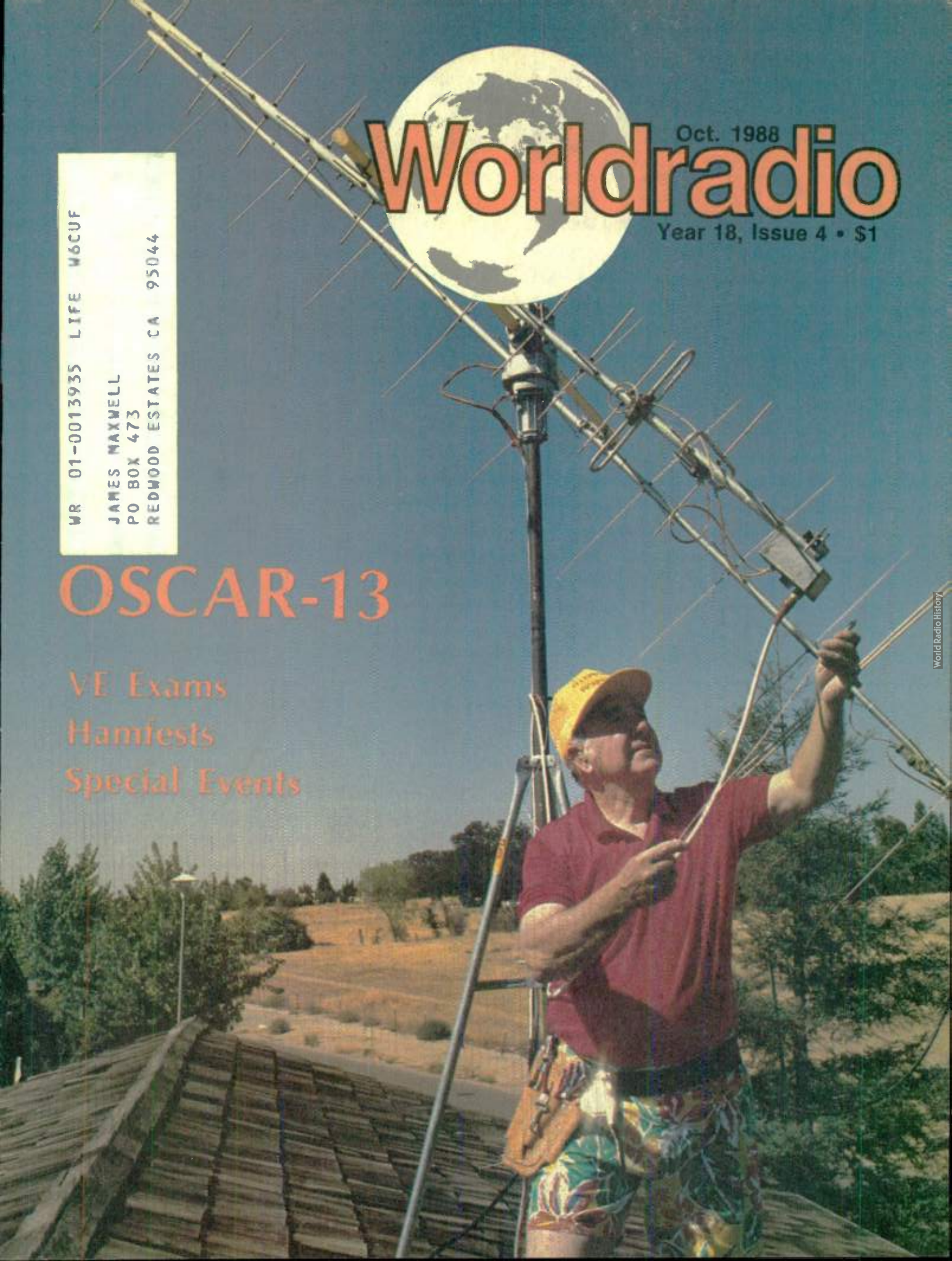
Oct. 1988

Worldradio

Year 18, Issue 4 • $1

OSCAR-13

VE Exams
Hamfests
Special Events



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AO-13 Command Station operator visits California

