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Worldradio

Year 26, Issue 10 April 1997 • $1.50

Here is Ethel Smith, then W3MSU, in her "cover girl" photo. It graced the cover the the May, 1953 issue of *CQ Magazine*. The 10M mobile rig was built into her car, shown here — a Henry J!

Ethel Smith, K4LMB

Lou Ann Keogh, KB6HP

Pioneer YL operator Ethel Smith, K4LMB, died on 5 February 1997, one week before her 80th birthday. In 1996, Ethel had celebrated her 60th anniversary as an Amateur Radio operator by taking and passing her Extra Class examination.

Most widely recognized as the person responsible for the founding of the Young Ladies Radio League, Ethel Smith's life and her involvement in Amateur Radio was far more varied than most people realize. Her introduction to radio in general came in 1922, at the age of five. The family lived in rural Washington state, "...in the middle of an apple orchard in Wenatchee..." she wrote recently. A relatively "rich" neighbor, she said, bought a broadcast radio and "...invited all the neighbors in to listen to this new marvel.... There were lots of crackles and weeps and wails of interference. One of the neighbor ladies was convinced these noises were the cries from souls in purgatory. I remember peering down the long throat of the horn speaker to see any signs of ghosts down there."

In 1935 Ethel's father bought the family's first radio, one that included a couple of shortwave bands. There was noise that sounded like intelligence (as opposed to ghosts), which were, one of her schoolmates informed her, Morse code — ham radio to be exact. Not only that, a boy in her school was indeed, one of the "hams" who did that sort of thing. That did it. She tracked the boy down, borrowed a license manual and a *Handbook* from him, and "...never quit until I got my own license." Although doubtful of any female becoming really serious about Amateur Radio, the local hams were very polite and encouraging, and loaned her a receiver and code practice equipment.

Ethel made flash cards with study questions on them. She translated road signs into CW and went over everything hundreds of times, as she told the story, until May of 1936, when she felt confident enough of her ability to handle 13-word-per-minute code, so the 10-word-per-minute test requirement was easily passed. The essay questions were successfully completed too, so she went home to camp out by the mailbox for the next few weeks to await the arrival of her ticket, which bore the call W7FWB.

Her father was kind enough to construct an antenna support out of 2x2 boards, and Ethel was on the air. "That was probably the last good night's sleep I ever had," she later joked. Within a few months, W7FWB was actively participating in CW traffic nets, became an Official Relay Station (ORS), and eventually joined the forerunner of MARS, the Army Amateur Radio System, and soon after that was made NCS of the second AARS net for the state of Washington.

In May of 1939, Ethel responded to a notice in *QST* which asked how many YL stations were really out there in radio land. That response marked the beginning of YLRL, which formally adopted its constitution and bylaws in October of 1939. Ethel said recently "I got an inordinate amount of credit and publicity over the years because of YLRL, but

(please turn to page 6)

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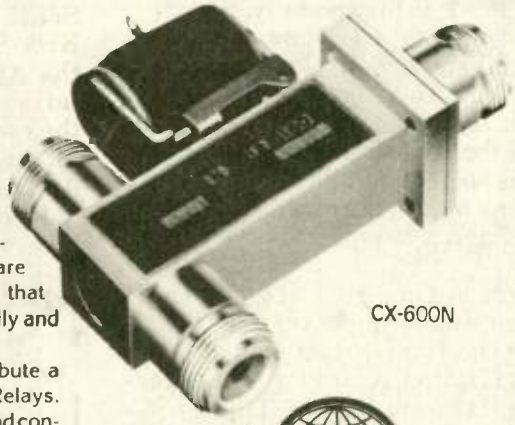
— Ted S. Henry



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NEWSFRONT

Worldradio

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

WA4SIR To speak at Dayton banquet

A well-known ham has been named as the banquet speaker of the Dayton Hamvention. Ron Parise, WA4SIR, will address the crowd in Dayton on Saturday night the 17th of May.

Ron came to fame in the world of Amateur Radio when he pioneered packet radio from the space shuttle in December of 1990. The mission was STS-35 aboard the *Columbia*. Ron held dozens of voice QSOs with fellow hams all over the world. In addition to the packet operation on that early day SAREX mission. He had to wait almost three years to fly, after the *Challenger* tragedy put a hold on manned space flight.

Later, Ron flew again aboard STS-67 aboard the *Endeavor* in March of 1995. Working from his home base at the Goddard Space Flight Center as an engineer-scientist, WA4SIR is not an astronaut, he is a payload specialist. The payload NASA calls ASTRO-1, is his specialty.

Astronauts are pilots or mission specialists. As a payload specialist, Ron handles a highly technical payload. It is so sophisticated that it calls for very special operation. He plans to give details about that, as well as highlights of his missions at the Dayton banquet on the 17th of May.

Here is some good news for those of you wondering how to get to and from the Hamvention site once you get to Dayton. According to the planners, Hamvention has found a replacement for those costly hotel buses that ran in the past. Instead, they have arranged with a taxi cab company to have a number of cabs at Hara Arena along with a curbside starter to facilitate the operation.

The cab company has agreed to a flat rate between the local hotels and Hara Arena. In other words, the rate charged will be per trip depending on distance, instead of a per person fee.

The Hamvention has also added free bus service to and from Dayton Mall and the University of Dayton Arena. They will also continue the free buses to and from Hara Arena from the Air Force Museum, Forest Park, the Salem Mall and the KOA Campgrounds.

ARRL Honors hams

The American Radio Relay League has bestowed honors on several hams. Dr. Robert C. Smithwick, W6JZU, and Mr. Ken Kirk-Bayley, GJØKKB, have won the ARRL International Humanitarian Award for 1996. The two are the co-founders of MediShare International, a program of the Medical Amateur Radio Council.

James Jacobs, K1GHT, was awarded the ARRL Certificate of Merit in recognition of his lifetime of humanitarian service and goodwill through Amateur Radio.

Michael Pilotti, N3IRZ, also won an ARRL Certificate of Merit in recognition of his arranging for the travel of Ukraine radio amateur Nick Bortnick, UXØZZ, to the United States for special medical care which was featured in the September, 1996 issue of ***Worldradio***.

Schools selected for SAREX contacts

Sixteen schools, including institutions in the People's Republic of China and on Okinawa, have been picked for scheduled SAREX contacts during NASA's STS-83 space shuttle mission. The tentative launch date is 27 March.

Three hams are scheduled to be aboard the shuttle *Columbia*. They are Mission Commander James Halsell, KC5RNI, Payload Commander Janice Voss, KC5BTK, and Donald Thomas, KC5FVF, Mission Specialist.

The STS-83 flight is scheduled to last 16 days and will carry a SAREX station that is configured for voice and packet. The mission's primary payload is a microgravity science laboratory.

(more NEWSFRONT on page 7)

Correction

In last month's issue the following individual's calls were incorrectly reported, and should have read: Dennis Merritt, WB6UHQ; Roy Rudebaugh, KD6LLE; Tim Tribble, KD6MDV and Lew Williams, WB7NML. We apologize for the errors. —*Lou Ann, KB6HP*

Worldradio

April 1997 **Year 26, Issue 10**

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.

Second class postage paid at Sacramento, CA & additional offices.

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

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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

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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—Brenda Evans; Graphics Director/Advertising—Dianne Dunning; Circulation Manager—Marcia McZeek; Administrative Assistant—Beth Habian.

Publisher's Microphone

A thousand years from now, when the time capsule is opened, there for all to see will be the names and calls of those who were the latest to become ***Worldradio*** SuperBoosters (Lifetime Subscribers):

- **Harry Patton, Jr., W8HL, Royal Oak, MI**
- **Igor Rowen, N5XUS, Round Rock, TX**
- **James McCann, N6MCF, Hawthorne, CA**
- **Frank Valdez, KI6OQ, Simi Valley, CA**
- **Bernard Engebretson, NL7TG, Petersburg, AK**

•

A really great event is just around the corner — the International DX Convention, which this year will be held at the Holiday Inn, Fresno Centre Plaza, Fresno, CA from 04 to 06 April. This is the 50th annual get-together of DXers from throughout the U.S. and the world.

I've been to just about all of the latter half of this event's existence and to say that it is highly recommended would be a real understatement.

We have a new book titled *Near Vertical Incidence Skywave Communication* available now. The price is $14 and $2 shipping and handling. California addresses add $1.09 tax, please. It's 144 pages (8.5 x 11") and will be most interesting reading, especially for those interested in local area emergencies and public service. It's the result of much research on the military and the amateur level regarding having a strong HF signal in your nearby area.

•

There are some very dedicated amateurs who are, as the phrase goes, "Giving something back" in exchange for all the pleasure they have received from Amateur Radio. You will find such amateurs spending many evenings teaching the licensing classes, and there are many other avenues of service, also.

These serious amateurs want to see Amateur Radio grow and flourish even after they will be long gone. One question that causes many of them concern is that so many people get an Amateur Radio license and after a short period of time leave the ranks, never to return. And, that puzzles those who have found a lifetime of enjoyment from this avocation.

I may have come across what may be one reason for at least some of the defections.

Many new amateurs go to a meeting of their local radio club and are met with absolutely no recognition at all. Not a single word of welcome is spoken to them. This would strike them particularly strange if their "Elmer" had made a point of the fellowship that exists among radio amateurs.

What a terrible feeling it must be to sit in a room with 25 or so people with supposed common interests and be totally and completely ignored.

You may be saying that such a thing never happens at your club, but it does happen at many other clubs.

There are clubs, knowing that many of their members are inhibited introverts, that have appointed official greeters. Their job is to spot the newcomer and speak to them and possibly introduce them to the group as a whole. Obviously, the best choice for that position is not someone who has a job which entails sitting in a room by themselves all day and having no contact with anyone, and they thoroughly enjoy that.

Every club must have at least one member (most likely a salesman) who enjoys pressing the flesh and doesn't mumble.

Try to imagine what it would be like as a proud brand new amateur to go to a meeting of kindred souls and be totally snubbed. Discouraging?

Or, what if you were a long-term amateur that had just moved from another city and were now being treated as if you were invisible?

If the newcomer were to assume that all the amateurs were like the ones at the club he was so eager to be a part of, it could be understood why he might just drift away. The veteran amateur, without "ham buddies" to share projects and activities with, could also lose interest.

And to add a bit of irony to it all, at the meeting at which the newcomer was ignored, the topic from the club's president was how to increase club membership.

This also applies to when a newly licensed amateur comes on a repeater and all the old timers decide not to answer. They never stop to think back to when they were first licensed. How were they treated? Was it the same or was it better?

— Armond, N6WR

NEW

Compact Dual Band Mobile FT-8000R

Now, a dual band that's so advanced it's simple!

"So easy to operate, I didn't even need the manual!"

"High-tech features, too, like the enhanced Smart-Search™."

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The FT-8000R is the first mobile to provide super-wide receiver coverage – from 110 to 550 MHz and 750 to 1300 MHz*, receiving public safety, marine, and weather channels. Using Yaesu's exclusive Enhanced Smart Search™, the FT-8000R automatically seeks out and loads active simplex channels into up to 50 ESS memory channels in just seconds – ideal when traveling.

Built-to-last, the FT-8000R brings together the most-requested dual band features and a MIL-STD 810 rating for enduring performance. Dual receive (V+V, U+U or V+U), Crossband Repeat (bidirectional or one-way), up to 50 Watts of VHF power output (35 Watts on UHF) with High/Medium/Low selection on each band, and "plug and play" 1200 or 9600 bps packet are just a few.

Clearly a standout, the FT-8000R boasts 110 memory channels (55 per band including one-touch "Home" channels) that store repeater shift, CTCSS encode tone, and packet baud rate. Other essential features include a backlit microphone (another Yaesu first), Time-Out Timer, and an all-new S-Meter Squelch that opens based on the S-meter reading. And, for a programming alternative, the optional ADMS-2C Personal Computer Programming Kit simplifies operation even more.

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Features

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- 110 Memory Channels (55 per band,including "Home" channels)
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- Time-Out Timer (TOT)
- S-Meter Squelch
- Dual Receive (V+V,U+U,V+U)
- Crossband Repeat (bidirectional or one-way)
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- Intelligent Band Display (IBD)
- Receiver Muting
- Auto Power Off (APO)
- MIL-STD 810 Rating
- Omni-Glow™ Display
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Ethel Smith

(continued from page 1)

it was a group effort all the way.... I was designated the first President [however] and we were off and running.... By 1941, we had 250 members, and district chairmen in all of the nine [in those days] call sign areas and one in Canada."

Then came the bombing of Pearl Harbor on 7 December. On 9 December, Ethel received a telegram from the Presidio of San Francisco asking her to come there to work for the Signal Corps. She said "...my boyfriend went into the Navy, I went to work for the Signal Corps and the YLs scattered to the four corners of the earth, to work in the military services, industry, and government. There was a drastic manpower shortage because of the war, and any woman with *any* technical background was much in demand. I ended up working at the Naval Research Laboratory in Washington, D.C., and as soon as the war was over, I got back on the air and became very active again, as W3MSU."

Among those renewed activities were more MARS activity, including the then-new Navy MARS, and activity in the Washington (D.C.) Radio Club, and work with Andy Anderson, W3NL, on their newsletter, which was to become *Auto-Call Magazine*. Andy built a mobile transmitter into her Henry J automobile, and her photograph appeared on the cover of the May, 1953 Mobile issue of *CQ Magazine*.

That same year Ethel started a club at the Naval Research Laboratory with Leo Young and Howard Lorenzen, which led to the formation of the Washington TVI Committee. Ethel always regarded the work on that committee as one of her greatest accomplishments, but one that was seldom remembered by others.

Not one to leave YL activities for long, 1956 saw the formation of the Washington Area Young Ladies Amateur Radio Club, the WAYLARCs. In 1957, the TVI Committee and the *Auto-Call* crew formed the nucleus for the formation of the Foundation For Amateur Radio, FAR. Its primary purpose then was to sponsor a national ARRL convention to be held in Washington D.C. the following year.

Ethel wrote, "I was on the committee for the Women's Program and a handsome redhead from the FCC was on another committee. By the time the convention was over, Tex and I were thinking of getting married." John F. (Tex) DeBardeleben, then W3CN (ex-5PK), and Ethel gave up their W3 calls, as was necessary then, when they moved to their "antenna farm" in McLean, Virginia, and became W4TE and K4LMB.

K4LMB at the YLRL 50th anniversary bash in 1989.

Tex and Ethel were very active on the air, and had "his and hers" stations and "his and hers" antenna systems. "Worked fine," said Ethel, "as long as we didn't want the same frequency (or harmonic) at the same time." K4LMB served as Section Emergency Coordinator for the state of Virginia for three years. She related that she joined the Quarter Century Wireless Association as soon as she became eligible, and in 1974 became the General Manager for the association. She went on to be elected Secretary, Director, and Vice President, leaving the board in 1993, but still served on some of the board committees until the time of her death.

When her husband, Tex, and her mother, for whom she had been caring, both became ill in the mid-1970s, Ethel cut back on her many activities, only keeping up with her QCWA responsibilities, and the editing of *Auto-Call*.

After the deaths of her husband and her mother, Ethel slowly resumed her many Amateur Radio activities. She learned to use computers and became ***Worldradio***'s QCWA columnist for many years. In 1982, she organized an international YLRL convention in Washington D.C. Despite all the many tasks involved in the organization of such a huge convention, Ethel took the time to meet DXYLs who might have had a hard time negotiating the difficulties of a U.S. airport, to their great relief.

Nozomi Gohara, JH3SQN, writes: "...I first met her in Washington, D.C., at the YLRL Convention, in 1982. It was our first visit to the U.S.A. Ken and I were met by her at the airport. I clearly remember the scene at the time. She was standing with a *YL Harmonics* by the exit. I saw her at the same time she saw me... I was so pleased to see her and was so relieved. I had felt we would be waiting for the pick-up service for a fairly long time. Because I was not able to speak English, easily. I spoke, but she heard me patiently."

When asked to sum up her life and her involvement with Amateur Radio, Ethel said the following in March of 1996: "Amateur Radio is still the main focus of my life. It has brought me all the good things that ever happened to me. It took me out of the pretty hopeless poverty of my youth, it gave me a challenging and rewarding career, it gave me a wonderful husband and the greatest collection of friends in the world — all over the world. I owe more to Amateur Radio than I can ever possibly repay.

"Certainly my history has provided proof that Amateur Radio is not just for men. It can offer just as much to women. You will find that 99% of the fellows are not only willing but eager to encourage women to get into Amateur Radio. Women are no longer as few and far between as they used to be and the ranks are growing every day. For those of you who aren't licensed yet, I will just say try it — you'll love it." To the end of her life she encouraged everyone, men and women, to join in the service that had enriched her life.

Truth be told, it was her life that has enriched ours. **WR**

NEWSFRONT
(continued from p. 3)

ARRL offers weekend classes

The ARRL is going into the Amateur Radio training business. Beginning in March, the League will sponsor three Amateur Radio licensing classes, to be held at ARRL Headquarters in Newington, Connecticut.

Classes will cover the Technician Class test elements and an upgrade class will instruct the General Class theory. Each class will include proper amateur operating procedures and repeater etiquette. There will also be a radio and test equipment display and demonstration.

Instructing will be Ed Hammond, WN1I. Ed is a well known author and lecturer and a ham for 25 years. Technician licensing classes will be held 14-16 March and 11-13 April. A General theory upgrade class will be held 25-27 April. Classes will run from 6 to 10 p.m. on Friday evening, and from 9 a.m. to 5 p.m. on Saturday and Sunday.

If you know someone who is interested in Amateur Radio, tell that person that he or she can see a part of Amateur Radio history at the same time. Advance registration is required and there is a fee for this class.

Wisconsin teen net

Tony Olivero, N9ZWM, is a 14-year-old ham, and the net control of a Teen Net on the W9UDU repeater. The system is on 147.27 MHz. It covers southeastern Wisconsin and northern Illinois. The net meets on Thursdays at 7 p.m. Central time. Tony says that all teens in its coverage area are invited to check in and take part. You can contact Tony via the Internet at: N9ZWM@aol.com

DX

The *Island DX News* reports W1BIH will be active as PJ9JT from Curaçao through 30 March. Activity will have an emphasis on CW, with operations on 160 through 10 Meters. QSL via W1AX.

Also, ZS6EZ who serves as the QSL Manager for ZS8RI, reports that a lot of people are losing their QSLs mailed to him because they put "Edward and Marion Island" on their envelopes. ZS8IR's QSL route is via ZS6EZ in South Africa. Whatever you do, never put Edward and Marion Island on the envelope.

K8PYD, from the 8th Area QSL Bureau would like to remind everyone with a new vanity call sign to send new SASEs with your new call signs on them. Also, you should still send an envelope or two with your old call sign on it just in case some cards continue to show up over the next few years at your QSL bureau.

FCC licensing begins

The FCC has announced a delay in the requirement that all computers used in conjunction with Amateur Radio must be licensed. A line in the Telecommunications Act of 1996 describing this mandate had gone unnoticed until recently. Accordingly, the Commission has delayed the date for required registration until 1 April 1998. Fees have been set at $1 per megabyte of storage space, renewable annually. *—tnx, GEARVAKf*

Hams assist at Peru mudslide

Amateur Radio is reported to be providing communications in the wake of a mudslide that has buried dozens of homes in an isolated Andean region of Peru.

At least 14 people are dead and another 185 have been reported missing. According to news reports, the river of mud hit two towns in the Tamburco district, 300 miles southeast of the capital, Lima, on 18 February. Reports relayed by radio amateurs say that fourteen of the dead were found in the town of Ccocha.

FCC resumes vanity processing

Vanity call sign processing under Gate 2 of the FCC program is back in operation. The FCC's Gettysburg, Pennsylvania, facility has now processed vanity applications received from December 1st, 1996, through February 5th, of this year. In all, slightly over 2,400 applications were processed. Unfortunately, only half of the applicants managed to successfully snag one of their call sign choices. The FCC says that it issued 1,344 vanity calls from this batch. Another 1,000 applications ended up in the work-in-process stack for special handling.

Vanity call sign applications continue to arrive at the FCC. Gate 1 opened last May, Gate 1A opened in July and Gate 2 opened in September. There is still no word on when the FCC plans to open Gate 3. *—tnx FCC, ARRL*

Rules & Regs

Jack Kelleher
W4ZC

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w4zc@macconnect.com

Little LEOs narrow 2-Meter focus to 146-148 MHz

The ARRL Letter reported this update on the ongoing battle with the "little LEOs" and their attempt to acquire part of the Amateur Radio VHF spectrum:

"As the fight continues to prevent hams from having to share 2 meters and 70 cm with the Low-Earth-Orbiting satellite industry, changes favorable to Amateur Radio have been incorporated in a draft report that will eventually go to the FCC. While the Little LEO industry persists in its efforts to secure a foothold on both bands, it seems to have turned its sights away from 144 to 146 MHz in favor of 146 to 148-MHz, which is not an amateur allocation in Region 1. But, most significant was the addition of eight words — at the ARRL's request — to a draft report section dealing with sharing with the Amateur Radio: 'Any consideration of sharing would require further study.' AMSAT supported the League in requesting the changes.

"The latest draft also now states, 'The diverse nature of the Amateur Service characteristics makes sharing difficult, but it has not yet been demonstrated to be impossible.' The Informal Working Group-2A (IWG-2A) approved the changes at its January 21 meeting in Washington, DC. An earlier draft of the same section had called sharing 'difficult, but not impossible' and claimed that studies had not considered certain sharing techniques discussed elsewhere in the report. The ARRL objected on the grounds that its study had taken some of the sharing techniques into account.

"In this section of the report, the Little LEO industry also backed away from references that cited Resolution 640 (an ITU radio regulation that involves the use of specific bands on an emergency basis) as a way to leverage access to 430 to 440 MHz and 146 to 148 MHz in Regions 2 and 3, where that 2-meter band segment is an exclusive amateur allocation.

"It's expected that when the FCC's WRC-97 Industry Advisory Committee (IAC) meets March 5, it will adopt the sharing section of the report (Section 4.12) as part of its report.

"With the possible exception of 144 to 146 MHz, Amateur Radio still is not out of the woods, however. Another paper still under consideration in IWG-2A — submitted by a Little LEO consultant at the January 21 meeting —proposes little LEO sharing in several bands, including 146 to 148 and 430 to 450 MHz in those parts of the world where the Amateur Service is not primary (which, in the case of 430 to 450 MHz, includes the US), with provisions for emergency use elsewhere.

"The ARRL objects to these proposals, noting that they are inconsistent with the report language that's already been agreed upon. The US Department of Defense objects to little LEO allocations at 430 to 450 MHz, where radiolocation (radar) is primary. Military radar and Amateur Radio operations have a long record of coexistence that would be upset by the introduction of a new satellite service...."

RF Safety questions due in July

The nation's VECs have decided to begin testing hams on the new RF exposure questions next July, even though the FCC had granted a year's moratorium on the imple-

Amateur Radio Call Signs

The following shows the last call sign in each group to be assigned for each VEC Region under the sequential call system as of third of February 1997.
For more information about the sequential call sign sytem, see Fact Sheet PR5000 #206-S dated August, 1996, or contact the Federal Communications Commission, Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245, toll-free 1-800/322-1117.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØEB	KIØGL		KBØZNG
1	AA1RO	KE1GR	N1YMY	KB1CAD
2	AB2DA	KG2KA		KC2ATT
3	AA3PH	KE3YR	N3YQJ	KB3BRK
4	AE4AO	KU4BN		KF4OSX
5	AC5LD	KM5GN		KC5YTK
6	AC6ZQ	KQ6MQ		KF6ITI
7	AB7UB	KK7EY		KC7UJI
8	AA8ZD	KI8AT		KC8FXZ
9	AA9TS	KG9JD		KB9PLP
N. Mariana Is.	NHØA	AHØAW	KHØFS	WHØABF
Guam*	AH2DC	AH2RJ		WH2ANT
Hawaii	AH7M	AH6PA	KH7CO	WH6DDJ
Amer. Samoa	AH8O	AH8AH	KH8DC	WH8ABF
Alaska	ALØA	AL7QT	KLØDL	WL7CUC
Virgin Is.	WP2X	KP2CJ	NP2JP	WP2AIH
Puerto Rico	KP3V	KP3AP	NP3JX	WP4NMT

*All of the Group A call signs for Guam have been assigned. Any request for a Group A call sign will now be assigned a Group B format.

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mentation of its new rules regulating human exposure to radio frequency energy.

When it adopted the new RF exposure rules, the FCC also put forth a requirement that additional RF safety questions be added to the Novice, Technician, Technician Plus and General Class Amateur Service exams. This meant revising the question pool for these exam elements.

On 1 December the VEC's Question Pool Committee released revised questions for Elements 2 and 3A which are to be included in examinations administered after 1 July 1997.

The new RF safety questions are intended to quiz an applicant's knowledge of the hazards of exposure to strong electromagnetic fields as well as what precautions should be taken to keep himself and the general public away from harm.

Another vanity delay

The FCC says that it could be March before another call is issued under Gate 2 of the vanity call sign program. No vanity calls dated since the end of last November have been processed because of what an FCC spokeswoman called unspecified computer related problems.

Non-FM to file for UHF/VHF protection

Weak signal and other non-FM users of the VHF and UHF spectrum are saying it will be full speed ahead in preparing a rule-making request to the FCC to protect their turf from encroachment by users of FM in light of the formal signing of the agreement between the National Frequency Coordinators' Council and the American Radio Relay League. An agreement that creates the National Frequency Coordination office as the potential single point of contact between the FCC and the FM coordination community.

The move by weak signal, CW, SSB, EME, Amateur Television, satellite enthusiasts and even AM users to legally protect their subbands from encroachment by users of FM began on the Internet Usenet about three months ago. These hams say that they are very concerned about the memorandum signed between the ARRL and the NFCC because previous "gentleman's agreements" dealing with protected spectrum may no longer be honored by the FM community. The loose-knit group will ask the FCC to legally designate certain portions of all amateur bands from 50 MHz to 13 centimeters as being off limits to any FM signal, simplex or repeated in any way.

Six Meters and 2 meters already have protected segments for Morse-only operation. The coalition will request additional band segment protection based on current ARRL band plans. No protection is being asked for spectrum above 13 centimeters because there is not yet any mode standardization nor many users of these super high frequency bands. —*tnx Newsline*

FCC Establishes 5.7-GHz U-NII service

The FCC has amended Part 15 of its rules to make available 300 MHz of spectrum in the 5-GHz range — including part of secondary Amateur Radio allocations in that region — for use by Unlicensed National Information Infrastructure (U-NII) devices (formerly referred to as NII/SUPERNet devices). The FCC made available 5.15 to 5.35 GHz and 5.725 to 5.825 GHz. Part 15 requires that unlicensed operations not interfere with other services. The U-NII devices will provide short-range, high-speed wireless digital communications on an unlicensed basis.

The 5.650 to 5.925-GHz band is allocated on a secondary basis to the amateur service; additionally, the 5.65 to 5.67-GHz and 5.83 to 5.85-GHz subbands are allocated to the amateur-satellite service on a secondary basis. The original FCC U-NII proposal included 5.725 to 5.875 GHz, but the plan adopted this month excludes 50 MHz of this, including the Amateur Radio-satellite downlink at 5.83 to 5.85 GHz.

The FCC said it anticipates that U-NII devices will support the creation of new wireless local area networks (LANs) and provide wireless access to the National Information Infrastructure (NII). That's the name the FCC has given the "group of networks, including the public switched telecommunications network, radio and television networks, private communications networks, and other networks not yet built" to serve U.S. communication needs.

The FCC said it was "adopting the minimum technical rules necessary to prevent interference to other services and to ensure that the spectrum is used efficiently" in order to permit "significant flexibility in the design and operation of these devices." Significantly, the FCC abandoned its original proposal that would have presumed that U-NII devices were not causing harmful interference — even if interference was, in fact, caused — as long as the devices were operated within the technical parameters of the new regulations.

Although it initially proposed a listen-before-talk protocol, the FCC deleted this requirement in its final Report and Order, concluding that requiring such "spectrum etiquette" could delay deployment of U-NII devices and hinder innovation. Instead, the Commission concluded that simple technical rules "should be sufficient to ensure spectrum sharing between incumbent operations and new U-NII devices." The Commission also declined to adopt a channelization plan or a minimum modulation efficiency requirement.

Incumbent users of the 5.725 to 5.825-GHz band either opposed allowing U-NII operation because of interference concerns or urged that sharing studies be completed before that band was made available to U-NII devices.

In its comments on the plan, the ARRL argued against setting up an

unlicensed service. The League asserted that longer-range community networks are not consistent with the typical low-power operations authorized by Part 15. The ARRL said that the Communications Act requires that such higher-powered systems with a significant interference potential be operated on a licensed basis, and that the FCC was unlikely to enforce the requirement that unlicensed-device users cease operation if they cause harmful interference to allocated services.

The League argued that permitting the power of U-NII operations to exceed 100 mW EIRP or permitting the use of high-gain antennas by non-spread-spectrum U-NII devices would represent a significant departure from the underlying precepts of Part 15. Although the ARRL opposed the operation of U-NII devices in the 5.725 to 5.825-GHz band, it stated that if a 100 mW EIRP limit and a power spectral density (PSD) limitation of 0.03 mW in any 3-kHz bandwidth were adopted, then U-NII devices should be able to share this band with incumbent operations.

The FCC concluded that an increase in the power limits proposed in its rulemaking notice was supported by "new material in the record in this proceeding" but said that unrestricted antenna gain should be permitted because of interference concerns. The Commission decided to increase the maximum peak power limit to 50 mW peak transmitter output power with up to 6 dBi antenna gain (which equates to 200 mW EIRP) in the 5.15 to 5.25-GHz band; 250 mW peak transmitter output power with up to 6 dBi antenna gain (which equates to 1 W EIRP) in the 5.25 to 5.35-GHz band; and 1W peak transmitter output power with up to 6 dBi antenna gain (which equates to 4W EIRP) permitted in the 5.725 to 5.825-GHz band. Further, the FCC adopted a PSD requirement for U-NII devices that would require that the maximum power be spread across a bandwidth of at least 20 MHz.

The FCC said it believes that the new rules "will foster the development of a broad range of new devices and service offerings that will stimulate economic development and the growth of new industries." —*tnx ARRL Letter* WR

Your tower and the Telecommunications Act

Sherri and David Brower, N4XLF and WA4NST

As a result of the Telecommunications Act of 1996, frequency spectrum has been auctioned, building and zoning regulations and even deed restrictions will need to meet specific requirements if they regulate satellite TV dishes less than 39 inches in diameter. Cable TV, direct satellite TV and cellular phone companies are competing for your business. Local government regulations for personal wireless services have certain requirements set by the FCC, and much more. What has all this got to do with your tower and antennas in the back yard? *Plenty*!

Tower types

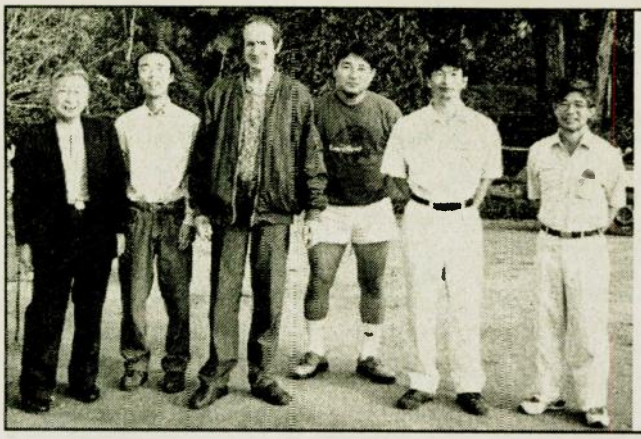
Cellular telephone and other digital wireless services need towers and antennas. Since the range of these signals averages only 5 miles, many antennas are needed. The Telecommunications Act of '96 states that local ordinances must not discriminate among wireless telecommunications providers, must not have the effect of prohibiting the services, and must act on requests for personal wireless services facilities within a reasonable length of time.

When local governments consider antennas and towers, they usually don't make much distinction among the different types of "towers." Amateur Radio antenna support structures therefore become one of those generic "towers." The preference in some governing bodies writing the new ordinances is for short towers with many antennas per tower. As Amateur Radio operators, we understand critical height of antennas, wind loads, antenna spacing and other concepts of antenna and tower construction. Local government officials understand the flood of tower applications from the commercial communications companies, neighbors who don't want to look at towers, and their obligations to the taxpayers. As the regulations are being rewritten, Amateur Radio tower height and location is being closely examined.

Keep informed

Most local governments will take a close look at the regulations regarding "towers" within the next year, if they have not already done so. Keep a close eye on the public

(please turn to page 55)



Pictured from left to right: Yoshiki "Dom" Uchiyama, JR6XIW; Yuki Ishikawa, C93AN; Roy Perkins; P.O. 2nd Class Nakamura; P.O. 1st ClassFukusato, JA6SJN and CPOTanaka, JG6BKB.

