions, being

coupled to ionization to some extent, may show up in ionospheric investigations and could well affect propagation.

This brings up the idea of "traveling ionospheric disturbances" or TIDs, as they're called. As their name implies, they represent forms of disturbance in the ionosphere, variations in the electron density that depart from more normal circumstances and show some horizontal motion. In that regard, Figure 2 shows wave-like electron density variations observed by an ionosonde at Springfield, MA in '68. Those density profiles were obtained by noting the virtual height of echos at seven different frequencies, from 1.6 MHz to 3.6 MHz, in the course of about three hours, starting around local midnight, and plotting them with the assumption that the wave motion was propagated horizontally at a speed of 768 meters per second. That particular TID was large in amplitude and covered a wide area range, south to Mississippi as well as west to Oklahoma. Experience shows that TIDs tend to propagate from high to low latitudes and are associated with auroral activity.

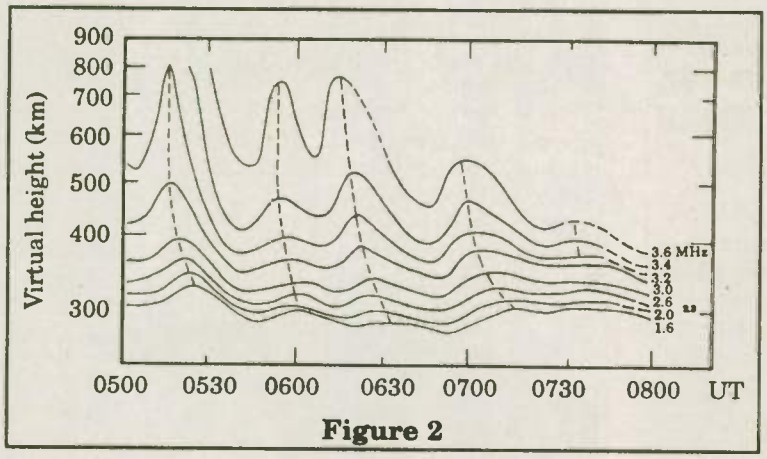


Figure 2

As you can well imagine, the more outstanding examples of those wave motions find their way into the literature. But that is not to say that lesser, smaller amplitude wave motions are not present nor abundant. In short, well-organized wave motions receive a lot of attention when observed but the common, less organized motions are present all the time, sort of a background noise. But the coupling of atmospheric motions to ionization, termed "plasma" at higher altitudes in the ionosphere, adds to the variability of ionospheric properties and the propagation that results.

If one thinks "globally" about air motions, the change in the N-S component of winds at high altitudes with sunrise and sunset, from poleward during the day to equatorward at night, has the effect of raising the F-region at night and helping maintain it because of lower recombination rates with positive ions at higher altitudes. So you see what might seem to you as a hidden or unsuspected variable from the neutral atmosphere can have a positive effect on your DXing. If you haven't thought about it, that has to be an unexpected bonus and should make you feel better, even now in the depths of solar minimum. WR

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

Building a winner

Bill Jones, KD7S, didn't hesitate when word spread about a QRP building contest to be judged during QRP ARCI's Four Days in May at the 1996 Dayton Hamvention.

At the time of the announcement the QRP world was buzzing about Wayne Burdick's "Forty-9er" transceiver. A competition challenging one and all to do their best and most innovative work with this neat little 40-meter milliwatt direct conversion design set a fire under Jones, whose building prowess has been widely featured, from *QST* magazine to *QRP Quarterly*.

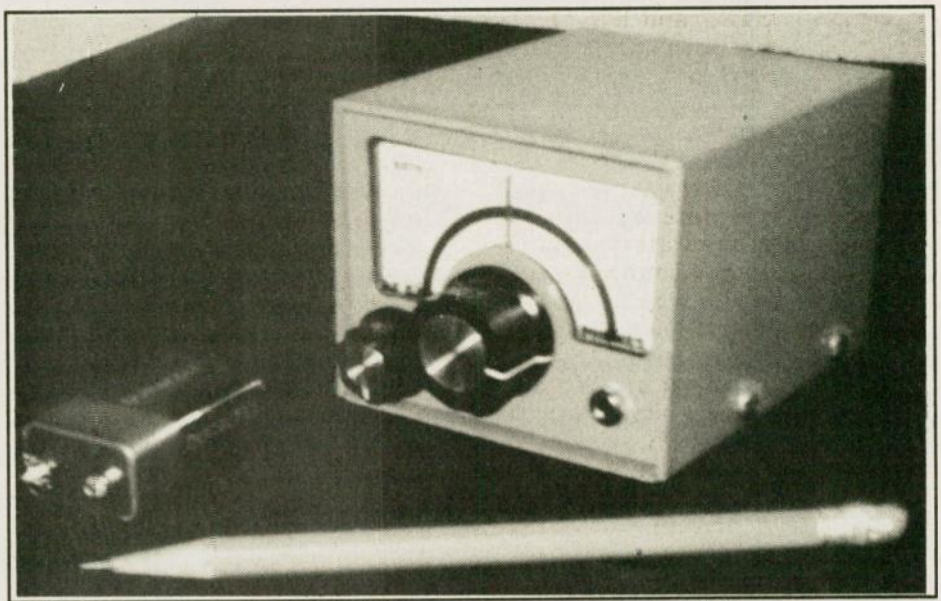
"I chose to build my 'Forty-9er' completely from scratch using whatever parts I had in the junk box," Jones, a veteran QRPer from Sanger, California, said. "For that reason I had to make a few modifications to the original design. For example, I couldn't find anything close to an 82 mH inductor for (a required RF choke), so I improvised by using an old transistor radio dynamic earplug. It measured about 70 mH on my ancient Heath RLC bridge. I did have to buy two capacitors and a tuning knob — so my total cash outlay was $4."

"I laid out my own PC boards (separate receiver and transmitter) using (the computer program) CorelDraw and transferred the pattern to laser printer toner transfer paper," he said. "The boards are mounted vertically inside the cabinet and held together with quarter-inch aluminum spacers. The dial mechanism includes a 6:1 vernier dial that drives a 365pF plastic variable capacitor taken from an old transistor radio. I get a solid 8 kHz tuning range from the VXO."

The cabinet is also built from scratch using soldered-together double-sided PC board stock. "It was finished with two coats of machine gray paint over a single coat of primer," Jones said. "I have worked a dozen states, coast to coast, with my 'Forty-9er.' This may not be the most sophisticated rig I've ever built, but every time I put it on the air it definitely qualifies for the 1,000 Miles Per Watt award."

Jones' combination of fine craftsmanship, circuit innovation and uncanny ability to scrounge and substitute parts certainly paid off. He flew west from Dayton with "Forty-9er Building Contest" top honors in his hip pocket.

And in case you're wondering, yes, his little radio sounds just as good as it looks.



Craftsmanship and innovative design brought Bill Jones, KD7S, top honors in the Forty-9er Building Contest at the 1996 Dayton Hamvention. ***—photo by KD7S***

QRP Hall of Famers

There are few honors in low power communication more prestigious than QRP Amateur Radio Club International's QRP Hall of Fame.

Members are among an elite corps of QRP trailblazers — whether for accomplishment in low power circuit research and development, equipment design or on-air operation.

Those inducted in 1992 reflect the caliber of radio amateur making the grade: **Doug DeMaw, W1FB; Roy Lewallen, W7EL; Randy Rand, AA2U; and the Rev. George Dobbs, G3RJV.**

This year's group adds even more luster to this hallowed hall.

Nominations for 1996 came from the QRP ARCI membership at large. Outgoing members of the organization's board of directors then voted to determine this year's inductees.

Michael Czuhajewski, WA8MCQ, QRP ARCI vice president, coordinated the nomination and voting process. New inductees were ceremoniously announced during the QRP ARCI banquet at the Dayton Hamvention.

Based on information provided by Czuhajewski and radio amateurs who submitted nomination letters, here are thumbnail sketches of the newest members of the QRP Hall:

Brice Anderson, W9PNE, of Lancaster, Illinois, has been a QRPer since he was a teenager in the early 1930s, coaxing one-watt from a UV-199 tube. While low power had always been his interest, Anderson's passion turned to milliwatting in the 1970s, racking up honors for Worked All States at 50 milliwatts output and 37 states at 25 milliwatts.

In 1975, Anderson was recognized by the ARRL for WAS at 500 milliwatts input — the first such QRP endorsement.

In 1979 during *CQ* Magazine's first *CQ* WW WPX CW competition, he took top honors in the QRPp division worldwide. In 1982, "The Milliwatt: National Journal of QRPp" honored him for 50 years of QRP operation, and issued Anderson DXCC QRPp Trophy No. 40.

Competing in the CW portion of the ARRL's 1989 DX Contest, Anderson qualified for Worked All Continents in five hours running just 20 milliwatts.

Anderson has been widely published, with his "Sucrets Box QRP Rig" and many articles on small transmitting loops earning him acclaim across the QRP spectrum.

George Burt, GM3OXX, of Edinburgh, Scotland, a veteran QRP operator and designer, was the first recipient of the QRP Club of Great Britain's QRP Master Trophy, one of the club's highest honors.

Burt is father of "The Oner" milliwatt transmitter, believed to be the most-duplicated QRP circuit in the world. He also designed other popular G-QRP projects including the "OXO" and "STX," and has been a frequent contributor to G-QRP's magazine *SPRAT*, distributed worldwide.

In 1978, Burt was presented (by Adrian Weiss, WØRSP) the second-ever DXCC Milliwatt Trophy, awarded to operators working 100 countries with one watt or less. He has more than 70 countries confirmed via two-way QRP.

Burt's QRP gear is home built and self-designed. He's never operated above one watt output and confines his aerial systems to simple wires.

While well-known in many QRP circles in the United States, Burt reigns as a QRP heavyweight around Great Britain and across Europe.

Tom Davis, K8IF, of South Lyon, Michigan, is widely credited as being the purveyor of "modern QRP."

A former president of QRP Amateur Radio Club International, Davis led the charge in the 1970s to shift the organization's definition of QRP from a 100-watt limit to the present-day five-watt ceiling.

Change, Davis learned, did not come without a price.

Within the club — founded in 1961 — debate raged. The lower power limit Davis endorsed was not embraced by everyone. But in the late 1970s, he deftly guided QRP ARCI through rough political terrain to its new QRP encampment.

As a result of Davis' efforts, QRP ARCI's bylaws were recast. Its awards program was reconfigured to reflect the five-watt limit. And low power and experimentation became energized bywords for QRP ARCI.

Due largely to Davis' hard work and vision, Amateur Radio worldwide views QRP much differently today than it did 30 years ago.

Wes Hayward, W7ZOI, of Beaverton, Oregon, teamed with Doug DeMaw, W1FB, to write what is widely referred to as the QRP experimenter's bible: "Solid State Design for the Radio Amateur," published in 1986.

In the world of QRP, Hayward's research and development stretch from pioneering work in high performance direct conversion receiver circuitry and intricate crystal filter design to important advances in T/R switching, oscillator and amplifier design, receiver RIT and beyond.

Other renowned QRP designers, including Roy Lewallen, W7EL, credit Hayward with sowing the technical seeds from which further innovation has grown.

Hayward's "Mountaineer" transceivers and "Universal QRP Transmitter" have been built by untold QRP experimenters. His many, many technical articles have been published worldwide.

Hayward's "Introduction to Radio Frequency Design," first published in 1982 and recognized as a "must-have" addition to many QRP bookshelves, has recently been reprinted by the ARRL.

Rick Littlefield, K1BQT, of Barrington, New Hampshire, introduced the QRP world to NE602 superheterodyne transceiver design. And it hasn't been the same since.

Dating back to January 1989's *Ham Radio Magazine*, Littlefield's new twists on the NE602 double-balanced mixer — previously relegated to direct conversion circuitry — shook the benches of QRP design.

His ideas lit the way for further advancement in transceiver development in the 1990s.

In collaboration with the MFJ Corp., Littlefield's design entered the commerical arena through the company's wildly popular MFJ-90s series of QRP superhet transceivers. Thousands of radios bearing Littlefield's innovations are in use around the United States and the world.

Littlefield is also an accomplished homebrew craftsman and writer whose articles over the years have appeared in dozens of QRP publications both here and abroad.