ROSS FORBES, WB6GFJ

Graham Ratcliff, VK5AGR, Command Station for AMSAT/OSCAR-13 and DCE station for UoSAT/OSCAR-9 and 11, visited San Francisco in early August. Graham, along with his XYL Liz, were returning to their Adelaide home after attending the RSGB International Satellite Conference and AMSAT-UK Colloquium at the University of Surrey in Guildford (England).

Following the AMSAT-UK Colloquium, Graham participated in the first Command Station meeting held in Marburg (West Germany) to review the current status and future operating plans for Amateur Radio's newest satellite, AMSAT/OSCAR-13.

In Australia, Graham is the National Coordinator for AMSAT-Australia. In addition to his command responsibilities for AMSAT/OSCAR-13, he has been part of the command team for AMSAT/OSCAR-10; Graham also is a member of the worldwide DCE team working to upload and download packet messages from UoSAT/OSCAR-9 and 11. Graham conducts the weekly AMSAT-Australia HF net and publishes the monthly AMSAT-VK newsletter.

Since the successful launch of AO-13, users have been busy learning about the new satellite. While in the San Francisco Bay area, Graham and his wife were the guests of Ross Forbes, WB6GFJ, AMSAT-NA Regional Coordinator and president of Project OSCAR. About 25 Project OSCAR and AMSAT members met with Graham to learn first-hand the latest news of OSCAR-13.

Graham presented a slide show describing how a command station operates OSCAR-13. A new piece of decoding software written for PC compatibles was demonstrated at the meeting. Graham was able to show how this new software gives the same

Ross Forbes, WB6GFJ, AMSAT Area Coordinator for North Central California

information as seen by command stations.

The original software was designed for an Atari 800 by Karl Meinzer, DJ4ZC, and has been written for PC compatibles. This program allows the general OSCAR user to monitor the internal operation of OSCAR-13. The software requires a 400 bps PSK modem designed by James R. Miller, G3RUH. The software, called P3C.EXE, is now available direct from AMSAT-Australia, or through Project OSCAR.

For more information on the decoding software, send an SASE to Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136.

Following his slide presentation, Graham discussed specific questions asked. Everyone was anxious to learn more about OSCAR-13.

Graham reported that the command team consists of dedicated people from around the world. OSCAR-13 command stations include DJ4ZC, DB2OS, KA9Q, ZL1AOX, VK5AGR and G3RUH. From all of the data

(please turn to page 6)

FRONT PAGE: OSCAR-13 is here! Norm Brooks, K6FO, is busy on his rooftop getting his OSCAR antennas back into working condition. ***(Photo by Armond Noble, N6WR)***

CONTENTS

FEATURES

COLUMNS

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PUBLISHER'S MICROPHONE

We first recognize the latest to become **Worldradio** Super-Boosters, the Lifetime Subscribers: Henry Ruh, KB9FO, Des Plaines, IL; Jim Minor, KB5AEJ, Houston, TX; and Ronald Bellomo, WY6U, San Jose, CA.

The winner of the antique tubes — making the high bid which will go to the HANDI-HAMS — was Dr. Bob Kurth, W5IRP, Lufkin, TX.

A few issues back we had a cover picture of a couple with the Amateur Radio postage stamp on their T-shirts. The T-shirts are sold by Paul Washa, WØTOK, 4916 Three Points Blvd., Mound, MN 55364 — $9 postpaid, sizes Small to XXLarge.

John Be Lille, K9WOV, Park Forest, IL, said, "Your magazine is great and I like it printed on newsprint rather than on glossy paper as it makes it much easier to read."

Thanks, John. True, the lack of glare makes it better for the eyes.

He also said, as an amateur of 28 years, he thought the name Amateur Radio should be changed to Private Radio Service.