A Heaven-sent QSO

Kay Eyman, WAØWOF

Last spring, Nobuko "Ton" Uchiyama, JR6XIX, was tuning across 20 meters from her home on Okinawa, when she heard C93AN calling "CQ." She answered the call and learned that the operator was a young Japanese missionary, Hiroyuki "Yuki" Ishikawa, who was serving at the Maforga Christian Mission in Mozambique.

Yuki told Ton about his work at the mission, near the town of Gondola, which housed an orphanage, school, and small clinic. The missionaries also run two other orphanages, one at Gorongosa and one in Inhassoro, near the Indian Ocean. Yuki explained that there was very little money to buy food and they had a severe shortage of medicine, paper, and supplies for the school.

To make matters even worse, there were no telephones or electric power, and the missions had no way to contact each other. Yuki pleaded "help us."

Ton spoke to friends and many groups in Okinawa, and a large quantity of paper, pens, and supplies was soon donated. She also explained the situation at the next meeting of the Japanese Ladies Radio Society (JLRS), and the members responded by donating the money for postage (which was very expensive) to mail the first shipment of supplies to the mission.

In addition, Ton's husband Yoshiki "Dom" Uchiyama, JR6XIW, immediately began planning a trip to Mozambique to deliver more items, and to help build antennas and work on the station. He had 2,000 QSLs printed for C93AN, and started looking for other volunteers to accompany him.

Travel in Mozambique can be very hazardous. There are an estimated two million land mines scattered in the country from the civil war that started in 1975, and Dom knew there was a possibility they could meet guerrillas on the road.

He is retired from the Japanese Navy, and he took three friends who are still on active duty; Chief Petty Officer Tanaka, JG6BKB, Petty Officer First Class Fukusato, JA6SJN, and Petty Officer Second Class Nakamura, who is not licensed. They all took summer leave and paid their own expenses for the trip. Other retired and active duty members of the Japanese Navy and Air Force donated seven VHF transceivers to the project.

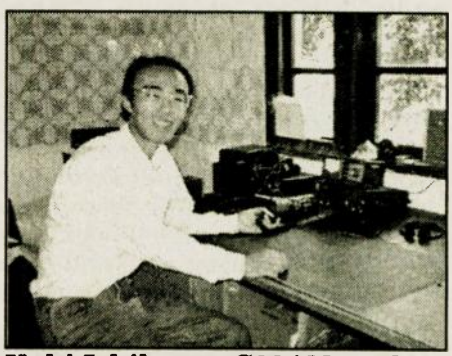
The trip was scheduled for 31 July, via Hong Kong and Johannesburg, South Africa. From Johannesburg, they would fly to Harare, Zimbabwe, where Yuki, C93AN, would meet them and drive them to the Maforga Christian Mission near Gondola.

On 31 July, a huge typhoon hit Okinawa and closed the airport, so Dom's three friends had to set out from Japan without him. They took the VHF transceivers, but Dom was bringing all the antennas with him from Okinawa, so they couldn't set up the stations until he got there.

All they could do until he arrived was to check possible sites for radio installations and play with the children. There were no toys on hand, so they made origami figures for them.

Three days after their arrival, Dom finally arrived, carrying a huge quantity of electronic parts. When his friends saw him, they yelled, "the antennas have arrived" (not "Uchiyama-san has arrived")! There were only 36 hours remaining until they had to leave, so they began work at once.

The first night they assembled all the ground plane antennas for 2 meters, made all the cables, and placed them in a Land Rover. They went to bed at 3 a.m. Arising just a few hours later, they separated into two groups. Dom's group went to the orphanage in Gorongosa, 50 miles northeast of Gondola. There were many craters in the road and one bridge had been blown up. A headquarters force had been stationed in Gorongosa, and many ruined armored personnel carriers had been left behind.



Yuki Ishikawa, C93AN, and his shack

By 10 p.m. that night, they made contact with Yuki back in Gondola. They used the car battery as a power source, which will later be replaced with a solar-charged battery. As there's no commercial power within 40 miles, the noise level is very low. The S-meter reading was a 3 on the ground plane antenna, and a 7 with the 5-element Yagi antenna. Dom heard later that a huge crowd of people had piled into the main office in Gondola to listen and were very surprised at the reception. They explained how to use the equipment they had installed, and again got to bed at 3 a.m.

The other group installed transceivers at a school, in a dormitory, and the "communications center"

in Gondra. The Maforga Christian Mission is situated in a country house built many years ago by a Portuguese count near Gondola, in the Beira corridor. There are about 250 orphans, and the missionaries oversee a four-year school and a small clinic. There is no doctor, but in the summer, two American student nurses serve as volunteers. Medicine is in short supply, and there is very little more available than can be found in the average American home medicine cabinet.

The school has about 500 students, including the orphans. The Portuguese language, mathematics, geography, and the standard classes are taught, but no writing instruction because of the lack of paper and supplies. The children are happy and eager to learn though, and they love to play football and sing spiritual songs.

Volunteers have built a concrete-block building containing 6 classrooms, with a slate roof and small windows. The orphans live in several houses, with the girls and all other children six years of age and under living in the mission center. The best house has a roof, walls, and windows which once had probably been a cowshed. But many children are living in the big 40-foot-long shipping containers which have windows cut in to them, or in tents. These were all left behind by the Japanese Army, who had been stationed there as part of an international peacekeeping mission. There is one additional dormitory in the town of Gondola for boys who are seven, or older.

There are no fresh vegetables or proteins, such as eggs or any kind of meat, available for the children. For foreign visitors, corn breads, tea, margarine, and peanut butter can be obtained, but the orphans eat potatoes and corn pudding. Corn and oranges are grown, but there are no cattle or pigs because of the tsetse flies. Grasshoppers attack the crops, and agricultural production in general is very difficult.

For transportation there is a Toyota pick-up for Roy Perkins, an Englishman who is in charge of the mission. Yuki has a Volkswagen, and there is a Land Rover, a Unimok ambulance that is used as a bus, and a truck. It sounds adequate, but the Volkswagen has a cracked windshield and one of the two engine mount bolts is broken, so it vibrates and makes a terrible racket when driven. The Land Rover was left over from a safari and given to the mission. The Unimok ambulance was left by the German Army, who were also present during the international peacekeeping mission.

Yoshiki "Dom" Uchiyama, JR6XIW, holds an orphaned infant.

When Yuki picked Dom up at the Harare Airport, the speedometer in the Volkswagen wasn't working but the tachometer was indicating over 3000 rpm. It was a scary ride over the almost impassable roads, but Dom calmed his fears by reminding himself that a missionary was sitting beside him, so Yuki could guide him to Heaven if something happened!

Yuki, who is 33 years old, is second-in-charge at the mission. He works almost 20 hours a day and is loved by everyone. He also assists in the clinic and is a vital force in the entire mission: He has little time to get on the air, so the 2,000 QSLs that were brought over to him will last for a long time. His usual operating time is between 1400 to 1600 UTC on Sundays, on 14.115 MHz.

His transceiver is an Icom IC-735, running 100 watts, and there is no amplifier. For back-up, he has an IC-720A and FT-757GX, which were donated by Dom. Yuki was using a G5RV antenna, but while they were there, Chief Tanaka found a log periodic antenna in the woods, where it had fallen and be-

come hidden by the brush. When he raised it he found that it was still good.

Yuki has obtained two towers, one aluminum and one steel, that are each 10 meters high. He will stack them to make a 20-meter high tower, but at present he is at least able to get a signal out. A Japanese station was copied at 5-9, although Yuki's report was not as good.

The mission has the loan of a room in Gondola, where a telephone and fax machine were housed. Since there is no one there on a regular basis, someone was able to break in and steal all the equipment in October, and it is uncertain when or how it can be replaced.

Chief Tanaka, JG6BKB, already has plans to return when he retires from the Navy in April, 2001. He has asked Dom to come back with him and hopes to bring a beam antenna, a rotator, and a 500 watt amplifier for an HF station in the mission center for Yuki. The four men left Mozambique knowing that they had performed a valuable service.

Answered prayers

Yuki told them that he had prayed for a communication system, because if anyone had car trouble while driving between the orphanages the only solution would be to walk back to the main office to get help.

He also needed HF communications for trips into the interior of the country. That first QSO with Ton turned out to be the answer to his prayers. Yuki said that God had sent them for that purpose, and helped them finish the job so fast.

Dom modestly says that they just came to see Mozambique, and to work a little, and they'll come back again and call "CQ" to the whole world. **WR**

From left to right: Durate Alves, CT3HG, Helio Perereira, CT3HJ, Paulo, CT3EHO, and Julius Wenglare, W6YO, enjoy pizza in Funchal Maderia.

DXing aboard a Russian icebreaker

Jules W. Wenglare, W6YO

Last summer it was my pleasure to cross the Atlantic Ocean from south to north. It was a 10,000 mile, 48-day voyage aboard a Russian polar research ship, the *Akademic Boris Petrov*. Starting from Ushuaia, Argentina, one of the most southern cities in the world, there followed visits to the following islands: Falklands, South Georgia, Gough, Tristan Da Cunha, St. Helena, Ascension, Cape Verde, Canary, Madeira, and England.

The captain approved my request to use an Amateur Radio transceiver aboard, and a friend, Bobby Glenn, WA6MNQ, had loaned me his new Yaesu FT-890. I decided against taking the 15-pound power supply, and instead made arrangements over the air with Don Betts, VP8ON, in Port Stanley, Falklands, to buy a car battery for me.

It was great seeing Don and his family once again. His eldest son seemed to have grown a foot since my last visit there in March of 1993, while on a trip to Antarctica.

After leaving the Falklands, I hooked up the rig to the battery, and draped a length of wire over the porthole as a temporary antenna. While I really didn't expect much from it, not a peep could be heard on *any* band. Since I had no guarantee that I would be permitted to use the dipole and coax that I had brought with me, I was a little worried.

The following morning I looked up Alexie, the radio officer whom I had befriended, and explained. I shouldn't have worried — he said you *must* have an outside antenna.

That afternoon I put up the 20M dipole and RG8X coax that I had brought from home on the 4th deck, above my cabin.

Now that the receiver was alive, my first call and QSO was with Svein Sandene, LA1FHA, on the northern tip of Norway. Receiving his 5 by 9 report made for more smiles on my part. The first stateside contact was with Bill Salerno, W2ONV, the loudest station on the band. The first west coast station that day was with my friend Howie Phelps, WA6TUJ, who had been listening for me. For nearly 20 years we have both kept biweekly skeds with Tom Christian, VR6TC, on Pitcairn Island.

Arriving on South Georgia, we visited the abandoned old whaling station at Grytviken. There was a neatly painted museum, an old

church that was brought from Norway in 1916, and in a nearby cemetery, the grave of the great Antarctic explorer, Sir Ernest Shackelton. We also saw thousands of king penguins.

At Gough Island, we were greeted by hundreds of dolphins. They put on a great show by jumping out of the water and doing acrobatics. There is a meteorological station on the island, with 7 men who each serve one year of duty. All of them come from South Africa, and once in a while the radio operator is an active ham. I remember working ZD9GE many times on long path back in early '79. The big rhombic antenna they used was pointed at Pretoria, South Africa, and during good conditions, their signals came the long path around the world to my home QTH in California.

Our next stop was the island of Tristan Da Cunha. It is an active volcano, and its 6,600 foot cone peaked above a puffy cloud. It was a beautiful sight in the afternoon sunshine. This is the most isolated, inhabited island in the world. I met Jim Glass, ZD9JC, who is the island's Manager of Natural Resources. We then visited Andy Repetto, ZD9CO. He used to be the radio officer for the island. With his wife Lorraine, ZD9CO, he is active on all bands. Their back yard is near the edge of a still smoldering volcano, at near sea level.

There are about 295 inhabitants, who share 8 surnames, and are primarily the descendants of shipwrecked sailors. There is a modern tuna cannery and a lobster tail packing/freezer plant on the island as well.

St. Helena was our next port of call, certainly an historic place. It is perhaps most famous as Napoleon's place of exile from 1815 to 1821. The 47 square mile island is rugged, with no beaches. The ham population is thriving.

Some ten days before arriving I started working Maggi Peters, ZD7SM, who as Customs Officer was the first person to board our ship. She had also invited me to dinner that evening. I went ashore in the first Zodiac boat and found Jim, ZD7JP, waiting for me with his Land Rover. We stopped in town so I could get some pictures of the famous Jacob's Ladder. With its 699 steps at about a 45 degree angle, it is an effort to climb.

Jim's QTH is up in the cooler highlands, not far from where Napoleon's compound is located. There were few changes in the countryside since my last visit some 18 years before in October of 1977. During that around-the-world trip, on the *Yankee Trader,* I operated as ZD7YO in the CQ World Wide SSB contest, from the home of ZD7SD and ZD7SS, with an Atlas 210 and a FT-101!

Jim took me back to town where I met Brian, ZD7JB, his wife Patsy, ZD7XY, Derek, ZD7CTO, Chris, ZD7HI, John, ZD7WRG, who gave me some needed coax. I then visited with Lorraine, ZD9CO, who is presently working on St. Helena, but is from Tristan Da Cunha. Then off to ZD7CRC, Chuck's home, and finally on to the promised dinner at the home of Desmond, ZD7DP, and Maggie and their daughter Diana. Maggie is a great cook! The Peters have a beautiful location about a 1,000 feet above the ocean, and Desmond has built one of the sturdiest 2 element quads I have ever seen!

After leaving St. Helena, I changed the location of my shipboard dipole, as I figured the close spacing to the railing which acted as a perfect reflector —but straight up! With the extra coax, I relocated the dipole to the bow of the ship, using a halyard on top of the foremast and the railing, so I then had a sloper, in the clear. My signal reports improved greatly. One day I heard my Voice of America retired friends John Gray, W6UZ/4 and Don Rinaldi, W6BVM, on CW. Since I didn't have a key with me, I borrowed 2 spoons from the dinning room and with a little tape, made up a key and surprised my friends on their next sked.

Later on I was able to work many of my WWII AACS (Army Airways Communications System) alumni friends, both on CW and SSB. I worked many of my friends in California, the loudest of whom was Terry Gaiser, N6UR, now W6TG. He and Mike McCorkle, KM6CB were kind enough to keep in telephone contact with my wife, Lyla.

One of my most outstanding QSOs (and at the antipodes), was with Dave Tremaine, ZL1AV, who has a fantastic DXing history. We both had sailed and operated with Danny Weil, and the *Yasme II*, in the Caribbean, during the late '50s.

Next was Ascension Island, unique with many small volcanoes, and in places looks like the moon's surface. There is no permanent resident population, but instead a contingent of military and communications personnel. I was disappointed in not seeing Jim Neiger, ZD8Z (N6TJ), who was home on vacation. The BBC has a powerful shortwave broadcasting station here. This is one of a few islands in the Atlantic that has nice sandy beaches, where the big sea turtles come at night to lay their eggs.

Our next stop was Cape Verde Islands, in Mendello, where I was pleased to meet Pulu, D44AC, an active RTTY operator who has a nice station, with a tri-band Yagi on top of his apartment building.

In Funchal, Madeira Islands, I was lucky to have 3 nice young hams find me walking near the ship. They were Durate Alves, CT3HG, Helio Perereira, CT3HJ, and Paulo, CT3EHO. They took me to a pizza parlor and later visited the ship. I asked Alexei to join us and show them the ship, then we all went to my cabin as I had a sked with Bob Gleason, W3KW. When Bob called, I answered and passed the mic around. I'm sure Bob was surprised by all my visitors.

The evening before reaching London, our final destination, I got on the air for the last time and there was ZD8Z, Jim Neiger, back on Ascension, saying he was sorry to have missed me. It was great to work him — he marked the 101st country to be contacted on this trip.

So the next time you dream about a long ocean voyage, remember the fun I was able to have by making Amateur Radio a large part of this trip. Who knows? Next time I could be working *you* as you cruise the world, stroke Maritime Mobile. WR

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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)

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FAX: (601) 323-6551; **Add s/h**

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MFJ pocket size Morse Code Tutor

Learn Morse code fast, anywhere . . . LCD display lets you check your copy instantly . . . Easy no-code Beginner's Course . . .Takes you beyond Extra Class . . . Customized Practice . . . Plain English QSOs . . . Word Recognition Mode™ . . . Interactive Mode™ . . .

Learn Morse code anywhere, anytime with this tiny *MFJ Pocket Morse Code Tutor™*!

Take it everywhere! Enjoy code practice at home, going to work, on vacation, on a plane or in a hotel -- no matter where you are.

MFJ-418 gives you a large LCD display that reads out letters, numbers and punctuation in *plain English*. See code as it is being sent!

MFJ's proven *Beginner's Course* takes you from zero code speed to solid copy *fast!*

Realistic plain English QSO practice helps you pass your FCC code exam.

High-speed practice takes you to Extra Class and beyond . . .

Practice copying words as *one sound* -- not individual characters. Instant word recognition makes you a true, high-speed CW pro.

InstantReplay™ Check your copy *instantly*!

MFJ's interactive mode lets *you* set the pace -- *you* decide when to copy the next group and how many -- *not the tutor.*

Easy-to-use -- choose from menus on the LCD display -- no instruction manual needed!

Beginner's Course

QST rate MFJ tutors *"the clear choice for beginners"*. Follows ARRL/VEC format.

MFJ-418 takes you from knowing zero code to solid copy fast! You learn individual letter, number and prosign sets first. As you do, previously learned sets are combined with new sets to reinforce all that you have learned.

InstantReplay™

Practice copying and then replay to instantly check your copy on the LCD display.

Custom Character Sets

If you have trouble with certain characters, you can *build and save* a custom set of these for extra practice -- *an MFJ exclusive.*

Realistic Plain English QSOs

You can practice copying *realistic* on-the-air style plain English random QSOs.

They'll help get you ready for your FCC exam. When you're comfortable copying these QSOs, you're ready to pass and upgrade!

They'll also give you plenty of confidence before you make your first *real* contact.

MFJ's *CodeTest™* set lets you practice *only* the characters required on FCC exams.

MFJ Word Recognition Mode™

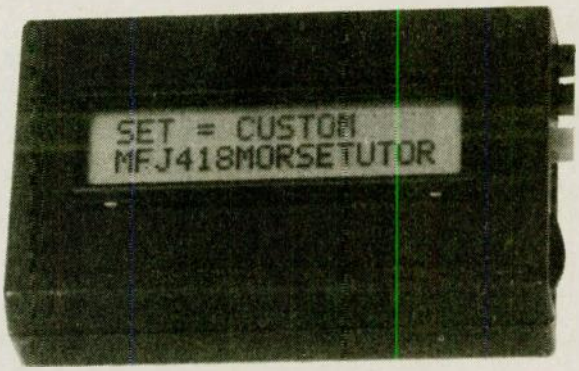
MFJ's *Word Recognition Mode™* gives you hundreds of commonly used words in amateur radio. Practice recognizing *entire words* instead of individual letters.

Learn to copy words without writing it down and carry on an entire CW conversation without paper -- just like pros on 40 Meter CW.

You can save 10 words of *your choice* for word recognition practice -- *an MFJ exclusive.*

You'll never run out of practice

Select letter, number, punctuation, prosign or code test sets, random call signs, random words, QSOs or combination sets for practice -- you'll never run out of study material.



NEW! MFJ-418 **$79.95**

You can even make up and save your own word and character sets for practice.

MFJ InteractiveMode™

MFJ InteractiveMode™ lets *you* decide when to copy the next or previous group and how many -- great for beginners.

Normal or Farnsworth

Select normal or Farnsworth spacing.

Farnsworth makes it easier to recognize entire characters. It stops the tendency to count individual dots and dashes that slows learning.

Farnsworth character speed is adjustable 10 to 60 words-per-minute for high-speed practice.

Fixed or Random Length Groups

Use fixed length or more realistic random length groups. Up to 8 characters per group.

Change Speed on the Fly

Change speed on the fly while you're playing a session -- 3 to 55 words-per-minute.

No Instruction Manual needed!

Choose from easy-to-use menus on LCD display. Simple 3 button operation.

SettingSaver™

Your settings are *automatically* saved, ready to use next time -- no more #$%* resets!

Large LCD Display

Read words, letters, numbers and punctuations in *plain English* as code is being sent. It's a powerful sound and sight aid!

Check your copy, select from menus and program custom characters and words.

LCD has 2 lines and 32 *huge* 1/4" high-contrast characters.

SilkySmoothSidetone™

Only MFJ gives you *SilkySmooth Sidetone™* with *TruTone™* sinewave and *SoftStart™* dots/dashes -- lets you concentrate on learning without the distraction of harsh keyclicks. Use earphones for private practice or built-in speaker for groups.

Adjustable volume. Loud, powerful audio amplifer. Variable pitch 300-1000Hz.

Pocket Size

Fits in shirt pocket with room to spare! *Smaller than a pack of cigarettes* -- tiny 2 1/4x3 3/4x1 in., weighs less than 5 1/2 oz.

Toss it in your briefcase, travel bag or stash in your car's glove compartment and you'll always have it ready for instant practice.

Uses 9 volt battery. Not included.

Tapes Can't Compare

Tapes play the same old boring stuff over and over again. Unlike tapes, you'll never memorize the MFJ-418 random code sessions.

You'll pay more for a few sets of code tapes than an MFJ-418. The MFJ-418 is less expensive, lots of fun and *far* more effective.

More pocket size MFJ Morse Tutors

MFJ-417, $59.95. Random characters, words, QSOs. Selectable character sets. *CombineSet™* Fixed or random length groups. Instant replay. Normal or Farnsworth. *3 to 35 WPM. Setting Saver™. SilkySmoothSidetone™.* Adjustable pitch 300 to 1000 Hz. Volume control. Use earphone for private practice. No LCD.

MFJ-413, $39.95. Similar to MFJ-417, less random words, QSOs, *SettingSaver™.*

MFJ-411, $69.95. Widely acclaimed original. Has most of the features of MFJ-418, no LCD.

Get Yours Today!

Enjoy more ham band privileges -- learn Morse code and upgrade! *Order yours today!*

MFJ Code Practice Oscillator

MFJ-557 **$24.95**

Learn to send Morse code with MFJ-557. Straight key with adjustable travel and tension, and built-in speaker with volume and tone controls lets you practice to your heart's content. Earphone jack. Heavy non-skid steel base stays put as you tap out Morse code. Use 9V battery or 110 VAC with MFJ-1305, $12.95.

MFJ-550, $7.95, telegraph key only.

2 Meter *IntermodFighter™*

MFJ-713
MFJ-714
$59.95

Intermod causing squeaks, squawks, unidentified voices and other noises all across the 2 Meter band? Can't use your radio?

MFJ *IntermodFighter™* eliminates intermod by reducing interference up to 50 dB with three high-Q bandpass filters. Plugs between radio and antenna.

MFJ-713, $59.95. For handhelds, has BNC connectors. Uses 9V battery.

MFJ-714, $59.95. For mobile rigs, has SO-239 connectors. Uses 12VDC.

12/24 Hour Clock/ID Timer!

MFJ-116, $14.95. ID buzz every 10 minutes. Big 5/8" red LED digits. Loud/soft alarm. Uses 110 VAC. 9V battery backup. 4 1/2x2x4 inches.

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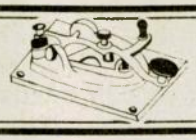
Silent Keys



William Goodloe, WA7GWJ

Former Washington State Supreme Court Justice William Goodloe, WA7GWJ, has died. Bill graduated from the Washington School of Law in 1948, and worked as a trial lawyer for 24 years. He had served as a state legislator and a Superior Court judge, before his election was to the State Supreme Court in 1984.

WA7GWJ was an active member of the Shrine Amateur Radio Club, and is survived by a son and daughter. He will be missed by his many friends and colleagues. *—contributed by Arnold Samuels, KH6COY*

Henry Sparks, KB2DLE

Rear Admiral Henry Sparks, M.D., KB2DLE, died 7 February 1997 at his home in Meadow Vista, California. He was 72.

Born in Woodland, California in 1924, he was the son of Marie and Thomas Sparks. The family moved to Placer County when he was a boy, and Henry graduated from Placer High School in 1942. He attended the College (now University) of the Pacific, went on to medical school there, and received his M.D. in 1948.

Dr. Sparks joined the U.S. Navy, and served as a medical officer in Japan, Egypt, and many stateside locations. He saw combat when he accompanied the Marines during the invasion of Inchon, Korea, in 1950. KB2DLE received numerous decorations and commendations, including the Legion of Merit in 1974. He was Deputy Surgeon General of the Navy when he retired from active duty in 1981.

Following retirement from the navy, Henry worked for the World Health Organization and also served as a medical consultant to the government of Saudi Arabia. He later was medical director of hospitals in the cities of Rome, and Watertown, New York, but then returned to his boyhood home.

In retirement, KB2DLE became an active participant in Placer High School's class reunions, and other related activities with his longtime friends. He was a member of the River City Amateur Radio Club, and served this last year as Vice President of the Sierra Foothills Amateur Radio Club.

His wife Betty passed away in 1989, and his second wife Jeanne died in 1992. Survivors include his children Mark, Matthew, Sandra, Nelson and Teresa, his sister Charlotte, and 11 grandchildren. KB2DLE was a gentleman, and a delight to all who were privileged to know him. *—contributed by the Sparks family, the Sacramento Bee, WA6ULL, KB6HP*

William O. Hamm, K5KAM

Bill Hamm was a man who was not happy unless he was helping others. He was an untiring worker, and was always doing something for his many friends. He taught code classes and assisted many youngsters in qualifying for their Amateur Radio licenses.

The son of the late Vardie and Daisy Hamm, Bill was born on New Year's Eve, 1938, in Chilton County, Alabama, and died 15 December 1996, at the Shelby Medical Center. K4KAM was Deacon in the Presbyterian Church in Clanton and was a veteran of the Korean War.

When Bill had his health, he was active in all phases of Amateur Radio. His wonderful shack was once featured in ***Worldradio.*** His employment enabled him to begin his hamming activities at about 1 a.m., which allowed him to contact most of the DX countries, and make friends all over the world, most particularly in Europe.

He is survived by his daughter and son-in-law, Joy and Robby Deavers, and their daughter Brittany, of Clanton, and a host of close friends. *—contributed by one of those close friends, Pat Keenan, N4UJC*

Howard C. Goldberg, W2IEK

Howard C. Goldberg, W2IEK was first licensed in 1934 at the age of 15. The young hams used to gather at the Fulton Radio Store in the Bronx in those days, and when the store owner's daughter Millie celebrated her "sweet sixteen" birthday, some of the boys were invited to attend the party. Luke Bonte brought Howard, W2IEK along, and the rest is history. Millie and Howard were married on 9 December 1941, two days after Pearl Harbor.

Howard had joined the Navy Reserve on 19 December 1940, and he ultimately achieved the rank of Petty Officer, Radioman First Class.

After his service in the navy, W2IEK joined Arrow Electronics, and eventually worked his way up to the position of Vice President of Consumer Electronics. After Arrow closed its retail division, he joined Harrison Radio, with Bill Harrison, W2AVA (now a silent key as well).

Howard was also a long-time member of QCWA and the ARRL. Upon his death, the family donated his 60-year collection of bound *QST*s to the Larkfield Radio Amateur Club. Howard Goldberg was an avid photographer, and he and Millie loved to travel. Meeting with Amateur Radio operators with whom he had QSOed was a high priority on those travels.

W2IEK leaves Millie, his wife of 55 years, sons Robert and Richard, daughter Naomi, and a host of dear friends. He will be missed by all. *—contributed by Mark Grossman, K2CON*

Ed Blaszczyk, N7EB

Ed Blaszczyk, N7EB, well-known CW operator and veteran FOC member, died 19 January at the age of 79. For 32 years Ed served as QSL manager for 9N1MM, the late Fr. Marshall Moran, handling more than 80,000 QSLs.

Ed and his wife hosted Father Moran at their Arizona home on those rare occasions when the mis-

sionary priest was able to take home leave from his post in Nepal.

During World War II, Ed piloted numerous B-24 missions over India as a U.S. Army Air Corps pilot. He was awarded the Distinguished Flying Cross with two clusters, and the Purple Heart for his service to his country.

In recent years Ed had been active in the VE program in the Phoenix area. An active DXer, at the time of his death he had worked and confirmed 362 DXCC countries. *—contributed by Frank R. Smith, AHØW/OH2LVG*

Special Events

Voice of America Relay Station

The Piscataway ARC will operate K2VOA, under their own call signs signing /VOA to commemorate the Voice of America Relay station, WBOU, which operated during WWII in the Bound Brook section of Piscataway, New Jersey. The dates are from 0000 UTC, 05 April through 2400 UTC 06 April. Operation will take place on CW — Novice portions of 80, 40, 15 and 10 Meter bands, RTTY — RTTY portions of 40 and 20 Meter bands and Phone — the lower third of the General portion of the 10 Meter band.

For certificate, send #10 or unfolded 9 x 12 SASE (2 units first class postage) with your QSL to: PARC, Attn: VOA, P.O. Box 1233, Piscataway, NJ 08854.

Memorial Station K3DN

Undaunted by past successes, the INTREPID EXPLORERS of the Warminster Amateur Radio Club have set their sights on new horizons. They have packed their gear to invade Rhode Island on 19 and 20 April, for a weekend of multiband high adventure. With two transmitters K3DN/1 will be active in the General portions of 40 and 75, 20 or 15 Meters (up +/225 kHz). CW on demand.

If conditions permit, we may also move on to 160 or the Novice portion of 10 Meters. Look for us on the even hours in the Novice CW bands. UTC hours are 1400 on the 19th to 0400 the 20th and 1300-2200 on the 20th.

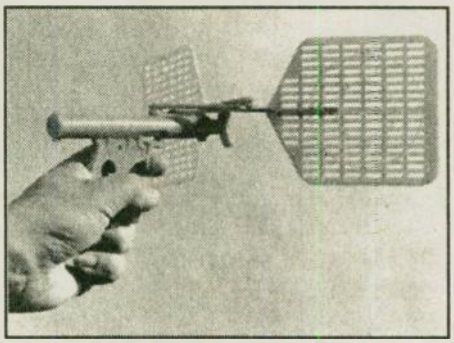
For QSL, send SSE to K3DN/RI, c/o Warminster ARC, P.O. Box 113, Warminster, PA 18974. For additional information or to make skeds contact W3GAD at WARC or e-mail to W3GAD at: docw@voicenet.com

Virginia Air and Space Center

The VASC Amateur Radio Group, Inc. will operate KE4ZXW on 5 and 6 April, between 1500-2200 UTC, to celebrate the 5th anniversary of the Virginia Air and Space Center in Hampton, Virginia. Special QSL cards will be issued for contacts via digital satellite on UO-22, KO-23 or KO-25 and Phone on HF on 7265, 14265, and 21265 kHz.

Send QSL with SASE to Ed Brummer, W4RTZ, 108 Oyster Cove Rd., Yorktown, VA 23692. WR

•••



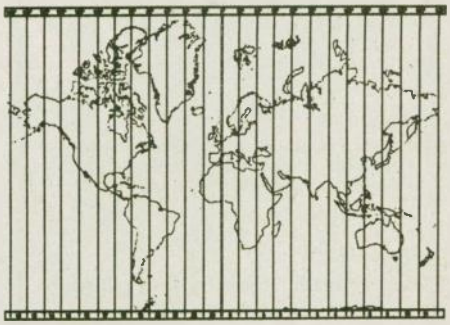
Debugging tool

Whack-O "Double Whammy" trigger-activated debugging tool is a must for beginning and professional programmers alike. Specify DOS, Windows or Mac for Atlas, Heath, Drake, Santec or your Sky Buddy when ordering.

A pneumatic model will also be available "when the bugs are worked out," according to the manufacturer. Circle #131 on Reader Response Card.

Be sure to look for all of our April Fool's stories!

Awards



Contact All Time Zones

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-hourly 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

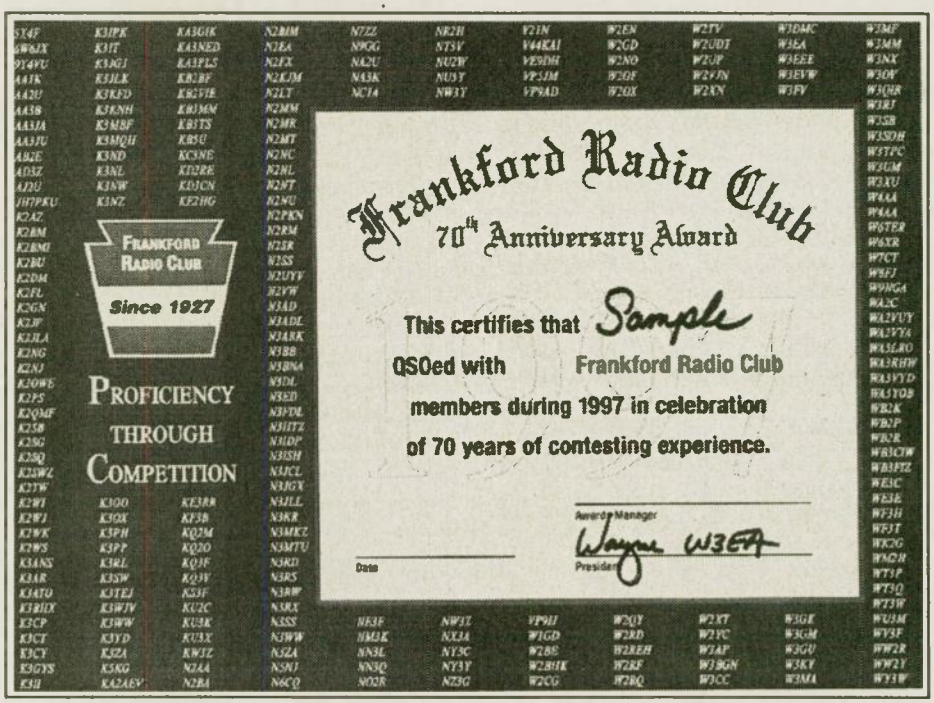
A list shall be made showing each contact's call sign, date, band, mode and the time zone starting with the prime meridian (0°) and moving eastward.