C.F. Rockey, W9SCH, of Albany, Wisconsin, has long been respected as both a QRP philosopher and a grand operator whose kindness, patience, technical expertise and shared experience have paved the way for many newcomers to low power operation.

His regular musings in Michigan QRP Club's *The Five Watter* often touch on Rockey's belief that doing a lot with very little is a laudable path to travel.

His byline frequently appears in *QRP Quarterly* and G-QRP's *SPRAT*, and Rockey's antenna designs have often been emulated or footnoted in the works of others.

Michigan QRP Club's Lowell Corbin, KD8FR, wrote that "in an era when many oldtimers reject newer hams because they did not come up 'the hard way,' or else shrug their shoulders at their lack of technical expertise, 'Rock' welcomes them to the world of what he calls 'real ham radio' by patiently teaching them fundamentals and encouraging them to believe that they, too, can build and experiment with the best of them."

Adrian Weiss, WØRSP, of Vermillion, South Dakota, has been a high-powered player in the lower end of the QRP game a long, long time.

Look up "milliwatt," and there's Weiss' mug shot.

In the early 1970s he co-founded *The Milliwatt: National Journal of QRPp* and by the mid-'70s had become QRP editor of *CQ* Magazine, a post he held for a decade. His regular column was viewed by many as an important benchmark signaling QRP's merge into amateur radio's main stream. His accomplishments at flea power levels were conversation pieces far and wide.

At Weiss' urging, a QRP category was created for *CQ* Worldwide DX Contest.

Weiss sponsored the DXCC-QRPp award, celebrating contacts with 100 countries using less than five watts output; the DXCC-200-QRPp award (200 countries at five watts); and DXCC-200-Milliwatt award (200 countries at less than one watt).

To many, many QRPers today, however, Weiss is perhaps best known as author of two of the most popular books ever written about low power communication: *The Joy of QRP*, and *The History of QRP in the United States*, limited-run gems that have become prized collectors' pieces. WR

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Board of Directors meeting

The Board of Directors of 10-10 held their annual meeting in Chicago, Illinois, on Saturday, 8 June, 1996. All officers and directors were present. A pre-board meeting was held on Friday evening before the official board meeting, during which items to be presented to the board on Saturday were thoroughly discussed. This four hour meeting helped resolve many of the issues and provided for streamlined board action during the Saturday meeting.

The official board of directors meeting convened on Saturday at 8 a.m., with all members present. The morning session was utilized to hear officers and directors reports, related discussions and resolution of unresolved committee actions. The afternoon sessions consisted of action on unfinished business, new business, resolutions and assignment of committee action for the coming year.

Some of the actions taken were:

An amendment to the by-laws to provide for the secretary to declare unanimous election of candidates who run unopposed in 10-10 elections.

Approval for the President to present a "Presidents Award" plaque to those 10-10 members who demonstrate outstanding service and or dedication to 10-10.

Establish a committee to investigate the possibility of award certificates for those who have been 10-10 members for a specific length of time (for example, 10, 15, 20 years, etc.).

Established the position of TEN-TEN-L Coordinator who will be responsible for 10-10's Internet connection, web page, and associated activities. L.B. Cebik, W4RNL #41159, was appointed to fill this volunteer position.

Discussions regarding a possible 1997, 10-10 convention resulted in assignment of a committee to determine if any chapter, or individual, is willing to assume the responsibility of host. Without a volunteer host, a discussion was held as to the possibility of holding a "10-10 Get Together" in conjunction with the 1997 Dayton Hamvention.

Detailed discussions were held on numerous other items, all of which are detailed in the minutes published in the July issue of the *10-10 International News*.

The Board meeting adjourned at approximately 4:45 p.m., with action taken on all agenda items.

A Saturday evening social get-together was held with approximately 30 local 10-10 members who visited with the officers and board members. An enjoyable 2 hours were spent discussing 10-10, band conditions, chapter activities and ham radio in general. The board appreciated meeting those local members who made their way to the Oak Brook Marriott for this social activity and thanks director Jack Miller, W9WYN #6894, for making the arrangements for the special social hour.

W6OI on the Air — Louise Chapman, N6ELK #36654, is the designated 10-10 Net Control operator for W6OI, each Wednesday beginning at 1800Z on 28.800 MHz. Please include an SASE when requesting a W6OI QSL card via N6ELK, 3210 Clark Ave., Long Beach, CA 90808.

Air Capital Chapter — Leanna, KFØZL #65217, is the new "Worked all States" manager for this chapter. Applications should be mailed to her at Box 173, Augusta, KS 67010.

Ham license plates — The Colorado Bighorn Amateur Radio Museum is in need of amateur call sign license plates from the states of DE, RI and UT to complete their all states amateur radio license plate display. You do not have to be a 10-10 member to help complete this exhibit. If you can help, and would like your plate on display for all to see, send your plate to Don, KØPVI #9902, PO Box DX, Genoa, CO 80818-0119.

Silent Key — 10-10 lost a very dedicated and long time member recently, when John Hugentober, N8FU #16154, became a Silent Key. John was 10-10's 8th Area Manager along with holding a number of other amateur radio positions, including being listed on the DXCC Honor Roll. Even though John is no longer with us, the impact that he made will be lasting.

10-10 Day Contest — The new 10-10 Day Sprint Contest, to be held on 10 October, will be here soon. Mark 10-10-96 on your calendar and participate in this new 24 hour 10-10 contest. Remember you do not have to be a 10-10 member to par-

Mail call:

Don't miss out on what's happening in Amateur Radio. Fill in page 9 and receive ***Worldradio*** every month!

ticipate. Use contacts to get your 10 contacts for 10-10 membership. If you are a member, use contacts made during the sprint to increase your BAR count, add counties to your county award list or new prefixes to your WPX (Prefix) award list. At this writing the 10 Meter band has been having some good openings, and with a little luck, there will be openings on 10-10 (96 that is!)

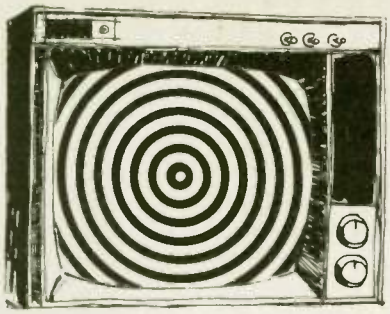
The rules are basically the same as for any 10-10 QSO Party except that any mode of operation can be used; AM, FM, CW, RTTY, or SSB. The sprint begins at 0000Z on 10-10 and ends at 2400Z on 10-10-96. Complete rules are listed in the July issue of the 10-10 News. Logs go to Don Zielinski, KØPVI #9902, 10-10 Contest manager, P.O. Box DX, Genoa, CO 80818-0119, on or before November 15, 1996.

Information about 10-10?

If you would like information about 10-10 and how you can become a member and receive your very own unique 10-10 number, send $1 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ #54625, 10-10 Information Manager, 9832 Gurdon Court, Boise, ID 83704-4080. No SASE please, as the information package requires a 9 x 12 envelope.

You will receive a copy of the 8 page "prospective New Member brochure" which contains everything you want to know about the 10-10 organization, a listing of all 10-10 chapters, their day, time and frequency of net operation and an application form. Also enclosed will be a copy of the latest issue of the *10-10 International News*, the 32-page 10-10 quarterly magazine.

If you have lost, or forgotten, your 10-10 number, the same as above to Mike will get you the information package along with your original 10-10 number. If your membership in 10-10 has expired, send your dues ($10/year) to 10-10 International Net, Inc., 643 N. 98th Street #142, Omaha, NE 68114-2332. You will become an "ACTIVE" member again and receive all of the benefits of 10-10 including the quarterly 10-10 international news. Remember 10-10 numbers are issued for life and your originally issued number is always yours. **WR**



RFI & you

Jack Althouse, K6NY

There are two kinds of ham radio operators: Those who have RFI problems and those who are going to have them. Really? You bet! The electronics industry is hiring engineers at a high rate to design new radio receivers and transceivers called "Personal Communications Devices." They're going to appear in your house, your neighbor's apartment, everywhere. And a lot of them are going to quit working when you start to transmit.

The FCC has made the manufacturers put warning labels on these devices stating "This device must accept any interference received, including interference that may cause undesired operation."

So when your neighbor calls to tell you that the screen goes blank on his new digital TV at the same time that your voice comes out of his microprocessor-controlled espresso machine what do you do? Tell him to read the warning labels on the rear of the machines? Forget it! If your transmitter causes RFI you have a problem. It's partly a technical problem but mostly a people problem.

Now is the time, before you get that call, to get prepared with some technical knowledge about RFI, its causes and cures.

Let's begin by looking at a problem that is common these days, telephone RFI. Anytime you talk on 20-meters the lady next door hears you on her telephone. She uses her telephone a lot.

How do you stop it? Low pass filter on your rig? A filter on you transmitter's AC power line? Balun on your antenna? Better ground system for your station? All of these are considered "good engineering practice" and, if you are lucky, they may cure the problem but, more than likely, they won't help at all. Why not?

Let's look at the technical fundamentals of the problem. EMI engineers use what they call the "Source-Receptor-Path" model. To have an RFI problem there must be a SOURCE of RF, a RECEPTOR of interference and a PATH connecting them. In this case we think we know the SOURCE (our transmitter) and the RECEPTOR (the telephone). But we don't know the PATH just yet.

To find the PATH let's first look at the SOURCE. Our transmitter produces, let's say, 100 watts. Because of our long history of TVI problems, the manufacturer of the transmitter has provided a tight metal box to keep it from directly radiating. He also has put filters on the leads coming out of the box (power input, key and microphone leads, remote control wiring, etc.). Filters aren't perfect but the RF leakage from these leads will be in the low milliwatt or maybe the microwatt range.

There is one exit for the 100 watts and that's the antenna connector. If your station is typical, a length of good quality coaxial cable pipes the 100 watts to an antenna where it is radiated for all the world to hear. So, for purposes of examining our telephone RFI problem, we can consider our antenna as the SOURCE instead of our transmitter.

If the antenna is the SOURCE then putting a filter on the transmitter's power cord is not going to help at all. Improving the ground system won't help either because the antenna will still radiate the full 100 watts. Now that we've identified the SOURCE these facts are obvious. But remember, before we identified the SOURCE they weren't obvious. Thinking the problem through sure can help solve it!

Now we need to find the PATH. Since the RF is radiated from the antenna the path starts through the air. Is it then picked up directly by the telephone? Not likely — the telephone is too small to be much of a receiving antenna. But it is connected to a large "antenna," the telephone wiring running through the building. If this cable runs through the attic it may not be far from your antenna.

Now that we identified the SOURCE, the RECEPTOR and the PATH we are ready to find the CURE. Clearly there is nothing to be done at the transmitter/antenna end (except possibly moving the antenna) because we want that radiation to continue so we can work DX with it. At the RECEPTOR end we almost certainly could get rid of the problem by shielding the telephone cable. That solution probably is not practical. Another, and easier, solution is to decouple the telephone from its cable at RF. This can be done without affecting the voice and data going through it.

The first choice for this CURE is the use of ferrite toroids. One inexpensive toroid commonly available has a half inch hole (Palomar Engineers part no. F82-77). The telephone line's modular plug will go through the hole. Run it through three or four times then plug it back into the telephone. Using type 77 ferrite the toroid acts partly as an RF choke but mostly like a resistor that absorbs RF. It will prevent the RF from entering the telephone (or at least reduces the amount going through) thus decoupling the telephone from the line at RF. It will not absorb the voice or DC going through the line. This is because the RF is "common-mode" and the voice signal is "differential-mode." We'll go into this phenomenon in detail in

a future installment.

This CURE works most of the time but, unfortunately, not always. It depends somewhat on the RF characteristics of the telephone and on the RF signal strength. In simple telephones the RF is detected by diodes that are used to keep the audio signal level constant. As long as the RF voltage is large enough to cause the diode to conduct it will be detected. Even though the RF voltage is reduced the sound does not change if the diode still conducts but once the signal drops below the conduction level the sound suddenly disappears. So, even if one toroid appears to not help at all, a second toroid may CURE completely. Experiment a bit.

If ferrites don't do it the next step is to use a filter. These are available commercially for around $15 to $30. They are fitted with modular plugs and just plug into the line and the telephone and in some cases they work.