Well, does that open up an avenue for comment?

Michael Strahon, KM7T, Eugene, OR, wrote: "All hell broke loose around here last spring when some ham took advantage of a recently widowed XYL who had no idea of what her husband's radio gear was worth and gave her very little for it.

"So the affair was hashed over in the local clubs and each club appointed a couple of members and they came up with (SKAP) Silent Key Assistance Program. Am enclosing a copy of the program with the thought that maybe others could set up a similar program in their area.

"I'm working on a story about how we held our Field Day in the Valley River Mall and will send it down as soon as the photographs get back. We got the idea from **Worldradio**."

The SKAP material is very well done, and I'm sure if those of you who are interested send an SASE to KM7T for a copy of the program, it would prove beneficial.

UH-OH! In my hand was an Official Observer card. Tremors. What had I done? Splattered while trying to beat out W6GO in a pileup? Is my counter off and was I at 13.999 MHz?

With fear and trepidation, I turned it over (better the OO caught me than the FCC, I thought); with gritting teeth I read, "Exceptional operating. Very high quality audio. Very polite on air. We hope others use for their example."

It was the OO's "Good Guy Report" — Field Day, 1838 UTC. Well, the statement certainly describes me. What an astute observer!

I knew I had been operating the first hour we were on the air, feeling really good. Getting ready to laminate the card, frame it, have it on the wall of the shack with a spotlight on it 24 hours a day.

Wait, the date. 26 June. That was Sunday. The operator the OO heard (after checking the log) I realized was instead Peter Onnigian, W6QEU.

Well, anyway, (after brushing away my tears) thanks to OO Marian Eddy, KM7B. Looked under Marian in our computer. Not there. I wonder how come such a nice person ISN'T a **Worldradio** subscriber?

Message to QRPers: If you are not a member of the G-QRP Club, you are really missing out. GREAT magazine from jolly Olde England. For info write to David Jackson, G4HYY, Castle Lodge West, Halifax Rd., Todmorden, Lancs OL14 5SQ, ENGLAND.

Cal Turner, WI6S, Lake Montezuma, AZ, gives talks before Kiwanis and Rotary groups about Amateur Radio. Bravo!!!

A friend from long ago, Tom Litty, called the office here. I was out and unfortunately one of our young ladies copied the phone number incorrectly. Attempts with the information operators throughout Southern California were for naught. Any readers knowing Tom please tell him to try again. Tnx.

Lots of very interesting letters coming in. Rather than shorten and ruin the message, they will be printed in their entirety at a later time in future issues.

—Armond, N6WR

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AO-13 *(continued from page 3)*

received so far, the command team is satisfied that the spacecraft is in excellent health.

Except for some minor modifications, the command team has a schedule of attitude adjustments planned through the next 12 months. While details will be released on the various AMSAT HF and VHF nets, the most current information about transponder schedules is available on OSCAR-13's general beacon.

OSCAR-13 has four beacon frequencies. Usually you will hear the General Beacon on 145.812 or 435.651 MHz. If you do not hear a signal on either frequency, check the Engineering Beacons on 145.985 or 435.677 MHz.

Since OSCAR-13 first came to life, the beacons have been constantly sending data. CW is transmitted for approximately five minutes on the hour and the half-hour, while RTTY information is sent on the quarter hours. The remainder of the hour has data sent by 400 bps PSK, which requires the G3RUH modem.

Since many OSCAR users have capabilities to receive the RTTY data, Graham indicated there is growing interest in the telemetry. In particular, people want to know about the set of three hexidecimal numbers and seven decimal numbers early within each RTTY block.

Graham explained that these are simply numbers reflecting specific status points within the spacecraft. OSCAR-10 had the same sets of information. Graham pointed out that these numbers are fully documented in the AMSAT/OSCAR-10 Handbook available from AMSAT-UK.