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.

Address applications 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. **WR**



Frankford Radio Club Award

Wayne Kline, W3EA

To celebrate Frankford Radio Club's 70th anniversary, the above award is being offered to commemorate this event.

There are two ways to be eligible for this award:

1. U.S.A. All U.S. stations need to have QSOs with 70 FRC members from 1 January 1997 to 31 December 1997.

2. DX — outside U.S.A. You must have QSOs with 35 FRC members from 1 January 1997 to 31 December 1997.

The membership list is available by sending an SASE to: FRC, Box 431, Alburtis, PA 18011, U.S.A. or visit our web site at: http://www.frc-contesting.org

There is no fee for this award. All we need is a QSO record of the members worked during the time period 1 January 1997 through 31 December 1997.

Send QSO log to Award manager:
Jack Heisey, K2FL
616 Chestnut Street
Palmyra, NJ 08065 U.S.A.

Station Appearance

Harry Burhans, W3FM

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

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

I was first licensed as W3HUS in 1938. I served as a radio operator in the Ninth Air Force during WWII and as an electronic technician afterwards. My main interest is CW-DX and I am on the DXCC Honor Roll.

The station is set up on a wrap-around console. The lower level has the computer, Yaesu FT-1000D transceiver, digital clock, receiving antenna switch, Brown Bros. key, calculator and microphone.

Above the FT-1000D is the Alpha 21-B amplifier and the AEA code reader and memory keyer.

Located above the amplifier is the Kenwood TR-7950 2-meter transceiver, the MFJ-1278 TNC and the Tailtwister rotator control. The top shelf supports the Yaesu speaker/patch, the NYE MB-V-B antenna tuner, B & W antenna switch and Bird wattmeter.

The shack walls display over 100 awards I have received. 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**!*

What feast is this?

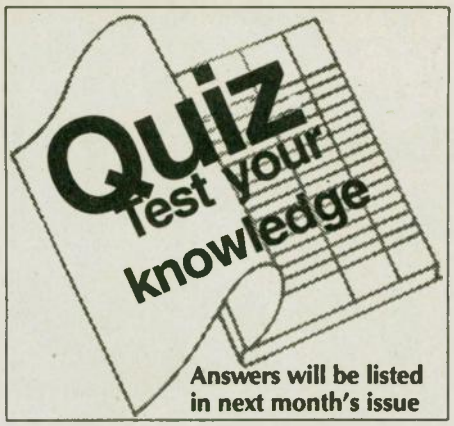
Jim Knoop, KB8SFL

Though I wasn't yet a "ham," I sold a product that hams wanted, so I attended swaps and hamfests all over Michigan, Ohio, Indiana and even into Ontario, Canada.

Traveling to the Bowling Green, Ohio, "Ham-A-Rama" for the very first time, and without "talk-in" privileges, I stopped at a service station to ask for directions to the Wood County Fairgrounds, the site of the event.

When I asked directions to the fairgrounds, the attendant gave me a blank look, thought about it, then realized where I was going.

"Oh, yeah!" he beamed. "I saw those signs. Say, what are they having out there anyway — a pig roast?"



The answers to the quiz questions for last month are: 126. B; 127. C; 128 A; 129. C; 130. C; 131. A; 132. D; 133. B; 134. A; 135. C; 136. C; 137. C; 138. A; 139. A; 140. D; 141. A; 142. B; 143. C; 144. B; 145. D; 146. B

147. What is the approximate magnitude of the impedance of a parallel R-L-C circuit at resonance?

A. Approximately equal to the circuit resistance

B. Approximately equal to XL

C. Low, as compared to the circuit resistance

D. Approximately equal to XC

148. What is the characteristic of the current flow in a series R-L-C circuit at resonance?

A. It is at a minimum

B. It is at a maximum

C. It is DC

D. It is zero

149. What is the characteristic of the current flow in a parallel R-L-C circuit at resonance?

A. The current circulating in the parallel elements is at a minimum

B. The current circulating in the parallel elements is at a maximum

C. The current circulating in the parallel elements is DC

D. The current circulating in the parallel elements is zero

150. What is the skin effect?

A. The phenomenon where RF current flows in a thinner layer of the conductor, close to the surface, as frequency increases

B. The phenomenon where RF current flows in a thinner layer of the conductor, close to the surface, as frequency decreases

C. The phenomenon where thermal effects on the surface of the conductor increase the impedance

D. The phenomenon where thermal effects on the surface of the conductor decrease the impedance

151. What is the term for the phenomenon where most of an RF current flows along the surface of the conductor?

A. Layer effect

B. Seeburg Effect

C. Skin effect

D. Resonance

152. Where does practically all of the RF current flow in a conductor?

A. Along the surface

B. In the center of the conductor

C. In the magnetic field around the conductor

D. In the electromagnetic field in the conductor center

153. Why does practically all of an RF current flow within a few thousandths-of-an-inch of the conductor's surface?

A. Because of skin effect

B. Because the RF resistance of the conductor is much less than the DC resistance

C. Because of heating of the metal at the conductor's interior

D. Because of the AC-resistance of the conductor's self inductance

154. Why is the resistance of a conductor different for RF current than for DC?

A. Because the insulation conducts current at radio frequencies

B. Because of the Heisenburg Effect

C. Because of skin effect

D. Because conductors are non-linear devices

155. What is a magnetic field?

A. Current flow through space around a permanent magnet

B. A force set up when current flows through a conductor

C. The force between the plates of a charged capacitor

D. The force that drives current through a resistor

156. In what direction is the magnetic field about a conductor when current is flowing?

A. In the same direction as the current

B. In a direction opposite to the current flow

C. In all directions; omnidirectional

D. In a direction determined by the left hand rule

157. What device is used to store electrical energy in an electrostatic field?

A. A battery C. A capacitor

B. A transformer D. An inductor

158. What is the term used to express the amount of electrical energy stored in an electrostatic field?

A. Coulombs C. Watts

B. Joules D. Volts

159. What factors determine the capacitance of a capacitor?

A. Area of the plates, voltage on the plates and distance between the plates

B. Area of the plates, distance between the plates and the dielectric constant of the material between the plates

C. Area of the plates, voltage on the plates and the dielectric constant of the material between the plates

D. Area of the plates, amount of charge on the plates and the dielectric constant of the material between the plates

160. What is the dielectric constant for air?

A. Approx. 1 C. Approx. 4

B. Approx. 2 D. Approx. 0

161. What determines the strength of the magnetic field around a conductor?

A. The resistance divided by the current

B. The ratio of the current to the resistance

C. The diameter of the conductor

D. The amount of current

162. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 1.8 MHz and a Q of 95?

A. 18.9 kHz C. 189 Hz

B. 1.89 kHz D. 58.7 kHz

163. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 3.6 MHz and a Q of 218?

A. 58.7 kHz C. 47.3 kHz

B. 606 kHz D. 16.5 kHz

164. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 7.1 MHz and a Q of 150?

A. 211 kHz C. 47.3 kHz

B. 16.5 kHz D. 21.1 kHz

165. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 12.8 MHz and a Q of 218?

A. 21.1 kHz C. 17 kHz

B. 27.9 kHz D. 58.7 kHz

166. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 14.25 MHz and a Q of 150?

A. 95 kHz C. 10.5 MHz

B. 10.5 kHz D. 17 kHz

167. What is the half-power bandwidth of a parallel resonant circuit which has a resonant frequency of 21.15 MHz and a Q of 95?

A. 4.49 kHz C. 22.3 kHz

B. 44.9 kHz D. 222.6 kHz

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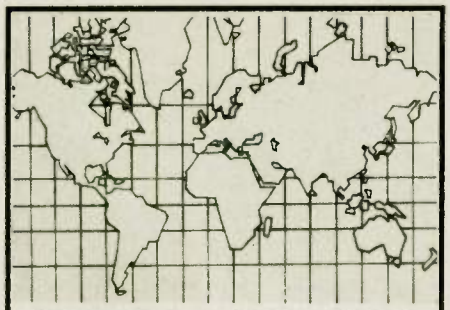

DX WORLD

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

W-100-N

The following DXers completed the requirements for ***Worldradio's*** *Worked 100 Nations Award*:

516. Nicholas E. Lambropoulos, SV1CRY 07 Jan 1997

517. John H. Soliday. N5WYR 07 Jan 1997

And, don't forget Armond's new famous CATZ Award.

Vietnam (3W)

Unni Gran, LA6RHA, was to have operated from Vietnam during the early part of the year signing with 3W6RHA, and is a YL operator.

The Low Band Monitor reports that Rolf Salme, SM5MX, has been active in Vietnam signing with XV7SW, and is available for Top Band contacts. Rolf managed to work a handful of west coast DXers on 7 December. He resides in downtown Hanoi and is plagued with noise from welding shops and neon signs. In January there were two reports of Rolf on 1.827 MHz at 1430 to 1445 UTC. XV7SW has also been reported on 80 Meters near 3.507 MHz around 1400 UTC. Also look for him on other bands such as 7.007 MHz at 1400 UTC or 14.026 MHz at 0830 UTC.

Also from Vietnam on the low bands is 3W5FM, who can be found on 75 Meters between 3.796 and 3.800 MHz after 1430 UTC and on 40 Meters CW between 7.004 and 7.008 MHz after 1400 UTC.

On the same band is 3W5RS, found near 7.003 MHz from 1445 to 1630 UTC, or on 14.022 MHz from 1200 UTC.

Bouvet Island (3Y)

Tony De Prato, WA4JQS, Director of Operations of the South Sandwich Island Antarctic DX Group, states that the 1997/98 DXpedition to Bouvet Island (AN-002) is progressing very well. Permission had been received for a December, 1997, landing, but with the possible establishment of a CCAMLR (Convention of the Conservation of Antarctic Marine Lining Resources) ecosystem monitoring program being set up on the island and taking effect October, 1997, problems could arise just before departure time with permission to land.

The South Sandwich Group has re-applied for a 1998 season landing date also, so that they would have time to work with any new requirements that the CCAMLR group should request. Tony also reports that there are many requests by the Japanese operators to postpone their landing until 1998, so that the 28 MHz band opening to Japan would be greater. This was also a big factor in the new date request.

Togo (5V)

That November entry in the *CQ* Worldwide DX Contest signing with 5V7A collected some 12,200 contacts. Not a bad showing and to the delight of the deserving for a new band/mode or otherwise credit to his or her DXCC.

Scarborough Reef (BS7)

425 DX News notes that there is to be a DXpedition to Scarborough Reef (AS-116) from 2-11 May 1997. The team members will include DXers: Martti Laine, OH2BH; Ville Hiilesmaa, OH2MM; Pekka Kolehmailnen, OH1RY; Mats Persson, SM7PKK; Wayne Mills, N7NG; Jim Duffy, W6EU (ex-WA6AUE); Kan Mizoguchi, JA1BK; BZ1HAM; Olli Rissanen, OHØXX; plus two DXers from Spain.

Scarborough Reef is also known as Huang Yan Island.

St. Paul Island (CY9)

According to *425 DX News,* Mike, VE9AA, is organizing a DXpedition to St. Paul Island (NA-094). The preliminary dates are 10-15 June. Look for an all-band deal, 2 through 160 Meters.

Angola (D2)

Alex van Eijk, PA3DZN, keeps DXers happy handing out contacts for Angola, signing with D25L. Much of his activity is on CW as seen in the DX spots on him. At the bottom of the 40-meter band you can find him on 7.000 to 7.001 MHz between 2300 and 0500 UTC. On 30 Meters try 10.100 to 10.102 MHz from 2230 to 2300 UTC. Alex has also been found on: 14.028 MHz at 2045 UTC, 18.072 MHz at 1545 UTC, 21.023 MHz at 1315 UTC and 28.025 MHz at 1530.

He operated RTTY on 29 December near 14.083 MHz at 2130 with Europeans and SSB on 28 December on 14.240 MHz at 2130 UTC, also with Europeans.

Other activity from Angola includes D2EB, who was active in December on 15 Meters. Try 21.200 to 21.222 MHz from 1400 UTC. D2EV was reported on 17 Meters near 18.155 MHz at 0945 UTC working the Europeans.

My comment regarding working Europeans is that this information was gleaned from RSGB's *DX News Sheet*. It is assumed that the reports in that bulletin came from European DXers. If stateside DXers are working this DX they are just not reporting it to the local DX newsletters.

St. Pierre & Miquelon (FP)

St. Pierre & Miquelon (NA-032) is an archipelago off the southern coast of Newfoundland, which is normally reached by high-speed ferry from Fortune. Most of the residents reside on St. Pierre, the smaller of the two main islands.

FP5EJ has been reported only three times recently. On 17 December he was on 15 Meters operating CW near 21.015 MHz at 1430 UTC; 27 December on 7.004 MHz at 2200 UTC, and 15 January on 14.008 MHz at 1645 UTC.

According to *DX News Sheet*, Jack Hamm, WA1CFS, is planning a serious August 1997 DXpedition

to St. Pierre and will be busy on all bands and modes.

Reunion Island (FR)

Jean Poma, F5AFJ, was to have been active as FR5GM from Reunion Island (AF-016) from 25 December through 15 February.

The Heard Island DXpedition team made a brief stop on Reunion Island early January and collected some 411 contacts signing with TOØR on 160 Meters.

If your choice of modes is RTTY look for Jean FR5DX, who has been worked between 14.083 and 14.085 MHz from 1400 to 1900 UTC.

Look for Jean Pierrat, FR5DD, on 40 Meters between 7.005 and 7.007 MHz around 1300 UTC, and on 20 Meters between 14.004 and 14.015 MHz at no particular time. For an SSB contact try 14.170 MHz around 1800 UTC.

Other activity includes:

FR5GQ	14.184 MHz	1700 UTC
FR5HA	14.175 MHz	0700 UTC
FR5BT	21.217 MHz	0930 UTC
FR5DX	21.292 MHz	1415 UTC
FR5DX	28.019 MHz	1100 UTC
FR5DN	28.010 MHz	1413 UTC
FR5GO	28.425 MHz	1030 UTC
FR5DX	28.560 MHz	1300 UTC

Antarctica (KC4)

This is about the time of the year when activity picks up in Antarctica, mainly as it is the middle of the summer. There are several countries that have stations there giving a large selection of calls to the prefix hunters, IOTA-types and Antarctic Base collectors, (WABA).

KC4AAA — Amundson-Scott Base (K-08) at the South Pole. I have only a single report for this one on 28 December at 0645 UTC on 14.243 MHz.

KC4AAC — Palmer Station (K-10), Anvers Island (AN-012).

KC4AAD — Siple Dome Station at 81°40'S 14°900'W, located 500 miles from McMurdo Station. This station has been set up for three years. Operators: Wendy and Don.

KC4AAF — Upstream Charlie Base. The operator is reported to be Sara, a novice operator. Try 14.270 MHz from 0230 UTC.

KC4USB — Marie Byrd Surface Camp (K-04), Marie Byrd Land. Operator: Steve.

KC4USL — Dome Charlie Base (K-02), Wilken Land. Two operators have been named: Steve and Glen.

CE9/CE8CMI — Patriot Hills Base (MN-01), Ellsworth Land. Try 14.270 MHz from 0300 UTC. Operator: Moncho.

CE9OH — Bernardo O'Higgins Base (CE-02). The operator is reported to be Juan Carlos; try 14.192 MHz between 2300 and 0300 UTC.

CE9SAC — Teniente Luis Carvajal Base (CE-07), located on Adelaide Island (AN-001). Try 14.277 MHz 0030 to 0500 UTC, or 14.195 MHz from 2200 to 0100 UTC. Operators: Carlos and Abraham.

FT5YP — Les Petrels (F-01), on Adelie Land (AN-017). Try 14.145 MHz around 0615 UTC.

LU1ZV — Army Ejercito Esperanza (LU-06), located on the Palmer Peninsula. Try 14.240 MHz after 0100 UTC.

OAØMO — (OA-01). The operator speaks only Spanish. Try 14.180 MHz between 2230 and 0300 UTC.

R1AND — Saam Novolazarevskaya (UA-08), Princess Astrid Coast.

R1ANL — Saam Novolazarevskaya, Princess Astrid Coast.

R1ANT — No information other than this call being reported on 5 January on 75 meters at 2130 UTC working into Europe on 3.795 MHz.

R1ANW — Saam Vostok (UA-10), Wilkes Land. Try 14.270 MHz 0000 to 0400 UTC. Operators: Peter and Henry, who is Canadian with the call VEØHSS.

R1ANZ — Operator: Valentin, who has been active on 40 meters SSB. Listen for him near 7.045 MHz after 1700 UTC. Also try 10.102 MHZ at 2000 UTC or 18.070 MHz after 0800 UTC.

VP8CPG — Rothea Base (G-07), Adelaide Island (AN-001). Operators are Anthony and Marcus. No other information.

VU2AXA/P — Indian Maitri Antarctica Base (VU-02), Queen Maud Land.

ZS7ANT — Sanae (ZS-01), Princess Martha Coast. Operator is Martin.

ZS7/ZS6ZY — Sanae (ZS-01). Operator and team leader is Martin du Preez.

ZXØECF — (PY-01). No other information.

7S8BBB — (SM-01). Operator is Henry, VEØHSS. No reports of activity.

8J1RL — Nipr Syowa (JA-01), on Ongul Island (AN-015). Try 14.019 MHz.

There are also several other Antarctic stations on the South Shetland Islands, and count as IOTA AN-010. Other than the IOTA references numbers the other reference numbers are those for the *Worked Antarctic Bases Award* (WABA), sponsored by the Diamond DX Club of Italy.

Heard Island (VKØ)

VKØIR (AN-003) came on the air on 0654 UTC on 14 January. They had a good signal into North America on 7.007 MHz working old and new DXers alike. They ran five stations on all bands and modes. *425 DX News* reports that it took 5 hours and 51 helicopter flights to set up for operations.

It is not known what portion of the DX fraternity managed at least one contact with the group. On 25 January they were readable on the west coast via long path on 20 Meters on 14.024 MHz listening up 8kHz. My personal feeling about this could they have not waited a year or two for better conditions instead of the low in the cycle?

Commitment is another issue, which I'm sure was the major factor in the decision to go at this time. One very nice feature for this DXpedition is that you could check the World Wide Web to see if "Am I in the Log." This should eliminate the need for insurance contacts, but not eliminate the DX pigs! Yes, those types who come on just to tell them they are "Five by nine, today, and just to let you know." They are of the same class as the DX Police and Listmasters.

Please send your financial contributions to: Heard Island DXpedition, c/o Bob Allphin, K4UEE, 4235 Blackland Avenue, Marietta, GA 30067.

The last DXpedition to Heard Island was two simultaneous opera-

tions 14 years ago. The first DXpedition was initiated by the VK6 DX Chasers Club with support of the WIA (Wireless Institute of Australia), the International DX Foundation and the Northern California DX Foundation, plus other support from manufacturers. The operators were Al Fischer, K8CW, and Dave Shaw, VK3DHF, signing with two calls: VKØCW on CW and VKØHI on SSB. They accumulated some 30,000 contacts in some six weeks of operation.

Transportation was via the *Anaconda II*, which left Fremantle, in Western Australia, on 31 December 1982, and arrived on the island three weeks later, coming on the air on 20 Meters CW on 23 January.

It was a joint operation with a mountaineering group. QSL requests were handled by Dan Handelsmann, N2DT.

The other was led by Jim Smith, VK9NS, and his Heard Island DX Association. Jim and his team left from Hobart, Tasmania, on 4 January 1983, aboard the *Cheynes II* and ran into problems, forcing them to return to Hobart for repairs. The trip resumed on 14 January and additional problems developed, but they managed to reach the island on 1 February 1983. In addition to Jim, the operators included his wife Kirsti, VK9NL; Bob Walsh, WA8MOA; Walter Marshall, W7SE; Walter Flor, OE1LO; and Sjoerd Jongens, VK7ZSJ. The calls VKØJS and VKØNL were used with the operation lasting two weeks, collecting about 12,500 contacts. QSL chores were handled by Jim Smith, VK9NS. The DXpedition operating locations were within one-half mile of each other.

Macquarie Island (VKØ)

Tom Stoke, VKØTS, arrived on Macquarie Island (AN-005) on Tuesday, 17 December, as a member of the team to the meteorological station there. Tom will try to ease the need for this one. Look for him on the 14.222 DX Net.

There are two additional Amateurs with this group and including Eric, VKØKBB, and Graham VKØWG. Eric holds only a Novice Class ticket so his operating habits will be restricted. Warren Hull, VKØWH, the former operator there, has returned to Australia. A total of 1,271 contacts were made by Warren during his stay.

There is also a report that the Ocean Radio DX Group (ODXG) is planning a DXpedition here in 1998 or 1999. Presently they are working on a DXpedition to Willis Island for this year.

IOTA

Via the *Ohio/Penn DX Bulletin*, word comes from Silvano Amenta, KB5GL, that he and three other operators will activate Stradbroke Island (OC-137), off the Queensland coast for about three days beginning Saturday, 15 March, using the call VK4WGL. The operation will be SSB only. Check the usual IOTA frequencies.

Here is a selection of various IOTA islands reported during the month of January 1997:

AN-003	Heard Island	VKØIR
NA-008	Ellesmere Island	VE8RCS
NA-019	Kodiak Island	WL7EM
NA-027	Newfoundland	CY1COP
NA-036	Vancouver Island	VE7IU
NA-041	Douglas Island	KL7AK
NA-046	Martha's Vineyard Isl.	W1GAY
NA-048	Bimini Islands	C6A/DL2SCQ
NA-058	Moose Island	AA1KS
NA-067	Hatteras Island	AA3ID/4
NA-110	Edisco Island	W2AKW/4
SA-026	Maria Francisca Island	PT5T
SA-030	Flores Island	CV5A

If you participated in the recent activity created by the ARRL International DX Contest in February you may have worked Gary, KR6V/C6A. He was operating from Abaco Island (NA-080). Check those logs as you may find other island contacts qualifying for IOTA credits.

Proposed DXpeditions to IOTA islands for the July IOTA Contest have begun to trickle in. Some of the planned activity will include:

EU-058 Ile Sainte Marguerite by Marc de Brabandere, ON5FP, and Kristof, ON6NN, probably using a call with the TM prefix, EU-099 Les Minquiers by several Belgian DXers using the call GBØON, EU-124 Anglesey Island, with the call MW6Z.

DXCC Applications

The DXCC Desk reports that the number of unprocessed applications at the end of December, 1996, was 463 (39,893 QSL cards).

During the month, 386 applications (29,401 QSL cards) were received for endorsements and new awards.

Applications being sent out at the end of the month were received less than a month 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.

Antique QSL Department

This month's selection of antique QSL cards are from the collection of Bob Donovan, W7CF, who resides in Bellingham, Washington. Bob joined the ranks of Amateur Radio back in 1931 as W7EYS and held that call for some 20 years. In 1951 he moved to Hawaii and received the call KH6AHZ. Later he wound up flying Boeing 737s for Aloha Airlines until his retirement in 1981. He returned to Bellingham and received the call KC7DA. Bob didn't like that call on CW so when the opportunity arose he applied for his present call, W7CF.

The first card, FN8AD, is for

French India. This was the call used by D.S. "Deb" Seal, of Hatkhola, Chandernagore. Bob worked Deb back on 9 March 1950, at 2225 IST. This probably was Indian Standard Time.

dian Standard Time.

For this 20-meter CW contact, Deb used a simple transmitter consisting of a 6V6 running into a 6L6 final. His receiver was a BC-312N, a left-over World War II receiver. A check with the *Callbook*™ shows that the operator is now VU2AX and is apparently still operating from the same location. French India became a deleted country to the DXCC Countries List effective 1 November 1954. A copy of the FN8AD QSL card was used back in the October 1981 column and was submitted by Dave Kennedy, N4SU.

The above card was routed via the bureaus. In India, J.S. Nicholson, VU2JP, handled the cards, while Maryann Tatro, W7FWR, of Olympia, handled the W7 bureau. Arab Palestine was represented by Pat Miller, W2AIS, while signing with ZC8PM back on 10 November 1948. Pat's present location is not known. The call W2AIS is vacant. The card was buff and printed with brown lettering. The one also made the deleted list effective 1 July 1968. Contacts on that date and after count as Israel.

Pat Miller's card was also run back in a 1981 issue and was submitted by Charles O'Brien, W2EQS. I believe he is now a Silent Key.

And, just as this portion of the column was written I received another ZC8PM card from Bob Baird, W9NN, who worked Pat the following month on CW.

DX Conventions

It may be too late for pre-registration for The 1997 International DX Convention in Fresno. However, you still can attend and registration is $65 at the door and includes the banquet. This year it is the weekend of 4-6 April, at the Holiday Inn, 2233 Ventura Street. No, it is not in Visalia! Accommodations at the hotel are most likely sold out, but it doesn't hurt to call them at 209/268-1000.

Later in the year comes the New Orleans International DX Convention the weekend of 22-23 August. It may be rather warm that time of the year, but with an air-conditioned hotel this should be no problem. The New Orleans DXers always put on a good convention.

Look for them at the Royal Sonesta Hotel in the French Quarter.

Other noted DX conventions include the Pacific Northwest DX Convention in July, this year in the Vancouver area, and W9DXCC in September. There is no information available for the latter two.

DX Prediction — April 1997

Maximum usable frequency from West Coast, Central U.S. 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	*(11)*	*14	*18	*(10)*	*15
12	*(16)*	*12	*16	*(10)*	*(13)*
14	*(20)*	*15	*13	16	20
16	*(23)*	13	*(13)*	18	25
18	24	*(11)*	*(12)*	17	27
20	23	17	23	*(15)*	29
22	19	21	28	*(10)*	28
24	*(16)*	*24	30	*(9)*	*27
2	14	*24	29	*(8)*	*22
4	*15	22	28	*15	*19
6	*(15)*	*20	26	13	*16
8	*(13)*	17	*22	*(11)*	*14

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(15)*	*(11)*	*18	*(10)*	*14
10	*(18)*	10	*16	*(9)*	*15
12	24	*13	14	15	17
14	28	15	*(14)*	18	22
16	28	*(13)*	*(13)*	18	*26
18	28	*(11)*	*(12)*	17	*28
20	23	*(18)*	23	*(15)*	*29
22	19	20	28	*(11)*	*30
24	*16	19	30	*(9)*	*25
2	*14	*(17)*	28	9	*20
4	*14	15	26	*13	*17
6	17	*(12)*	22	*(11)*	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	15	*(10)*	*18	10	*14
9	*(16)*	9	16	13	*15
11	23	*14	14	17	17
13	27	*(13)*	*(14)*	*19	22
15	28	*(11)*	*(13)*	*19	*25
17	27	*(10)*	*(12)*	*18	*28
19	*25	*(13)*	*(19)*	16	*29
21	21	*(17)*	26	*(12)*	*28
23	*17	19	29	10	*27
1	*15	*(17)*	28	9	*22
3	*12	14	26	*8	*19
5	*17	*(12)*	22	*11	*16

Miscellaneous

Editorship of *DX News Letter* has now been assumed by Michael Oerter, DJ5AV. The previous editor of this weekly DX newsletter was Uwe Gruenberg, DL9GOA, who, after two years of much activity, has decided to spend more time with his family. The *DX News Letter* can be found on the Internet.

QSL Addresses

3D2AG/P	—Antone D. N'Yeurt, P.O. Box 14633, Suva, FIJI
3W5RS	—P.O. Box 303, Vung Tau, VIETNAM
4K5CW	—P.O. Box 214, Baku. AZERBAIJAN
4L7AA	—P.O. Box 32, Warsaw 16, 00906 POLAND
4S7RPG	—R.E. Parkes, c/o YWCA, 7 Rotunda Gardens, Colombo 3, SRI LANKA
5H3LM	—Ludwig, P.O. Box 519, Arusha, TANZANIA
5R8FK/ 7P8SR	—Ray Shankweiler, B.P. 620, 101 Antananarivo, MADASGASCAR
BA4TB	—P.O. Box 219, Wuxi, Shanghai, CHINA
CV5A	—P.O. Box 2, 11000 Montevideo, URUGUAY
D2EB	—P.O. Box 2344, Luanda, ANGOLA (See Note 1)
EK6GC	—Robert Grigoryan, P.O. Box 25, Charentsavan, ARMENIA
ET3BT	—P.O. Box 6128, Addis Ababa, ETHIOPIA
EY4AB	—P.O. Box 13, Volzhsk 9, 425009 RUSSIA
JT1BH	—P.O. Box 791, Ulan Bator, MONGOLIA
PQ5L	—LABRE/SC, P.O. Box 224,

QSL Routes

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

1AØKM —IKØFVC
3B8/F5PYI —F5PYI
3D2UK —HB9DDM
3W6RHA —LA6RHA
4F4C —XE1BEF
4F4IX —DU4IX
4KØCW —DL6KVA
4K9W —DL6KVA
4L1DX —OZ1HPS
4L2M —DJØIF
4L5A —IK3HHX
4L8A —OZ1HPS
4S7RPG —G3REP (*1)
5H3JB —NK2T
5NØMVE —ON7LX
5NØT —F2YT
5R8FH —I1PIN
5WØNY —DJ3NY
5Z4SS —JA1SQI
6F4C —XE1BEF
6W1QV —F6FNU
6Y6Y —I5JHW
7O1A —JH1AJT
7Q7KH —WF5A
7Q7RM —GØIAS
7XØAD —EA4URE
7X2RO —OM3CGN
8P9DX —VE3ICR
8P9EM —G3VBL
8Q7BE —HB9NBE
8Q7BY —HB9DIF
8Q7CR —DF5JR
8Q7YN —HB9CYN
8Q7YV —HB9CYV
8R1K —OH6DO
8R1ZG —W4FRU
9AØAA/MM —9AØAA
9G1FN —DK6IW
9G5BQ —PA3GBQ
9H3XF —IK3OYS
9J2RR —W4CER
9J2SZ —SP8DIP
9K2F —9K2HN
9L1KA —WØHSC
9M2RY —N4JR
9M8CC —PDØALB
9U5DX —F2VX
9V1ZB —JL3WSL
9X4WW —ON5NT
9X5HF —LA2HFA
A35NY —DJ3NY
A625ND —KA5TQF
A92GD —K1SE
AC5FL/M —DF4TD
AH2BE —AA6BB
AH7A —AH6NV
AH7G —N2AU
AL7R —KL7KJ
AY7D —LU7DW
C31SD —CT1AMK
C5ØYL —DL7AFS
C6A/DL2SCQ —DL6DK
C6A/K3TEJ —K3TEJ
CE3/F6EXV —F2VX
CE9/CE7JOD—CE7JOD
CE9SAC —EA8BGY
CO3ZD —CT1ESO
CP4BT —DL9OT
CT9H —DF5AN
CVØZ —CX3CE
CX8DX —CE3CE
CYØXX —WA4DAN
CY1COP —VO1COP
CY1TX —VO1TX
D25L —PA3DMH
D2EB —I3LLH (*1)
D2EV —DL3KBQ
DAØPLG —DL1DCY
DAOSI —DK1WI
E31FAO —JH1AJT
EA4ENK/P —EA5OL
EA8BRR —EC8ATN
ED1TCC —EA1DHH
ED2LSB —EA2MQ
EK1700JJ —GW3CDP
EL2AB —IKØPHY
EP2MKO —UA6HCW
ER1AD —KD1CT
ER5AA —I8YGZ
EY8MM —K1BV
EY8XX —GW3CDP
F5PAC/HP7 —F5PAC
FG5HR —F6BUM
FK8CJ —F6EYB
FR5GM —F6AFJ
FR5RH —F5RRH
FS5PL —KFØUI
FY5YE —W5SVZ
GBØON —ON4ON
GS4TMS —FM4UYE
H44/DK9FN —DK9FN
H44MS —DL2GAC
HBØ/HB9LEY—JH1BSE
HC8/N5KO —AA5BT
HFØPOL —SP3FYM
HP1XBH —W4YC
HR3/K9BG —K9BG
HSØAC —LA7JO
HSØ/DL2FDK—DL2FDK
HSØ/WAØRJY—WAØRJY
IK8UHA/IC8 —IK8VRH
IU2D —IK2EKY
J38AH —IV3TMV
J38AI —IV3TMV
J3K —WB8GEX
J41AG —SV1CIB
J68AS —N9AG
J68NR —WB8ENR
J6DX —N9AG
JA5SEY/HP3 —JF2UED
JH4FBV/6 —JH4FBV
JWØL —G8APB
JX7DFA —LA7DFA
JY9QJ —DL5MBY
K3VOA —K3IXD
KC4/UA3YH —RW3XA
KC4AAA —NC6J
KC6VW —JA6BSM (*2)
KF4AME/TI6—KF4AME
KG4AU —WT4K
KH2D —K8NA
KH2V —JA8RWU
KL7AK —N6IV
KP4/K4UJ —K4UJ
KP4/K4WA —K4WA
KR8V/C6A —KR8V
LA1V —LA4LN
LU1ZI —LU8ED
LW5EJQ/D —LW5EJQ
LW9DHU/D —LW5EJQ
LY6M —LY1DS
LY7A —LY2ZO
LZ70BFR —LZ1BJ
P29TL —KF9TH
P4ØWA —K9UWA
P43A —P43ARC
P49I —K4PI
PA6PA —PA3BLS
PJ1B —K2SB
PJ5AA —W1AF
PJ8AD —KV4AD
PJ9B —K2SB
PJ9E —K2SB
PT5T —PP5LL
PYØTI —PY1UP
PY8JA/P —PY8JA
PZ1HP —JA1OEM
PZ5HP —JA1OEM
PZ5JB —AA3OE
R1AND —RZ1PWA
R1ANT —UA1MU
R1ANZ —UW1ZC
R1ASP —RA1AQD
RA2FZ —W3HNK
RN3QO —N2UCK
S79MX —HB9MX
S92AT —NJ2D
SU1SU —9K2RA
SU3AM —DL1FCM
SX2THE —SV2TSL
T31BB —DF6FK
T32Z —N7YL
T94GB —S52CX
TA1/RU9WW —RW9WA
TA2IJ —DJ9ZB
TF50IRA —TF3IRA
TI4CF —W3HNK
TI9/KBØQMY —K3BYV
TI9CF —TI2CF
TL8/F5JKK —F6FNU
TM4ICF —F5PTI
TM8TON —F5KKU
TN7A —JH1NBN
TOØBG —S50B
TOØR —W4FRU
TOØTN —OK1TN
TT8ED —F5SEC
TU4FF —OH8SR
TZ6FIC —F6KEQ
TZ6VV —AAØGL
UK4YT —K4YT
UNØAA —DL6ZFG
UN5J —W3HNK
UX3UA —F2IA
V2/J38FR —DL7DF
V31MP —W5ZPA
V31YK —W5JYK
V47CA —VE3BW
V47KP —K2SB
V47NS —W9NSZ
V5/WA1JBB —W3HCW
V5/W8UVZ —W8UVZ
V5/ZS6YG —KYØA
V59T —KYØA
V63CT —HL1IWD
V63KZ —JAØVSH
V63MP —JGØPBJ
V63YT —JE1SCJ
V85HY —JA1WTR (*1)
VI75AAF —VK4LV
VKØGC —VK9NS
VK1DX —VK1PJ
VK4CYB —JE1LET
VK4WGL —KB5GL
VK9PA —JR5XPG
VK9PG —JR5XPG
VP5/K8JP —K8JP
VP5JP —K8JP
VP8CSA —DL1SDN
VQ9KH —WJ5R
VQ9QM —W4QM
VS96BG —VS6BG
WP2Z —KØDEQ
XF4A —XE1BEF
XU2FB —N4JR
XU6WV —KØTLM
XX9TEL —JH2KAG
XX9TQY —JA1OGX
XY1HT —LA7JO
YA5MM —K1BV
YI1FLY —KK3S (*1)
YI1IK —SM3DBU
YJØANY —DJ3NY
YS1XS —WD4PDZ
YS8ZKK —DK6KK
Z31JA —WA4JTK
Z31VJ —YU5XVJ
Z32XA —KM6ON
Z38/OH3MIG—OH3MIG
ZA1AJ —OK2ZV
ZA1M —IK2HTW
ZD7HI —N2AU
ZF2QM —W6OSP
ZK1DI —DK1RV
ZS7ANT —ZS5UND
ZV5E —PP5ZYZ
ZW2A —PT2BW
ZYØSG —*3
ZYØSK —*3
ZY3CEJ —F6FNU

BRAZIL

PY5AA —LABRE/PR, P.O. Box 1455, Curitiba, PR, 80001-970 BRAZIL

SU1MT —Mohamed Soheil, Tartousieh, P.O. Box 1616, Alexandria, EGYPT

UA2FCI —P.O. Box 215, 236015 Kaliningrad, RUSSIA

UA3YH/KC4—P.O. Box 461, Obninsk, Kaluga oblast, 249020 RUSSIA

V31BB —P.O. Box 3132, Belize City, BELIZE

V85HY —H. Yamada, Japan Embassy, 1/3 J1, Jawatan Dalam Kampong Mabohai, BRUNEI (See Note 1)

VQ9XX —Diego Garcia ARC, Jim Pfister, P.O. Box 15, U.S. Navy Support Center, FPO AP 96464-0016.