One important feature of both of these CURES is that they do not modify the telephone in any way. You can't be held responsible for any later problems with the telephone. Keep in mind that the lady next door probably hasn't the faintest idea of how the telephone works. She just wants to use it in peace. Try to leave her that way as a happy neighbor. WR

SEDSAT report

Dennis Wingo, KD4ETA

The NASA Marshall Space Flight Center's Small Expendable Deployer System will not be a part of the SEDS/SEDSAT mission on STS 85 slated for launch on 17 July 1997.

The Marshall Center was having in assuring the safety of the Shuttle due to the tether during the deployment.

The SEDSAT Project Team at the University of Alabama, Huntsville, remains committed to the launch of SEDSAT on STS 85, and will be working with the Goddard Space Flight Center to assure this result. The satellite is ready to advance to the Phase II safety process at the Johnson Space Flight Center and no technical issues have been raised that would preclude the flight of SEDSAT.

The unfortunate result is that the lifetime of SEDSAT will be reduced from three years to only several months. However, this is preferable to no lifetime at all. WR

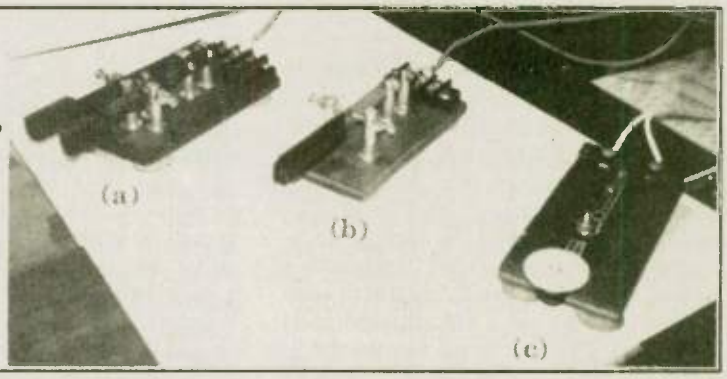
Wires & Pliers

Yes, you can build a key!

Gerald R. Skinner, K4LVZ

We don't need to be engineers to build one of the 3 popular telegraph keys in use today: (a) The Straight Key; (b) The Single Paddle [Sideswiper], and (c) The Dual Paddle Iambic.)

All three keys use basically the same idea: A hacksaw blade (properly cleaned) makes a great paddle/lever. This is a fact learned from the "Brass-Pounders" of the 1920s and 30s. All other parts were from the junk box (¼" aluminum tubing, 5/16" thick plywood, extra small suc-



From left to right: The Straight Key, The Single Paddle, and The Dual Paddle Iambic. —*photo by K4LVZ*

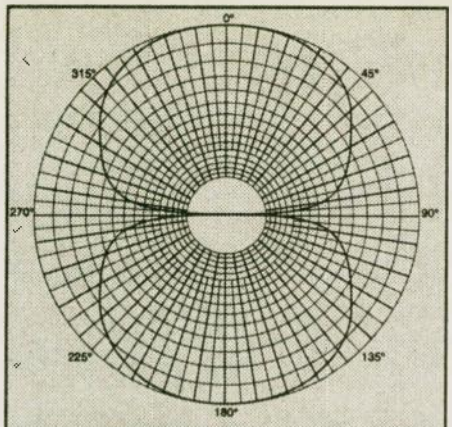
I needed a key for the workshop in my garage because my iambic and straight keys are wired, more or less, permanently into the station (in the house).

Being a Scotsman, I didn't want to tie up any more money in shop equipment, therefore the keys in the photo were built.

tion cups). Bolts, washers, lock washers, and nuts, wood finishes are either on hand, or in the local hardware store.

The total cost, if you buy all parts, for each key is less than $5.

Try it and see why your imagination can dream up! WR



AERIALS

Kurt N. Sterba

An amateur in Norway, Maine, said he was not renewing his subscription to ***Worldradio*** because: "It would appear that your antenna man has much more of an intent to destroy the credibility and reputation of folks and companies."

While I had thought that I was the very personification of the phrase, **"I will not lie, cheat or steal nor tolerate anyone who does,"** it was obvious this fellow felt quite differently about it.

To get an outside opinion about all this I called up the local junior college and spoke to the philosophy professor, Dr. Oza. He's a busy man but agreed to meet with me on Saturday while he was at the Laundromat. While his clothes were on spin Oza explained to me that it was truly NOT I who was "destroying the credibility of folks and companies" but rather the folks at the companies who were doing it to themselves. I thanked the teacher of courses in logic and ethics, and felt much better.

Let us examine manufacturer claims made for the Quad versus what various authorities may say. First, the esteemed William Orr, W6SAI, recipient of the Technical Achievement Award (long overdue, in my opinion) at this year's Dayton banquet. In his just-published (by *CQ* Magazine) outstanding *W6SAI HF Antenna Handbook* he says (for the 2L Quad) "a power gain of over 5 dBd." The chart on page 5-3 shows the gain of just under 6 dB. In the brilliant work done by the late Keith Machin, K6WG, back in 1978, he stated that the gain was just under 6 dB (.15 WL boom).

Machin went on to say that a 3L Quad could have a gain (over a dipole) of 8.5 dB if the boom was .45 of a wavelength, or, about 31 feet at 14.2 MHz. In order to reach 11dBd the boom would have to be a full wavelength long with multi-elements. That translates to about 13 dB over isotropic, which some manufacturers "prefer" to use.

Other work done by WØHTH, said that it would take a one wavelength boom to realize 14 dB over isotropic, or 12dBd.

The ARRL has gone on record as stating that the 4L on a .45 WL boom will give 11.5 over isotropic which translates to about 9.4 dBd.

(This would be an appropriate moment to pause and give thanks that there is an ARRL with highly principled officers all these years. Different than other magazines, in *QST* you will never see the bunko ads that pollute the pages of others.)

You will notice that to realize this gain that (over the 2L Quad) the boom length has tripled, as has the number of parasitic elements.

So when we see certain claims by manufacturers, what can we assume? On one hand, to be charitable, they have never read any of the articles or books about the field they are in or even their competitor's brochures nor have they actually measured their antennas. On the other hand, well. . . .

To put things into perspective, for example, there is a Yagi that claims a truly measured 12.5 dBd gain (14.6 iso.) but it has a boom that is two wavelengths long (2M) and TEN elements! I doubt that even the most zealous Quad devotee on the green earth would claim that a 4L quad on a less than ½ WL boom would beat a 10L on a 2 WL boom, except for the manufacturer.

So who is damaging whose credibility? If people want to shoot themselves in the foot, don't blame me. On one of those computer services whenever anyone mentions a particular antenna manufacturer others come on and say, "Deduct 2 dB from everything they say." Should someone from that famous antenna company see that over and over again would they be embarrassed? Or would they even care that they are being ridiculed? And there are indeed stronger words that would apply. How harsh should the judgment be?

Let us now move on to pleasanter subjects.

So you're thinking that if your quarter-wave vertical had 120 radials, each ⅖ of a wavelength long that you would be heard all the time like WWV is.

Well, don't fret for there is something much better and a lot cheaper. It takes a whole lot less space and wire and radiates better.

This antenna has been the subject

of some disparaging remarks by those who neglected one important factor. It is an under-appreciated antenna that has a great deal going for it. This conversation is about the center-fed, half-wave vertical dipole with (here's the important part) the bottom one-quarter wave above ground.

Let's look at the dimensions. The half-wave (for 20M) is 32.957 feet. (32 ft., 11 and ½ inches.) And the quarter-wave would be 16.478 feet. (16 ft., 5 and ¾ inches.) The total structure would be 49.435 ft. long. (49 ft., 5 and ¼ inch.) By hammering lengths of overlapping 2 x 4, (or less as you prefer) a lightweight structure could be easily erected "Iwo Jima" style with a small crew and guyed to your satisfaction with a minimum of muss and fuss.

The coax (or open wire if you prefer) comes away from the center of the vertical dipole horizontal to the ground for as far as practical.

This antenna should outgun the everyday quarter-wave ground mounted vertical by 3dB right at the horizon. And, you've done it without using up 3,300 feet of radials, have avoided quite a bit of radial laying work and avoided the need for quite a bit of space.

Allow me to issue a small warning. If you compare signals between this antenna and your dipole (35 feet up) with your Uncle Andy who lives two states away it will most likely lose. This antenna is for talking to Auntie Podeez.

If the feedline coming horizontal when 33 ft. up in the air presents a problem, there is a solution, and that is turning this antenna into what some call a sleeve antenna or a needle antenna.

Start with at least 50 feet of coaxial cable. At one end cut away 16½ feet of the outer jacket and the shield. The dielectric around the center conductor stays intact.

Now let's go to that junction where the 16½ feet of center conductor only meets the remaining uncut and intact cable. Strip away a few inches of jacket leaving bare the shield. At that point tape aluminum foil to the coax shield creating a cylinder around the outer jacket. If this sounds boggling now, don't worry, it will all fall into place shortly.

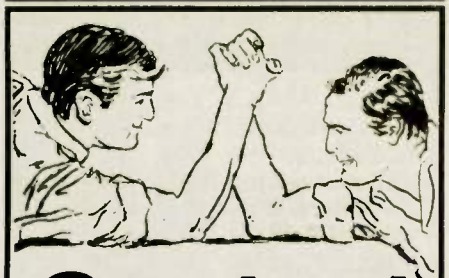
The aluminum foil creates a tube over the coaxial cable 17.325 feet (17 ft., 3 and ⅞ inches) long. The bottom half of the dipole is five percent longer.

So, what we now have is an everyday dipole for 20M with the usual 16.5 feet of wire (center conductor) on one side and 17.325 feet of wire (center conductor), dielectric, and outer jacket all encased in a tunnel of aluminum foil. The dipole is as normal, fed in the center with the feedline now coming up through the tubing created by the aluminum foil. The center conductor is half the dipole and the created cylinder of aluminum foil is the other half of the dipole.

After trimming, the foil is covered with electrical tape to make it somewhat neat. Naturally, the two halves will possibly have to be individually trimmed to bring the antenna into resonance at the frequency of choice. To review, we have 16.5 feet of wire and 17.325 feet of glop out of which comes the feedline on to the station. The tip of the wire is just about 50 feet in the air with the whole assembly being vertical.

No, it won't beat out a 5-element monobander 170 feet in the air but it will give a very good account of itself relative to cost. Let me know how it worked out for you.

(KNS, Zorro-like, lets the blackguards in the antenna arena feel the metal of his righteous sword.) WR



Contest Corner

Don Durk, KA1DWX

786226.1414@compuserve.com

Start your engines!

The WAE (Worked All Europe) contest marks the beginning of another Fall/Winter season of major contesting. Now is the time to put the finishing touches on some of the projects started during the summer QRN doldrums! If you're thinking about a new antenna, fixing the old one or touching up the tower, procrastinate no longer — now's the time! If not, you'll find yourself where I end up every year — antennas partly up, interfacing half completed, and the contest starting in 4 or 5 hours!

If you are contemplating a major "go" at it, this is the time to implement those grandiose summer thoughts of stacked monos or to get down to reality and fix the tribander! Consider the contests which are the most important or which you enjoy the most and plan your strategies for them. Estimate what propagation might be like based on current and projected data (last season's forecast for the same time may provide some guidance). Consider which operating times are best to reach the largest number of folks operating in the particular contest, then consider the multiplier question.

Think about your antenna. In some cases (Field Day, Sweepstakes, local QSO parties and short haul DX running) you'll do better with antennas having higher take-off angles. On the other hand, for longer distance multiplier chasing, low-angle radiators may be better, especially on the lower HF bands. On the higher HF bands of course height and gain will do it, but if you "ain't got it," then improvise!

You'd be quite amazed at what phased verticals for 10,15 or 20 can do! Just give a listen to the results of those using 4 squares and other phased vertical antennas on the lower HF segments! Or listen to some of those low-power 10 Meter beacons using single or multiple ground planes! Consider trying a Bobtail curtain, if you don't know what that is, then find out! Most importantly, have fun and enjoy the upcoming season!

Most contests require separate logs per band, check sheets for over 200 Qs, a summary sheet and a signed/ dated affidavit attesting to observance of the rules of both the contest and your local regulating authority. A statement wherein you agree to be bound by the decisions of the contest committee is also needed. ASCII files are generally acceptable. All times are in UTC.