The OSCAR-13 Handbook will be printed within the next six weeks and will be available direct from AMSAT-UK. Graham urged anyone interested in PSK or RTTY telemetry on OSCAR-13 to obtain a copy of the books.

In response to one question, Graham described his own OSCAR station. He uses ICOM equipment on all modes. For Mode A (29 MHz downlink) he uses an IC-751. For Modes B and J (using 145 and 435 MHz) he has the 471 and 271. On the Mode L uplink he uses the 1271. His antennas include the KLM 14C on 145 MHz and the KLM 18C on 435 MHz. His Mode L antennas will be twin 15-turn helical antennas designed by G3RUH.

Prior to his departure for Adelaide, Graham expressed his appreciation for everyone's hospitality. He looks forward to hearing more stations on OSCAR-13, but urges all OSCAR users to put more effort into their *RECEIVE* system! Too often, satellite users put their money into high power and neglect spending time (and money) on their receive system.

Since Graham is pleased to discuss any OSCAR operation with users, he looks forward to many contacts on OSCAR-13 over the next 10 years.

Those interested in obtaining a copy of the AMSAT-OSCAR-10 and OSCAR-13 handbooks should contact AMSAT-UK directly. They accept MasterCard for all donations, books, membership, etc. Members of AMSAT-UK receive *OSCAR News* every other month.

For more information, send an SAE and three IRC's (International Reply Coupons) to: AMSAT-UK; Ron Broadbent, G3AAJ; Hon. Secretary/Treasurer; 94 Herongate Road; Wanstead Park; London E12 5EQ, ENGLAND.

Anyone interested in OSCAR is encouraged to join their national AMSAT organization. For more information in North America, send an SASE to: AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. □

Worldradio* Editor Chris Wilson, KA6TAL, looks over Ross Forbes, WB6GFJ's article on the newly-launched AMSAT/OSCAR-13.** ***(N6WR photos)

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I bought the latest computer;
It came completely loaded.
It was guaranteed for 90 days,
But in 30 it was outmoded.
—Mt. Diablo ARC, Pleasant Hill, CA

The show must go on

Norm Brooks, K6FO

This is a story that almost didn't get written. But let's start at the beginning.

Just a short while ago, I mentioned to Armond Noble, N6WR, our publisher, that I was busy putting my OSCAR satellite antennas back up because the new OSCAR-13 was about to be launched.

Like many other OSCAR-10 enthusiasts, I took the opportunity during OSCAR-10's illness to take my antennas down to put them back in a different way to make working on them easier. In other words, I was determined to correct the errors I had made the first time.

By Sunday, August 7, I had things tweaked up, and Armond came over to photograph my progress. You see the results on this month's cover.

A few days later, I was scheduled for a routine physical exam that included a treadmill test. In my entire life, I have never flunked a test. But the treadmill test changed my stats. I not only flunked the exam, but I was rushed into the hospital and had heart bypass surgery.

You never know how many friends you have until you're flat on your back. I want to say "thank you" to all of you who sent cards, notes and words of encouragement.

My article this month was to tell you about operations on the new OSCAR-13. At this point, let me just say they have been "Super." With your permission, I'll write the article with more details and have it ready for the next issue.

Again, I say thanks to all of my friends out there in Worldradioland. □

AMSAT-NA HF Nets

AMSAT-NA HF Nets can be found on the following frequencies:

Sun	1900 UTC	14.282	International

Often there is a pre-net session on this frequency between 1730 and 1900 UTC. This allows many the opportunity to call in and ask specific questions about OSCAR.

Sun	1900 UTC	21.280	International
Tues	2000 Local	3.840	NA East Coast
Tues	2100 Local	3.840	Central NA
Tues	2000 Local	3.840	NA West Coast

(Source of net information: *AMSAT-NA ASR*, Issue 153, July 13, 1987) □

G3RUH modem

Anyone interested in monitoring the 400 bps PSK telemetry on OSCAR-13 will require the modem designed by G3RUH. Whle the printed circuit board (alone) is available from AMSAT-UK, the PCB and a package of parts is available in the United States from RADIOKIT, P.O. Box 973, Pelham, NH 03076. □

Volunteer center needs equipment

Carl Zaruba, WA9NRI, who retired several years ago and has been RV'ing around the country with MYL Florence, sends his regards from the sunny Southwest, where he has joined the staff of the volunteer, non-profit Christian Service Center — a wintering-over site for RV'ers from October to March each year.