XT2HB —Hugolin, Dep 01, B.P. 6397, Ougadougou, BURKINA FASO

YI1AU —Zayd, P.O. Box 55072, Baghdad, IRAQ

YI1FLY —Azahr, P.O. Box 55072, Baghdad, IRAQ (See Note 1)

ZB2EO —John J. Bautista, P.O. Box 534, GIBRALTAR

ZD7YL —Cherie, P.O. Box 12, ST. HELENA ISLAND

ZS6CAX —Koji Takara, Embassy of Japan, P.O. Box 11434, Hatfield, Pretoria 0083, SOUTH AFRICA

NOTES:

1. Two routes have been given for this one, direct or via a manager.

2. This manager requests cards via his bureau only.

3. Contacts made with ZYØSG or ZYØSK on CW should be sent via PT7AA; SSB contacts go via PS7KM.

Many thanks to the following contributors: AB5QH, W7CF, W9NN, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), American Radio Relay League (K5FUV), *Island News* (W5IJU), *425 DX News* (I1JQJ), The *Ohio/Penn DX Bulletin* (KB8NW), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), and *Inside DX* (N2AU).

Our youngest daughter ended her six-month contract as lead female vocalist aboard the m.s. *Statendam* in January. This also ended our cruising for a while. She is getting married 5 April, and after I recuperate from the financial drain of the wedding I may consider another cruise as they are a lot of fun. Maybe the radio can come this time. I only ran into one amateur this last cruise, K2LDK. He was busy taking in the sun on the deck.

My column has been submitted a week early as the XYL suggested a winter trip to Alaska for about two weeks. I had planned to bring the radio, but the poor propagation was discouraging and not worth the effort to assemble the antenna in the snow. Should be interesting! Very 73 de John N6JM. **WR**

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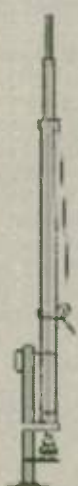

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J48Y —SV1BKN Salamis Isl I.O.T.A EU-075

J6DX —N9AG Scott Lehman, P.O. Box 803, Greenville, OH 45331, USA with an SASE or via the bureau.

JT1BH —Bureau or direct: S. Surenjav, P.O. Box 125, Ulan Bator 13, Mongolia

JT1CD —N. Khosbayar, P.O. Box 94, Ulan-Bator 28; Mongolia

JT1T —JT1KAA HQ Station of the MRSF, P.O. Box 639, Ulan Bator 13, Mongolia

KC4AAA —NC6J (from Sout Pole K-08 USN MARS Amundsen Scott)

KH6CC —Jack N. Wheeler, P.O. Box 436, Paauilo, HI-96776, HAWAII, USA

NH2G —WF5T (GUAM in Zone 27) E-Mail:garydein@Kuentos.Guam.NET

OL3A —OK1MR bureau or direct: Milan Rusky, Sadova 530, 34562 Holysov, Czech Republic

OY9JD —John I.Dan, P.O. Box 2028, FR-165 Argir, Faroe Isl.

PI4TUE Bureau or E.T.S.V. Thor TBV de Esrac, Den Dolech 2, Eindhoven, Netherlands (PA3EZL OP.) E-Mail: esrac~ele.tue.nl

PI4ZLD DE DE-BEEVLANDEN ARC, P.O. Box 2024, NL-4460 MA GOES, Netherlands

RA0FF —KL7H/W6 or Eugene Popov, P.O. Box 79, Yu-Sakhalinsk-10, 693010, Russia

RN4W —RW4WR (only contest) P.O. Box 3945, Izhevsk 426000, Russia E-Mail: cost@izhcom. ru

RW9USA —UA9AB Gennady Schumat, Box 17, Troitsk 457100, Chelyabinskoy, Russia, CIS

RZ9AZA —UA9AB Gennady Schumat, Box 17, Troitsk 457100, Chelyabinskoy, Russia,CIS

RZ9UA/0 —Mike Klokov, Box 4291, Norokuznetsk 654000, USA

SL3ZV —SL3ZV bureau (SM3BDZ OP.)

SU1SK —Said Kamel, P.O. Box 62, Shobra Al-Khima, Cairo 13411, Egypt

SU2MT —Mohamed Soheil Tartousieh, P.O. Box 1616, Alexandria, Egypt.

T77C —Antonio Ceccoli, Via delle Carrare 67, RSM-47031 Murata A-7, Rep.San Marino

T88T —Belau DXpedition, Box 88, Morris, OK 74445-0088, USA

TF3DX —Villi, Silungakvisl 10, IS-110 Reykjavik, Iceland

TF50IRA —TF3IRA bureau or direct: Icelandic Radio Amateurs, Box 1058. Reykjavik, Iceland.

TK5EP —Patrick Egloff, Box 223, F-21079 Ajaccio Cedex, France

TK5NN —Patrick Bittiger, Box 227, F-20179 Ajaccio Cedex, France

TM0ZK —F50ZK Mazoyer Frederick, 33, rue Maurice Rigolet, 91550 PARAY VIEILLE Poste, France

VE9DH —VE9DH buro or Direct

VK9NS —J. B. Smith, P.O. Box 90, Norkfolk Isl. NSW 2899, Australia

VP5EA —WD5N to 1997 CBA ONLY: 103 Osage Dr.,Leander, TX 78641 (or W5-buro)

VS6BG —Brett Graham, P.O.Box 12727, Hong Kong. E-Mail: bagraham@ HK.super.net

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VU2PAI —Ananth Pai, Bharath Beedi Works, POB 730, Mangalore 575003

VY1JA —Jay Allen, RR 2 Site 15 Comp 117, Whitehorse YT Y1A5W9, Canada

WP2Z —KODEQ (from Iota NA-106)

XE1L WA3HUP Mary Ann Crider, 2485 Lewisberry Rd., York Haven, PA 17370, USA

XE2L —Jose I. Chagoya Gomez, Guadalupe Victoria 3, Bahia, Ensenada, BC 22880, Mexico

XV7SW —SM3CXS bureau or direct

XZ1N —W1XT (P.O. Box 17108, Fountain Hills, AZ 85269, USA) direct or via Bureau. Internet: xzln@qrz.com.

YB2UDH —Tatang, P.O.Box 277, Magelang 56101, Indonesia

YB9BON —Nyoman Suwena, P.O.Box 952, Denpasar 80001, Indonesia

YM2ZW —OKDXF Box 73, Bradlec, CZ-29306, Czech Republic

YW1A —YV1AVO Italo Stradiotto, P.O. Box 20, 4123 Punto Fijo, Venezuela

ZB2EO —John J. Bautista, Box 534, Gibraltar

ZF2RF —K4WT Daniel R. Dorsey Jr., P.O. Box 231240, Montgomery, AL 36123-1240, USA with SASE or via bureau

ZL1AMO —Ron Wright, 28 Chorley Avenue, Massey, Henderson, Auckland 1208, New Zealand.

ZL1AXQ —D. B. Hardwick, 53 Broadway, Matamata 2271, New Zealand

ZL2HW —N. O. Marsh, 16 Harris Street, Waitara 4656, New Zealand

ZL2JR —Jim Robertson, 100 Cluny Road, Plimmerton 6251, New Zealand

ZL2SQ —H. Mc Quillan, Tasman, R D 1, Upper Moutere 7152, New Zealand

ZL2VI —E. E. Manning, 33 Tiverton Crescent, New Plymouth 4601, New Zealand

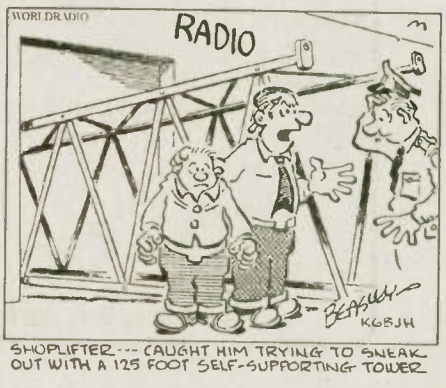
ZL2VS —H. R. Miller, 41 Alexandra Street, Marton 5151, New Zealand

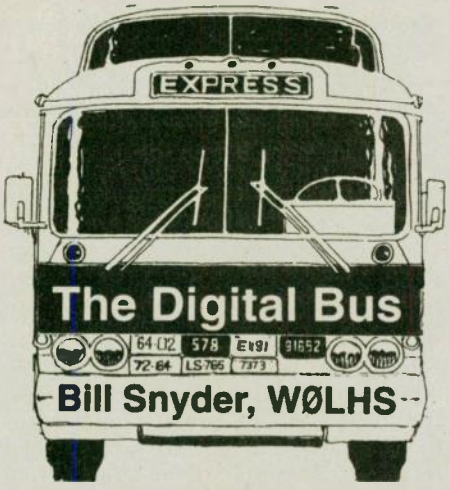
ZL3CW —P. O. Box 25-111, Christchurch, New Zealand

ZP5KO —Atilio Roa, Mecanicos de aviacion 1439, Asuncion, Paraguay

ZS6P —Tjerk J Lammers, Box 48052, Hercules 0030

ZS6SA —Don Soper, P.O. Box 2934, Johannesburg 2000





Every hobby has its leaders, its lovable people and its characters. It's the people who make any hobby fun and exciting, and this is particularly true of Amateur Radio. In 63 years of active hamming, I've crossed dits and dahs, bytes and bauds with many wonderful people, but none can compare with one character: the late Boyd Phelps, WØBP, of the Twin Cites of Minnesota. He was something to write home about.

Yes, "Beep," as he was affectionately known, was not only a character, he was a legend in his own time! His initials spelled "Beep" and his radio call sign spelled "Beep." Do we need more? Well, there's a lot more!

In his lifetime he held many calls: 9ZT, 1HX, 1HXAQ, 2EB, W2BP, W9BP, and XEØBP. Beep was well-known for many things, his devotion to Amateur Radio, his keen sense of humor, and his avid convention-going activities. Wherever he went and whatever he did would command instant attention. If Beep appeared at a hamfest the word would spread like wildfire: "Beep is here!" That's the kind of man he was. I personally held him in awe, and I think he had some magic spell over me and all the other hams of his time.

Beep was an added attraction at any dinner or hamfest. Just the rumor that he might appear at any radio gathering would increase the attendance figures dramatically. I suspect many rumors were started to do just that. "We hope to have Beep there," prefaced many a regional ham get-to-gether. And it worked.

Who was this character, and what caused all the commotion when he appeared on the scene? Well, I really only knew Beep by QSO and a few brief personal encounters at hamfests. So, to set the legend straight, I must rely on others to fill me in on this personality who did so much for Amateur Radio, and in particular, Amateur Radio teletype (RTTY).

Bruce Meyer, WØHZR, gave me these clues: Beep like mixed drinks — nine parts of bourbon and one part of water. When he worked as a store clerk in Lew Bonn's radio supply house in Minneapolis/St. Paul, and the cash register ran out of pennies, Beep would give out grid caps for change.

One Christmas Eve he rang up $1 million on the cash register. When the boss asked what was going on, Beep replied simply that he had just sold the store!

Beep was one of the Godfathers of HF RTTY. He was the first one in the world to work all 48 states on the green keys and prove it. He was awarded WAS certificate number one by the ARRL (I furnished Beep with the then hard-to-get North Dakota RTTY contact, for I was the only ND operator on that mode during 1953).

Bruce also tells of his visit to the BP shack a few months after Boyd had acquired his first Model 28 machine. The floor was littered with miles of TTY paper. Beep was rummaging through the paper on the floor looking for a lost $8,000 check. It seems the company that had issued the check to Boyd, a royalty payment for one of Beep's inventions, was bugging him to cash it. Money was never that important to Beep.

Beep ran a small company called Phelps Laboratories in St. Paul, Minnesota. It specialized in making precision frequency measurements for radio stations in the upper Midwest area. Every broadcast station was required to have its carrier frequency periodically measured by an outside agency to insure the station was within the plus or minus 20 cycle tolerance allowed by the FCC. This was usually done after sign-off in the middle of the night. One former chief engineer of a daytime-only station recalls having the measurement scheduled in the midst of a blizzard and he was unable to reach the transmitter site and put the rig on the air. . . but the report card arrived a few days later, saying the station was only off two cycles. Beep had done it during the day.

My late friend, Bob Stanek, WØHAH, lived only 15 blocks from Beep, and he classed Phelps as the most "unforgettable character" he ever met. Bob spent many hours with Beep at his QTH, particularly when WØBP called the "RTTY Net" to order on Sunday afternoon (with a repeat on Tuesday evening.) The net started with "Bully Tins" as Beep called them, and was transmitted on various frequencies, among them 7.140, 21.090, and 51.000 kHz.

"It was a sight to behold," said

Stanek. "He ran as many as five 1kW rigs on five bands simultaneously!" Beep's kilowatts were all home-brewed contraptions using commercial broadcast station components. One such transmitter used a 5kW final tube which had been designed to be cooled by circulating water. Beep, lacking the special sized equipment to cool the jug by water, air-cooled the big tube by conducting air from a blower through a Model T Ford car inner tube. Everyone said it worked fine at only a kilowatt input.

"Beep had a curious sense of humor," continued Stanek, "and it was reflected over all his shack. I recall all of his kilowatts were powered from one big pole-pig power transformer, the kind electrical companies hang on a light pole outside your house. This power supply was controlled by a gigantic powerstat which had an actual automobile steering wheel fastened to the control shaft. The hand-lettered name plate on the massive autoformer read: 'VOLUME CONTROL.'"

"Beep used 1/4-inch copper tubing for his antenna feedlines. On one of the open feeders he suspended a small 20 watt tube by its plate cap. It was an 807, a very popular low-power transmitting tube of the period. Attached to the unlit tube was a little sign that read: '807 IN THE FINAL!'

"And there is more," Stanek smiled. "On the frequency standard he used to check the accuracy of broadcast stations, he had painted a little red spot right in the middle of the panel. By pressing on the red spot you could warp the front panel enough to change the frequency a bit, so Beep put a little sign the panel which read: 'PRESS HERE TO INCREASE FREQUENCY.'"

Bob concludes his description of WØBP's shack: "... with all those watts humming and occasionally zapping away, I thought I was in Frankenstein's laboratory!"

Phil Dejarlais, WØJHS, is another old timer who remembers, with a smile, the wonderful world of Beep. Phil adds this comment to the 807 story: "Up on the ceiling where the feeders came in, Beep had a Victor mouse trap clipped on the terminal with a sign reading, 'TVI TRAP.'"

Phil continues: "One day the old 30" x 3½" inner tube rotted away, fell down, and the 5kW tube went west, so Beep replaced it with an 833."

In 1953, Beep was instrumental in founding the Twin Cities-based Radio Teletype Society, commonly known as the RATS. He was the first "Quick Brown Fox" of the club that met in his home. I often wondered if Beep invented the unique title for the office of president, for "Quick Brown Fox" smacks of Beep's sense of humor. (Comes from a test sentence used by RTTY folks: "The quick brown fox jumped over the lazy dog's back." It contains the whole alphabet.)

Beep was also once on the ARRL staff, but I know nothing about such employment. If you know any Beep stories, please send them to me. I've been a Beep fan for a long, long time.

Beep met the end of his life years ago. He was on the way back to Minneapolis and had an auto accident. He had gone to Mexico with a Teletype machine to put Mexico on RTTY for the Amateur Radio world. And so the legend of RTTY became a silent key.

Doctor Ken, WØZQJ, Good Guy

A ham friendship I cherish is that of Ken Covey, M.D., WØZQJ of Moorhead, Minnesota. I have known Ken for a number of years and I have been admirer of his ever since we were officers in our local ham club at the same time. He always participates when asked, and he always does an excellent job of every thing he attempts.

Ken is a retired orthopedic surgeon of some stature, and he rides a bicycle as a fitness hobby. He's ridden his "wheels" on many long distance trips. One example: a trip across Iowa with some kind of bike club rally. It might have even been two trips across Iowa, at 70-plus, he doesn't brag about his accomplishments.

Covey's ham activities include CW, packet, and every bike rally that needs ham communications. He is the perfect model for young hams to emulate, and Ken has been a ham for many, many years.

Recently the Moorhead, Minnesota Human Rights Commission honored Ken for his service to humanity ever since he graduated from medical school in 1944. They honored him for being one who "lives his life with deep concern for all people." Just look at this list of service to the poor:

Years ago at Mahnomen, Minnesota, he volunteered at the clinic on the White Earth Indian Reservation.

As a Crookston, Minnesota resident, he treated migrant farm workers, and with his family, founded a migrant clinic.

Today in Moorhead, Covey provides free weekly medical care to the residents of two homeless shelters and to patients at the Salvation Army Health Clinic. He is also involved in helping resettle refugees and he's active in efforts to advance women's rights and oppose racism.

Ken comes to our ham breakfast on Saturday mornings on his bike (except in those Dakota blizzard days in the winter), stays a while and then bikes off to take care of the homeless. He's a Amateur Radio fan through and through, and he is active on the air in many modes.

The Mayor of Moorhead in lauding Ken for his accomplishments, called Covey "one of the volunteer stars of Moorhead." I'd like to add "of the nation," if I might.

EAVESDROPPINGS

BLIZZARDS MAY COME AND BLIZZARDS MAY GO, BUT WE'VE HAD ENOUGH FOR A CENTURY DURING THIS LAST WINTER . . . I'VE GOT SIX FEET OF SNOW IN MY FRONT YARD, TEN FEET IN MY BACK YARD, AND ABOUT THREE FEET IN MY GARAGE BECAUSE MY TEENAGE KID LEFT THE DOOR OPEN. . . . DID YOU GET CAUGHT IN THE GRID-LOCK ON THE INTERNET?

Write me: Bill Snyder, WØLHS, 1514 12th St. S., Fargo, ND 58103-4134. 73 and as we end a QSO on CW: DIT DIT. WR

FM, REPEATERS REPEATERS & VHF

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Little LEOs narrow 2-Meter focus to 146-148 MHz

The Little LEO micro satellites have now targeted the domestic U.S. repeater subband from 146 to 148 MHz as prime territory into which they want to expand. Please check the Rules and Regulations column on page 8 for the latest on this issue.

Coordinator vs. coordinator in Indiana

Last month we highlighted the signing of the Memorandum of Understanding between the National Frequency Coordinators' Council and American Radio Relay League leading to the formation of the National Frequency Coordination Office (NFCC) as the "single point of contact" to the FCC on repeater related issues. Even before the ink dried on that document, a conflict appeared in some areas as to whom the recognized coordinator should be.

This is nothing new where I live in California, where for the better part of two years, the newer TMRCC has been fielding a challenge to the long-established Two Meter Area Spectrum Management Association. Even as long as a decade ago, we had two separate coordinators for 1.25 meters "duking it out." That one landed in court.

This situation is fairly new in Indiana, though, where there are now two competing frequency coordinators, each having its own ideas regarding the process to be used, and each claiming support from many of the same people. This is not a case of good guy vs. bad guy. Rather, it is a study in the way differences of opinion between people who mean well can negatively impact on others. Its also why the NFCC is needed.

About six months ago, several hams in Indiana organized a new Midwest Spectrum Management Association, Inc. (MiSMA) and are claiming to be the "state-of-the-art alternative" to the Indiana Repeater Council (IRC). In order to increase their membership, they have just completed a "free first year" membership drive and they claim to have about 150 members. However, as in Southern California where repeater users have literally taken over one of the region's coordination entities, many MiSMA members are reportedly not repeater owners, and others are also dues-paying members of the IRC. Unlike their California counterparts, it is reported that none of them are paying dues to MiSMA in 1997. The question then arises: Who is financing MiSMA?

The creation of MiSMA does not sit well with the coordinators in adjoining states. All recognize the IRC as the only legitimate entity representing coordination interests in Indiana.

The confrontation has reached a point where the recognized coordination bodies in Michigan, Illinois, Ohio, and the "regional umbrella" SouthEastern Repeater Association (SERA) have all told MiSMA that they will not recognize them as an Indiana coordinator. In fact, the SouthEastern Repeater Association's Board of Directors has voted unanimously to refuse recognition.

Also, the giant "umbrella" Mid-America Coordination Council will not recognize them as the Indiana coordinator unless there is some form of a neutral, fair election held in the state.

Such an election is not expected in the near future, and even if it were, the demographics and the logistics would be a nightmare.

First, who would take part? Would it be fair to limit such a plebiscite to only those in Indiana who own and operate repeaters? Should repeater users be included? What about hams who do not even own radio gear for the VHF bands? Remember, according to the FCC, any amateur who holds license higher than a Novice is a potential repeater licensee.

Who would bear the cost if it turns out that every ham in Indiana is given the opportunity to vote? The cost of holding such an election would be high. Its not just a matter of generating a list of names and mailing out ballots. There is also the expense of going from club to club to educate as many hams as possible on the issue. This means a lot of people would be spending lots of time on the road and in the air going from town to town drumming up interest. Somebody has to bear this expense for each side.

Consider too, that there would be the cost of printing up ballots, mailing them at 32 cents each, and including a prepaid mailer at another 32 cents apiece. Knowing the hard feelings involved, it would probably mean hiring an outside auditing firm to oversee the vote counting and making sure that only those truly eligible had voted. In the end, such an election could cost the hams of Indiana a great deal of money if

done in such a way as to insure everyone's confidence in the results.

There are some who are suggesting that the ARRL might be approached to fund such an vote, possibly by including it with the next Division elections. There are two good reasons this will not happen. First, the ARRL's election audit company would assuredly charge extra for such a vote count and background check. Unlike ARRL elections where ballots go to a mailing list of known ARRL members, a plebiscite in Indiana would have ballots going to every ham in the FCC database in that state. Ballots would go to people of all ages and some would invariably go to "silent keys" still not deleted from the database. This could mean that the election auditor would have to check the validity of every ballot and this would be exceedingly costly. With the ARRL admitting that its hard up for funds, there is no way the organization is going to spend any more than it has to in the near future

There is yet another reason for the ARRL to keep away. That of not wanting to get involved in the day-to-day political process of regional coordination. The ARRL agreed to act as a conduit of information to and from the FCC. It did not accept the task of mediator between feuding parties. In fact, one of the key points discussed at the October, 1995, St. Charles national meeting of repeater coordinators was the introduction of "Alternative Dispute Resolution" in matters such as this, so that the ARRL would not have to get involved.

On the other side of the controversy is the long-established IRC, which represents only repeater owner-operators. Its chairman Neil Rapp, WB9VPG, claims a paid membership of actual repeater license holders is at or approaching an all-time high of around 140. The IRC is in the process of reorganizing itself with direct membership input, and has already taken some interesting steps to help negate the inter-system interference problems that come with a lot of repeaters crammed into a small space.

For instance, the IRC has plans underway to develop a regional Continuous Tone Coded Squelch System access plan for all open Indiana repeaters. There would be several tones used — each assigned to a different part of the state. When a person from one area visited or moved to another, it would simply be a matter of reprogramming a single tone to cover all repeaters that might be encountered. Publication of the tones in repeater directories would inform travelers of the tone in use. The same publications would serve to notify potential new repeaters of what tone was allocated for their area. IRC officials liken it to assigning area codes to repeaters. They say it would minimize, and in most cases eliminate, most inter-system interference and allow development of more repeaters in the state.

But as the IRC works inside Indiana, MiSMA may have its sights set on bigger things. Coordinators in adjoining states believe that MiSMA is trying to set itself up as the "majority" coordinator in Indiana with the long-range goal of extending their coordination service into the surrounding states. Possibly in an open challenge to both MACC and SERA — and the state coordinators that they represent. MiSMA has a very well-constructed web page (www.interlink-2000.com/misma) on which such a region-wide goal is alluded to, though the organization appears to have no legal standing in the eyes of anyone other than its own members.

This may all come to an end in another way. If (and it is still a big "if") the FCC agrees to recognize the NFCO as the "Single Point of Contact" on repeater issues, it will in effect be giving recognition to the IRC as the official coordinator for Indiana. This is because the Indiana Repeater Council is the organization recognized by the NFCC, and MiSMA is not. Whomever the NFCC acknowledges, will be the entity the FCC recognizes.

The best repeater in town

Ever hear of Cherryville, New Jersey? If you are a pilot and have ever flown in the "North-East Corridor" then you have. If not, then you will have to take my word for it, and that of N2MQZ.

Randy says that one of the best repeaters in New Jersey can be found on 147.375 (+), transmitting from Cherryville. The repeater is wide coverage, with 6 receive sites, and a 300W transmitter in Cherryville. Activities include fox hunts, an associate members Christmas dinner and the "Greatest Hamfest Burgers" in the East. For more information, contact N2MQZ on a call database address, or e-mail to n2mqz@aol.com.

New North American digital system directory

The Tucson Amateur Packet Radio Corporation, with the support of the American Radio Relay League, will begin providing the TAPR Internet site the information on digital systems that until now has been printed in the annual *ARRL Repeater Directory*.

Information on digital systems will not be published in the 1997-98 edition of the *Repeater Directory*, permitting the publication to better focus on its primary use as a guide to voice repeaters for traveling amateurs. In planning the 1997-98 edition, the ARRL concluded that the *Repeater Directory* was no longer the most effective medium for this information. Discussions involving various regional digital groups that provide data to the digital section of the *Repeater Directory* led to the conclusion that TAPR was the logical group to take

on the task of a new North American Digital System Directory.

This new database system will describe systems used by Amateur Radio stations involved in digital communications in the United States, Canada, and Mexico. The Digital System Directory will be based on information provided by regional, state, and local organizations as well as individuals in a nearly real-time format. This should allow information to be maintained and be more up to date than in an annual print publication. TAPR will also work with participating organizations to make this information available on TAPR's yearly CD-ROM as well as some future publication for local/regional groups to distribute.

The purpose of the Digital System Directory is not to manage, coordinate, or regulate the usage of digital systems, but to provide the most accurate listing of digital systems that can be provided. It is not a formal organization, but a mechanism to allow regional groups to provide and share information regarding digital systems. The Digital System Directory is intended for use by individuals to further their enjoyment of the hobby and by organizations to help plan and develop digital networks.

Regional/Local groups including TwinsLAN, Texas Packet Radio Society, Miami Valley FM Association, Ohio Area Repeater Council, Puget Sound AR TCP/IP Group, Northern California Packet Association, Northern Illinois Packet Radio Frequency Council, Indiana Digital Experimenters Association, Central Lakeshore Experimenter's Digital Organization, HogNet Packet Radio Association, YCCC Sysops Association and the Missouri Amateur Packet Radio Society have already begun to participate in the process. TAPR is encouraging other regional groups to support this project by contributing data from their respective areas.

For further information on the project and how to get involved, regional groups should check the TAPR www site at http://www.tapr.org/directory or send e-mail to Carl Estey, wa0cqg@tapr. org

Help build a repeater in Hawaii

Francis Fong, AH6CJ, lives in Honolulu and wants to put up a new repeater. Unfortunately, Francis is experiencing problems interfacing the radio equipment chosen.

Francis writes: ". . . maybe you can guide us on how we can get advice to interface two Motorola Mitrek VHF radios for repeater service. I have the receiver going and the audio coming out is fine. I am feeding its output to the microphone input (on the other Mitrek) using a Hamtronics COR-3 controller board. . .I hope that you can get me some help. . . ."

Can you provide assistance? If so, please send a note to Francis Fong, AH6CJ, 3322 Ala Lehua Place, Honolulu HI 96818.

Plus there are new advances in VHF digital technology....

Six Meters in Ireland

Ireland is also now allowing its hams onto Six Meters, but their access is far more limited and restricted than in Great Britain. There will also be no repeaters in the foreseeable future.

According to the Irish Radio Transmitting Society it has been in discussions over the past two years with Ireland's Department of Communications. The regulatory agency recently notified the Society that the restrictions to operations on 50MHz have been extensively modified — but not eliminated.

The following are the conditions for operation on 50MHz in Ireland:

(1) Authorization is for a period of twelve months only.

(2) Operation is restricted to the 50 - 50.5 MHz band

(3) Maximum Power: Carrier 14 dbW erp. PEP 20 dbW erp.

(4) In accordance with the ITU Radio Regulations, the following modes of emission are authorized:- CW - A1A: AM - A3E: SSB - R3E: FM - F3E: SSB - J3E:

(5) Operation will be on a strictly non-interference basis in accordance with Radio Regulation 342. Particular caution should be exercised in areas where cable television systems are in operation

(6) Transmitting antenna height shall not exceed 20 meters above ground level.