Late July 'tests

(see July *Worldradio* for details)

•YV CWDX 'test

27 July 00:00-28 July 24:00

(RST+contact number)

•RSGB IOTA (Islands on the Air) **SSB/CW 'test**

27 July 12:00-28 July 12:00

(RS(T) + number+IOTA reference number if island station)

August 'tests

•ARRL UHF All mode 'test

3 August 18:00-4 August 18:00 (Grid square locator)

Q 1x per band above 222 MHz. Score:Pts (3 for ea 222 or 432 MHz Q; 6 for ea 902 or 1296 MHz Q;12 for ea 2.3 GHz or higher Q) x mults (total number of grid squares worked per band). Single op multiband; single op single band; rover-1 or 2 ops moving among 2 or more grid squares — sign /R on CW and 'Rover' on voice; multiop. See *QST* for additional details/ restrictions. Participation awards and $5 pins for 10 Qs.ASCII ARRL format. BBS to: 860/ 594-0306; Internet-contest @arrl.org. ARRL

•NAQP CW 'test

3 August 18:00-4 August 06:00

(Name + state/VE call area/NA country)

Q 1x/band. 160 -10. Freqs-1.815, 35 kHz up 80-10. Non-NA countries do not count as mults but do count for QSO credit. Score-Pts (Qs) x mults per band. Single op// multi op 2 trans// Pre- registered teams.150 W.max out. Single ops max 10 hrs. Off times at least 30 mins and noted in log. *NCJ/QST*

•QRP ARCI Phone Sprint

4 August 12 noon local time thru 8 pm local time.

(RS+state/prov/country+ARCI number or pwr out if no number)

Q 1x per band, 160-6 meters. Suggested freqs.-1.860; 3.865; 7.285; 14.285; 21.385; 28.385; 50.130. Score-Pts(5 pts for ARCI member; 2 pts for non-member, same continent;4 pts for non-member, different continent. Bonus pts for each band on which equipment used — for homebrew xmtr 2000; for homebrew rcvr 3000; for homebrew txvr 5000) x mults.

(All-band total of states/ provs/ DX) x pwr mult of SSB pwr out (>10W x1; <10W x7; <2W x10: <500mW x15). Single band; all band;high band (20, 15, 10 or 6); lo band(160, 80 and 40). N6GA. CamQRP@cyberg8t.com

•Ten-Ten Summer SSB 'test

Call/ write KØPVI for details.

•YO SSB/CW DX 'test

10 August 20:00-11 August 16:00

(RS(T)+ITU zone not *CQ* zone. YO stns send 2 letters for county)

Q all stns not just YO. Q 1x per band 80-10 meters. Score- Pts (2 for own continent;4 for different continent; 8 for YO stns) x mults(YO counties + ITU zones per band). Ck address via www.

•MD/DC Phone/CW/RTTY QSO Party

10 August 16:00-04:00 and 11 August 16:00-23:59

RS(T)+(For MD/DC stns-Category: Standard, QRP, mobile, Nov/Tech,club) or st/prov/DX for non MD/DC stn.

Q 1x per mode(CW and RTTY are 1 mode), 80-2 Meters.Try CW on odd half hrs. Simplex 2 Meters & up. CW: 3.641

and 35 to 40 kHz up.SSB: 3.92; 7.23; 14.26; 21.37; 28.38; 50.15.

Score-Pts (10 for club stn;5 for mobile;4 for QRP or Nov/Tech 3 for CW/RTTY; 1 for other Q) x mults (For MD/DC stns — up to 25 MD/DC mults+ st/prov/DX; For Non MD/DC stns,-up to 25 MD/DC mults (ea MD county+DC+ Baltimore City)). Mults are 1 time only, *not* per band! W3CWC.

•WAE CW 'test

10 August 00:00-11 August 24:00 (599+number)

Q 1x/band. 3.5-28 MHz NO WARC BANDS. 36 Hour max for single ops. World Qs EU only. EU Qs outside EU. Non EU may send QTCs (but not more than 10) to each EU stn(It's ok to send the 10 spread out in 2 groups of 5; 3 groups of three and 1 group of 1, etc.) A QTC is info on a prior Q with an EU stn.

The format is Grp 1/10, 2/10, 3/5, 4/5 etc. This means your first group having ten exchanges, your fourth group having 5 exchanges etc. You then send time/stn/number. For example: 0001/DJ6QT/020 0002/DL1IAO/034 0004/DJ6RB/023 etc. EU stns receive no more than ten QTC from each station outside EU. Score-Number of QSOs + QTCs x multipliers (non EU = number of EU countries per band (WAE Country List) x2 for 14/21/28; x3 for 7 MHz; x 4 for 3.5 MHz. EU stns= 1 mult per band for each non EU country per DX list.) Single op all bands/ multi op single transmitter/ SWL and club competitions. WAEDC, P.O. Box 1126, D-74370 Sersheim, Germany.

•NAQP SSB 'test

17 August 18:00-18 August 06:00 (Name + state/VE call area/NA country)

See NA QSO PARTY CW above

Fqs — 1.865, 3.850, 7.225, 14.250, 21.300, 28.450.*NCJ/QST*

•SARTG RTTY 'test

17 August 00:00-08:00 and 16:00-24:00; and 18 August 08:00-16:00 (RST+number)

Q 1 x *each band*, 80-10 Meters. Score-Pts(5 pts for own country; 10 for own continent but different country; 15 for different continent) note-each call area in JA, VE, VK and W counts as a separate country x mults (DX including first QSO w/JA, VE, VK and W. Each call area in JA, VE, VK and W count as mult). A. Single op, all band; B. Single op, single band; C. Multi op, single xmtr, all band; D. SWLs, all band. Club competition.SM4CMG.

•NJ Phone/CW QSO Party

17 August 20:00-18 August 07:00 and 18 August 17:00-19 August 02:00 (RS(T) +number+st/prov/country or county if NJ stn)

Q1x per mode160-2 meters. CW freqs-3.5 up; SSB 3.950, 7.235, 14.285, 21.355, 28.400. 160-1.810 @ 05:00, 50-50.5, 144-146.Try 15/10@1500, 1700, 1900 and 2100. Score — Pts(3 per Q) x mults (non NJ stns -NJ counties(maximum 21); NJ stns - NJ counties+st/prov/ DX). Certs and plaques.EARA, P.O. Box 528, Englewood, NJ 07631-0528.

•ARRL 10 GHz 'test

17 Aug 8 a.m. local-8 p.m. local and 18 August 8 a.m. local-8 p.m. local

This is a two-weekend contest, the second weekend 21-22 Sept.

(Send six character Maidenhead locator — see *QST* April '94 p.86; Signal report optional) Two catagories: A) 10 GHz; B) 10 GHz and up. Q 1x per location per band. A different location means a move of at least 16 km (10 miles). Prescheduling of Qs is recommended. Try 7 p.m. or later on 3.818 the Tue, Wed & Thur before the test or 144.230 & 146.550 MHz. Ck *QST* for details.*QST*.

•SEANET SSB 'test

24 August 00:00-25 August 24:00 (RST+number)

Q 1x per band 160-10 meters(no WARC). SEANET countries A4, A5, A6, A7, A9, AP, BV, BY, DU, EP, HL, HS, JA, JD1, JY, KH2, P29, S79, VK, VQ9, VS6VU, V8, XU, XV, XW, XX9, YB, ZK, ZL, ZL9, 3B6, 3B8, 4S7, 4X, 8Q7 9K2, 9M2, 9M6, 9N, 9V. Score- pts(1 pt per Q w/SEANET country except your own country; then no point, but ok for mult) x mults (total number of SEANET countries x 3). 9M2FK, P.O. Box13,10700 Penang, Malaysia.

•Utah CW/Phone QSO Party

24 August 15:00-25 August 21:00 (RS(T)+name+number+st/prov/ dx cc or county(29) for UT stns

Q 1x per mode. 160 -2 Meters. Try 2 @20:00,00:00 and 04:00; 160 @ 05:00; 10@19:00. CW 1810 and 50 up;phone-1.850, 3.850, 7.230, 14.250, 21.300, 28.450, 50.130 and 147.540. Okay to Q /mobile or/portable stns as they change counties. Max time 24 of 30 hrs. Times off of at least 30 mins.Score-pts (for fixed Utah stns-4 for CW, 2 for phone; for non UT/mob. or /portable stns-8 for CW, 4 for phone) x mults (counties per band or st/prov/DX for UT stns). Classes: Fixed; mobile; portable 1 op; portable multi op. AH3C or alan@es.com.

•TOEC WW CW Grid 'test

24 August 12:00-25 August 12:00 (RST+Grid)

Q all stns not just EU. Q 1x per band 80-10 Meters. Ok to Q /m at each different grid field per band for new mult but not for added points. Score-Pts (fixed stns-3 for other continent; 1 for own continent or own country; mobile - 3 pts per Q) x mults (grid fields per band). Packet = multi op. Categories: Single op all band/ single band/low power(100W out) all band//multi op all band//multi transmitter // mobile -1 op all band. Top of Europe Contesters,Box 2063, S-831 02, Osterland, Sweden.

•••

September 'tests

9/7 Weekend
- •FISTS INT'L STRAIGHT KEY CW 'test
- •WV QSO Party
- •LZ DX Test
- •ALL ASIAN SSB 'test
- •IARU REG 1(EU) SSB FD 'test
- •NA Sprint CW
- •DARC DIGITAL CORONA 'test

9/11-9/13 Midweek
- •YLRL HOWDY DAYS

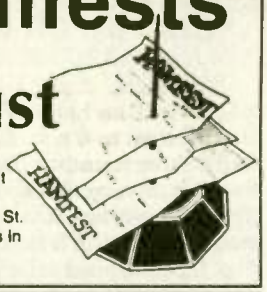
9/14 Weekend
- •RADIO CLUB PANAMA 'test
- •ARRL SEPT VHF 'test
- •NA SSB SPRINT
- •WAE SSB 'test

9/21 Weekend
- •ARRL 10 GHz 'test
- •SAC CW
- •WASH ST QSO Party
- •RAC VHF/UHF 220 MHz SPRINT

9/28 Weekend
- •CQWW/ADRS JOURNAL DIGITAL 'test
- •SAC SSB
- •CLASSIC RADIO EXCHANGE
- •RAC VHF/UHF 144 MHz SPRINT

WR

Hamfests August



Do you have a hamfest coming up? Send your information to our 28th St. office at least 2 months in advance of your event. We'll send prizes!

California

The **Livermore ARK** will hold a swap meet on 4 August, 7 a.m. to 12 noon at Las Positas College, 3033 Collier Canyon Rd. (Airway Blvd. exit to north of 580 highway) in Livermore. Features include new, used, surplus ham, computer gear, misc. electronics and testing equipment, refreshments. Admission and parking is free. No VE exams. Sellers pay $10 space fee. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves. or leave message days at 510/783-2803. Talk-in on 147.045(+) (PL 94.8) and 145.350(-).

Colorado

The **Denver Radio Club, Inc.** will hold a ham radio and computer hobbyist swapfest and ARRL State Convention on 18 August, 8 a.m. to 2 p.m. (vendor setup 7 a.m.) at the Jefferson County Fairgrounds, 15200 W. 6th Ave. (Indiana exit), in Golden, CO. Features include commercial exhibits, ARRL forum, technical seminars, VE exams, snack bar and hourly prizes. Admission for buyers and sellers is $4, tables are $10/advance, $12/door. For more information, call Guy Reed, W5GR, at 303/674-5389. Talk-in on 147.33(+) or 146.52(S).

Florida

The **Jacksonville Amateur Radio & Computer Show** will be held on 3 August, from 9 a.m. to 5 p.m. and 4 August, 9 a.m. to 2 p.m. at the Osborn Convention Center near the junction of I-10 and I-95 in downtown Jacksonville. Admission is $8 and swap tables are $20 for the weekend (must also purchase admission). VE exams for all grades will be given on Sunday at 9 a.m. (walk-ins are welcome). For more information, contact Greater Jacksonville Hamfest Assn., P.O. Box 27033, Jacksonville, FL 32205; 904/268-2302.