Carl and an ex-ham, who is studying to get another license, serve as repairmen in the center's electronics shop, where he says "We repair (or attempt to repair) TV's, radios, CB's, coffeemakers, antennas, generators, etc. It's fun even though it's all done for free. Our problem is a shortage of parts and test equipment.

"We have a non-working scope, old signal generator, Heath VTVM, lots of old TV's, and a slim supply of mostly used resistors, capacitors and tubes. We would like to set up a ham station when we come back next winter. Will be back in the Chicago area June through September, and could take along anything which someone may wish to donate (they could use parts, equipment, a low-band transmitter/receiver, etc.)"

Anyone who wishes to write to Carl can do so at the Christian Service Center, 2225 Ferguson Rd., Winterhaven, CA 92283.

—6 Meter Club of Chicago, IL □

220 Defense Fund

Shortly after hearing about the FCC's decision to reallocate 220-222 MHz to land mobile services, attorney Robert B. Cherry, K2HBX, said he would be filing a class-action suit against the FCC.

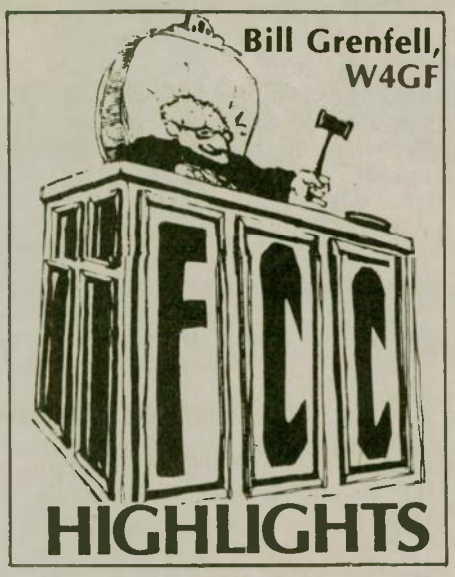
To this end, he has opened a bank account to start and accumulate a 220 Defense Fund. Those who would like to support this action may send their checks to: Robert B. Cherry, Esq., Trustee; 220 Defense Fund; P.O. Box 476, Totowa, NJ 07512.

Cherry is recording secretary of the Splitrock ARA, and at its August meeting, he informed the members that — in his opinion — the manner in which the FCC went about this whole thing was blatantly illegal. (K2HBX also serves as legal counsel for the ARRL.) □

Time for renewal?

Right now is the time to check two items in your wallet for expiration dates: your driver's license and your license to operate your ham gear. Also check credit cards, etc.

—Lake Erie ARA Repeater Newsletter, Lakewood, OH □



FLASH: On Thursday, August 4, the FCC reallocated 220-225 MHz from the Amateur Radio Service to land mobile services. For more information on this, see page 18.

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Responding to a petition (RM-6363) by Anthony Sivo, W2FJ, to permit phone in the 10.1-10.15 MHz band claiming it is under-utilized, ARRL cited a 1980 survey in which 71% of the 610 respondents suggested that either A1A emissions only, or A1A and F1B [teleprinter] emissions only, in the 50 kHz wide band, should be allowed. Other comments were presented by both parties. *(W5YI Report,* 07/15/88)

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"Last year, the FCC made a ruling that it would recognize more than one repeater coordinator in the same geographic area providing it had the support of the amateur community."

When an area amateur wanted to put a low-powered repeater on the air and got no response from the repeater association, a friend notified the association he would begin coordinating low-powered (5W or less) repeaters. The new repeater operation apparently interfered with the operation of a repeater many miles away.