(7) Antenna shall be horizontally polarized.

The bottom line. If you want a QSO with Ireland, keep an ear open on CW and SSB on the DX calling frequencies at the low end of the Six Meter band.

We've changed our name

In case you have not noticed, the name of this column has been changed to encompass more than FM and repeaters. This is because there is a lot happening in the world above 50 MHz and much of it reaches me every month. Six Meters is a hot non-FM topic and a band that almost anyone can get on by stripping out an old tube-type TV set and using the parts to build a basic station that can make great DX contacts!

Plus there are new advances in VHF digital technology that will eventually lead to new relay modes that will replace FM. As we approach the millennium, it's time to look toward 2001 and enjoy the fruits of modern communications technology. That is why we are broadening the scope of this endeavor to include all of what's happening on VHF and UHF. For the time being, our emphasis will remain FM and repeaters, but the new stuff is on just the other side of that "port." WR

Search And Rescue Communications

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In the past week I have determined that the skill of listening has to be the most important skill one can develop. It is also one skill many seem to have neglected.

Last week one of our company's aging network servers died. We have six servers, and this one was scheduled to be replaced. Most of our users had been transferred to a new server and we'd conducted some seminars to explain what to expect as users were moved to a new server. When the server did quit, there were a few days of hectic activity as software was loaded. Users were coached through a visually different server access screen, but no software commands changed, no files were lost, no procedures were changed, no access codes were changed.

You'd have thought that the world had ended! It was as if all verbal instructions had been lost. I wondered if some users had actually listened as instructions were given. We would coach someone to type in a user name and they'd ask "what is that?" even though it was something they had done daily for years. Some users who were unaffected by the changes caught the panic disease and my phone rang off the hook for several days. Instructions were forgotten. Passwords were forgotten. Names of files were forgotten. Routine tasks, that had nothing to do with a computer network, were messed up.

In most cases, the advice to the users was to take a quick break, take a deep breath, and think about what they were doing.

Interestingly, those who were least affected were those I would call the best "trained." These folk always show up for in-house education seminars and are always asking questions. It's almost as if they are in a continuing education mode.

The scene reminded me of an emergency scene where even the unaffected appear in a zombie-like state, incapable of following simple instructions. Those managing the scene are those trained emergency responders who have practiced and have experience dealing with the crisis at hand. It's as if those who are in the panic mode have disconnected their listening ability.

Avoidance of the panic mode seems tied to the level of training and experience in dealing with the crisis situations.

Training and response

Amateur Radio operators sometimes complain because we do too much training and not enough responding. There are some public service groups that go months between actual events, and I don't know how to tell you to "create" real responses other than to let agencies and organizations know of your talents and capabilities. Just because you don't get called out every week or month doesn't mean you should avoid training. It's training and the experience you gain that keeps your response ability sharp.

Another observation I made with our computer event was that trained individuals will pitch in to resolve the critical issues. It's something I've observed with emergency groups as well.

When the callout comes and the mission opens, your people will rally to the cause. Needed tasks will get done, your people will grab their gear and get the job done. This still depends, however, on having a pool of trained people. Sometimes we get caught up in the numbers game. We look at our roster and wonder why every individual isn't there for every training event or class. As I look over the past year's participation within our ARES group, I find a significant number of people participate in at least one or two training events. There are trained people there, they're just not making a lot of noise and they're not at every meeting or training event.

What I'm saying is that as a group, you must make the training available and accept that your people will attend as their own time and energy will allow. Sometimes people need a break so they can get caught up with other "to do" lists, but this does not mean they're not a resource or are incapable of responding when you have a major event. They'll be there and they'll get the job done. Your task is to keep conducting training for new people, experienced people who need the refresher course, and to show your agency sponsors you're a viable resource. Your "red flag" people are those who never attend training and might expect to be involved in a big callout. If you know who they are, you are ready to deal with their inability to listen and follow instructions.

Some training ideas

Contact your state's emergency management office and find out if they'll let you attend Federal Emergency Management Agency-sponsored courses. In my home state, Utah's Comprehensive Emergency Management agency conducts a variety of emergency response courses and they're willing to allow ARES

members to attend, space permitting. Several of us recently attended a two-day exercise design course that was well worth our time and will be of value to ARES. You might have to take time off from your job to attend, as these courses often happen during the working day. You won't find any better course material than what's offered by FEMA.

FEMA also offers a large number of independent-study courses that can be taken by yourself or as a group. The courses include Emergency Program Manager, Emergency Preparedness USA, Hazardous Materials: A Citizen's Orientation, and A Citizen's Guide to Disaster Assistance. A couple of others include Emergency Operation Center roles in an emergency, and an orientation course for design of disaster exercises. These are only some of the available courses and you can contact FEMA at this address: FEMA, Emergency Management Institute, Independent Study Program, 16825 South Seton Avenue, Emmitsburg, MD 21727-9986.

Completion of these independent-study courses can also give you college credit and military retirement points. None of the courses will cost you to enroll, you simply work through a study guide, in some cases watch a video supplied with the course, and complete an open-book exam. You'll receive a completion certificate and best of all, you'll gain experience in some critical areas of emergency management and response.

If you have several interested people in your group, you can contact FEMA at the above address as well, and schedule the course as an independent-group event. Many of these courses could be done in a couple of hours as a group and this is an excellent meeting training idea. The courses are top-notch, well-prepared, and worth your time to undertake.

Radio swap

Would you like a fun exercise for your next in-person or perhaps as a field response event? Play musical radios. At an in-person event, have everyone sit around a large table, or in a circle. (You would have told them in advance to bring their portable radio.) Have each person pass their radio to the right *two* places. Have everyone tune to an uncommon simplex frequency. Have them switch to a repeater frequency and then do the reverse function (listen on the repeater input, transmit on the repeater output.) Have them practice removing the battery pack with eyes closed in case they need to swap packs in the dark.

You can be creative and ask for a change in sub-audible tone or to do a non-standard repeater offset. The idea is to become familiar with different types of radios in order to perhaps function in an emergency with an unfamiliar borrowed radio. You might get a radio you know how to program, and you might not. It's fun to try and less stressful than doing it for the first time on the front line, in the dark, and with a loaner radio.

The same musical radio/vehicle thing can happen with mobiles in a large parking lot. Once in a while we need to get out of our comfort zone and stretch our thinking ability. You cannot predict that you'll only use equipment with which you are familiar. If you have some experience at discovering how things work, it's easier to do when you face the need during an event.

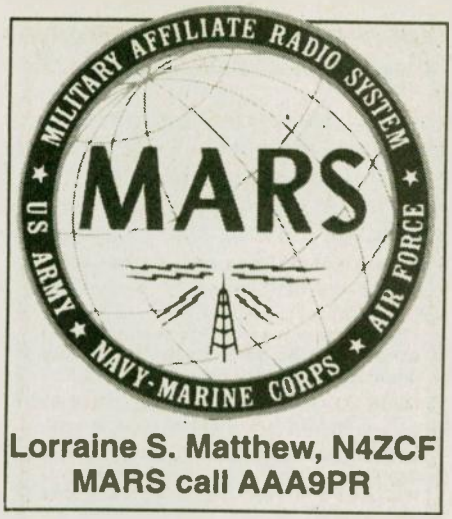
Mobile repeaters

There was a discussion via an Internet discussion group last month concerning setting up field repeaters. Here is where Amateur Radio can really shine. Establishing a portable repeater on a commercial frequency is a major undertaking both in advance preparation and in frequency coordination. An SAR group cannot just simply set up a repeater. Many commercial radios require sophisticated computer programming or purchase of crystals — and that takes time.

Amateur Radio operators have an advantage of being able to establish a repeater with a minimum of coordination and have a large number of operators with radios available quickly. You might consider putting together a portable repeater and testing it regularly. In some states your volunteer frequency coordinator has identified temporary repeater frequencies that you could use. You should work with your area's frequency coordinator (listed in the *ARRL Repeater Directory*) and define some coordination parameters in advance. Your group could then develop the ability to set up a repeater in a remote area in support of a public service event.

We have the technology, we have the equipment, we have the ability, and we have the people. We simply need to combine all of these resources to accomplish something another group needs, and we have a public service niche. Besides, it's a great activity and it will teach your members some of the mechanics of repeater construction and operation.

Until next month, keep busy, keep thinking, be creative in your training events. Most of all, have fun! You may reach me via e-mail (jw@desnews.com) or via snail mail to the address at the top of the column. **WR**



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

Looking ahead

Looking ahead to the Joint Chiefs' Panel Meeting tentatively scheduled for this month, Army MARS members are aware of a number of themes that Chief Army MARS will carry to this meeting.

Interoperability among the three service MARS organizations has been an on-going topic of interest and each meeting has brought this goal closer to reality. This theme has been expanded to include greater interfacing with other disaster relief agencies as well. A greater understanding of the role of the MARS services in a disaster or emergency will assist in the better utilization of MARS assets.

MARS is *not* intended as a replacement for existing emergency communications systems. MARS represents an augmentation to existing systems. The mission for MARS members to address during the early stages of an emergency is the need for Essential Elements of Information (EEI) reports to be sent to the Department of Defense's Directorate of Military Support (DOMS). This information can be shared with other federal agencies in case those agencies are needed to assist with the given emergency. It is this information which enables the planners at the federal level to plan for the specific needs of the emergency.

The desirability for greater interaction among the MARS services was exemplified in 1996 with the inclusion of all three MARS services in the mission of EEI reporting. Many fine EEI reports have been sent from all the services covering many types of emergency situations. This year, 1997, has already seen, and will continue to see, a number of natural emergencies and disasters in which all the MARS services have taken part. The EEI reports and the radio communications support that were made available throughout each event have proved invaluable.

Radio support

Radio support is still the basic mode of operation for each of the MARS' programs. The failure of such high-tech modes as cellular phones, basic telephone systems, and, thus, e-mail and other modalities occur too often to allow the public to be entirely dependent upon these modes of operation. The MARS radio systems gives its users local, national, and global capabilities as needed. Radio, on VHF, UHF, and HF frequencies, allows direct communication between individuals or groups without danger of unsolvable interruption. If there is an interruption during communication, a change in frequency or a relay by another operator will keep the communication going.

MARS members are very well schooled in such flexibility. MARS nets meet every day, every hour, in every conceivable propagation condition. This constant practice keeps every MARS member capable of meeting most unforeseen situations. There are guidelines for operation in all the MARS services, but a basic rule states: "Use common sense."

Taking the lead

"Army MARS must continue to take the lead in providing cost effective emergency communications support to our many valued users or customers. Quality, never compromised, is measured through customer satisfaction and operational success. Army MARS will settle for nothing less." These remarks were made by Chief Army MARS, Robert Sutton earlier this year. That this would also be the spirit of all the MARS services is unquestioned and well understood. As greater and greater interservice and interagency operation is developed, the MARS systems will become the greatest single channel communications systems available anywhere in the world.

The primary focus of Army MARS, during this year, has been the closing and distribution of the following

documents which are the operating framework of Army MARS:

(1) The Regional Network Concept Plan

(2) Revision/Replacement of Army MARS Emergency Communications Operations Plan

(3) Revision of the Army MARS Emergency Frequency Network Plan

(4) Finalization and Standardization of the Army MARS Training Program

(5) Replacement of the Field Manual with the DA PAM (6) Completion of interservice interoperability issues

Since all of these documents can be impacted by decisions coming out of the Chiefs' Panel Meeting, they are kept flexible and open for amendment whenever necessary.

As each one is issued for "beta" testing, every Army MARS member is invited to comment through his or her State MARS Director. In this way, decisions are not made arbitrarily without any input from the field of Army MARS volunteers. The membership has already given much input during the developmental phases of each of these projects. This on-going chance to comment is what makes Army MARS strong. Each member knows that his or her judgment is important to keeping Army MARS ... proud, professional, and ready.

Internet growth

Other news of interest which will be carried to the Chiefs' Panel Meeting includes the very rapid growth of Army MARS on the Internet. Seventeen Army MARS pages have been set up by volunteer Army MARS members with at least two of them originating from overseas — Germany and Korea. Other pages are in the planning and approval stages. It has been recommended that each page be linked and each page to emphasize a unique feature of Army MARS. I have visited several of the pages and I am truly impressed by what I have seen.

The Texas page features a fully linked map of the locations of all the other Army MARS pages in the United States.

For those who would like to visit the MARS pages, you might start at: http://138.27.149.12/marsmars.htm or: http://www.army.mil

All other pages are linked from the official Army MARS Homepage at Fort Huachuca at the above URLs.

It is my understanding that Air Force MARS and NavyMarine Corps MARS also have Internet Web pages. Perhaps, someday, all three sets will be linked.

Continued challenges

All three service MARS' organizations have many exciting changes and challenges to meet during 1997. All MARS members will find great fulfillment in welcoming and working in unity to implement the changes. It is this willingness to keep up with the technologies and the needs of our customers that will keep all MARS . . . proud, professional and ready. WR

WITH THE HANDI-HAMS

Patrick Tice, WAØTDA

The Big Three-Oh!

In 1997 we celebrate 30 years of HANDI-HAMS! Come and join the party!

Work the HANDI-HAM headquarters station, WØZSW, or the Radio Camp station, WØEQO, and get a special 30 year commemorative QSL card.

The Courage HANDI-HAM System was "born" in Rochester, Minnesota in 1967, the idea of Ned Carmen, WØZSW. Ned worked for a clinic, and, in the course of his work, would visit people with severe physical disabilities. As he spoke with his clients, who often had few opportunities to leave their homes, he realized that Amateur Radio would be the perfect hobby for them. Here was a hobby that could open a window to the world! A person with the most severe disabilities could stand as an equal with fellow hams in the world of Amateur Radio!

Ned enlisted the help of a group of local nuns, the Sisters of St. Francis, on 30 April 1967. Although their first action was as weather watchers during a thunderstorm that passed through Rochester that day, the Sisters were committed to helping Ned with his new project, and several received their licenses. Among them was Sister Alverna O'Laughlin, WAØSGJ, the current Educational Coordinator for the HANDI-HAM System.

The first HANDI-HAM was Edna (Eddy) Thorson, NØYL, who took her General Class license exam in December, 1967.

Krisele Hass (Kris), KAØVIY, uses a light probe on her forehead to control her packet station. —*photo by WAØTDA*

Very soon the Rochester Amateur Radio Club, and a little later the Piconet of South Eastern Minnesota took up the torch of service that Ned had lighted. Word of the HANDI-HAM System spread rapidly throughout southern Minnesota and northern Iowa.

By 1969 it was very evident that the expansion of HANDI-HAM services could not continue without some rather substantial financial support. This support came from the non-profit Minnesota Society for Crippled Children and Adults (whose name would later change to "Courage Center"). The Society granted full affiliate status to the fledgling System and helped with money and equipment.

Word of the HANDI-HAM System spread throughout the Upper Midwest, then across the country, and around the world. It became impossible to continue the work of the System as a volunteer organization. Something had to be done, or HANDI-HAMS would be a victim of its own success. The answer emerged when Courage Center agreed to accept the System as a program, and in 1975 the Minnesota HANDI-HAM System merged with Courage Center to become a full service, providing help wherever there was a need.

The Courage HANDI-HAM System, now a fully-integrated service of Courage Center, is able to call on the resources of its parent organization, from accounting and counseling to rehabilitation medicine and physical therapy, in order to better serve its students and members.

Ned Carmen is a silent key, but the Courage HANDI-HAM System's headquarters station bears his call sign, WØZSW, and an organization of volunteers and paid staff carries on his good work of sharing Amateur Radio with people who have physical disabilities.

HANDI-HAMS: "Hams helping hams."

For information, contact: Courage HANDI-HAM System, 3915 Golden Valley Road, Golden Valley, MN 55422; 612/520-0515. E-mail: handiham@mtn.org or WWW at: http://www.mtn. org/handiham WR

KNØS demonstrates antenna basics with a Quad he constructed at camp. Ken Care, KN6CK; Dan O'Brien, N1IVT; Grady Ebert, KD5SDU; and Lorraine McCarthy, N6CIO, look on.

Visit Your Local RADIO CLUB

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 9/97

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., YMCA Lighthouse Cntr., 2900 N. Columbus (So. of Ft. Lowell). 2/98

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. 3/98

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. http://www.snowcrest.net/bgorski/index.html 4/98

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly (except May & Dec.), 0630, Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962. 1/98

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., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/97

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. 101, Chico. 9/97

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. 1/98

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 9/97

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. 2/98

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

Sierra Foothills ARC. 1222 San Simeon Dr., Roseville, CA 95661-5365. Meets 2nd Fri./monthly, 7:30 p.m., Auburn Library (Beecher Rm.), 350 Nevada St. Thurs. nets 7:30 p.m. 145.430(-) (PL 94.8), 7 p.m., Fri. 28.415. 3/98

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

Southern Sierra ARS. Meets 2nd Thurs./quarterly (Jan., Apr., Jul., Oct.), 7 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06(-), 224.42(-), 145.090(S) Packet. 1/98

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.

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, AC6HF, (916) 966-3654. http://www.ns.net/~NHRC 3/98

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. 2/98

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. 9/97

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. 1/98

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. 12/97

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

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 9/97

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). 3/98

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. 1/98

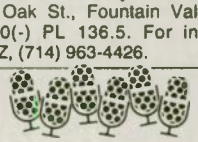
Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, County School Adm. Bldg. in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/97

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. Mary Turner, (707) 451-2134. 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(-). 1/98

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. 10/97



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

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 9/97

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. 10/97

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City. 1/98

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob Dargel, KA1BB, (860) 739-8016. 10/97

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. 9/97

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. 3/98

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, KT4PA, (561) 340-4319. Call in 146.955(-). 9/97

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) 896-4274. 1/98

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. 6/98

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. 1/98

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. 3/98

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

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 833-6944, WH6CZB. 10/97

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: (773) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 7/97

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(-). 2/98

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. 1/98

Peoria Area Amateur Radio Club, (PAARC). P.O. Box 3508, Peoria, IL 61612-3508. Meets 2nd Fri./monthly, Red Cross Chaper House, 311 W. John Gwynn Jr. Ave., Peoria, IL. Voice mail: (309) 692-3378. Rptrs: 147.075(+) & 146.85(-). 5/97

Schaumburg ARC. Meets 3rd Thurs./every other month, 7 p.m., Rec. Center, corner of Bode and Springinsguth Roads. Nets all other Thurs., 9 p.m., 145.23(-). Info: (708) 612-9446. 8/97

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(+). 11/97

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic HS cafeteria, 855 Hearthstone Dr., Baton Rouge, LA. Info: Norma Ramey, WD5GFD, (504) 654-6087. Club rptr. 146.79(-). 9/97

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 11/97

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fri./monthly, 8:00 p.m., (May & Nov. meets 3rd Fri.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 3/98

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Wellesley, MA (Sept.- June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. 12/97

MICHIGAN

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(+). 9/97

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 3/98

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. 10/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. mtg. 8 a.m., Country Inn, SE cor. W. Sunset, Valle Verde, Henderson NV. Club info: Jim Frye, NW7O, (702) 456-5396 or Bill Scarborough, WA6ASI, (702) 269-9551. 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., Carson Valley Museum & Cultural Cntr., 1477 Hwy 395 North, Gardnerville, NV. Contact: George Uebele, WW7E, (702) 265-4278, 147.330 MHz. 11/97

Sierra Nevada Amateur Radio Society (SNARS). P.O. Box 7727, Reno, NV 89510-7727. Meets 2nd Sat./monthly, 0800, KT's Restaurant, 5485 Equity Ave. (corner Equity & Financial). 146.61(-) PL 123. 443.075(+) PL 123. Contact Swede Ohlson, WDØAXP, (702) 852-2402. 1/98

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 749-2970/332-9107. Meets 2nd Sun./monthly, 7 p.m., Rochester Community Ctr. Talk-in: 147.57. 11/97

NEW JERSEY

10-70 Repeater Assn., 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(+). 10/97

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), K2AA. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed), Bloomfield Fire Hall in Pennsauken, NJ. Talk-in: 145.29(-) rptr. 8/97

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. 10/97

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. 1/98

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. 2/98

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. 12/97

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly, 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/98

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! 9/97

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. 4/98

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. 10/97

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(-), 440.150(+). 10/97

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(-). 10/97

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. 3/98

Greater Cincinnati Amateur Radio Assn., (GCARA). ARRL SCC, meets 4th Wed./monthly, 7:45 p.m., Brusman's Hall, 4813 Vine St., St. Bernard. Nets: Mon. 9 p.m. EST 147.15(+), Thurs. 9 p.m., 1.936 MHz. Info: WA8STX, (513) 772-7378 or KW8X 961-3250. 11/97

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697; (419) 243-3836. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. 147.270(+) Net every Sun. 8:30 p.m. 1/98

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(-). 2/98

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 Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, & every Wed./weekly, 9 a.m. for brkfst. at Woody's Rest. Net Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/98

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. 147.06(+) MHz. Info: (541) 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. 11/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/97

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16003-1787. 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. 10/97

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. 3/98

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. Coffee mtg. Sat./weekly, 10 a.m., Days Inn, Hwy 83 & Price Rd. Talk-in on 147.040(+). 1/98

VIRGINIA

Southern Peninsula Amateur Radio Klub, W4QR (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/98

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. 2/98

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

YLs on the Air

Kay Eyman, WAØWOF
Rte. 2, Box 366 • Garnett, KS 66032
E-mail: waØwof@juno.com

Ethel Smith, K4LMB

YLRL founder Ethel Smith, K4LMB, became a Silent Key, on 5 February 1997, just a few days before her 80th birthday. Always modest and unassuming, Ethel will be remembered with love for her many achievements and contributions to the Amateur Radio Service. We all owe a tremendous debt of gratitude to this remarkable woman, who truly led by example.

Ethel was licensed in 1936 and celebrated her 60th year in Amateur Radio by getting her Extra class license last summer. Throughout her long involvement with radio, she maintained her enthusiasm and commitment to YLRL, which she founded in 1939. Ethel was YLRL's first President, and through the years she continued her support in many capacities. In 1982, she was Chairman of the YLRL Convention in Washington, D.C., and she served as Circulation Manager in 1994.

In addition to founding YLRL, Ethel was active in many other groups and helped to organize several new ones, including an Amateur Radio club at the Naval Research Laboratory, in Washington, D. C. where she worked; the Washington Area Young Ladies Amateur Radio Club (WAYLARC); the Washington TVI Committee; The Quarter Century Wireless Women (QCWW), which was co-founded with her friends Blanche Randles, W4GXZ, and Onie Woodward, W1ZEN, and the Foundation For Amateur Radio.

Ethel was a working ARRL member, serving as the Virginia Section Emergency Coordinator in 1966-1969 and was an ARRL Assistant Director under four Roanoke Division Directors. She was also active in QCWA, which she joined in 1961. Ethel served as QCWA Executive Secretary/General Manager in 1974-1976, and was an elected member of the Board of Directors for the next 14 years. Ethel wrote the QCWA column in ***Worldradio*** and edited *Auto Call* for many years.

Her accomplishments have been recognized and appreciated throughout her distinguished years of service. Some of the awards Ethel received were the 1965 Ham of the Year from the Washington, D.C. Mobile Radio Club; the 1972 ARRL Roanoke Division Service Award; the 1984 Dayton Hamvention Special Achievement Award; the 1987 QCWA Roll of Honor

Elsa Marie, XE3VD, and friend. She can be found on 20 Meters.

Award; the 1988 Radio Club of America Fellow, and the 1993 Foundation For Amateur Radio Ham of the Year.

Ethel was instrumental in establishing YLRL's scholarship and served as YLRL's first scholarship liaison with the Foundation For Amateur Radio. She never served in a "ceremonial" position but put her heart and full efforts into whatever job needed to be done. One of her special interests was the history of early YLs and she had gathered information and given many talks on the subject.

Our beloved Ethel Smith will be mourned by all those who knew her and her sterling accomplishments will insure her distinguished place in the history of Amateur Radio. She never sought recognition, but always credited others for her achievements. Ethel treasured her many friends and often said that she owed more to Amateur Radio than she could ever repay. We will always remember her with love for her compassion, thoughtfulness, and integrity.

YLRL members owe her a special debt because she made it possible for us to meet and to develop deep and long-lasting friendships with YLs around the world. Nothing would please Ethel more than for every YL to make a determined effort to use her Amateur Radio license to the fullest extent, to participate fully in local, national, and international groups, and to contribute to the Amateur Radio Service in every way possible.

Contest Info

The CW portion of YLRL's DX-YL to North American YL Contest is scheduled from 1400 UTC, 10 April 1997, to 0200 UTC, 12 April 1997, and the SSB portion will run from 1400 UTC, 24 April 1997, to 0200 UTC, 26 April 1997.

All licensed women operators are invited to participate, and the SSB and CW portions will be scored as separate contests. In this contest, YLs in Canada and the 48 contiguous states are counted as North America, and YLs in Hawaii, Alaska, and all other countries are counted as DX. Cups will be awarded to the highest scoring DX and North American YLs on both phone and CW. In addition, a plaque will be awarded to the highest combined phone and CW score for both DX and North American YLs.

Separate logs for each contest must be postmarked not later than 30 days after the contest ends and mailed to YLRL Vice-President Nancy Hall, KC4IYD. For complete rules, write to Nancy or check the contest column in ***Worldradio.***

Sanae Kohzuki, JJ6GVX, was first in the YL Phone A section in the 25th JLRS Party Contest, held in September, 1996. Enoue Mieko, JAØQWO, was first in the YL CW A section, and Kimiko Saito, JA8UWT, was second in both the YL Phone B and the YL CW B sections. A total of 611 logs were received for the contest, even though conditions were not too good. A special bookmark was mailed to each participant who sent in a log to commemorate the 25th anniversary of this contest.

Doris Anderson, K5BNQ, still active and ready to help, is on the TYLRUN Net, Thursdays at 1400 and Fridays at 0100.

Meetings

The YLRL Forum at Dayton will be held at the Meadowdale High School auditorium at 10 a.m., on Saturday morning, May 17. YLRL President Marti Brutcher, N6XDS, and Vice-President Nancy Hall, KC4IYD, are the featured speakers. Don't forget to stop by the Buckeye Belle/YLRL table at C11 in Hara Arena and sign the register.

JLRS members in each of the 10 call areas of Japan hold an annual meeting during the fall and winter months, with some of them lasting three days. In addition, there is an annual convention of all members. This year will be very special as JLRS celebrates its 40th anniversary with a convention to be held at the Imperial Hotel in Chiyoda Ku, Tokyo, on 26-27 July, 1997. Special events and activities are being planned by YLs in the different call areas to commemorate the 40th birthday party.

Speaking of birthday parties, don't forget that CLARA will be celebrating its 30th year in September, 1997. Cathy Hrischenko, VE3GJH, the organizer of this event, reports that lots of registrations are coming in and she promises many surprises and good times at this event. After the dinner theater on Friday night, OM and XYL bagpipers are scheduled from 11 p.m. until 1 a.m. and a Ukrainian dance group will perform at the Saturday night dinner and dance. The meeting will be held at the Howard Johnson Hotel, in Toronto, on 26-28 September 1997, and you can contact Cathy at 13451 Concession 1, RR 1 Zephyr, Ontario LOE-1T0 Canada for more details.

Have you ever thought of searching for 50 million-year-old fossils?

One of the optional tours that the organizers of the Svalbard Polar YL '98 Meeting have planned will give you the opportunity to travel from Sverdrupbyen to the Longyear glacier to do just that. The guide will bring the hammers and chisels, and it's an easy trip, lasting about 3 hours.

For the more adventurous, there is dog sledging on the Foxfonna Glacier, with a guide, which is a 4 to 5 hour trip. There will also be opportunities to climb Plateau Mountain, overlooking Longyearbyen; glacier walking, and a kayak trip across the Adventfjord to Hiorthamn. Full equipment, such as a drysuit and lifejacket, will be provided.

These are just extra trips that are available, and other interesting activities are included in the meeting. There will be a guided sight-seeing tour of Longyearbyen, and on Sunday, 23 August, there will be a day-long boat trip on the Icefjord, which includes a visit to Barentsburg, the Russian settlement on Svalbard, a Russian lunch, and a guided tour of IcefJord Radio at Kapp Linne.

For more information contact Ruth Tollefsen, LA6ZH, at P.O. Box 17, Tveita, N-0617 Oslo, Norway. Ruth's e-mail address is jetpro@sn.no and the website address is http://home.sn.nolhome/tbjerke/svalbard/.

Updates:

Congratulations to Patricia Pelczar, KA1TPM, of Rocky Hill, Connecticut, who won YLRL's 1996 scholarship. Patricia holds an Extra Class license, and her mother, father, and sister are also licensed. She is a Liberal Arts student at Trinity College in Hartford.

This scholarship was one of 56 that were administered by The Foundation For Amateur Radio, Inc. The foundation is a non-profit organization that represents over 75 Amateur Radio clubs and is devoted exclusively to the scientific, literary and educational pursuits that advance the purposes of the Amateur Radio service. Of the 56 scholarships that were awarded in 1996, 16 YLs were winners.

The deadline for 1997 applications is approaching. If you'd like to apply or would like more information, write to FAR Scholarships, 6903 Rhode Island Avenue, College Park, MD 20740.

In January, 1958, Louisa Sando, W5RZJ, published *CQ YL*, a book about women in Amateur Radio. It contains some fascinating accounts of the early days, including the first SOS sent by a woman, Lena Mitchelson, in September, 1918. Lena had been the ship's radio operator since March of that year when the tanker *Tamesi,* ran aground on a bar just off the coast of Texas. Her SOS was received by station NBK at Galveston, but the tanker's oil was dumped in the gulf and the ship washed off the bar unaided.

Liz Zandonini, W3CDQ, earned a commercial radio license while she was still in high school because she wanted to become a shipboard operator. WWI foiled her plans so Liz used her training to teach radio to wounded veterans in Army hospitals. In 1922, she got her Amateur license and was on the air on CW only almost every day until she died in 1989.

CQ YL tells many stories about YLs who were recognized for public service in floods, tornadoes, hurricanes, forest fires, and earthquakes. There's a photo of Betty Hahn Bernhaum, HC1KX, at her radio just after the disastrous earthquake that struck Ecuador in 1949. Doris Anderson, K5BNQ, of Broken Arrow, Oklahoma, was also pictured after Broken Arrow was inundated with floodwater from the Arkansas River, in May, 1957. At the height of the flood, a tornado struck. Doris and her OM Andy, W5IWL, immediately established emergency communications with the hospital and police station, operating almost continuously for a week.

For many decades, YLs have used their capabilities in the Amateur Radio service, but, unfortunately, a lot of their stories have not been recorded since Louisa published her book. I serve as the Historian-Librarian for YLRL and would be very glad to receive information from all of you if you have clippings or knowledge about YL service in both disasters and public service from any time period. I will start a scrapbook for YLRL's files and share some of the most unusual and interesting stories in the column. WR

-10-10- INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention

The convention, "Dedicated to our Volunteer Managers," will be held at the Ramada Inn in Council Bluffs, Iowa, on 10-13 July, 1997. The program and forums are set and a full schedule is planned. The hospitality room will be open for socializing with fellow 10-10ers each evening and the banquet will be held Saturday, 12 July. The pre-registration prize will be a Kenwood TS-50S HF transceiver, and will be available only to those who pre-register before 1 June, 1997. It is suggested you get your pre-registration in as soon as possible. In addition to the pre-registration prize, another HF radio will be awarded at the banquet. The renown "auctioneer" Col. Ed Redwine, K5ERJ #11843, will once again conduct one of his famous sales to provide our entertainment after the banquet.

A convention package with all information, including a pre-registration application is available from Tom Henderson, K4CIH #33233, at 4901 15th Place East, Tuscaloosa, AL 35404.

New CW award

A new CW award has been added to the list of awards available to 10-10 members. CW contacts made after 1 January, 1997, are valid for this new award. For information and an application for the CW award, send a SASE to: Lee Zalaznik, KI6OY #50948, 334 Olivna Avenue, Livermore, CA 94550.

Changed your call?

With all of the new vanity call signs being issued, if you are one of those receiving the call of your desire, please send your new call sign, along with your old call and 10-10 number to: 10-10 International Net, Inc. 643 N. 98th Street, Omaha, NE 68114-2341. This will allow the 10-10 database to be brought up-to-date. If you have let your 10-10 dues expire, it would also be a good time to renew, With band conditions on their way back, it is time to get back into 10-10. Send your dues along with your new call sign. Dues are $10 per year and multiple year dues are acceptable.

Gateway Chapter reaches quarter century

The 10-10 Gateway Chapter was founded in St. Louis County, Missouri, in June, 1972. Now, 25 years later, the chapter plans a month long-celebration. Norm Kahdeman, WBØCCF #2933 one of the charter members of Gateway, is directing the special activities. Gateway has the distinction of having operated a weekly net every Wednesday since 15 June, 1972, beginning at 8:00 p.m. Central time on 28.650 kHz. The net on 4 June, 1997 will be Gateway's 1,305th consecutive net. You are invited to check in whenever band conditions permit.