Illinois

The **Hamfesters Radio Club, Inc.** will hold a hamfest on 4 August, from 6 a.m. (setup 3-11 p.m. on the 3rd) to 3 p.m. at the Will County Fairgrounds in Peotone. Features include exhibitors and convenient unloading and overnight parking. Admission is $4/advance or $6/gate. Send reservations to John Dvorak, W9ZUV, 5750 S. Newcastle Ave., Chicago, IL 60638; 312/586-0128.

•

The **DuPage ARC** will hold a hamfest on 18 August from 8 a.m. to 2 p.m. (vendor setup 6 a.m./commercial setup 3-6 p.m. on Saturday), at the Hawthorne Race Course, 3500 S. Cicero, Stickney. Admission is $4/advance, $5/door. Food, refreshments, free parking, hourly door prizes. For table information, call the hamfest info line at 708/985-9256. Send check payable to "DARC" and SASE to: DARC Hamfest '96, 7511 Walnut Ave., Woodridge, IL 60571. Talk-in on 145.25(-).

Indiana

The **Lakes ARC** will hold a hamfest on 4 August from 7 a.m. to 2 p.m. (vendor setup 3-10 p.m. on Sat. and 4-7 a.m. on Sun.), at the Steuben County 4-H Fairgrounds in Angola. Features include free parking, door prizes, camping, barbecue, swimming, amusement park, concessions and VE testing for all classes. Admission $3/advance and $4/door. Indoor tables $8, trunk sales $2. For information, contact Sharon Brown, WD9DSP, 905 W. Parkway Dr., Pleasant Lake, IN 46779; 219/475-5897. Talk-in on 147.180(-) 444.350(-), PL 131.8.

•

The **Porter County ARC** will hold a hamfest on 10 August (setup 6 a.m.) at the Porter County Expo Center. VE testing from 9-11 a.m. Admission is $5 (free under the age of 12). Tables $8 (electricity $5 per outlet). Food and drinks available and tailgating. For tickets, reservations or information, contact Rich, N9QLQ, PCARC Hamfest, P.O. Box 1782, Valparaiso, IN 46384; 219/762-0484. Talk-in on 146.775(-) PL 131.8 or 146.52(S).

Kansas

The **Central Kansas ARC, Inc.** will hold a hamfest on 18 August from 9 a.m. to 3 p.m. at the Bicentennial Center heritage hall in Salina, KS. Admission is $6/door. Commercial tables are $10 and flea market tables are $5. Commercial vendors, flea market, door prizes, YL and non-ham activities, food and refreshments. Contact Dan Cook, AAØTT at 913/263-8540 or by mail in c/o CKARC, P.O. Box 2493, Salina, KS 67401. Talk-in on 147.03(+).

Kentucky

The **Bluegrass ARS, Inc.** will hold a hamfest on 11 August. Features include sales exhibits, guest speakers, technical, Novice and ARRL forums and VE exams, all in an air-conditioned facility. Space is provided for an outdoor flea market at no charge except price of admission. Admission is $5/advance (before 1 Aug) or $6/door. Table reservations are $15/advance for inside vendor area or $25/door. For information, contact Bill De Vore, N4DIT, 112 Brigadoon Pkwy, Lexington, KY 40517; 606/257-3343 days; 606/273-8345 evenings.

Massachusetts

The **Wellesley ARS and Babson Wireless Club** will hold a hamfest on 4 August, 9 a.m. to 1 p.m., at the PepsiCo Pavilion, Babson College, in Wellesley. Admission is $2. Indoor tables $10/advance, $14/door. Tailgate space $7/advance, $10/door. Contacts are Barbara Holdridge, N1ICQ, 617/329-2628 or Gerry Driscoll, NV1T, 617/444-2686. Send checks to Wellesley ARS, 107 Church St., Westwood, MA 02090. Talk-in on 147.03(+) repeater.

Michigan

The **Eastern Michigan ARC** will hold a swapfest on 4 August from 8 a.m. (vendors 6 a.m.) to 2 p.m. at the Saint Clair Co. Community College Student Center in Port Huron. Features include DX forum, packet demos, QRP forum, air-conditioned swap area, concession lounge, walk-in VE exams (11 a.m). Admission is $3/advance, $4/door, tables $12, trunk sales $4/parking space. For information and reservations, call Jim Wilson, N8SVI, at 810/367-3059 or write: EMARC, P.O. Box 611230, Port Huron, MI 48061. Talk-in on 147.30(+) and 146.52(S).

•

The **Livingston Amateur Radio Klub** will hold a hamfest on 4 August from 8 a.m. (vendor setup 6 a.m.) to 2 p.m. at the Fowlerville Fairgrounds. Features include Amateur Radio gear and computers. VE exams. Admission $4/advance, $5/door; covered trunk spaces $5/space; table sales $8/table (all sales spaces must purchase an admission ticket as well). Send SASE and check or money order to: LARK, P.O. Box 283, Howell, MI 48843; or call Ray at 517/546-9209. Talk-in on 146.68(-).

•

The **Bay Area ARC, Genesee County RC, Lapeer ARA, Mid-Michigan Wireless Association and Shiawassee ARA** will hold a swap 'n shop and the 1996 Michigan State Convention on 25 August, from 8 a.m. (vendors 6 a.m.) at the Shiawassee County Fairgrounds in Corunna. Admission is $4, tables $10/advance, $15/door, trunk sales $7. Send check and SASE to Five County Swap 'n Shop, 1214 McKinley Ave., Bay City, MI 48708; or call Jan at 517/893-3475. Talk-in on 147.02(+) or 146.52(S).

Minnesota

The **St. Cloud ARC** will hold a

hamfest on 11 August from 8 a.m to 2 p.m. at Whitney Senior Center in St. Cloud. For tickets and information contact WØSV, P.O. 401 Great Northern Dr., Waite Park, MN 56387 or WØSV @NFØH.#CMN. MN.USA.NOAM or e-mail jmaus@cloudnet.com Talk-in on 146.94(-) or 147.016(+).

•

The **Lake of the Woods Repeater Association** will hold a hamfest on 17 August from 1 p.m. (setup 10 a.m.) to 5:30 p.m. with a banquet following, at the Warroad Area Community Center, 222 Virginia Ave. N.E. in Warroad. Admission is $5 (hamfest only) or $10 (hamfest and banquet). The first 20 dealer and flea market tables will be free with paid admission for those who reserve first (and a bonus of a free coffee mug). VE exams 11 a.m. (walk-ins okay). Send SASE and check to: David Landby, KBØHAP, Rt. 3, Box 10, Warroad, MN 56763; 218/386-1092. Talk-in on 147.09(+).

New Jersey

The **Somerset ARS, Inc.** will hold a hamfest on 24 August from 8 a.m. to 1 p.m. at the Somerset County 4H Center in Bridgewater. Admission is $4 (XYL and children under 12 are free). Indoor tables are $20 with power (reservations required), $15 without power. Outdoor tailgating is $10/space. Contact SCARS, P.O. Box 742, Manville, NJ 08835 or Pete, WA2OCN at 908/429-9093. Talk-in on 146.52(S).

New York

The **Thompkins County ARC** will hold a hamfest on 10 Aug at Dryden High School in Dryden. Features include plenty of indoor space, huge paved flea market area, classes and demos, breakfast, VE testing on site (pre-register). Admission $4/advance (before 31 July), $5/door (under the age of 18 are free), $6/table, outdoor flea market $2/space. For information, call Ross Boyer, N2ISU, or Lonnie Boyer, N2WGW, at 607/844-4302 until 10 p.m. or e-mail: rmb3@cornell.edu Talk-in on 146.97(-).

•

The **Westchester Emerg. Comm. Assoc. Inc.** will hold a hamfest on 18 August from 9 a.m. to 2 p.m. at Yonkers Raceway, intersection of I-87, Central & Yonkers Ave., in Yonkers. Features include all outdoor tailgating and more .... Admission is $6. Contact Tom, WB2NHC, or Jeanne, N2NQY, Raffaelli at 914/962-9666. Talk-in on 147.06(+).

Ohio

The **Paulding County ARG, Inc.** will hold a hamfest on 10 August from 1-8 p.m. (setup at noon) and 11 August from 8 a.m. (setup Saturday or 6 a.m. Sunday) at the Paulding County Fairgrounds. Admission is $3/gate (under 12 are free with one paid adult); flea market spaces/tables $2; inside tables (8') $10. VE exams by pre-registration only (contact KA8IAF at 419/795-5763. For other information, contact Jon, KB8MDT, 10392 SR 500, Paulding, OH 45879; 419/399-4507. Talk-in on 146.46(S).

•

The **Union County ARC** will hold a hamfest on 18 August from 8 a.m. to 2 p.m. (vendor setup 6 a.m.) at the Broadway Ohio Community & Civic Complex, 1 mile west of intersection state Routes 31 and 347, on 347. Admission is $4/advance, $5 after 10 August. Indoor vendor table $15 ($5 extra for electricity); flea market space $7.50. For information, contact Gene Moore, N8YRF, 24461 Claibourne Rd., Marysville, OH 43040; 513/246-5943.

•

The **Warren ARA** will hold a hamfest on 18 August, from 6 a.m. to 3 p.m. at the Trumbull Branch Campus of Kent State University in Warren. Features include air-conditioned indoor area, 5-acre flea market on campus, walk-in VE exams (10 a.m.), meeting rooms, forums, food and refreshments and free parking. Admission is $4 (under 12 free), exhibitors $8/8' table, flea market $3/10' space. For information, contact AL VanSlyke, N8IKX, WARA Hamfest, P.O. Box 809, Warren, OH 44482; 330/889-3378.

Pennsylvania

The **Skyview Radio Society** will hold a hamfest on 4 August from 8 a.m. (vendor setup 7 a.m.) to 3 p.m. at the Washington Township Fire Hall in North Washington, PA just off Route 380, on Route 66. Admission is $3/person; flea market $2/space; indoor vending $8/first table, $5 each additional table (max 6). Contact Robert Reihms, N3NOS, 192 N. Washington Rd., Apollo, PA 15613; 412/727-2194 after 9 p.m. Talk-in on 146.64(-) and 444.900(+), no PL tones needed.

•

The **Juniata Valley ARC** will hold a hamfest on 10 August from 8 a.m. to 2 p.m. at the Decatur Township Fire Company grounds on PA Route 522, 8 miles from Lewistown. Watch for signs. Food will be available. Admission is free, tables $10, tailgating $4. For information and reservations, call 814/237-1591. Talk-in on 146.91(-).

•

The **York Hamfest & Computer Show** will be held on 17 & 18 August from 8 a.m. to 4 p.m. at the York Interstate Fairgrounds in York. Features include software, hardware, accessories, books, shareware, Laurel VECs (no fees!), large electronics flea market, free parking, handicapped accessible, ATV seminar. VE exams on Saturday at 9 a.m. (pre-registration encouraged); call 717/751-9675. For reservations and information, call 717/751-9675 or write to York Hamfest, P.O. Box 351, Dover, PA 17315. Talk-in on 146.97(-).

Washington

The **Eastern Washington ARRL Spokane** hamfest will be held on 3 August (9 a.m to 5 p.m.) and 4 August (8 a.m. to noon) at University High School, 10212 E. 9th Avenue, in Spokane. Features include dealers, seminars, demos, VE testing, prizes, bazaar, steak feed. Admission is $4 (before 20 July) or $5/door. Steak feed $5 per person. Vendor setup 6 p.m. to 9 p.m. 2 August and 8 a.m. to 9 a.m. 3 August. Tables $5 each. Contact JoAnn Gemmrig, KA7SUZ, 6812 E. Third, Spokane, WA 99212; or call 509/928-1808 or fax 509/921-6912. Talk-in on 146.52(S), 147.38(+) or 223.90(-).

•

The **Lower Columbia ARA** will hold a ham radio, computer, & electronic equipment swap meet on 17 August from 9 a.m. to 3 p.m. (vendor setup on Friday from 5-9 p.m., Saturday from 6 to 8:45 a.m) at the Cowlitz County Fairgrounds in Longview. Take exit 36 or 39 off Interstate 5 and follow the signs west for the county fairgrounds. Mt. St. Helens and the Oregon coast nearby. Admission is $3, over 100 tables available. Swap tables are $12 before 3 August, $15 after. Commercial tables $15. Food concessions; free parking; overnight RV parking on the fairgrounds for $10, electrical hookup available. Sorry, no VE exams. For

more information, write to LCARA Swap Meet, P.O. Box 906, Longview, WA 98632; or call Bob, KB7ADO, at 360/425-6076 evenings. E-mail to KB7ADO@aol.com. Talk-in on 147.26(+), PL 114.8.

West Virginia

The **West Virginia State AR Council** is sponsoring the West Virginia State Amateur Radio ARRL Convention on 24 August at the WVU Convention and 4-H Conference Center in Jackson's Mill. Dealers, flea market, ARRL Forums, VE exams, technical forums, ARES/RACES meetings, WV net meetings, MARS meetings, DX forum, code tests, WAS/VUCC verification, repeater trustee meeting, ham gear auction, QCWA meeting. Please contact Dave Ramezan, KA8ZXP, 304/462-7560, e-mail: gsa0010@mail.wvnet.edu or Dick Fowler, 304/623-9479, e-mail: n8fmd@ westvirginia.com

Wisconsin

The **Marshfield Area ARS** will hold a Hamnic picnic on 4 August. Swapfest, and potluck around 11 a.m. in Wildwood Park. Everyone welcome. Contact Guy Boucher, KF9XX, 107 W. Third St., Marshfield, WI 54449; 715/384-4323 or packet: KF9XX@W9IHW.WI.USA.NA. Talk-in on 147.18(+).

•

The Rhinelander Repeater Assoc. and Northwoods ARES will hold a hamfest on 17 August from 8 a.m. (setup 16 Aug, 6-10 p.m. and 17 Aug. 6 a.m.) to 2 p.m. at Sugar Camp Town Hall, 13 miles north of Rhinelander on Highway 17 to Camp Four Road in Sugar Camp. Features include food and beverages. VE testing at 11 a.m. Admission is $2. Contact Mary Berger, NS9Q, 367 Lois St., Rhinelander, WI 54501; 715/362-9296 Talk-in on 146.94(-).

•

C.A.R.S. will hold their first-ever swapfest on 17 August from 7 a.m. to 2 p.m. at Crystal Ridge Ski Lodge (76th Street & Loomis Rd. (Hwy. 36) in Franklin. Admission is $4/advance, $5/gate; tables $5/six foot, electricity $1 extra. Plenty of free parking, large tailgate selling area, concessions and door prizes too. VE testing at 11 a.m. (registration 10:30 a.m.) . Send check and SASE to C.A.R.S., P.O. Box 325, Franksville, WI 53126. For more information, call Mike, N9OEZ, at 414/325-7427. Talk-in on 444.200(+) N9OEZ/R repeater. WR

QCWA Convention

Now is the time to make yourself a reservation for the upcoming QCWA Convention, 4-5 October 1996. The convention will be held in beautiful Ottawa, Canada.

For information and to obtain a registration form, visit the QCWA page on the Internet: http://www.efn.org/~qcwa or call 800/481-4649. More next month.

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

IC-R8500 Super Wide Band All-mode Receiver

Icom introduces an advanced, top class receiver for professionals and serious SWLers, the IC-R8500. With super wide band all-mode coverage from 01. to 2000 MHz, in 10 Hz tuning steps, the IC-R8500 provides the same high performance as the IC-R9000 at an affordable price. In addition, the IC-R8500 is equipped with IF shift and APF (audio peak filter) functions.

The IC-R8500 allows you to monitor emergency services, security services, fire departments, VHF air and marine bands, FM-wide broadcast stations, Amateur Radio stations and other utilities. SSB, CW, RTTY, AM, FM, WFM, FM-N, AM-W, AM-N and CW-N (with optional FL-52A CW narrow filter) modes are all included.

Advanced RF circuits contribute to an improved dynamic range of 107dB. Separate bandpass filters provide superior characteristics for multi-signal cross modulation and high sensitivity from 0.1 to 2000 MHz, the same as Icom's HF transceivers. Weak signals can be received even in the presence of stronger adjacent signals. The IF shift circuit effectively rejects nearby interfering signals in SSB modes by shifting the center frequency of the passband. The APF can select between two bandwidths. When receiving in CW, the APF changes the receive frequency response by boosting a specific frequency to pick up a desired CW signal. When receiving in the FM mode, the APF provides tone control.

Store your frequently used frequencies in the IC-R8500's 1,000 memory channels and 20 scan edge channels.

Scanning functions include programmed scan, memory scan, priority scan, selected mode memory scan, auto memory write scan and selected number memory scan. Scanning speed is 20 channels per second in programmed scan mode and 10 channels per second in memory scan. A voice scan control function enhances scanning. When a voice signal is received, the IC-R8500 pauses. When a beat signal or noise component signal is received, the IC-R8500 resumes scanning after approximately one second.

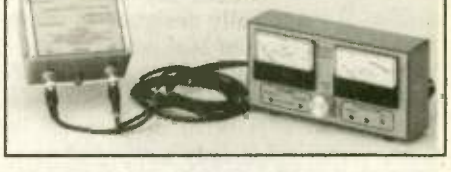
The S-meter squelch function receives only signals which are stronger than the preset level, providing a wide range between the squelch threshold level and a tight squelch level.

Tuning is precise since it is equipped with selectable tuning steps of 10, 50, 100Hz, 1, 2.5, 5, 9, 10, 12.5, 20, 25, 100 kHz or 1 MHz. Signal resolution and readout is 10 Hz.

Additional features include high frequency stability even when receiving in the GHz range, a noise blanker that eliminates pulse-type noise in SSB/AM mode, S-meter and center indicator for tuning convenience and three separate antenna connectors.

Options include a UT-102 voice synthesizer, TV-R7100 TV receive adapter and CR-293 high stability crystal unit.

For further information, please contact your local Icom dealer or Icom America, Inc., 2380-116th Ave., N.E., Bellevue, WA 98004; 206/454-8155.



P-2000A HF Digital Wattmeter

RF Applications, Inc. announces the availability of a new product, the P-2000A RF Power/VSWR Indicator. The P-2000A provides digitally driven analog meters for indication of peak RF power VSWR. Two power ranges are automatically selected by the internal microprocessor (200 and 2,000 watts full scale).

An adjustable reading hold time control allows the meters to operate as conventional meters or as peak-and-hold-type meters. An adjustable VSWR alarm, including a control relay, is provided. The alarm can be set from 1.1:1 to 10.0:1 by the operator using a small screwdriver. The P-2000A is available from stock (allow four weeks for delivery), and the list price is $299.

RF Applications, Inc. is a developer and manufacturer of RF power monitoring equipment. For further information, write: 9310 Little Mountain Rd., Mentor, OH 44060; 800/423-7252 or 216/974-1961, fax 216/974-9506.

Lead acid/gell-cell battery controller

Jade Products, Inc. introduces its newest lead acid/gell-cell batter controller, the SC06, 6 Amp Solar Controller. This controller offers fast recovery and is applicable to deep cycle high power usage.

The SC06 controller offers more than a standard battery charger — it controls and maintains the battery continuously. It is specifically designed to sense the condition of the battery and control the charging requirements accordingly. It can be left connected indefinitely to the battery, prolonging the life of the battery by protecting it from overcharge-undercharge damage. It is "smart" enough to go into a "sleep" mode when the light source is inadequate for charging. Once sufficient light is available the controller senses the battery condition and continues its charging duties.

The controller operates in several modes depending upon the condition of the battery. When maximum charging is required the UC3906 charging I.C. goes into "bulk charge" mode and charges the battery at the maximum rate, which, in this application is up to 6.0 amps. An intentional "overcharge" occurs once the battery nears its full charge condition, and then the controller goes into a "float" charge state once the battery is fully charged.

The Jade Products, Inc. battery controller is specifically designed to charge the entire range of lead-acid batteries, from small gell-cells to large, deep-cycle marine duty batteries. Practically any combination of cells can be charged. The solar panel need only supply approximately 4 volts more than the battery voltage needed. These are only minimums, higher voltage panels may be used, the on-board heat sink will dissipate the additional heat.

The SC06 can be built as a 6 or 7 cell charger for 6, 12, or 14 volt systems and comes with current programming resistors to select 0.5A, 1A, 3A, or 6A; any current up to 6A can be chosen using other value resistors. For those who wish to customize the board for other voltages and currents, there is IBM compatible software, including source codes, to assist in programming the required resistor values.

The kits are easy to assemble and include a step-by-step manual, schematics, and trouble-shooting information. Assembly requires screwdriver, pliers and soldering equipment. Needs space that provides adequate air circulation.

Prices:

SC06 Solar Battery Controller (add $7.25 s/h), $185; BC-LVOLT-06 Lo Volt Disconnect Option for 6 volts $18; BC-LVOLT-12 Lo Volt Disconnect Option for 12 or 14 volts $18.

Contact Jade Products, Inc., P.O. Box 368, East Hampstead, NH 03826-0368; 603/329-6995, fax 603/329-4499. E-mail: djade@hampsead.k12.nh.us or WWW: http://www. hampstead.k12.us/~djade/

Worldradio caps

Durable navy blue poplin caps with the attractive ***Worldradio*** logo imprinted in light blue are now available for a cost of $7.00 + $2.00 shipping & handling. The caps coordinate perfectly with the ***Worldradio*** mugs (see adjacent ad) and mark the wearer as very literate, indeed! Caps are adjustable and come complete with a navy decorative braid across the front. The underside of the bill is kelly green. Truly a class item!

Caps are available from ***Worldradio***, P.O. Box 189490, Sacramento, CA 95818. $7.00 + $2.00 shipping & handling. California residents please include $.54 for the privilege of living in the Golden State. WR

The MART

Classified
• Buy • Trade
• Sell • Inform

MART deadline: 15th of the month two months prior to issue date. Please include an address on all ads so prospective clients can contact you by mail, if they prefer.

Commercial rate: 35¢/word, prepaid.
Private rate: 20¢/word, prepaid.

THE MART *Worldradio*
2120 28th St., Sacramento, CA 95818

***WORLDRADIO* ON CASSETTES** for the blind. For information, contact TOM CARTEN, K1PZU, 1602-Y King's College, Wilkes-Barre, PA, 18711. F397

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send SASE to W6LS, 45527 3rd St. East, Lancaster, CA 93535-1802 to get data sheet. F397

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write SUSAN BIGGS, 9708 Skillman #107, Dallas, TX 75243. F397

AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 80 clubs in the greater Baltimore/Washington DC area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For a sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-7612. F1296

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92033. 396-397

FREE HAM GOSPEL TRACTS. SASE, N3FTT, 5133 Gramercy, Clifton Heights, PA 19018. 894-1096

WANTED: ELECTRON TUBES, ICs, semiconductors. ASTRAL, P.O. Box 707WM, Linden NJ 07036. Call 800/666-8467. 196-197

HAM RADIO REPAIR! Reasonable charges. JIM RUPP (WARRC), 998 Whipple, Grayland, WA 98547-0697, 360/267-4011, AB7DR. 696-697

FREE: HAM RADIO GOSPEL TRACTS. Christian youth leaders needed for outreach areas. Membership is free. Send #10 SASE with call letters for details. RAY BOHMER, N1GDP, P.O. Box 8, Harmony, ME 04942. 5-896

FOREIGN AIRMAIL POSTAGE for successful QSLing! Monthly bargains. Low cost European nesting airmail envelopes! BILL PLUM, 12 Glenn Rd., Flemington, NJ 08822; 908/788-1020. 6-1296

PERSONALIZED HOURLY HF SKYWAVE PREDICTIONS from your city or town: SKYCOM v1.5 floppy disk for Apple Macintosh or IBM PC and compatible personal computers. Includes complete mathematical description of theory ($30). DX window v2.0 floppy disk circular projection world radio map centered on your QTH shows sunrise-sunset gray line for any time of interest. Includes feature which displays any of 400 prefixes on world map instantly. For all Apple Macintosh machines ($50). Satellite Predictions MACSAT 3.1, $50; P/H $5 N. America; $10 International. SASE for more info: ATTN: DX; ENGINEERING SYSTEMS INC., P.O. Box 939, Vienna, VA 22183. F397

WANTED FOR MUSEUM: Apple-1 and other pre-1980 micro-computers, also early micro-computer journals, newsletters and advertising literature. KK4WW, P.O. Box 341, Floyd, VA 24091, 703/231-6478 or 703/763-2321. 196-197

AMATEUR RADIO REPAIR— Prompt service. HALL ELECTRONICS, 1660 McKee Rd., Ste. A, San Jose, CA 95116; 408/729-8200. 196-397