A certificate suitable for framing will be awarded to each 10-10 member who works five (5) or more Gateway members during June 1997. Send a simple log showing date, call, name and 10-10 number of each Gateway member worked to Norm Kahdeman, WBØCCF, 9854 West Vista Dr., Hillsboro, MO 63050-3117.

Enclose $1 and your name and address. If you want your certificate mailed flat, not folded, include an additional two, 32-cent postage stamps with your dollar.

Over the years, Gateway members have enjoyed many "eyeball" picnics in St. Louis County parks. A "birthday party" will take place in Tilles Park on Sunday, 8 June, site #4. All Ten-Tenners are invited to participate.

Next contest

The next 10-10 contest is the spring CW contest and it will be held on the weekend of 3-4 May, 1997. It is recommended that you review the new rules that were published in the January issue of the *10-10 International News*. Remember, logs must be in UTC and a dupe sheet is required for all logs, regardless of the number of contacts made. Also, you must submit either your 10-10 membership card (photo copy) or the address label from the back page of your *News* which shows your membership status. Please check the new rules and be sure you comply with all of the requirements before you submit your log for any 10-10 contest.

Hill Country 10-10 picnic

The 9th annual 10-10 Hill Country picnic will be held on 1 June, 1997, at the Bulverd, Texas QTH of Jack Moore, N5CC (ex K4NF). All 10-10ers and anyone interested in 10-10 are invited to attend. A Texas barbecue will be served with lots of other good food. Several club stations will be handing out 10-10 numbers and certificate managers of several chapters will be in attendance offering an opportunity to exchange numbers or join chapters.

For a flyer with more details and directions send a SASE to: Jack Moore, N5CC, 371 Ridge Creek Lane, Bulverde, TX 78163.

10-10 Scholarships

Again this year 10-10 will sponsor three $1000 scholarships. Information and an application may be requested by letter or QSL card, postmarked prior to 30 April, 1997, from: FAR Scholarships, 6903 Rhode Island Avenue, College Park, MD 20740. All 10-10 members are encouraged to send their donations for the 10-10 Scholarship Fund to Morrie Goldman, W6EHM #41898, 21518 Marjorie Avenue, Torrance, CA 90503-6814. Please make checks payable to: 10-10 Scholarship Fund. You may also include a scholarship donation along with your dues renewal or new member application.

Information about 10-10?

If you would like information about 10-10, and how you can be-

come a member and receive your 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 SASEs 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 all information 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, send the same information as above to Mike and you will receive the information package along with your original 10-10 number.

If your membership in 10-10 has expired and you would like to renew your dues, 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

4U1ITU Radio Club meet in Geneva

The club members of 4U1ITU in Geneva met 28 January for their annual get-together. Pictured here, left to right: Attila Matas, HB9IAJ, station manager, Berge Khantrouni, OD5BF, Renato Brossa, ex-I1BAG, Max de Henseler, HB9RS, Philippe Capitaine, HB9RKG, President, IARC, and Gene Neill, WA7NPP.

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

QRPer's "Special" Delivery

Are there any QRPers besides me twisted enough to draw a corollary between the launch of NorCal QRP Club's "38 Special" transceiver kit and Apollo 13? Probably not.

Both qualify as state-of-the-art projects built on the collaboration of many great engineering minds. Both underwent painstaking modeling, research and development, ground testing and shakedown. Both saw change orders in the course of development to assure the worthiness of the airframe. Both struggled to stay on time and within budget.

And both launches were very anxiously awaited.

Then unexpectedly: "Houston, we've got a problem."

In an eerie parallel to the exploits of Jim Lovell and company, some "38 Special" (NC38S) builders began reporting something venting from the output side of the PC board. It was smoke from the IRF510.

A design anomaly in an RF amplifier modification, which boosts the 30-meter transceiver kit's stock output of about 400 milliwatts to a full five watts, had resulted in a meltdown of the final transistor.

Hundreds of kits had already been shipped. Troubleshooters quickly went to work on the problem.

A fix went out over the Internet: Remove a resistor and capacitor here, place a jumper there. Go to a backup IRF510. Bingo, up to full power again.

But we weren't out of the woods yet: "Houston, we've lost sidetone in the TiCK keyer." The guys at Embedded Research who developed the keyer circuit were called in to assess the situation. In receive mode, telemetry tones were mysteriously lost in an apparent path to ground. The receiver was being amplified, but not the keyer's sidetone.

Another Internet dispatch: Cut a PC board trace here, add a resistor there. We were back in the CW business.

Such has been the saga of NorCal's latest and most exciting project. And as it was with Apollo 13, the NC38S story has had a happy ending in literally hundreds of QRP shacks around the country and the world.

Since its debut in January, the "38 Special" has been in a constant state of modification. Doug Hendricks, KI6DS, a driving force behind the project, has promised to keep track of circuit changes, suggestions and improvements from builders. It was his vision, in large part, that established the NC38S as a tinkerer's radio from the start.

Advice to new homebrewers: Get this radio kit. As a learning tool it's unsurpassed. For $25, plus $3 shipping in the U.S., you won't go wrong. Troubleshooting and modification are two oft-practiced exercises around home built stations. The "38 Special" is a laboratory session in both respects.

An unmodified NC38S here at KI6SN went together in a few hours without a hitch. The kit includes a high quality, double-sided and plated-through PC board, all on-board parts for a 30-meter 400 milliwatt superhet transceiver and a comprehensive, well written and illustrated construction manual. Off-board components for the stock transceiver are readily available from Radio Shack.

The builder then has the option of adding a 5-watt RF amplifier, receiver incremental tuning (RIT) circuit, and TiCK electronic keyer designed by Embedded Research. Each of these modifications has already been designed into the NC38S motherboard. Adding them calls for gathering a handful of parts — most available from Radio Shack — removing some components from the original stock circuit, adding new components and cutting a few PC board traces.

It's the builder's responsibility, too, to find an enclosure for the rig.

The NC38S, designed by Ori Mizrahi-Shalom, AC6AN, and a development team including David Fifield, KQ6FR, Paul Harden, NA5N, Preston Douglas, WJ2V, Jim Cates, WA6GER, and Hendricks, is a fabulous kit for first-time builders. The tinkering, modifications and corrections to the original design provide the kind of homebrewer's education you'll never get from a textbook.

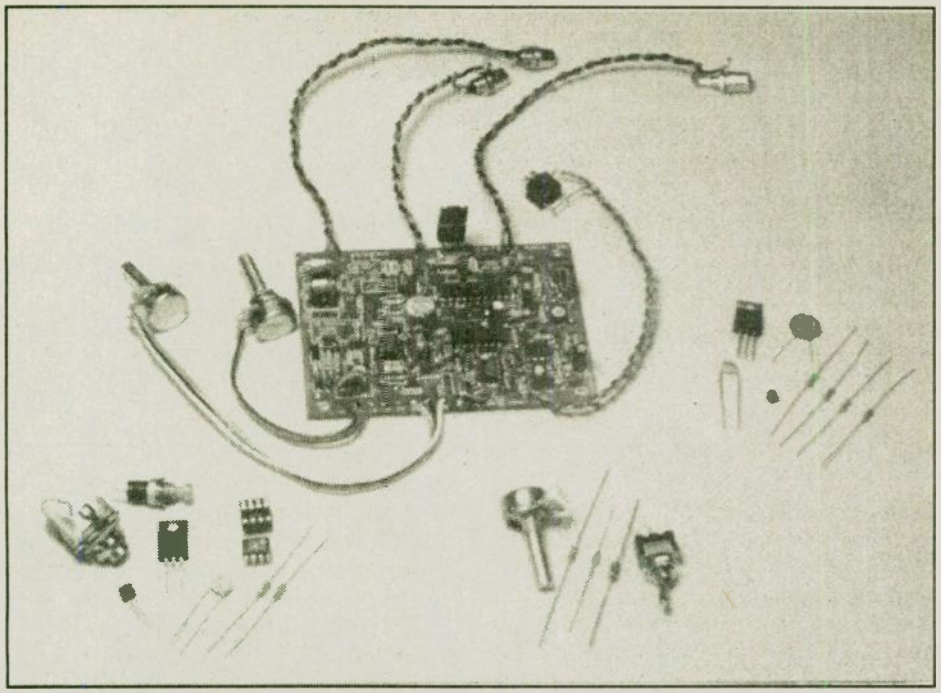
As testimony to claims that this $25 kit is no "novelty radio," every day more and more NC38S' are popping up in regular use on 10.1 MHz.

Renowned QRP homebrewer and operator Bill Jones, KD7S, of Sanger, California, reported what is believed to be the first NC38S-to-NC38S contact when in January he QSO'd Roy Gregson, W6EMT, of Bremerton, WA.

"While I slowly tuned my nearly-completed '38 Special' up and down the band," Jones writes, "I marveled at what a great little rig this latest offering for NorCal was. Despite the fact that the PC board was sitting on my desk, held together with a series of multi-colored clip leads, it had already been responsible for a half-dozen solid contacts.

"As I tuned through 10.106 kHz, I heard Roy, W6EMT, commenting on his new '38 Special' to another station. I had been looking for my first two-way '38 Special' contact, so I tail-ended Roy after he signed. He came back on the first call.

"Both Roy's and my rig had the IRF510 amplifier modification in-



The "38 Special" motherboard is surrounded by parts needed to modify and upgrade the 30-meter transceiver. From left, the TiCK keyer, RIT circuit, and 5-watt RF amplifier.

stalled. He reported running just under 5 watts output — exactly like mine.

"Signals were fairly weak on both ends as the band was 'long' . . . I gave Roy a 549 (RST) and he gave me the same.

"The '38 Special' receiver is extremely quiet, yet very sensitive. In fact, without an antenna connected, it's sometimes hard to tell whether the rig is powered up or not. The design is well suited for weak signal work.

"The antenna on my end was a roof-mounted Butternut HF6V-X vertical . . . Roy's signal was very clean and showed no signs of (some) instability that a few builders have experienced. His keying waveform was crisp and clean and he commented on how well the internal TiCK keyer sounded.

"The QSO lasted about 15 minutes with barely a character missed despite the onset of some deep QSB. It seemed a shame to have to give it up for the day but I had to get the board off the desk and into the cabinet sooner or later. The clip leads were just too messy.

Soon after scoring his two-way "Special" QSO, Jones snagged JA7FRT, Fukishima, Japan, for his first NC38S DX.

"(He) was running 200 watts to a 3-element Yagi at 55 feet," Jones said. "I was running 5 watts to (the) Butternut HF6V-X roof-mounted vertical. He gave me a 549 until the QSB monster ate my signal at 0616Z. So much for the '38 Special' being a 'toy radio.'"

NorCal QRP Club is so convinced that the "38 Special" will be a solid 30-meter performer, it's offering a commemorative plaque to the first operator to work 100 countries on 10.1 MHz with the NC38S. DX contacts count as of 1 February 1997.

For more information about the "38 Special," or to order, write: Jim Cates, WA6GER, 3241 Eastwood Rd., Sacramento, CA 95821. Make checks ($25 plus $3 shipping in the U.S.) payable to Jim Cates.

It's a QRPer's "Special" delivery well worth waiting for.

QRP To the Field

Don't forget to mark your calendar for this month's "QRP To the Field," the spring fling for QRPers across the country.

The NorCal-sponsored contest goes from 1300 UTC Saturday, 26 April, to 0100 UTC Sunday, 27 April. Operators are allowed a single transmitter on the air at one time. Multiple operators are welcome, as long as the single transmitter rule is honored. Contestants may declare the best continuous 8-hour period of operation for their score.

Complete details appear in the QRP column in March's ***Worldradio***. WR

John G. Troster, W6ISQ

Don Johnson, W6AAQ

One thing you learn fast around QCWA is that General Manager, Jim "BJ" Walsh, W7LVN, runs the show! It pays to pay attention when this Chief of Operations speaks. Soooo, when BJ told me to call up his old navy Buddy, Don Johnson, W6AAQ, designer/builder of the famous Screwdriver mobile antenna, guess what? I complied and immediately. Jim had sung the praises of his mobile Screwdriver antenna, installed by Don, for so long and loud, I figured maybe old BJ knew something. He did.

Don's is a great story. He had an early introduction to Amateur Radio via classes given by the principal of his high school in Laporte, Minnesota. Don was born and lived there until he graduated. The principal, William Soderlund, W9LSC, had obtained permission from the state to write a curriculum for the first radio course given in Minnesota schools. Thus Don and his schoolmates were introduced to Amateur Radio and received licenses courtesy of this energetic principal.

In November 1935, Don received his call, W9VVN and went on the air a week later with a homebrew 201 Hartley and a 201 final, feeding a zepp antenna. This was during the Depression and "B" batteries were costly. One of Don's more affluent radio friends discarded his B batteries immediately they began to put out less that the rated 45 volts. Don, knowing one ham's trash is another's operating opportunity, rounded up these low voltage discards and hooked a string of them in series to build up the voltage to what he needed. It was exactly this resourceful, inventive talent that led Don to the creation of the Screwdriver antenna.

Don, W6AAQ, at his new lathe which is tooled for producing the coils and parts for the "Screwdriver" antenna.

After high school, Don got a job with the Civilian Conservation Corps (CCC) planting trees. Of course, he took a ham station with him. The next thing he knew, he was appointed radio operator of his unit to keep them in touch with other units in the state. He wound up as radio man in charge of Sub District Headquarters, and then was made Chief Clerk of the unit. This meant he could hire people, which did — all his old high school radio club buddies. He says that was before anybody knew the word "nepotism!"

When the CCC tour ended, Don went to work at radio station WTCN, Minneapolis, assigned to copy press wireless releases at 40 wpm for an older fella, 26 or 27, by the name of Oliver E. Severeid, their star reporter. Later the reporter began using his middle name and became the super star reporter we all remember as Eric Severeid.

Don was an astute observer of economics. Paid $35 per week, he lived in a hotel where the bill was $50 per week. Those numbers didn't seem to cipher out just right, so Don, reading the U.S. Navy recruiting posters, signed up (requesting radio duty), and went off to navy boot camp at Great Lakes.

Amateur Radio influenced Don's career again here as it seemed to at every turn. One day the Chief sat the recruits on the deck ("floor" to you landlubbers), gave them paper and pencil and said, "I am going to send you some dots and I'm going to send you some dashes over the speaker. You make a dot when you hear it and make a dash when you hear it." Don, completely at home — wrote down the Morse code letters to the Chief's total surprise. No surprise however, when he was shipped to aviation radio school in

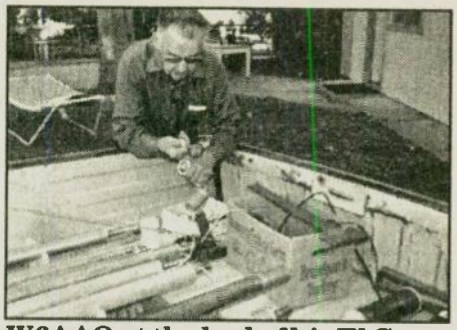
San Diego after boot camp, the first such radio school in the navy.

He graduated first in this class and was given his choice of duty stations. Instead of some paradise-island-type duty, however, Don chose to stick with his buddies; so they all went off to Panama for three years. To continue the surprises, soon after Don arrived in Panama, he had a visitor from back home. With some effort, this guy, a friendly collection agency representative, had tracked Don all the way to Panama, to collect 16 bucks. Remember up above how those salary and rent costs didn't jibe? Well, the 16 bucks was for that unpaid difference at the hotel in Minneapolis. Those were the days when a buck was a buck!

Don was a radioman, and assigned to PBY Black Cat Squadron VPB 33. But in the true and tried service tradition, he was assigned to sweep floors in the hangar. On his daily sweeping rounds he somehow swept longer and more vigorously in front of the Communications office where the Chief kept the CW press wireless station, WCX tuned in over the speaker. Don was just interested in getting the latest world news. But the Chief in the office noted that this swab and sweep sailor was copying the press wireless at 40 wpm in his head. Don was immediately transferred to the Patrol Wing Communications Staff.

He soon became Supervisor of the Watch and a "Slick Arm Chief." That meant he was a Chief but without hash marks, signifying naval longevity, an honor bestowed on the bright ones who make Chief early in their career. When WWII started, the Black Cat Squadron was sent to Australia where they trained as night bombers. Don was a radioman in a flight crew. Then they began the slow trek from Perth, to Samarai, to Manus, to Celebes, to Leyte, plus others in between, and finally Manila at war's end. It was in Samarai that Don and Jim Walsh met. Jim was the Corpsman for the outfit and periodically had to flush out Don's ears so he could hear better through the earphones on those long flights.

Don decided to stay in the navy. He said Chiefs and Captains both had too much time in service to quit early. His next assignment was to NATS (Naval Air Transportation Service) where he was in charge of communications for the Admiral at NAS Moffett Field, California. Two years later he was assigned to one of the two largest airplanes of the time, the Lockheed "Constitution" which barnstormed the country carrying dignitaries thither and hither, including President Truman. The next four years were put in at NAS Alameda, CA, where he was the communications man on the big Martin Flying boats on their daily hop forth and back between Alameda and Honolulu. He relates that as soon as the flying machine cleared traffic after takeoff, he would reel out the long wire antenna and work 75 Meters from the cockpit.



W6AAQ at the bed of his El Camino, loaded with components of his "Screwdriver" antenna.

In 1945, Don had met and married Letha. Don did a lot of traveling (see above) and he always had a rig with him. So, Letha got her ham ticket, W6HMD, so she could chat with Don wherever he was. They have two sons: Gary, KG6UN, who is at the Livermore Labs, and Don, KB6GWZ, who is in management at Pacific Bell.

On July 15, 1948, Don began his mobile career, which he has followed ever since. He had an ARC-5 and a homebrew crystal controlled converter and a current loop antenna which bent from the front bumper, over the cab and tied down to the rear bumper. At home he had a Hallicrafters S-40 and a homebrew, six foot rack and panel 813 rig, which he used on the 75-meter traffic nets. So Don was mobile on 75 going to work, operated 75 Meters while flying the ocean, and active on 75-meter nets at home. Never too far from Amateur Radio!

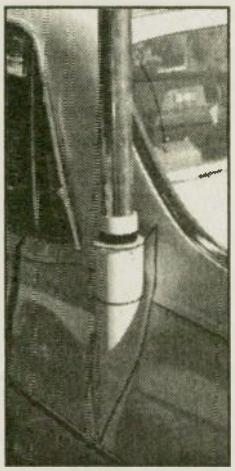
In 1952 Don began teaching electronic maintenance at Alameda,

then went to Memphis, Tennessee, in August '55 to attend an advanced electronic school for a year. From there he was assigned to administrative work, which he says is what happens to anyone who goes to advanced training. He went to Newfoundland for two tours as an administrator of all communications for a Super Constellation Squadron flying the DEW Line. And finally, to Brunswick, Maine, to a PV-2 Neptune Patrol Squadron. In 1959 he retired with 20 years service.

While still in the navy, Don met Jo Jennings, W6EI, who was a well-known creator and manufacturer of electronic equipment. Remember Jennings vacuum variables? They were both interested in antennas and when Don retired from service, Jo hunted him down and offered him a job as his personal assistant in the restricted "Snug Harbor" research facility of Jennings Radio in San Jose, CA. Later Don took over as Production Manager at Jennings Power Switch Division near Monterey, California. There he supervised 400 employees manufacturing IBM cable harnesses, among other things.

One small incident among many shows Jo Jennings management style and Don's creative imagination working together. One Monday morning in early April of 1960, Jo walked into Don's office with an Eimac 4CX1000A ceramic transmitting tube and a small chassis and announced, "I want a kilowatt rig ready Friday morning for Bill Orr (W6SAI) to take to Dayton." Of course, Don met the time requirements and Bill Orr had his Eimac final measuring 5-1/2 x 11 x 7 inches, one of the smallest kilowatt transmitters ever built at that time. The rig was featured in an Eimac ad in *QST*.

In '66, Jo Jennings sold his company to ITT and departed. Don also decided to leave, and joined the Thor Electric Company with the assignment to establish and manage a sub-contracting plant to make harnesses (again) for IBM, Memorex and others. The foggy days of Monterey Bay began to get to Don and Letha, and in '75 they departed for a year-long RV tour of the U.S. of A, running mobile, of course, all the way. Upon their return to California they scouted out a relaxing, garden spot to live far from the madding crowd. They found it in an ideal little town west of Sacramento in the Sacramento Valley, bought a house at first sight, and have been there ever since. After they bought the house, Don remembered to ask what the name of the town was! It was Esparto.



A custom mount on Don's pickup allows for ready attachment or removal of the latest antenna design. ***—photos by W7LVN***

Don went back to playing 75-meter mobile in earnest. YF Letha says he changed his mobile rigs and antennas more often that he changed his socks. Like most hams, Don was a scrounger (remember those B batteries!). A lumber yard nearby closed and Don wandered over to see what was left behind that he might liberate. He found a 15 foot length of two-inch chrome plated brass pipe, which he of course brought home. On 18 March 1991, Don was sitting in his back yard contemplating what to do with his new brass pipe as he idly worked a piece of PVC in and out of it. Suddenly, as Don describes the moment, he visualized a coil wrapped around that PVC and the whole assembly moving in and out of the brass pipe. He realized he had just created *the* mobile antenna, the one he'd been dreaming about for 45 years!

He immediately went to work and built this dream, using a long threaded screw to move the hastily wound coil in and out of the brass tubing. Only that part of the coil exposed would be in the circuit; all the windings down inside the tubing were effectively not in the circuit. Don completed construction of the antenna and put it on the air that first creative day. It worked perfectly the first try! And so was born the DK Mobile Screwdriver Antenna that Jim Walsh has been raving about. "DK," by the way, are Don's first two initials.

Don admits the antenna is big and ugly and not often popular with the non-ham ladies. However, when asked what she thinks of that huge thing on the back of the car, Letha replies, "I never look back." Don wrote a book about that antenna which was published by ***World-radio***. It was called *40+5 Years of HF Mobileer-ing* and is now sold out. Another is about to be published by ***WR*** entitled *Everything You Forgot to Ask About HF Mobile Antennas.* Don also has the reputation as a great speaker on the convention lecture circuit.

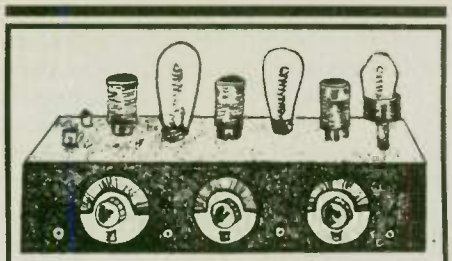
Don has a half dozen mobile rigs which he changes in and out of his El Camino "test vehicle" about every week. He says that his pick up is drilled as full of holes as a piece of Swiss cheese. Right now, he is using a TS-50 and, of course, the DK-3 or some new modification thereof.

Don's enthusiasm is truly infectious, and it's easy to understand why we say we are proud he is One of Us, the Proud, the Creative, the Many, the Elite, the QCWA.

Until the next one, 73+25. Jack, W6ISQ **WR**

MIR frequencies

In last month's "How to work the MIR 440 repeater" story on page 14, the frequency for CH2 should read 437.956 and CH9 should read 437.942. The offset for CH2 should read 2.212 and CH3 should be 2.298.



Old-time Radio

Russ Rennaker is pictured at his spark station in 1922 (top) and as W9CRC today. Below is a copy of his license renewal which expires 1 January 2007.

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

AMATEUR RADIO LICENSE

W9CRC

RUSSELL B RENNAKER SR
1011 LINDA DR
KOKOMO IN 46902

Special Conditions

Effective Date	Expiration Date
01/06/97	01/06/07
Operator Privileges	Station Privileges
ADVANCED	PRIMARY

THIS LICENSE SUBJECT TO CONDITIONS OF GRANT ON THE REVERSE SIDE
THIS LICENSE IS NOT TRANSFERABLE

Russell B. Rennaker Sr.
Assistant Secretary

From spark to computer in 75 years

Ninety-one year old Russ Rennaker, W9CRC, received a ten-year renewal of his Amateur Radio license this month. The first one was received in 1922. The original call was 9CRC. He also holds a life-long commercial license.

His early career was with CBS Radio Network. Since retiring in 1973 he has written two books and many articles about the early days of radio. He is still active in Amateur Radio, especially in the digital modes.

Known to many as "The Story Man," Russ Rennaker's stories became so popular on RTTY that he made up pre-punched tapes of some of his most often-requested tales, so they could be replayed upon request. W9CRC has been a frequent and popular contributor to ***Worldradio*** for many years. WR

Computers & Basic Stuff

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

Guiltless Vanity

For years the FCC has received more requests for personal Amateur Radio call signs, it seems, than for anything else. Amateurs frequently petitioned the Commission to grant them special personal and club call signs, and the Commission always turned them down.

There was a time, in 1976, where certain Extra Class amateurs could request specific 1x2 call signs. The catch was; they had to have been licensed 25 years or more to qualify!

Once the "old timers" took their choices of available calls, amateurs who had been Extras for two-and-a-half years were given their turns.

But it all ended in 1978. After that amateurs pretty much got what the Commission gave them. That meant your call sign would follow, sequentially, that of the previous call sign issued for your licence class and call area. N1AAB followed N1AAA and N1AAC followed that.

Some amateurs kept close track of the calls being issued, hoping to pass their tests and get the paperwork submitted just in time for a "choice" call. But it was still a gamble: That AB1CD target call might end up being AB1BZ or AB1CR, or anything else in between.

For nearly twenty years the Commission had turned down requests for "personal" call signs. That is, until last year.

Almost hidden in the Omnibus Telecommunications Act of 1996 was the provision that the FCC institute a for-a-fee vanity call sign system. For the first time in 20 years a system was in place to again let amateurs select their own calls.

Gate 1, the first of a series of gates, permitted amateurs to request reissuance of previously-held personal and club call signs, or the call sign of a deceased close relative.

Gate 2 opened 5 November, and within a few days nearly 3800 Extra Class amateurs got the call signs they requested. Extras had their choice of available call signs in all four call sign groups (1x2s, 2x1s, 1x3s and 2x2s).

Gate 3 may be underway by the time you read this. Gate 3 opens the vanity call sign program to Advanced Class operators who want call signs in groups B, C or D. (1x2 and 2x1 calls are not available to anyone other than Extra Class licensees).

Gate 4 opens the way for General, Technician and Technician Plus operators to apply for call signs they might want to have. Operators may request Group C and D call signs under this gate.

And that brings us to this month's BASIC listing. Most amateurs seem to want call signs containing their names (-ART, -BOB, -SUE, -PAT), or initials (like -CHS in my case). Or they might want a call sign significant to their line of work: -DOC for doctors, -DDS for dentists, -CPA for Chevy pickup assemblers, and so on.

While many amateurs might find it easy to come up with a possible vanity suffix or three (you're allowed to select up to 25), many others may find the mere thought of participating in a vanity call sign system repulsive.

To some, the word "vanity" contains the root word "vain." To them it would be an unpardonable sin to even think such thoughts as coveting a personal call sign.

Then, too, there are amateurs with too many initials in their names to come up with a good suffix. If Prince Charles were an amateur he would have at least his four given names to choose initials from, and that's not counting his assorted royal titles. Since his name is Charles Phillip Arthur George he would have -CPG, -CAG and -PAG to choose from but not -CPA. Remember, it's already taken by the guy in the Chevy plant.

Of course, he could opt instead for -POW (for Prince of Wales), or -EFK (England's Future King) for his job description.

That's where I think this month's BASIC listing might come in handy. It is actually a short random Group C call sign picker.

Group C is open to all amateurs except Novices. It consists of a single-letter prefix (W, K or N), the region identifier, and a three-letter suffix. The only restrictions are that the suffix must not contain the letters SOS or be anywhere in the range of QRA to QUZ. Any amateur in any region can select a call sign in any region, 0 through 9.

Our GW-BASIC listing uses a random number generator to select fifteen call signs at a time. Line 110 checks for the QRA to QUZ restriction and line 120 checks for SOS. If either if found the program jumps back to line 80 to select a different random suffix.

There you have it — the guiltless road to vanity (or something like it).

```
10 CLS: PRINT:PRINT "VANITY.BAS, BY KD5DL, 4/97": PRINT
20 PRINT: PRINT "PICKS RANDOM GROUP-C CALLSIGNS FOR VANITY CALLSIGN SYSTEM."
30 PRINT: RANDOMIZE TIMER
40 FOR A=1 TO 15
50 B=INT(RND*3)+1: IF B=1 THEN A$="W": GOTO 70
60 IF B=2 THEN A$="K" ELSE A$="N"
70 C=INT (RND*10)
80 D=INT (RND*26)+65
90 E=INT (RND*26)+65
100 F=INT (RND*26)+65
110 IF D=81 AND E>81 AND E<86 THEN 80
120 IF D=83 AND E=79 AND F=83 THEN 80
130 PRINT A$;C;CHR$(D);CHR$(E);CHR$(F): NEXT A
140 PRINT: PRINT "PRESS [ENTER] TO CONTINUE, [Q] TO QUIT"
150 Z$=INPUT$(1): IF Z$="Q" OR Z$="q" THEN END ELSE 10
```

Seasonal contest

As we go to press it occurs to me that this program could come in

handy for the annual Poisson d'Avril contest. I would have missed mentioning this popular contest if it had not been for another contest—the recent Arizona ScQRPion QRP Club's "FYBO" Winter Field Day in late February.

What set the ScQRPion contest apart was how its point multipliers worked. Stations actually multiplied scores based on how cold it was at the operator's position. All other things being equal, a station thermometer reading 19F at an operator's position earned that station six times the score of a station where the temperature was 60F or more.

That's kind of how the Poisson d'Avril contest usually works. The rules, which will probably be available on the Internet (search for the key words "Poisson d'Avril contest"), specifies "Each contact, real or imagined, counts for points, regardless of band, mode, signal report, or ethnic heritage."

The part about "real or imagined" leaves this contest wide open to an unskilled operator's skillful use of the Vanity.BAS program, as you'll shortly see.

The contest is not too difficult, even though the top scores hover around infinity. A few years ago K1DG racked up an impressive Infinity+1, followed by AA7BG's Infinity and the third-place tie between W2PA and KD2NT, with each reporting Infinity-1.

KD2NT did exceptionally well, considering adverse conditions at his station: "Took on water in heavy seas. Ship went down. Tremendous loss, but saved the log."

Another operator, K0HB, who claimed a score of 809,963,064 points, did so by using a Heath HW-8, unassembled, driving a pair of 1N914s in grounded grid.

Therefore it should be fairly easy to use Vanity.BAS to rack up a really big score without even firing up a rig. Just load the printer with plenty of fan-fold paper, begin line 130 with LPRINT..., and end it with :GOTO 10. Give it a week or two to print an impressive "log" of call signs, then submit it to the contest committee.

Of course, you might want to embellish the log with random frequencies, times, reports, etc., but you get the basic idea.

This year's contest should be the same as usual: 0001-1954Z, 1 April, give or take your personal schedule (and subject to rules changes). If you are busy on 1 April, feel free to operate (or not operate) whenever it is convenient for you. All bands are permitted (ham bands, WARC bands, jazz bands, rubber bands, Band-Aids and valence bands. For further information, query Doug Grant, K1DG.

Just don't tell him who sent you.

Next time: Random Numbers and your Income Tax Return. Until then, stay radio active. **WR**

Your tower

(continued from page 11)

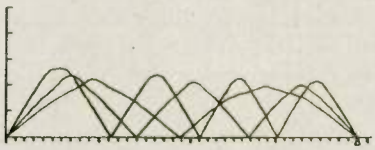
notices section of the newspaper and on the agendas for local Commission, Council, Planning and Zoning, Board of Adjustment, etc. meetings. If you have a contact within the local planning department(s) call him/her and inquire if there are any changes being considered to zoning regulations regarding communications towers. Ask that your name be placed on a list of interested parties to be contacted if such changes are proposed. The earlier in the process that Amateur Radio has input, the easier and the better the process works. Attend all the meetings you possibly can, since you will be recognized when the issue comes before a board which can vote on the changes. We were actually given an introduction by the chairman of the Planning and Zoning board and an acknowledgment by the Director of Planning at a public hearing because we had attended earlier meetings and provided input.

Hopefully, your county or municipality will exempt Amateur Radio from the definitions of communications towers. If they don't however, here are some helpful ideas. When you address any of these government bodies, always remember to smile, dress appropriately for the occasion, be polite, and thank them for their time. Be sure to offer simple concise comments and a "solution" if you have a "concern." We have found the word "concern" works better than "problem" or "disagreement."

Helpful tactics

When the day for the public meeting arrives, have as many Amateur Radio operators present as possible. If you have an ARES/RACES uniform, wear it; it shows unity and support. Limit the number of speakers, and coordinate your remarks so you that you don't repeat yourselves. Refer to the Federal Preemption, PRB 1, and any state statutes that might regulate Amateur Radio towers regarding "minimum practical regulation" and "reasonable accommodation" and be sure to have a copy of these with you. Remember to emphasize the public service aspects of Amateur Radio, MARS, any present proclamations you have received for public service, Field Day, or Amateur Radio Week. **WR**

Propagation



Carl Luetzelschwab, K9LA
1227 Pion Rd.
Ft. Wayne, IN 46845

E-mail: rcluet@most.fw.hac.com

Mention the word "aurora" to a non-ham, and if you get a response at all it most likely will be in reference to the northern lights (aurora borealis).