ELECTRON TUBES Transmitting, receiving, military obsolete...all types. Large inventory. Fast delivery. DAILY ELECTRONICS, 10914 N.E. 39th St., Ste. B-6, Vancouver, WA 98682; 360/896-8856, 800/346-6667, fax 360/896-5476. 396-397

DIGITAL JOURNAL published 12x per year features everything for the digital communicator. Rigs, operations, computers, software, news and reviews. $25 U.S., $42 DX-Air. Mail orders (with payment — U.S. funds only) to IDRA, Dept. W, P.O. Box 2550, Goldenrod, FL 32733-2550. Fax 407/671-0194. Visa/MC accepted. F1096

CHASSIS & CABINET KITS. SASE. K3IWK, 5120 Harmony Grove Rd., Dover, PA 17315. 1295-1296

BROWNIE'S QSLs since 1939. Catalog and samples $1.00. 3035 Lehigh St. (rear), Allentown, PA 18103. 6-996

NOW ON 40 METERS! Knob tuned w/ digital display, synthesized QRP tranceiver. Complete kit only $199.95 plus S/H $7.50 (continental U.S.). Guaranteed to work. For info send SASE; call/write to order. S&S ENGINEERING, 14102 Brown Road, Smithsburg, MD 21783; 301/416-0661. 3-896

FREE ADVERTISING. Buy, sell, trade swap sheet. SASE: ADVERTIZER-WR, 39652 West Idylwild, BassLake, CA 93604-9711. 4-996

2 KW ANTENNA TUNER KIT $149, HV variable capacitors, roller inductors, counter dials, plus more! Catalog $1. KILO-TEC, P.O. Box 10, Oak View, CA 93022. 7-1296

ISLAND HUNTERS read the Island News. Sample #10 SASE to VANCE LEPIERRE, W5IJU, P.O. Box 701, Fernandina Beach, FL 32035. 6-1196

COMMERCIAL LEGAL RADIOS. For less than $400 you can have an American made mobile or handheld VHF radio, legal on search and rescue, volunteer police, fire, medical, etc. Also available for new CAP splinter channels. Free spec sheet. 800/755-7169, ask for Gar or Sue. AXM ENTERPRISES, 11791 Loara St., Ste. B, Garden Grove, CA 92640. 896

PACKET RADIO AND MORE! Join TAPR, connect with the largest packet/digital group in the U.S. Creators of the TNC-2 standard and currently working on spread spectrum. Benefits: newsletter, software, discount on kits and publications. $15/year U.S., $18 Can/Mex, $25 elsewhere. Visa/MC. When joining, mention ***Worldradio***, receive TAPR's Packet Radio: What? Why? How? ($12 value) FREE! Internet: tapr@ tapr.org; Web: http://www.tapr.org; 817/383-0000. Mail: 8987-309 E. Tanque Verde Rd., #337, Tucson, AZ 85749-9399. 6-896

WANTED: HAM EQUIPMENT AND RELATED ITEMS. Donate your excess gear — new, old, in any condition — to the Radio Club of Junior High School 22, the Nation's only full-time, non-profit organization working to get ham radio into schools around the country as a teaching tool, using our EDUCOM (Education Thru Communication) program. Send your radio to school. Your donated material will be picked up ANYWHERE or shipping arranged and this means a tax deduction to the full extent of the law for you as we are an IRS 501(c)(3) charity in our 16th year of service. It is always easier to donate and usually more financially rewarding but most important, your gift will mean a whole new world of educational opportunity for children nationwide. Radios you can write off, kids you can't; make 1996 the year to help a child and yourself. Write, phone or fax the WB2JKJ "22 Crew" today: The RC of JHS 22, P.O. Box 1052, New York, NY 10002. Call 24 hours 516/674-4072 or fax 516/674-9600. Join us on the WB2JKJ classroom net, 7.238 MHz 1200-1330 UTC daily and 21.395 MHz from 1400-2000 UTC. Meet us this month at the Huntsville Alabama Hamfest. 896

GREAT HAM ITEMS. Computer mouse pad/CW key pad made from your QSL card, only $10.95. Name and call sign caps $5.95. QSL T-shirt, $12.95. Jacket with embroidered name and call $24.95. Add $3.50 S/H. Send check to PERSONALIZED PHOTO, Dept W, P.O. Box 370244, West Hartford, CT 06137; 860/233-7277. 6-896

IBM SHAREWARE 99 CENTS A DISK. Over 1,000 virus-free programs. Over 250 ham related titles. Send $1, refundable with order, for 41-page catalog. CHEAP SOFTWARE, P.O. Box 693, Agoura Hills, CA 91376-0693. 796-197

PICTURE QSL CARDS of your shack, etc., from your photo or black and white artwork. 500–$28.00, 1000–$44.50. Also non-picture cards. Customized cards, send specifications for estimate. Send two stamps for illustrated literature. Generous sample kit–$2, half pound of samples–$3. RAUM'S, 8617 Orchard Rd., Coopersburg, PA 18036. Phone or fax 215/679-7238. 5-896

PEAK CONVERTER! Transforms averaging wattmeters to read PEP with flip of switch. Peak hold adjustment to 10 seconds. $19.99 ppd. kit. HI-RES, 8232 Woodview, Clarkston, MI 48348; 810/391-6660. 5-896

NEW PRODUCTS FROM S & S — UPGRADE YOUR OLD RIGS! "Digital Dial" has 10 Hz resolution and frequency range 50 kHz to 230 MHz; Kit $79.95; assembled $129.95. "Digital VFO" with 1 Hz resolution; Kit $139.95; assembled $189.95. S&H $7.50 (Continental U.S.). GUARANTEED TO WORK. For info, send SASE; call/write to order: S & S Engineering, 14102 Brown Rd., Smithsburg, MD 21783; 301/416-0661. 7-996

VIBROPLEX, MARTIN AND BUNNELL-MARTIN BUGS WANTED by collector. Looking for Vibroplex bugs with New York or Georgia nameplate. Still seeking Melehan Valiant keys. RANDY COLE, KN6W, 4540 Fairway St., Dallas, TX 75219; 214/521-7041. 7-1196

PLAQUES AND ENGRAVING FOR AMATEUR RADIO OPERATORS. Attractive wall plaques to detail your operating accomplishments. Any custom engraving. Great product list. SASE for brochure: KN3A-CAMELLIA TROPHY SHOP, 590-B Schillinger Rd., South, Box 96, Mobile, AL 36695. E-mail to: aspw25e@prodigy.com 7-896

AMATEUR RADIO REPAIR. HF, VHF, UHF all brands, repeaters and amplifiers serviced, DUPLEXERS tuned. Prompt service, reasonable rates, FCC licensed. CENTURION COMMUNICATIONS, 892 N. Delsea Dr., Vineland, NJ 08360; 609/794-8000. 7-1296

AMATEUR RADIO REPAIR. Two technicians — combined shop experience of over 60 years. We repair real radios that "glow in the dark," as well as the latest SMD construction. BORSCH ELECTRONICS, 9935 SW Johnson St., Tigard, OR 97223; 503/684-5201. 4-996

QSL SAMPLES —50¢ SAMCARDS, 48 Monte Carlo Dr., Pittsburgh, PA 15239. 1295-1296

KEYS, MILITARY FLAMEPROOF, J-45 and Viet-Nam era electrovoice thigh, J12, etc. 16-page illustrated revised list of these and other telegraph-related, $3 (refund $5 for purchase of $20 or more) plus two stamps. WR JACOBS, 5 Yorktown Place, Fort Salonga, NY 11768; 516/261-1576. 7-896

QSL CARDS. Standard and custom. Your ideas or ours. Excellent quality. Foil stamping available. Many designs and type styles. Catalog and samples $1.00 refundable. WILKINS, Dept. D, Box 787, Atascadero, CA 93423. 5-896

CHAVERIM-WESTERN USA AND MEXICO CHAPTER. Jewish amateurs and friends interested in our chapter or the Chaverim, contact KA6BJO, 2242 #N, Laguna Hills, CA 92653. 696-697

UNUSUAL OPPORTUNITY. Miniquad for 20, 15, 10 and 6 Meters. Hambands $350. MFJ-931 artif. ground $65. Wanted: Kenwood DM 81 grid dip meter. ALBERT KEEN, KI6UY, 6051 Lindley Ave., Tarzana, CA 91356; 818/342-9467; Fax 818/996-3802 6-896

WANTED: Collins radios any condition. FRED, W6YKM, 17890 Sharon Ct., Pine Grove, CA 95665; 209/296-5990; fhonnold @continental.com 8-1296

STATIC DISCHARGE AND LIGHTNING protection for towers and antennas. Under $25. For information packet, contact NI4P 3236 Walter Rd., Robards, KY 42452 or e-mail: ni4p1@hcc-uky.campus.mci.net 796-197

100 QSL CARDS $7.50. We pay postage. Stamp for sample. ARTIST, P.O. Box 111534, Nashville, TN 37222. 896

COMMODORE 64 HAM PROGRAMS— 8 disk sides—over 200 ham programs $16.95. 32¢ stamp gets software catalog. HOME-SPUN SOFTWARE, Box 1064-W, Estero, FL 33928. 896

FOR SALE: Norcal 40A — QRP 2W transceiver, professionally wired $150. W6XM 619/459-5527. 896

QSLs — ELEGANT, AFFORDABLE. Samples $1 (refunded with order). ELEMENTAL DESIGNS, Dept. W6085, 1639 Fordham, Mountain View, CA 94040. 8-1296

SELLING VARIABLE CAPACITORS, 25 to 250 pF 4kV removed from new equipment, ideal for tuners. $50 each including postage. W6QEU, 1236-40th Ave., Sacramento, CA 95822. Msg phone 916/421-1637 (Kopps). F197

WE REPAIR BROKEN RADIOS! 16 years specialized experience repairing only Kenwood, ICOM, Yaesu, Atlas, Azden equipment. Specializing in lightning-damage repair. Optimized alignments, enhancements, modifications (including installed crystal filters) available. INTERNATIONAL RADIO, 1118 Raymond Ave., Ft. Pierce, FL 34950; 407/489-6302. 896

WEST VIRGINIA'S LARGEST hamfest-computer show, Sunday, September 15, Wheeling Park, Wheeling WV. Dealers, refreshments, fun contest, women-children free, 8 a.m. to 3 p.m. Admission $3. Info, TSRAC, Box 240 RR 1, Adena, OH 43901; phone/fax 614/546-3930. 896

QRP KITS — The NW8020 series of monoband transceivers for 80, 40, 30, and 20 Meters. Full 5 watts out, real QSK, Xtal ladder filter with VBT (Variable Bandwidth Tuning). RIT and plenty of speaker audio. $75 plus $5 S/H. Optional audio filter for pulling the weak ones out of the mud $20. If ordered separately, add $2.50 S/H. EMTECH, 3641A Preble St., Bremerton, WA 98312; 360/415-0804, e-mail to: roygregson@aol.com 896

FOR SALE: ALPHA 76CAE amplifier. Clean, used less than 50 hours, perfect condition, non-smoker. Will ship prepaid CONUS $1,750. You pick up $1,675. W6QEU, 1236-40th Ave., Sacramento, CA 95822. Msg phone 916/421-1637 (Kopps). F197

WANTED: Ham-Pro 10-meter monobander, three or four element antenna only. Peter Onnigian, 1236-40th Ave., Sacramento, CA 95822. Msg phone 916/421-1637 (Kopps). F197

Advertisers' Index

VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing those VE exams, times and locations which are sent to us.

Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for October, please have the information to us by mid-July.

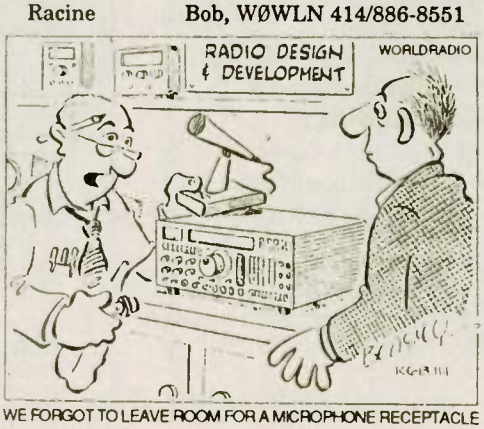
p/r pref. = pre-register preferred but w/i OK
p/r = pre-register only — no w/i

Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams."