Mention this same word to a ham, and the response will be similar to the above but perhaps with some additional qualifiers — good in that it gives us another mode of VHF/UHF propagation, but bad for HF propagation due to flutter, extra absorption, and distortion.

But is an auroral event always bad for HF? Is it indeed digital in nature — either it has no effect or it has a bad effect? Could there be something in between, where HF might actually benefit? We'll take a look at this by reviewing some high latitude auroral-E propagation data taken by some of our fellow amateurs. But before doing that, let's review what "aurora" is.

To a first order approximation the earth's magnetic field can be considered to be that of a simple bar magnet. It is tilted about 11 degrees with respect to a line between the north and south geographic poles. This means the geomagnetic poles do not coincide with the geographic poles.

When particles from the sun encounter the earth's magnetic field, they spiral around the lines of force down to low altitudes. The particles then collide with components of the neutral atmosphere at E region altitudes causing increased ionization. Some of the energy carried by the high speed charged particles manifests itself as visible light during collisions with the atoms of the neutral atmosphere. This gives us the spectacular northern lights display.

The resulting pattern of increased ionization is an oval-shaped annulus called the auroral oval. Although I will only talk about the auroral oval in the northern hemisphere, there is a similar one in the southern hemisphere (aurora australis).

Figure 1 (derived from Peter Oldfield's DXAID propagation prediction software) depicts this oval-shaped annulus for a date of 6 March at 0010 UTC and a K-index of 1 (the southern oval is omitted to keep the plot from being too cluttered). This is an azimuthal equidistant map centered on the geographic north pole. Note that the center of the annulus is not at the center of the map (the cross). The annulus is centered about the geomagnetic north pole, which is at about 79 degrees North and 70 degrees West.

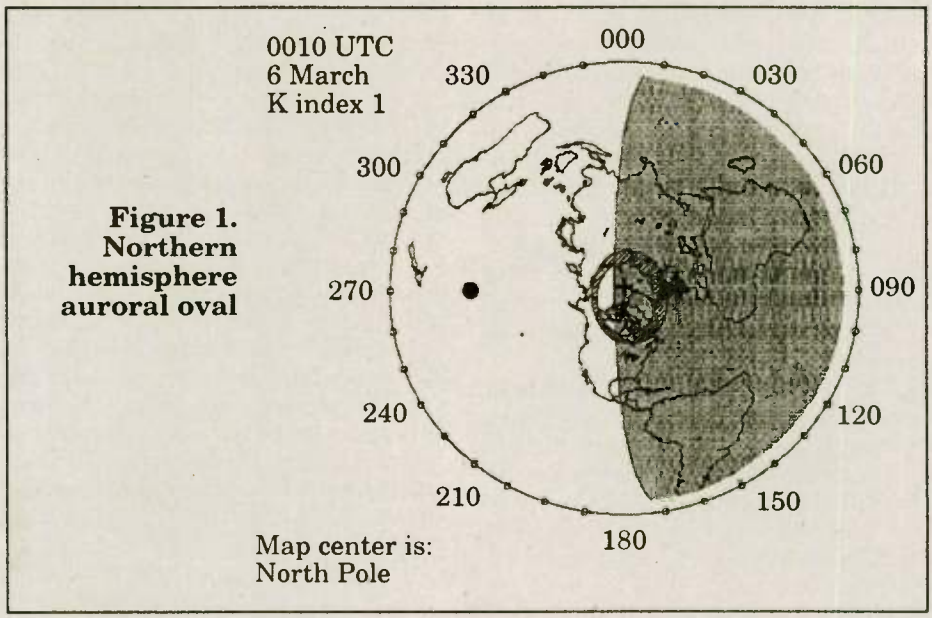


Figure 1. Northern hemisphere auroral oval

The width of the annulus ring is dependent upon whether it's day or night and the activity of the earth's magnetic field. It is always thinnest in the day sector and widest in the dark sector. For a low K-index (quiet magnetic field) as in Figure 1, the equator-ward edge (southern edge) of the oval is seen to extend through Hudson Bay, through the southern tip of Greenland, just touches the northern tip of the Scandinavian countries, skirts the northern extremity of the former USSR, and just touches the northernmost areas of Alaska. For a high K-index (very active magnetic field), the equator-ward edge extends almost to the northern tip of the Great Lakes, extends well south of Greenland, covers all of the Scandinavian countries, extends a good distance into the former USSR, and extends down to the Anchorage area of Alaska.

With this basic background, we're ready to review the high latitude auroral-E propagation data. It comes from the Control and Ocean Surveillance Center of the Naval Command, and is Technical Document 2449, dated February, 1993. It is titled Auroral-E Observations: The First Year's Data. The authors are R. Rose, K6GKU, and R. Hunsucker, KL7CYS.

In order to gain better insight into the characteristics of auroral-E propagation in conjunction with a program to assess the impact of

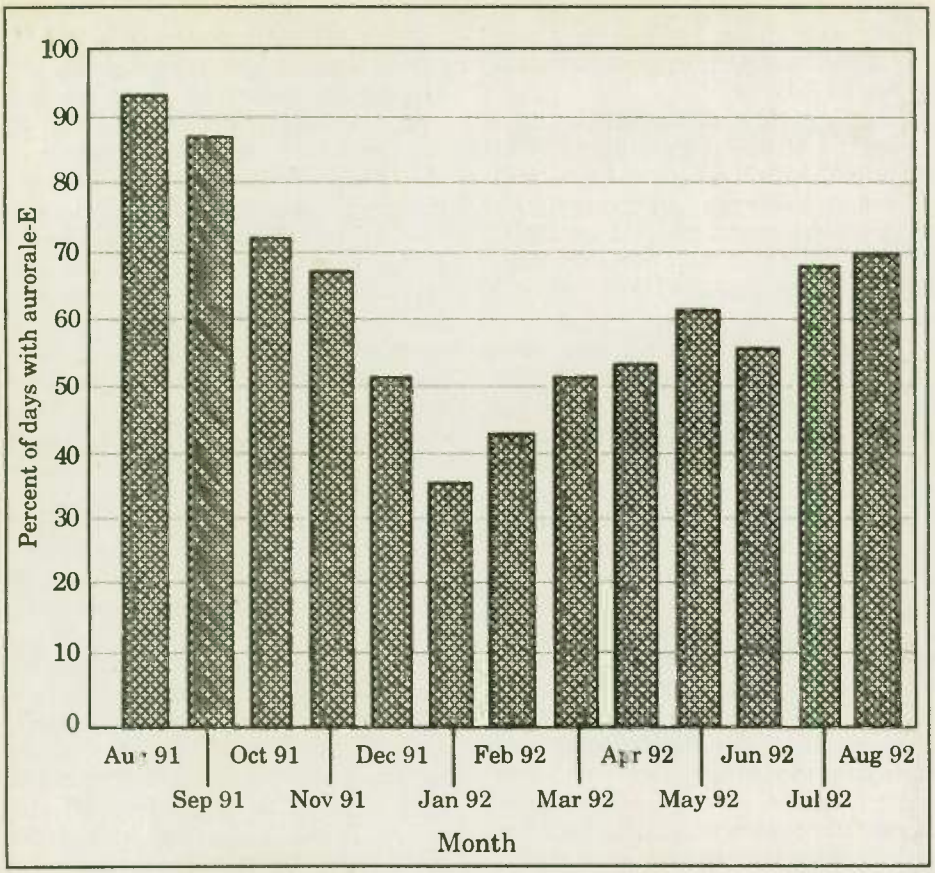


Figure 2. Percentage of days with auroral-E propagation (from Rose and Hunsucker)

solar flares on high latitude HF propagation, a year-long study was undertaken from 15 August 1991, to 16 August 1992. The transmitter (a Yaesu FT-757) was located at Cape Prince of Wales, Alaska, and provided 100W to a half-wave dipole. The signal was a slow Morse "R," and was continuous for 24 hours a day.

The receiver (an ICOM R-9000) was located in Fairbanks, Alaska and continuously monitored the transmitter frequency. The distance of this east-west path between Cape Prince of Wales and Fairbanks is 960km, which is about half the maximum distance that can be covered with one E region hop. The frequency of operation was 25.545 MHz. This was chosen to indicate when the E region critical frequency rose above about 5.0 MHz at the E region midpoint (refer to Table I from last month's column — the M-factor for a 1000km path using the E region is indeed about 5).

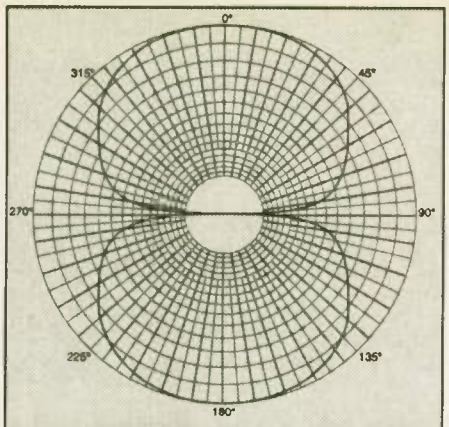
With one full year of data, several interesting and important characteristics of auroral-E propagation were learned. It is predominantly a nighttime phenomenon. It occurs for several hours (not continuously). It is centered around the local midnight portion of the oval (that portion of the oval at local midnight) for fall, winter, and spring, and shifts to that portion of the oval around 3 a.m. local time in the summer. For propagation to take place, the K-index must be of the proper value to extend the auroral oval over the transmission path. When this does happen, the overall likelihood of auroral-E occurrence is 50%.

Most auroral-E events are short-lived phenomenon. Of the 1445 observations (number of times the Cape Prince of Wales transmission was received in Fairbanks), 68% had durations equal to or less than 10 minutes, 16% had durations between 11 and 20 minutes, and 6% had durations between 21 and 30 minutes. The remaining 10% had durations between 31 minutes and a little over 2 hours.

Auroral-E occurs on 75% of the days during months containing equinoxes, about 60% of the time during the summer, and only 35% of the time during the winter. Figure 2 is a plot of one of the data set (used with permission) showing the percentage of days in a month that auroral-E occurred.

So how does all this relate to Figure 1? Taking what was learned and summarized above, we could expect 15M propagation (and perhaps even 10M) up to about 2000km via auroral-E on a path that goes tangentially through the nighttime part of the auroral oval. For the month of March, with occurrences centered around local midnight, this part of the oval is just southeast of Greenland. Propagation would occur on about 50% of the days of the month.

Taken by itself, this mode of HF propagation doesn't appear to offer anything for those of us at the lower latitudes. But stay tuned for next month's column to see where we're headed. WR



AERIALS

Kurt N. Sterba

2100Z and a fierce, competitive animal is unleashed. I am entering the slugfest called Sweepstakes.

But with a difference. My antenna is a vertical all of seven feet tall.

This is the Antronic, distributed by Palomar Engineers. In these days of the Volpos in their Volvos, (night vision devices cranked up to maximum intensity for searching out antennas) this may be a solution.

Looking through the 1997 *ARRL Handbook* we find this, on page 20 of Chapter 20, "Generally a large number of shorter radials offers a better ground system than a few longer ones. For example, 8 radials of 1/8 WL are preferred over four radials of 1/4 WL. If the physical height of the vertical is 1/8 WL, the radial wires should be of the same length and dispersed from the base."

Which means that you could actually run this antenna indoors and lay out 8 radials (.125 WL) 8 ft., 2-1/2 inches each on the floor and be set on 20M and bands higher in frequency. If you can, lay out 16 of those short radials and there would be a worthwhile improvement.

This an interesting antenna in that as the ground system gains quality the whole system moves closer and closer to 50 ohms and the SWR meter moves closer and closer to 1:1.

I ran my antenna outside using a Lakeview three-magnet magmount on one of Lil's big cookie pans, and raised it a few feet off the ground. There were eight radials on 20M, two for 75M and the SWR was very satisfactory (or perfect) on all bands.

The bandwidth on 75 was very "tight" (narrow). Which, contrary to what you may read elsewhere is actually a good sign. One manufacturer of mobile antennas makes a point of how broad their 75M antenna is. That tells you that it is actually quite lossy. That particular antenna is called, by the knowledgeable, "a dummy load on a stick." While a full-size dipole has a nice bowl-shaped SWR curve, a short, short antenna (unless the laws of physics were magically repealed) will have a curve more resembling that of the letter "V." Even with a tuner, power output when trying to operate at a distance from the resonant frequency dropped a great deal. However, with a 2-inch alligator clip clipped to the top of the whip, the resonant frequency was lowered. A second clip, 180 degrees from the first lowered it further and a third clip (each at 120 degrees) lowered the resonant frequency down to 3.754. The SWR needle just barely moved.

Now, to the contest. Gee, a seven-foot antenna at 100W? What can I expect? The ARRL gives a lapel pin if you make 100 contacts. I thought I would be lucky to get that. My goal for sections, was half (39) of the 78 possible, which I felt would be good for this itsy-bitsy antenna.

In the first hour, on 20M, I worked 13 sections. I upgraded my goal to the RMS (.707) of 78—55. When I had a run of :50, :51, :53, :55, :57, :59, :01 I realized that I had underestimated the antenna. There were other runs such as :11, :11, :13, :15, :18, :19. The best one was :42, :44, :46, :47, :49, :50, :52, :53 (on 15M).

When the smoke had cleared, the results showed that I had worked every section in Yankeeland and on the Left Coast. Also every section in the fifth, ninth and zero call areas. Geographically, I had from Yukon to the Virgin Islands and South Texas to Manitoba. As this is not a fish story I must report that I never had the poop to get to KH6 and there were stations that just never heard me at all. With well over 60 sections and over 200 contacts I retired from the battle an hour before it was over. The MFJ DSP filter was a great help.

There will some contester reading this who will say "200 contacts? I've done that in an hour!" OK, smarty pants, let's first turn off your 2 S-unit amplifier. Then we'll go up your tower to the Yagi and tear off the reflector and then the director. After that we'll chop the driven element in half and then chop again what's left in half, saw off another foot and throw it 70 feet off the tower. If it lands so one end sticks in the ground and it's vertical you can go on the air with it.

Seriously, it is obvious that a small antenna just cannot develop the field that a full-size antenna can. It is "down" for sure. However, from no antenna at all, it is really "up." As you can see I really enjoyed myself over the weekend and so can you even if your particular situation demands a minimum of visibility.

This antenna can be resonated so all transmissions are "direct" and a tuner is not necessary. For example on 40M the lowest dip (needle barely off the pin) came at 7.260 MHz. In tuning down to 7.150 the SWR rose to 2.75. Adding one alligator clip at the tip of the whip element lowered the SWR to 1.2, which is a value not even worth thinking about.

In a recent issue of a ham mag, a writer, in describing an antenna, referred to the feedpoint in this manner: "radiation resistance (impedance)." Alas.

Uncle Kurt to the rescue. First, there is the radiation resistance. This is usually described as the value of resistor that would draw the same current as the antenna. There is feedpoint resistance which is the actual resistance when allowing for loss resistance (bad ground

systems, sloppy soldering, ohmic loss and the like.) The two Rs add together.

Then there is impedance. Here is where many go astray. We all often use as a catchall phrase "impedance" when we really mean "radiation resistance" and the numbers regarding the two terms can be actually quite far apart.

If an antenna, say a dipole, were cut to the exact frequency of the energy being fed to it, (and we mean exact) it would be at resonance, the definition being neither too long (inductive) or too short (capacitive). The reactive component of the dipole is controlled by the length mainly and also nearby objects. The radiation resistance is controlled mainly by the height above ground. If you had a dipole at the perfect length and at the exactly correct height above ground it would have 72 ohms radiation resistance and 0 ohms reactance. And thus you could say that it had 72 ohms impedance. When the height and length change from the perfect situation then the impedance is something different from the textbook descriptions.

Also, many (a lot who should know better) think that the SWR bridges are measuring the difference between the feedline impedance and the antenna impedance. Not so. They are actually measuring the ratio between the forward and reflected powers.

Once again I know I will be receiving the "you know nothing" letters. It is the fate that I have resigned myself to. But once again I know that I am correct.

And now here is the proof. For those whose field of pursuit was other than math, do not allow thine eyes to glaze over. This is going to be quite painless.

We are going to assume that the feedline is 50 ohms. Next, your measuring equipment tells you that the antenna is 67 ohms resistive and 48 ohms reactive.

According to the impedance formula we would square the R67=4,489. Next, we would square the X48=2,304. Adding those two together we see 6,793. The square root of that is now 82.4 ohms impedance. If we divided 82.4 by 50 the answer would be 1.65 and many would think that's the SWR. NO!

Now we shall do it right. Easy, step by step, don't sweat it. Here goes,

Step 1.
(A.) R67 minus 50 (feedline) = 17
(B.) 17 squared = 289

Step 2.
(A.) X48 squared =2,304
(B.) Add 289 and 2,304. Ans. 2,593

Step 3.
(A.) R67 plus 50 (feedline) = 117
(B.) 117 squared = 13,689

Step 4.
(A.) Take the previously squared X48, 2,304, and add that to 13,689.
(B.) The answer is 15,993

Step 5.
(A.) Divide the 2,593 by 15,993.
(B.) The answer is 0.16213

Step 6.
(A.) Take the square root of .16213
(B.) The answer is 0.40266

Step 7.
(A.) Add "1" to 0.40266
(B.) The answer is 1.40266

Step 8.
(A.) Subtract 0.40266 from "1".
(B.) The answer is 0.59734

Step 9.
(A.) Take 1.40266 and divide it by 0.59734
(B.) The answer, and the real SWR is: 2:35 to 1

Let's look at another example. Suppose the antenna were 55 ohms resistive and 84 ohm reactive. So we see 55 squared (3,025) and 84 squared (7,056) added together it comes to 10,081 of which the square root is 100.40 which compared to the 50-ohm feedline would lead many to believe the SWR would be 2.00 to 1, and they could live with that. Not so.

Let's take a closer look: 55-50=5 and that squared is 25.

The reactive 84 squared is 7,056 and the total is 7,140.

The 55 added to 50, the answer is 105. Square that for 11,025. Add to that the 7,140 above and the answer is 18,165.

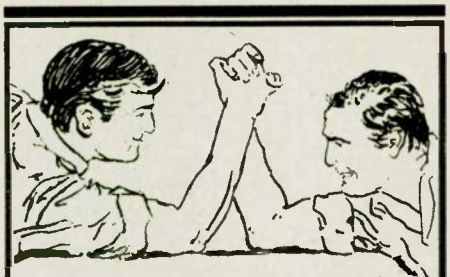
Divide 7,140 by 18,165 and the answer is 0.3930, the square root of that is 0.6269.

Lastly 1.6269, divided by 1 minus that 0.6269 (Ans: 0.3731) equals 4.36 which is not wonderful in anybody's book, unless you are running open wire feedline.

(And so, once again, becoming more and more the case these days, it is your Uncle Kurt that is who brings you the true facts. More to come next month.) **WR**

Want to e-mail your story?

Please send your contributions to:
kb6hp@ns.net



Contest Corner

Don Durk, KA1DWX
76226.1414@compuserve.com

In the spring time a "youngun's" fancy lightly turns to . . . .

Taxes? Nah! The birds and the bees? Nope! It is antennas of course! Once again it's time to push the envelope! We are on the upswing of the new solar cycle and the weather is fine. Field Day is just around the corner and it's antenna time. If you know which changes you want to make in your antenna system, now's the time! If you are uncertain about what to do or how to do it, get on down to your local radio club and join the antenna planning group. Here you will listen and learn as the cognoscenti discuss various antennas, wave take off/arrival angles, gain and propagation. Then you can experience the joy of victory and the agony of defeat as you learn how to design, build and erect these structures! What better way to gain the experience needed to allow you to build your own super station? It's probably the equal of a 3 credit enrichment course!

The implementation of the current RF exposure measurement rules for Amateur Radio have been delayed until January, '98. An interesting BASIC software program to assist you in your effort to comply is available at http://members.aol.com/cqvhf/index/html or check the article in the January '97 issue of *CQ VHF* magazine.

A contest rule change has been adopted by the ARRL Contest Committee/ARRL Awards Committee: For multi op, single transmitter stations during 1998, the old 10 minute rule is modified. That rule stated that you had to remain on a band for at least 10 minutes once operation had begun on that band. The new rule permits six band changes per hour. Sounds the same? It's not! There are no additional band changes per hour, however it is now possible to quit an unproductive band after a single Q and go back to a more productive band. Band changes per hour are for a clock hour not an arbitrary 60 minute period.

ARRL contest rule reminders about club scores: for multi op entries who are submitting for a club score — at least 66% of the ops must be members of the same club for the score to count for that club. DXpedition scores are now added to the aggregate club totals, effective 1997, for active affiliated clubs. The rule that single guest operators and the station licensee must be members of the same club still applies for all except DXpeditions.

For our VHF/UHF guys and gals both ARRL Committees have prohibited the use of repeaters or repeater frequencies for contest Qs on all VHF/UHF bands. The old rule specifically prohibited this only on 2 Meters. (Tnx YCCC *Scuttlebutt*).

If you know of an upcoming contest, state party, etc. please drop me a snail mail or e-mail.

Late March 'tests

(see March ***Worldradio*** magazine for details)

•CQ WPX SSB 'test

23 March 00:00-24 March 2400 (RS+NR)

•ALASKA SSB/CW QSO Party

23 March 00:00-24 March 24:00 (RS(T)+city if KL7 or state/prov/country for non-KL7)

April 'tests

•SP DX CW/SSB 'test

05 April 15:00-06 April 15:00 (RS(T)+number or province for SP stns)

Q 1x per band SP, SZ, SQ, SR stns. Q only Polish stns.160-10 meters. Score-pts (3 ea QSO) x mults (total provs-not per band, 49 max).

Provs are: SP1-KO, SL, SZ; SP2-BY, EL, GD, TO, WL; SP3-GO, KL, KN, LE, PI, PO, ZG; SP4-BK, LO, OL, SU; SP5-CI, OS, PL, SE, WA; SP6-JG, LG, OP, WB, WR; SP7-KI, LD, PT, RA, SI, SK, TG; SP8-BP, CH, KS, LU, PR, RZ, ZA; SP9-BB, CZ, KA, KR, NS, TA (49).

Classes: Single op/ 1band CW; single op/1 band SSB; single op/1 band mixed; single op/ multiband CW; single op/ multiband SSB; single op/ multiband mixed; multiop, multi band mixed. '96 U.S. high -K1CC- congrats! Mult ck list. ARRL file ASCII floppy ok to SPDX Contest, P.O. Box 320, 00-950, Warszawa, Poland.

•MARAC SSB County Hunters 'test

06 April 00:00-07 April 24:00 (RS+county/provs+state for U.S./VE or prov+country for others) Q w/ fixed stns only 1x per band.Q w/ mobiles each time they change counties. Qs w/ stns under a net control are invalid. Freqs.- 3.880, 7.240, 14.270, 21.340, 28.340 w/ fixed stns asked to work above these fqs.

Score -pts (1pt for Qs w/ fixed U.S./VE stns; 5 pts for U.S./VE Qs w/DX, 15 pts for Qs w/ mobile /m stns (Mobiles on site of conjunction of several county lines count for only one 15 pt Q but do count for separate mults for each county at conjunction) x mults (different U.S. counties worked w/ mobile or fixed stns). No 'net controlled' contacts permitted. Certificates. Ck sheet for counties if > 100 Qs. Logs to:K8CW

•YLRC Elettra Marconi SSB/CW/RTTY 'test

06 April 13:00-07 April 13:00 (RS(T)+number or number+RC for Elettra Marconi member) OK to Q YL-YL; YL-OM; OM-OM, 3.5-28 MHz. Two distinct tests- Phone and Mixed (Phone+RTTY+CW). Score-pts (1 for OM Q; 2 for YL non-member Q; 3 for YLRC member) x mults (1 for ea DXCC country perband). Classes-Single YL; Single OM; Foreign YL-OM in both tests.Cups. ISØPFD.

•EA WW RTTY 'test

06 April 16:00-07 April 16:00 (RST+CQ zone or prov [52] for EA stns) Q any stns not only EA, 1x per band, 80-10. Single op/1 band; single op/multi band; multi op /all band. Score-pts(10, 15, 20- 1 own continent; 2 outside ur continent; 40, 80-3 own cont; 6 outside ur cont) x mults (DXCC countries+EA provs

each band). Trophy plate and certs. Classes: Single op, all band; single op, single band; multi op, all band. Logs-separate sheet per band to-EA1MV. EA provs: A, AB, AL, AV, B, BA, BI, BU, C, CA, CC, CE, CO, CR, CS, CU, GC, GE, GR, GU, H, HU, J, L, LE, LO, LU, M, MA, ML, MU, NA, O, OR, P, PM, S, SA, SE, SG, SO, SS, T, TE, TF, TO, V, VA, Z, ZA.

•ARCI QRP CW Spring Party

12 April 12:00-13 April 24:00

(RST+st/prov/DXCC country + ARCI number or power out)

Q 1x/band. 1.8 - 50 MHz. 1.810, 3.560, 3.710, 7.040, 7.110, 14.060, 21.060, 21.110, 28.060, 28.110, 50.060. Max. op time 24 hrs. All band pts (5 pts/ARCI member; 2 pts non-member, same continent; 4 pts non-member, diff. continent) x all band mults (states/provs/ DXCC countries) x pwr mult (>5W out x1; <5W out x7; <1W out x10; <250mW out x 15). Single band; all band; high band (20-6 Meters) or low band (160-40). SASE for results. N6GA camqrp@cyberg8t.com

•King of Spain SSB or CW 'test

12 April 18:00-13 April 18:00

(RS(T)+number, for EA/EC stns add prov[52])-see EA RTTY test for provs. Two distinct tests SSB or CW. Q 1x per band 80-10M. Score-pts (1 per Q) x mults (EA provs per band [max 5 x 52]). Classes: Single op EA/EC; single op rest of world; multi op. Trophies and certs. Logs of 40 Qs/page + summary sheet. U.R.E.'test, P.O. Box 220, 28080, Madrid, Spain.

•UBA 80 Meter CW 'test

13 April 07:00-13 April 11: 00

(RST+number or prov for ON stns) Prov-(AN, BA (DA) BT, HT, LB, LG, LX NR, OV, WV) 80 Meter band only. Score- pts (3 for ea ON Q) x mults (10 ON provinces) ON2AHJ.

•DIG (Diploma Interest Group) QSO Party

12 April 12:00-13 April 17:00 (10-20M); 13 April 07:00-09:00 (80M); 09:00-11:00 (40M)

(RST+DIG number) Q 1x per band 80-10M. Score-pts (10 for Q w/ DIG member; 1 for others) x mults (1 for ea DIG different member and 1 for ea DXCC/WAE country per band). DF2KD.

•JA INT'L DX 'test HFCW

11 April 23:00-13 April 23:00

(RST+CQ Zone number/prefecture 01-50 for JA stns) Q 1x/band. Q JA only. 14-28MHz. NO WARC BANDS. Single Ops 30 hr. max., multi's 48. Ten minute rule. Rest period of at least 60 mins. Score - Pts (1 for 20, 15; 2 for 10 mtrs) x mults (prefectures per band). Single op/single band// single op multi band//multi op/ multi band. '96 NA Hi score VD6JO; WBØO. Only 3 NA entrants-how about it folks? *59* Magazine, P.O. Box 59, Kamata, Tokyo 144, Japan

•Int'l HF Grid SSB/CW/Mixed 'test

12 April 12:00-13 April 12:00

(Maidenhead grid square+name)

Q 1x per band/mode/grid square. Power restriction -no greater than 150 watts. Op only 18 of 24 hrs with 30 min minimum off times. Telephone, spotting nets not allowed. Packet clusters not allowed for single ops. Mults only 1 sig per band w/10 min rule. Rovers are 1 or 2 ops and must use same equipment and antennas at each site. Rovers sign/R. Classes: Single op: Phone/CW/mixed mode; multi two, mixed mode; rover, mixed mode. Score-pts (1 per Q) x mults (grid squares per band). Rovers add total QSO pts from each grid square and total mults from each grid square and multiply the two. Grid loc, P.O. Box 180703, Austin, TX 78718-0703.

•ARRL VHF/UHF Sprints (ck ARRL for the dates and details)

•ES SSB/CW Open Championship

19 April 05:00-08:59

(RS(T)+number) Non ES Q ES stns. ES stns Q all 80 and 40M only. Q 1x per band per mode.Score: pts (CW 2; SSB 1) x mults(ES prefixes [ES1-ESØ] ea band [max 20]). Classes- A. Single op mixed mode B. Single op SSB. C. Single op CW. D. Single op QRP 10W mixed. Diplomas. ES5RY.

•YU DX CW/SSB 'test

19 April 12:00-20 April 12:00

(RS(T)+ ITU Zone Number)

Q all stns. Q 1x per mode per band, 1.8-28MHz. Score- pts(Q in your ITU zone -1pt; Q in ur continent but not ur zone -3 pts; Q w/ DX outside ur continent-5 pts) x mults (YU prefixes and ITU Zones per band). Count mults 1x per band not per mode! Classes-A Single op, CW B. Single op, SSB; C single op mixed modes D multi op, mixed mode, single tx. 10 min rule for multis. Sep log per band. MS DOS ASCII ok or K1EA-CT ver. 8.45 or > for IARU HF 'test. SRJ, YU DX 'test, P.O. Box 48, 11001 Belgrade, Yugoslavia.

•MI SSB/FM/CW QSO Party

19 April 18:00-20 April 03:00 and 11:00-02:00 21 April

(RS(T)+ number+county for MI stns [max 83] or state/prov/DXCC country for non MI stns) Q 1x ea mode ea band.CW- 1.810, 3.540, 3.725, 7.035, 7.125, 14.035, 21.035, 21.125, 28.025, 28.125; SSB-1.855, 3.905, 7.280, 14.280, 21.380, 28.380; VHF-50.125, 145.025, 146.55. 160 even hrs after dark. Score- (1 pt phone; 2 pts CW; 5 added pts for ea Q w/K8EPV & W8JXU club calls) x mults (MI counties [max 83] or MI stns counties + states/prov/DXCC countries [max 85]). Classes- Single op, multi op, mobile. MI stns on county lines ok for ea county if new contact number used for each county. Plaques and certs. 100 Qs or > requires dupe sheet. Use official log form via EMARC, P.O. Box 611230. Port Huron, MI 48061-1230.

•EU SSB Sprint

19 April 15:00-18:59 (Both calls +

number+ name)

NO RS(T). U.S./VE Q EU only. EU Q EU and others.

QSY Rule-if you initiate a Q via CQ or QRZ etc., you can work only 1 station on that freq and your next QSO or CQ, QRZ, etc. must be at least 2 KHz away. Single op only. Fqs.-14.250; 7.050; 3.730. No suggestion from sponsors about how U.S. stns can work split.Single op only. EU Sprint contest software can be downloaded via http://www.rrze.unierlangen.de/~unrz 45/BCC The download link for SPRINT.EXE is: ftp://ftp.unier langen.de/pub/pc-freeware/ham radio/logbuch/contest TR by N6TR is easily adapted. Contact I2UIY pcortese@mbox.vol.it or above. Logs in 15 days via mail to G4BUO or in ASCII; .ASC file for DL2NBU sw; .DAT file for N6TR sw; .DBF file for IK4EWK sw - to eusprint @dl6rai.muc.de

•SP DX RTTY 'test

26 April 00:00-27 April 24:00

(RST+CQ Zone or Prov(48) for SP stns)

Q all stns 1x per band, 80-10. 36 hr max for single ops 48 ok for multis. No rest period regs. Score- pts (2 for own country; 5 for different country same continent; 10 for countries not on your continent) x mults (ea 1st Q w/ DXCC country including 1st SP stn +1st stn in your own country + ea continent plus per band mults of ea SP prov). Bonus mult for ea SP stn w/ RVG suffix.

Polish provs are:BB, BK, BP, BY, CH, CI, CZ, EL, GD, GO, JG, KA, KI, KL, KN, KO, KR, KS, LD, LE, LG, LO, LU, NS, OL, OP, OS, PI, PL, PO, PR, PT, RA, RZ, SE, SI, SK, SL, SU, SZ, TA, TG, TO, WA, WB, WL, WR, ZA and ZG. Classes: Single op all band; multi op all band; SP stn; SWL. Separate logs per band. CT.BIN (K1EA) or RTTY (WF1B). Plaque and certs. SP2UUU

•Holyland 4X4 SSB/CW 'test

26 April 18:00- 27 April 18:00

(RS(T)+ number or area for 4X stns)

Q only Israeli stns.Q 1x each mode on each band (ok to QSO /m or /p stns when they change QTH. The 4X/4Z/m or/p stn changes call sign e.g.- 4X41JU can change to 4X42JU. . .4X45JU. . .etc.) It is okay to work all 3 on each mode and on the same band. Score- pts (2 for160-40; 1 for 20-10) x mults [areas- HO8HF, HO8HD, HO8YZ are different areas] 300+ areas exist) Trophy, plaques, certs. Single op all band/multi op 1 tx. Separate logs for each band and mode. Logs to: IARC Contest Mgr, 4Z4UT, Box 3003, Beersheva, 84130, Israel. 23 Administrative regions (each with numerous areas within them): AK, AS, AZ, BS, BL, HD, HF, HG HS, HB, JN, JS, KT, PT, RA, RM, RH, SM, TA, TK, YN, YZ, ZF.

•HB9 SSB/CW Helvetica 22 'test

26 April 13:00-27 April 13:00

(RS(T)+number or Canton for HB9 Stns)

Q 1x per band not per mode. CW-160 -10; SSB-80-10. Score- pts(3 ea Q) x Cantons (1 pt per Canton on each band).single op; multi op 1TX. Certificates. Logs- separate log ea band to: HB9DDZ. 26 Cantons: AG, AI, AR, BE, BL, BS, FR GE, GL, GR, JU, LU, NE, NW, OW, SG, SH, SO, SZ, TG, TI, UR, VD, VS, ZG, ZH.

•NE All Modes QSO Party

26 April 17:00-27 April 17:00

(QSO number+ st/prov/DXCC country or for NE stns number+ county[93]) Q NE stns1 x per mode per band, NE stns Q all 160- 2 meters.CW 1805 and 80 kHz up. SSB 1.815, 3.880, 7.280, 14.280 , 21.380, 28.380, 146.460. Novice - 10 kHz up and 28.380.No satellite/cross band or repeaters. Score- Pts (1 for SSB/FM, 2 for CW/digital/video) x mults (total counties [max 93] or st [50]/ prov/DXCC country [max 35] for NE stns).

Ok to count new mult and point for mobiles in each county but mobiles on county lines count only for 1Q. Classes: Single op; multi single; mobile; Nov/Tech and club. (3 logs or more). 5 Plaques- 1 plaque for top Novice/Tech or Tech+ in NE and 1 for U.S., 1 for top op U.S./DX/NE.Certificates. IBM format, MS-DOS 5-1/4" or 3-1/2" discs ARRL SSFF ASCII file. Logs to: NE QSO Party, P.O. Box 375, Elkhorn, NE 68022-0375.

May 'tests

•ARRL Sprints- Please ck ARRL for dates.

•ARRL 902, 1296, 2304 MHz Spring Sprint

•ARRL 50MHz Sprint

5/1

•AGCW-DL QRP Party

5/3 Weekend

•ARI SSB/CW Italian 'test

•OZ Danish SSTV 'test

•MA SSB/CW QSO Party

•CT SSB/CW QSO Party

•MARAC County Hunters CW 'test

•Ten Ten CW 'test

•TX SSB/CW QSO Party

5/10 Weekend

•A. Volta RTTY 'test

•NV SSB/CW QSO Party

•FISTS CW Spring Sprint

•GA SSB/CW QSO Party

•CQ MIR SSB/CW DX 'test

5/17 Weekend

•EU CW Sprint

•Baltic SSB/CW 'test

5/24 Weekend

•CQ WPX CW 'test

5/31 Weekend

•CQ Vikings 'test

•PY Brazil WTU 'test

June 'tests

6/7 Weekend

•IARU Reg 1 EU CW FD

6/14 Weekend

•Portugal Day SSB test

•ANARTS WW RTTY 'test

•TOEC WW SSB Grid 'test

•WW So. America CW 'test

•Cervantes SSB 'test

•Asia Pacific SSB Sprint

•ARRL VHF QSO Party

6/21 Weekend

•All Asian DX CW 'test

•WV SSB/CW QSO Party

•Marconi Memorial CW 'test

•RSGB 1.8 MHz CW 'test

•SMIRK 6-meter 'test

6/28 Weekend

•ARRL Field Day

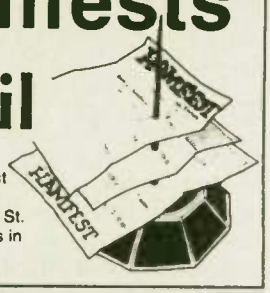
•SP QRP CW 'test

WR

Send your stories

If you are involved in any emergency communications incident, send story and photos to ***Worldradio,*** 2120 28th St., Sacramento, CA 95818.

Hamfests April



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!

Arkansas

The **Arkansas Radio Emergency Service, DeGray ARC, Malvern ARC, Metropolitan ARC, Pine Bluff ARC,** and **Saline County ARC** will hold the Little Rock Hamfest 25-26 April at the Little Rock Expo Center, exit 126, I-30, in southwest Little Rock. Admission is $7. Tables are $30 (dealers), $20 (flea market), $15 (tailgate). Features include exhibitors, forums, and working stations on packet, amateur television and satellite. For more information, contact Jim Blackmon, KB5IFV, 501/246-6734 or 501/246-7833 (24 hr. recorder).

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The **Central Arkansas Radio Emergency Net (CAREN)** will hold an all-Arkansas family hamfest 18-19 April at the Sherwood Forest Convention Center, 111 W. Maryland Ave., Sherwood. Admission and parking are free. Dealer tables $20, flea market tables $15 (before 10 April) $20 after. For information, contact J.C. Smith, N5RXS, at 501/568-7982. Talk-in on 146.94(-).

California

The **Livermore ARK** will hold a swap meet on 06 April from 7 a.m. to noon at Las Positas College, 3033 Collier Canyon Rd., Livermore, CA (Airway Blvd., exit to north of 580 highway). Features include new, used, surplus ham, computer gear, miscellaneous electronics and testing equipment, refreshments available. Admission and parking are free; vendors $10 per space (equals two parking spaces). No VE exams. Contact Noel Anklam at 510/447-3857 (eves.) or 510/783-2803 (days). Talk-in on 145.350(-) PL 100 (receive and send), 147.045(+) PL 94.8, 147.120(+) PL 100.

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The **Valley of the Moon ARC** will hold an ARRL hamfest on 26 April from 8 a.m. to 1 p.m. at McDougal Hall on the corner of Wilson and Sonoma Avenues in the Sonoma Developmental Center, 15000 Arnold Drive, in Glen Ellen. Features include a walk-in VE exam session (register at 9 a.m., session at 10 a.m.), electronics swap meet with both indoor and outdoor spaces available, forums to include an operating QRP station and display of home-built equipment, AMSAT booth, beginners D.F. hunt and more. Setup will start at 7 a.m. with spaces renting for $10. A full breakfast will be served from 8-10 a.m. for $5 or pancake-only breakfast for $3.50. For a map and directions to the hamfest, send an SASE to VOMARC, 358 Patten St., Sonoma, CA 95476. For info, call Darrel, WD6BOR at 707/996-4494. Talk-in on 145.35(-), PL 88.5.

Connecticut

The **Radio Amateur Society** of Norwich will hold a Amateur Radio auction on 05 April from 10 a.m. (setup at 9 a.m.) at the Waterford Senior Center on Rt. 85. From Hartford, take Rt. 2 south to Rt. 11 to Rt. 85 south. From the Shoreline, take Rt. 95 to Rt. 85 north. Bring your gear to sell (10% commission to RASON). Free admission, free parking. Contact Tony, AA1JN, 860/859-0162. Talk-in on 146.73(-).

Florida

The **Flamingo Net** and **Univ. of Miami ARC** will hold a tailgate swapmeet on 05 April from 8 a.m. to noon in the University of Miami parking lot #102 (N.W. corner of campus). Contact Bill, WA4TEJ, by mail: 73 Palm Ave., Miami Beach, FL 33139 or on the air Friday 7:30 p.m. on 10M, 29.044 MHz, 8 p.m., 28.444 MHz, with 2M also monitored for check ins: 146.91(-), 146.86(-) and 147.21(+). You may also contact Walt, W4DWN at 305/895-0398 for information.

Indiana

The **Columbus ARC** will hold a hamfest on 05 April from 8 a.m. to 2 p.m. (Friday setup 6-10 p.m. and Saturday 6 a.m.) at the Bartholomew County 4-H Fairgrounds Community Building on State Road 11, SW of Columbus, Indiana. Admission is $3.50/advance, $4/door. Tables are 8 ft. at $8 and 6 ft. at $6. Make reservations through Marion Winterberg, WD9HTN, 11941 W. Sawmill Rd., Columbus, IN 47201; 812/342-4670, e-mail: winterbe@hsonline.net. Talk-in on 146.79(-).

Iowa

The **Denison Repeater Association** will host an Amateur Radio swapmeet on 06 April from 7 a.m. to 2 p.m. at the Deloit Community Building in Deloit. Tables (sellers) and admission (buyers) will be $2. Reservations for table space may be sent to Jim Currie, KBØTLC, or Jim Slechta, KAØHFR, via the *Callbook*™. For more information, contact John Amdor, KD6MXL, (e-mail at johnmxl@netins.net). Talk-in on 147.09(+).

Kentucky

The **Kentucky Colonels ARC** will hold a hamfest on 12 April from 7 a.m. to 1 p.m. (setup on the 11th, 1-5 p.m. and the 12th at 5 a.m.) at Knights of Columbus Hall, 911 Sercy Way, in Bowling Green. Features include ATV balloon launch (7 a.m.) ham gear, electronic gear, computers, displays, VE testing (p/r required, 9 a.m.). Admission is $5 for age 12 and over; tables $10 each (includes admission). Talk-in on 147.93(-).

Maine

The **Portland Amateur Wireless Association (PAWA)** will hold an electronics flea market and hamfest on 12 April from 8 a.m. to 1 p.m. (vendors 6:30-8 a.m.) at the University of Southern Maine, Sullivan Gymnasium, Falmouth Street, in Portland. VE exams will be held at 10 a.m. Admission is $6 (before 8 a.m.) or $4 after 8 a.m. There is no charge for tables. For information, contact Marty Feeney, K1OYB, at 207/839-5072 (e-mail to rlockard@worldnet.att.net) or Ron Levere, KA1FI at 207/846-9090 (e-mail to levere@usm.maine.edu). Talk-in on 146.73(-).

Maryland

The **1997 Greater Baltimore Hamboree and Computerfest** and host to the ARRL Maryland State Convention will be held 04 April from 8 a.m. to 5 p.m. and 05 April, 8 a.m. to 4 p.m. at the Timonium Fairgrounds in Timonium. Features include ARRL Convention program and banquet, indoor/outdoor show and sales areas, VE exams. A weekend admission ticket is only $8/advance sale only. Dial 410/426-3378 for voice anytime. Outside Maryland dial 800/426-3378.

Massachusetts

The **Framington ARA** will hold their spring flea market on 06 April from 9 a.m. to 1 p.m. (setup at 7:30 a.m.) at the Framington High School, off Concord St. (Rt. 126). Features include Amateur Radio equipment, electronics and computer hardware/software, door prizes. VE exams start at 11 a.m. (contact Dick, K1KTK at 508/877-0563.) Admission is $3, tables $10/advance, $14/door. Limited tailgate space available, $10. For table information, call Bev, N1LOO, at 508/626-2012. Talk-in on 147-15(+).

Minnesota

The Southwest Metro Amateur Radio Transmitting Society, Inc. will hold a SMARTSFEST '97 hobby electronics show on 27 April from 8 a.m. to 1 p.m. in Canterbury Park (formerly Canterbury Downs Racetrack) in Shakopee. Features include indoor flea market (with drive-up access), VE testing, free parking, prizes and public service opportunities. Admission is $3.50/advance, $5/door (under age 16 are free). Indoor tables are $10. Free tables to bona fide clubs (no selling). For advance tickets/tables, call Tim at 612/474-9232. Vendors call Roger at 612/448-1945. Talk-in on 147.165(+).

Mississippi

The **Tupelo** and **Booneville ARCs** will hold the North Mississippi Hamfest and Computer Expo on 11 April from 6-9 p.m. and 12 April, 8 a.m. to 5 p.m. at the Mississippi Building of the Tupelo Furniture Market Complex, Coley Road, Tupelo. Features include all indoor hamfest/computer show, flea market, vendors, VE session, food, door prizes, free parking. Admission is $5, under 13 free when accompanied by adult. Tables $20. For information, contact Jack Ellis, KI5QV, Rt. 4, Box 198-B, Tupelo, MS 38801; 601-842-7255. Talk-in on 147.38(+). Ragchew on 147.24(+).

Nebraska

The **39 Hundred Club, Inc.** will hold Hamboree 19/Iowa State Convention 25-26 April at the Marina Inn in south Sioux City, NE. Features include technical forums, flea market, Amateur Radio dealers, QCWA luncheon, banquet. Admission is $6, Friday night dinner $8 and Saturday night banquet is $14. Contact Mike Nickolaus, 316 E. 32nd St., South Sioux City, NE 68776; 402/494-6070, e-mail menicko @avalon.net or packet NFØN@NFØN. NE.USA.NA.

New Hampshire

The **North Country ARC and LARK** will hold their annual flea market on 05 April from 8 a.m. to 3 p.m. at the Twin Mountain Town Hall, approx 500 yards west of the intersections of Routes 3 and 302. VE session. Admission $2. Sellers $5/8' space, bring tables. Richard Force, WB1ASL, 12 Cottage St., Lancaster, NH 03584; 603/788-4428, e-mail bhabooks@ together.net.

New Mexico

The **Albuquerque ARC** and the **Amateur Radio Caravan Club** will hold a flea market at sunrise on 26 April at St. Paul's United Methodist Church parking lot, 9500 Constitution NE in Albuquerque. There is no admission charge for buyers or sellers. Contact Chuck, KC5GA; 505/858-0306 or e-mail Art, n5oqj@juno.com. Talk-in on 147.06(+).

New York

The **Eastern New York Section Convention** at the **Mt. Beacon Hamfest** will be held 27 April at the John Jay High School in Fishkill, New York. Features include forums and demonstrations, large indoor/outdoor areas, spouses and kids free, VE exams for all license classes, hot food and beverages. Admission $5. Tables $8/advance, $10/gate. Tailgating and bring-your-own-table $6. For more information, call or write: Ken Akasofu, KL7JCQ, 316 Titusville Rd., #4, Poughkeepsie, NY 12603; 914/485-9617, fax 914/485-2402 or e-mail Ken.Akasofu@bbs.mhv.net. Talk-in on 146.97(-).

Oklahoma

The **Lawton Ft. Sill ARC** will host 51st hamfest and computer fair on 05 April from 8 a.m. (Friday setup from 5-9:30 p.m. for vendor/flea market and Saturday at 7 a.m.) at the Comanche County Fairgrounds in Lawton. Features include forums from the National Weather Service, beginner and advanced packet, OKDX Society, Slow Scan TV, and a non-ham program. Admission is $4/advance, $5/door; tables $8/advance, $10/door; tailgate slots $10. Tailgate and table costs do not include admission. Contact Bob Morford, KA5YED, 1415 N.W. 33rd St. Lawton, OK 73505; 405/355-6120 or 405/353-8074. Talk-in on 146.91(-).

Pennsylvania

The **Penn-Del** ARC will hold a hamfest and host the 1997 ARRL Delaware State Convention on 20 April from 9 a.m. to 3 p.m. (setup 6 a.m.) at the Nur Temple on Route 13 in New Castle, DE, 1/4 mile north of Rtes 13 and 40 intersection. Features include a certified skywarn spotter training class, ARRL forum, State police communications van on display and a program covering statewide digital radio system. Special guest Rick Palm from the ARRL. Admission is $5/door (no advance). Tables are $15 w/ electricity or $10 without, by reservation only with payment to: Penn-Del Hamfest '97, P.O. Box 1964, Boothwyn, PA 19061. Tailgating is $8 per space first come first served. For information, contact Hal Frantz, KA3TWG at 302/798-7270. Tailgating is $10 per space, first-come, first-served. Talk-in on 147.225(+) or 224.220 (-) repeater.

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The **Appalachian Amateur Radio Group** will hold its annual hamfest and computer show on 12 April from 8 a.m. (vendor setup 6 a.m.) at the Northern Lebanon High School in Fredericksburg. Admission is $4, tailgating $4, indoor tables, $14. VE tests, 9 a.m. Food available. Reservations for tables must be prepaid. Send check to AARG, 105 Walnut St., Pine Grove, PA 17963; 717/345-3780. Talk-in on 146.64(S).

Rhode Island

The **Washington County** and **Fidelity ARC's** will hold a hamfest on 26 April from 9 a.m. to 4 p.m. (setup 7-9 a.m.) at the West View Inn, located on Rt. 3, three miles south of exit 6 off of I-95. VE exams at 1 p.m. (walk-ins). Admission is free, vendor spaces $6. Everett Lovenbury, N1VEZ, 232 Carolinanooseneck Rd., Wyoming, RI 02898 or Bill May, WA1WM, 20 Montana Ave., Coventry, RI 02816; 401/822-0520. Talk-in on 145.130(+), 147.165(+) and 146.58(S).

Texas

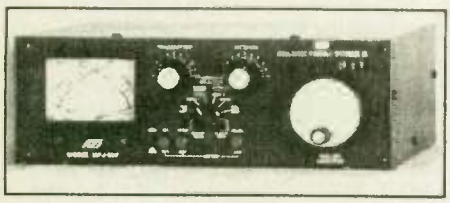
The **Temple ARC** will hold a ham expo on 19 April from 7 a.m. (vendors 6 a.m.) at the Bell County Expo Center. Huge indoor tailgate arena. Admission $1. Indoor tailgate spaces $10/door. Vendor tables $20, free electricity. Telephone Mike, WA5EQQ, at 817/773-3590; e-mail: mlefan@vvm.com. Expo netpage at http://www.tarc.org. Talk-in on 146.820, PL 123 Hz. All tables $13. Admission $6 in advance, $7 at the door. Children under 12 free. For information and flyer, contact Warren, KJ7BBG, S. 1405 Crestline St., Spokane, WA 99203, 509/534-8443.

Wisconsin

The Madison Area Repeater Association, Inc. will hold a swapfest on 13 April from 8 a.m. (3 a.m. setup for sellers with 6 or more tables, all others 6 a.m.) at the Dane County Exposition Center Exhibition Hall in Madison. Features include electronic equipment and components, computer hobbyists and experimenters, new and used equipment. Admission is $6/advance, $7/door (children under 12 are free). Flea market tables are $15 each in advance, plus admission. For admission tickets, table reservations or information, write to: M.A.R.A., P.O. Box 8890, Madison, WI 53708; 608/245-8890 (24 hrs.). Talk-in on the MARA repeater, WB9AER, 147.15(+). **WR**

Remember! Submit your hamfest announcement at least 2 months ahead.

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



MFJ's *AirCore*™ antenna tuner

MFJ introduces the MFJ-969, a 300-watt *AirCore*™ roller inductor and continuous 6 through 160 Meters coverage, plus the great features similar to the MFJ-949E.

Some of MFJ's 969 *AirCore*™ features include:

• a three-digit turns counter and spinner knob gives owners exact inductance control. It can give you absolute minimum SWR, something a tapped inductor just can't do.

•an air core that can't burn up. It features high-Q, lowest loss, high efficiency, and high power

•keeps potentially damaging self-resonance away from the operating frequency. Large self-cleaning wiping contact gives excellent low resistance connection without contact arcing or burning. A solid 1/4-inch brass shaft with self-aligned bearings give smooth non-binding operation.

•matching of any antenna — dipoles, verticals, inverted vees, random wires, mobile whips, etc.

•lighted cross-needle SWR/wattmeter, *QRM-Free PreTune*™, 8-position ceramic antenna switch, built-in 50-ohm dummy load, heavy duty 4:1 balun, all in a sleek black, scratch-proof cabinet.

•*QRM-Free PreTune*™ lets you pre-tune your MFJ-969 off the air into a built-in dummy load without causing QRM. Pre-tuning into a dummy load makes tuning your actual antenna tuner faster and easier. It handles 300 watts SSB PEP. The unit measures 3-1/2" x 10-1/2" x 9-1/2." The meter lamp uses 12V DC or 110V AC with MFJ-1312B, $12.95.

The MFJ 300-watt roller inductor antenna tuner is protected by MFJ's NO MATTER WHAT™ one year unconditional warranty. That means MFJ will repair or replace (at their option) your product for one complete year. The price of the MFJ-969 is $179.95.

For more information or your nearest dealer, contact MFJ Enterprises, Inc., 300 Industrial Park Rd., Mississippi State, MS 39762; telephone 601/323-5869; fax 601/323-6551; Internet: http://mfjenterprises.com; or order toll-free by calling 800/647-1800.

IC-W32A Compact Dual-Band Handheld

Icom introduces an ultra-slim dual-band handheld, big on performance and features. The IC-W32A fits comfortably in your hand, and meets the demands of the experienced and novice operator.

A total of 200 memories may be displayed by either frequency or alpha name. Up to eight alphanumeric characters can be programmed for quick and easy identification on the LCD. Each band has 100 memory channels and four DTMF memories have up to 16-digit capability.

Superior memory management allows you to easily transfer memory contents to either VFO or to other memories while an EEPROM prevents memory loss if the battery runs low.

The unit receives both VHF and UHF bands simultaneously (both frequencies can be viewed on the display) or use the V/V and U/U functions to receive two frequencies on the same band. You can transmit on either operating band. The IC-W32A has separate tuning and volume controls for each band on the top panel to allow independent adjustment of each band.

Icom's versatile VHF/UHF exchange function allows you to assign VHF/UHF tuning and volume to either knob. Frequency coverage is 144-148 MHz and 440-450 MHz transmit and 118-174 MHz and 400-

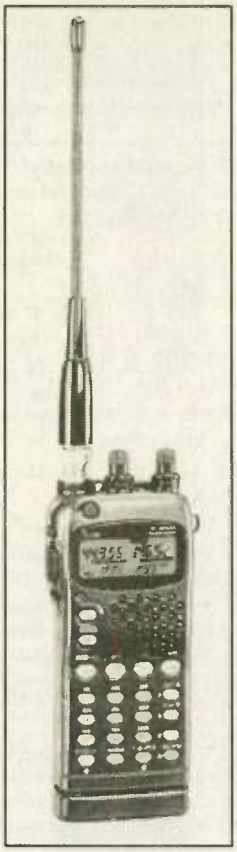
470 MHz receive.

The IC-W32A is easy to use. A new guide function enables quick description of the key function without searching a menu list. No function button means simple programming.

A power MOS-FET module provides high power output even under low battery voltage. Three levels of power output are available. Multiple power-saver functions (with current drain as low as 30mA) provide long operating times. A battery voltage readout allows you to monitor the battery condition. The IC-W32A accepts 4.5 to 16 volts external power supply.

The Icom IC-W32A has large, backlit keys for easy operation. Additional features include full crossband duplex operation. Scanning functions include programmed, full and memory skip scan. The IC-W32A also has ten U.S. weather channels and improved audio. Tone encoder and decoder (tone squelch) are built-in, and transmit and receive CTCSS tones can be different.

Information may be cloned from handheld-to-handheld with Icom's optional OPC-474 cloning cable. Memory channels, memory names and other information can be easily transferred from the IC-W32A to another. Optional computer software enables you to clone and edit contents using a computer.



Options include an HS-85 headset and BP-173 battery pack for five watts of output power.

The suggested retail price for the IC-W32A is $479.

For information on availability, please contact your local Amateur Radio dealer or Icom America, Inc., 2380-116th Avenue N.E., Bellevue, WA 98004, 206/454-8155.

Hamtronics® catalog

Hamtronics, Inc. introduces its 1997 catalog, which contains 40 pages of kits and wired units for Amateur Radio, two-way shops, scientific and industrial users, and OEMs. Several new products have been added to the usual lineup of high-quality VHF and UHF products.

The TD-5 is a new version of their popular CTCSS (Subaudible Tone) Encoder/Decoder Module. It features crystal control tone accuracy, simple dip switch tone selection, and filters to eliminate the buzz sometimes heard in the receiver. Like most Hamtronics® modules, this is available either as a kit or wired/tested.

The R139 is a new, improved, 3rd generation Weather fax (WEFAX) receiver, designed to receive images from the 137 MHz NOAA APT and Russian meteor weather satellites. This unit comes with an attractive cabinet and AC power supply and integral scan circuitry, which allows it to search for and automatically record any satellite which passes overhead, even when you are not at home. Accessory demodulators, software, and antennas are offered for use with the receiver.

The RWX Receiver is a professional quality receiver to monitor weather alert and emergency broadcasts from NOAA/NWS or Environment Canada. It is supplied with a cabinet, speaker, AC power supply, and connector for an outdoor antenna to provide reliable reception from distant stations. An automatic circuit mutes the speaker unless a storm warning tone is received.

The TWWV Receiver is now available with cabinet, speaker, and power supply to listen to the 10 MHz WWV time and frequency standard broadcasts without investing in an expensive multiband HF receiver.

These new products are added to the already popular selection of VHF and UHF FM transmitters, receivers, power amplifiers, transmit and receive converters, preamps, repeaters, dtmf controllers, automatches, and digital radio modems which Hamtronics, Inc. has manufactured for 35 years.

You may already have received your new catalog. If not, write Hamtronics, Inc., 65-F Moul Rd., Hilton, NY 14468-9353; telephone 716/392-9430, fax 716/392-9420. Please mention that you saw the announcement here in ***Worldradio.*** You may also see the entire catalog on the web at: http://www.hamtronics.com **WR**

VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing those VE exams, times and locations which are sent to us.

Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for 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
Alabama			
5/06/97	Mobile	David, WA4VAC 205/649-5229	
Arizona			
5/10/97	Tucson	Joe, K7OPX 520/886-7217	w/i
Arkansas			
5/10/97	Siloam Sprgs	Mike, KJ5OP 501/524-8090	p/r
California			
5/28/97	California	Robert, AC6JM 310/429-8275	p/r pref.
5/22/97	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	p/r pref.
5/31/97	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	w/i
5/10/97	Culver City	Clive, AA6TZ 310/827-2538	p/r pref.
5/03/97	Cupertino	Emmett, AE6Z 408/243-8349	w/i only
5/15/97	Ftn. Valley	Allan, AB6UB 714/531-6707	p/r pref.
5/06/97	Fremont	Dennis, K6DF 510/791-0954	w/i only
5/03/97	Hesperia	Jim 619/244-1396	w/i only
5/09/97	Irvine	Jack, WD6AEI 714/856-0802	
5/03/97	Lake Isabella	Ham Radio HOTLINE 619/379-2947	p/r pref.
5/16/97	Lake Isabella	Rex, 619/379-3011	p/r pref.
5/19/97	Mission Viejo	Louis, 714/951-0336	p/r
5/04/97	Oakland	Vern, AA6YE 510/233-4504	p/r pref.
5/17/97	Orange	Richard, AA6NA 310/598-0086	p/r pref.
5/31/97	Pomona	Don, WA6HNC 909/949-0059	p/r pref.
5/17/97	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
5/11/97	Sacramento	Dick, N6DK 916/383-2113	p/r pref.
5/10/97	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
5/14/97	Santa Ana	Red Cross 714.835-5381 x140	w/i
5/17/97	Signal Hill	Donald, NN6Q 310/420-9480	p/r pref.
5/17/97	Stockton	Mark, W6DKI 209/465-7496	w/i
5/25/97	Sunnyvale	John, KG6XF or Gordon, W6NW 408/255-9000	w/i only
5/17/97	Westminster	Terry, 714/638-4057.	
Colorado			
	All Colorado	Exam recording 303/360-7293	
5/10/97	Denver	Glenn, WØIJR 303/366-0155	w/i pref.
5/03/97	Littleton	Dave, NØHEQ 303/795-5718	w/i pref.
Connecticut			
5/09/97	Stamford	Tom, WB1L 203/363-0319 or Marv, N1AWJ 203/438-7889	
5/22/97	Trumbull	Kevin, N1KGM 203/268-5015 or Bob, KA1ZMF 203/933-9587	
Florida			
5/17/97	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
5/17/97	Orange Park	John, W5HUQ 904/264-5587	p/r pref.
5/22/97	Pensacola	Steve, KO4TT 904/968-1092	
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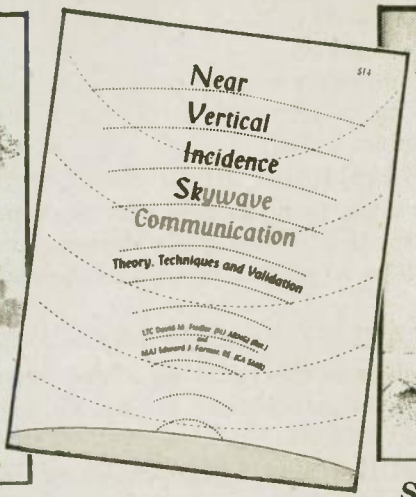

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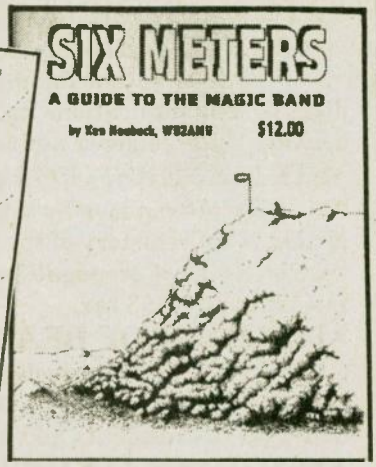

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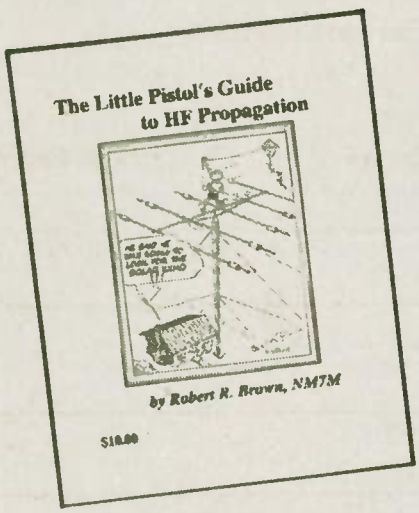

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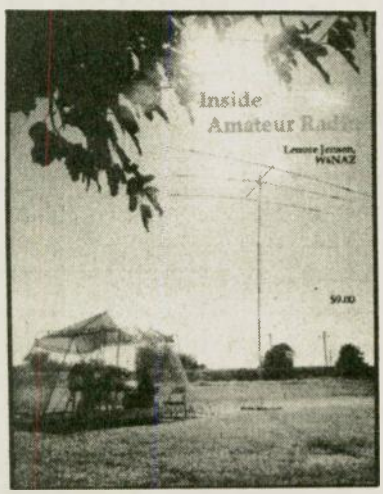

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Late Flash . . .

Little LEOs now want 220, too

The same industry that has already targeted 2 Meters and 450 MHz for sharing, now wants even more ham radio spectrum.

The Low Earth Orbiting satellite industry, seeking access to amateur allocations at 146 and 430 MHz has now added 220 MHz to its "wish list." The move was announced in what the satellite industry calls its "flexible allocation proposal." That proposal was delivered at the 13 February meeting of FCC Informal Working Group 2-A. In it, the Little LEO industry specifically targets the ham bands from 146 to 148, 219 to 225 and 430 to 450 MHz for shared use.

The ARRL and AMSAT were among those objecting to the idea. A joint statement says that the latest proposal affecting amateur allocations in the 219 to 225 MHz segment came at the last possible moment and without any technical support whatsoever.

The League and AMSAT point out that the little LEO supporters have had more than a year to complete a technical study of the possibilities of sharing with the amateur service in the 144 to 148 MHz and 420 to 450 MHz bands. Both organizations conclude that the Little LEO people have not demonstrated compatibility for sharing these amateur bands.

The ARRL is urging everyone who agrees with its position to comment to the FCC by 4 March, if possible. The FCC Informal Working Group 2-A has been preparing proposals for the 1997 World Radiocommunication Conference, which will be reviewed at a 5 March meeting of the FCC's WRC-97 Industry Advisory Committee. That committee is the one preparing draft proposals for consideration by the United States as it gets ready for the 1997 conference.

Anyone wishing to register support for the joint ARRL and AMSAT submission and to file in opposition to the Little LEO position should send a brief e-mail message to wrc97@fcc.gov.

The "subject" line should say "Reference No. ISP-96-005 IWG-2A."

All that is needed is a simple statement such as "I support the ARRL and AMSAT opposition to the NVNG MSS flexible allocation proposal." The ARRL says that these will be included in the public record and will help to drive home the point that there is broad-based opposition to poorly conceived sharing proposals.

Please note that these are not proposals from the FCC, nor are they ideas that are endorsed by any other branch of the government. Rather, these are Little LEO satellite industry proposals. The League's objective is to demonstrate to the government that there is broad citizen opposition to the Little LEO industry proposals, in the hope that the government will not adopt them as a United States position. Please be supportive of the FCC in any comments that you file.

The complete text of the ARRL and AMSAT opposition statement and other comments is posted on ARRL web page at www.arrl.org under "Band Threat News." Read it if you plan to file extensive comments or to take the issue to the public via the talk show circuit. (*Via ARRL, AMSAT-NA, Spectrum, Airwaves, ANW, Newsline*)

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