List the location (City), any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

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

State	City	Contact	Notes
Arizona			
9/14/96	Tucson	Joe, K7OPX 520/886-7217	
Arkansas			
9/21/96	Gassville	Phil, AB5ZU 501/425-7406	p/r pref.
9/14/96	Siloam Sprgs	Mike, KJ5OP 501/524-8090	p/r pref.
California			
9/15/96	Berkeley	Gary, N6YBS 408/255-9000	w/i only
9/26/96	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	
9/28/96	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	p/r pref.
9/21/96	Cupertino	Emmett, AE6Z 408/243-8349	p/r
9/28/96	Escondido	Harry, WA6YOO 619/743-4212	p/r
9/28/96	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
9/03/96	Fremont (TP)	Greg, KJ6EP 510/791-6818	w/i only
9/15/96	Fresno	Charles, W6DPD 209/431-2038	p/r pref.
9/27/96	Garden Grove	John, N6CTV 714/534-8633	p/r pref.
9/09/96	Lancaster	Adrienne, WA6YEO 805/948-1865	p/r
9/14/96	Modesto	Chet, W6XK 209/883-2968	p/r pref.
9/21/96	Oakhurst	Ken, K6LFR 209/683-8245	
9/01/96	Oakland	Allen, AA6UX 415/752-8783	p/r pref.
9/28/96	Pomona	Don, WA6HNC 909/949-0059	p/r
9/21/96	Porterville	Phil, WA6WRS 209/535-4288	w/i only
9/14/96	Redding	Evan, WU6Q 916/547-3665	p/r
9/21/96	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
9/21/96	Sacramento	Lyle, AA6DJ 916/483-3293 or Phil, N6ZVA 916/338-3223	w/i
9/04/96	Sacramento	Larry, KD6OLN 916/361-2476	p/r pref.
9/14/96	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
9/07/96	San Rafael	Recording 707/996-6461	p/r pref.
9/11/96	Santa Ana	Red Cross, 714/835-5381 x140	w/i
9/14/96	Santa Barbara	Phil, KG6KB 805/962-8957	p/r pref.
9/21/96	Stockton	Mark, W6DKI 209/465-7496	w/i
9/28/96	Sunnyvale	John, KG6XF 408/255-9000	w/i only
9/10/96	Yuba City	Homer, KB6EJ 707/673-0868	p/r
Colorado			
9/14/96	Denver	Glenn, WØIJR 303/366-9689	p/r pref.
9/96	All Colorado	Exams recording 303/360-7293	
Florida			
9/21/96	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
Georgia			
9/21/96	Marietta	Joanne, AC4JQ 770/955-3171	w/i
9/02/96	Marietta	Delaine, KM4FV 770/993-9758	w/i
Idaho			
9/04/96	Athol	Bob, N7GHV 208/683-2094	p/r
9/14/96	Boise	Lem, W7JMH 208/343-9153	p/r pref.
9/14/96	Priest River	Russ, AA7XM or Chris, AA7XN 208/264-4534	p/r
Illinois			
9/17/96	Aurora	James, N9UZC 708/879-3042	w/i
9/21/96	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
9/14/96	Oak Forest	David, NF9N 708/448-0580	p/r pref.
9/26/96	Villa Park	Lyle, WB7EED 708/325-5694	w/i pref.
Indiana			
9/28/96	Lafayette	Bob, W7YE 317/423-1035	
Maryland			
9/24/96	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref.
Massachusetts			
9/27/96	Holyoke	Dave, N1MHP 413/592-4978	w/i
9/21/96	Melrose	Scott, WB1F 617/665-7654	p/r pref.
Minnesota			
9/07/96	St. Paul	Jay, KØQBE 612/222-7253	p/r pref.
Missouri			
9/07/96	Kimberling	Jim, NQØG 417/739-2888	p/r pref.
Nebraska			
9/13/96	Sioux City	Brian, AAØDQ 712/255-0071	p/r pref.
Nevada			
9/21/96	Minden	George, WW7E 702/265-4278	w/i pref.
New Jersey			
9/14/96	Cranford	24 hour hot-line 201/377-4790	w/i pref.
9/19/96	Bellmawr	Bill, NT2N 609/933-1500	w/i pref.
9/11/96	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	p/r pref.
9/21/96	Pennington	Don, AA2F 609/737-1723	p/r pref.
New Mexico			
9/21/96	Las Cruces	Gunnar, AE4W 505/525-2159 or Dean, WA7EPU 525-1962	p/r pref.
New York			
9/21/96	Long Island	Les, AA2FJ 516/364-0030 or 516/922-0947	p/r pref.
9/10/96	Long Island	Bob, W2ILP 516/499-2214	w/i pref.
9/01/96	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
9/22/96	N. Lindenhurst	Walter, KA2RGI 516/957-0218	p/r pref.
Ohio			
9/07/96	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
9/14/96	Van Wert	Robert, KA8IAF 419/795-5763	p/r pref.
9/19/96	Youngstown	Jerry, N8IRL 216/534-1394	p/r pref.
Oregon			
9/28/96	Eugene	Bary, AA7LE 541/343-8811 days or 541/935-2518 eves.	p/r
9/18/96	Florence	Hal, N7NNA 541/997-2323 or Bob, KH7VA 541/997-1222	p/r pref.
9/13/96	Grants Pass	Clyde, AA7WC 541/474-0205 or Gary, KB7CFI 541/474-7974	p/r pref.
9/28/96	Klamath Falls	Brad, KG7OK 541/883-1737	p/r pref.
9/11/96	Roseburg	Dick, AA7GC 541/672-7564	p/r pref.
Pennsylvania			
9/07/96	Erie	Norma, W3CG 814/665-9124	p/r pref.
Rhode Island			
9/08/96	E. Providence	Bob, AA1CT 401/438-0935	p/r pref.
9/12/96	Providence	Al, NN1U 401/231-9156 or Judy 401/454-6848	w/i pref.
South Dakota			
9/14/96	Rapid City	Frank, NUØF 605/348-6564	p/r pref.
Texas			
9/21/96	Austin	Jim, AB5EK 512/327-6184	w/i pref.
9/10/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
Virginia			
9/28/96	Glouster	Harry, N4THN 804/642-3517	p/r pref.
9/22/96	Virg. Bch	Ed, W4RTZ 804/898-8031	p/r pref.
Wisconsin			
9/07/96	Racine	Bob, WØWLN 414/886-8551	p/r pref.



WE FORGOT TO LEAVE ROOM FOR A MICROPHONE RECEPTACLE

WORLDRADIO BOOKS

AERIALS II, *by Kurt N. Sterba & Lil Paddle*

A compilation of antenna columns which appeared in ***Worldradio*** from 1985-93. 88 pp. $11.00 + $2.00 s/h ($4.00 for non-US ZIP air delivery.) CA residents add $.85 tax.

40+5 YEARS of HF MOBILEERING. *by Don Johnson, W6AAQ*

This long-awaited and eagerly [illegible] vision of Don's "40 Years of HF Mobil[illegible]" [illegible]ay for shipping. A compendium of inval[illegible] mobile antennas. 104 pp. $14.95 + [illegible] for non-US ZIP air delivery.) CA residents add $1.[illegible]

Out of stock Out of stock

WHEN THE BIG ONE HITS... *A Survival Guide for Amateur Radio Operators, by Jerry Boyd, KG6LF & Jay Boyd, KN6BP*

Tells Amateur Radio operators what to do to prepare for survival, safety of families and loved ones, and perform disaster communications duties efficiently in the face of disaster. 56 pp. $7.50 + $2.00 s/h. ($4.00 for non-US ZIP air delivery.) CA residents add $.58 tax.

THE LITTLE PISTOL'S GUIDE TO HF PROPAGATION, *by Robert Brown, NM7M*

Explains the intricacies of HF propagation so that average- and low-power station operators can more efficiently take advantage of ionospheric conditions to make those rare DX contacts. 128 pp. $10.00 + $2.00 shipping and handling. ($4.00 for non-US ZIP air delivery.) CA residents add $.78 tax.

SIX METERS, *A Guide to the Magic Band, by Ken Neubeck, WB2AMU*

A labor of love by the author, the book provides comprehensive information on Six Meter equipment and modes. A little history of the Golden Age of Six Meters is provided along with some explanations for the causes of various forms of propagation. 80 pp. $12.00 + $2.00 shipping and handling. ($4.00 for non-US ZIP air delivery.) CA residents add $.93 tax.

THE BEST OF BEASLEY, *by Robert Beasley, K6BJH*

"Oh, to see ourselves as others see us...." A wacky view of Amateur Radio through the eyes of a very clever cartoonist. Great gift for a fellow amateur. 112 pp. $8.00 + $2.00 shipping and handling. ($4.00 for non-US ZIP air delivery.) CA residents add $.62 tax.

INSIDE AMATEUR RADIO, *by Lenore Jensen, W6NAZ*

Interviews with the people who make Amateur Radio the engaging hobby that it is. A collection of short stories and anecdotes detailing courageous rescues, hilarious situations and heart-warming tales, as told by the hams who made them happen, through the "pen" of someone who truly knew what it was about inside Amateur Radio. A must for every ham shack coffee table. 93 pp. $9.00 + $2.00 shipping and handling. ($4.00 for non-US ZIP air delivery.) CA residents add $.70 tax.

••••••••••••••••••*Send your order to*••••••••••••••••••

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

Send me the following books:

QTY	TITLE	PRICE	TOTAL
____	AERIALS II	$11.00	____
____	40+5 YEARS OF HF MOBILEERING	Out of stock	
____	BIG ONE...	$7.50	____
____	LITTLE PISTOL'S GUIDE TO HF PROPAGATION...	$10.00	____
____	SIX METERS...	$12.00	____
____	BEST OF BEASLEY	$8.00	____
____	INSIDE AMATEUR RADIO	$9.00	____
	SUBTOTAL		____
	CA residents add 7.75% sales tax		____
	S&H charges: $2.00 for the first book to an address, and $1.00/book for additional books		____
	TOTAL PRICE		____

❒ Check or money order enclosed for $_____

❒ Charge my credit card:

❒ VISA ❒ MasterCard ❒ American Express

_____

Account Number Expiration Date

_____

Signature

_____

Name & call (please print)

_____

Address

_____

City/State/Zip

Late Flash

22 July-Gate 1A opens for club memorial calls

"A license trustee of a club station may request in memoriam the call sign previously shown on the station license of a deceased person who was a member of the club. The club must have held a club station license grant on March 24, 1995. The requestor must possess a letter from a close relative of the deceased confirming the deceased person's association with the club and show consent of the relative to the application." John Johnson, W3BE, ***Worldradio***, January, 1996, page 8.

The above is a thumbnail sketch of what is covered by gate 1A. A public notice was issued on 21 June, 1996, detailing the necessary steps to be taken by a club to acquire an "in memoriam" call sign. It is quite lengthy, and says in part ". . . To request a vanity call sign for a club station, you must also hold an unexpired club station license grant listing you as the license trustee." "You may request your club station's former call sign even though it has been unassigned for less than two years . . . the two-year requirement does not apply to an otherwise eligible club station if the call sign was previously assigned to the club station for which the requestor is the license trustee . . . ."

The Public Notice stresses that legibility on the application 610-V is critical, that if the application is not legible, ". . . you could experience a delay in processing, lose the opportunity to obtain a requested call sign or even obtain a call sign different from what you want."

The FCC advises that anyone planning to request any vanity call sign obtain Fact Sheet PR5000 Number 206-V AMATEUR STATION VANITY CALL SIGN SYSTEM, submit your request on FCC Form 610-V, and include the $30 fee. Send the application package to:

FCC
Amateur Vanity Call Sign Request
P.O. Box 358924
Pittsburgh, PA 15251-5924

For further information, contact the Consumer Assistance Branch at 1-800-322-1117. WR

Worldradio

(USPS 947000)
P.O. Box 189490
Sacramento, CA 95818-9490

POSTMASTER: Send this page (NOT A COPY — THAT'S WASTEFUL!) with changes of address to above. (Please include mailing label intact. Please do not obliterate ANY information on the mailing label.)

Periodicals Postage Paid
Sacramento, CA
and additional
mailing offices