The older established repeater group maintains that the newer machine is illegal since it has not been coordinated by the recognized coordinator. The area FCC field office confirmed that there are instances when the Commission recognizes more than one coordinator in an area. "The FCC apparently does not want to get involved in the dispute."

Some amateurs are reported saying that when the operators of the new repeater could not get the response they liked, they went ahead and set up their own one-man rival repeater coordinator council. ". . . in view of the circumstances, the FCC will probably be summoned to get involved in the controversy, whether they want to or not." *(W5YI Report,* 07/15/88)

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FCC-licensed amateurs planning to operate in Canada may do so under an automatic reciprocal operating agreement, and it is not necessary to file a request for such operation. The ARRL advises, "It is best to carry your original FCC license, rather than a photocopy, when entering Canada. "Always remember to sign your U.S. call sign followed by the proper Canadian prefix." *(ARRL Letter,* 07/13/88)

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"The Amateur Auxiliary to the FCC's Field Operations Bureau still needs volunteers to spend a few hours a month monitoring for rules infractions and technical problems that cause on-the-air difficulties and occasionally provide survey data on overall Part 97 rules compliance. Also needed are amateurs who can monitor a wide variety of digital emissions."

Contact ARRL HQ or appropriate Section Manager for further information. *(ARRL Letter,* 07/13/88)

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At a recent luncheon meeting sponsored by the FCC, a number of topics of interest to amateurs were discussed. Among the many items, Private Radio Bureau Chief Ralph Haller, N4RH, advised ". . . there is tremendous interest in being a Volunteer Examiner . . . We're most appreciative of the tremendous untiring efforts of the VEC's and VE's." The PRB-3 issue ". . . is under active consideration (and) should have a decision made in the near future."

Concerning RFI and the Part 97 rewrite (Docket 88-139), he said "I urge you to comment in the docket on this. The Commission sometimes has to look at what is the effect of the amateur operation on the community.

"I feel very strongly that if you rely only on your government to find solutions, you'll get solutions you don't like. I urge you to put comments in [on all amateur] dockets. It may well be one comment from one person who almost didn't write in, that turns the direction of an entire docket and rulemaking.

"It is very important that you keep up with what the Commission is doing, not only in the Amateur Service, but also in services that may have some kind of relationship with the Amateur Radio Service." *(ARRL Letter,* 07/13/88; *W5YI Report,* 07/01/88)

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FCC's Amateur Radio Service Rules Part 97 in loose-leaf form is now available from the U.S. Government Printing Office. "Order Stock No. *(please turn to page 10)*

Amateur Radio call signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of August 1, 1988.

For more information about the call sign assignment in the Amateur Radio Service, see Section 97.51 of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17326.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0	WM0F	KE0XC	N0JPR	KB0DBY
1	NS1Z	KC1KP	N1FXC	KA1SLU
2	WI2S	KE2II	N2ILQ	KB2GGF
3	NR3H	KD3IR	N3GKJ	KA3TMK
4	AB4JN	KM4FI	N4TLW	KC4GKX
5	AA5HI	KG5MA	N5MXU	KB5HAJ
6	AA6JU	KJ6KK	N6SVA	KB6ZOE
7	WR7G	KF7MW	N7LMM	KB7FPZ
8	WI8Z	KE8TL	N8JTR	KB8FIR
9	WA9J	KE9LX	N9HRH	KB9BIQ
N. Mariana Is.	AH0F	AH0AE	KH0AK	WH0AAH
Guam	KH2K	AH2BZ	KH2DI	WH2ALR
Johnston Is.	AH3B	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6JC	NH6QG	WH6BZR
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AG	WH8AAX
Wake Wilkes Peale		AH9AD	KH9AD	WH9AAH
Alaska		AL7KF	NL7OM	WL7BSB
Virgin Is.	NP2C	KP2BN	NP2CR	WP2AGA
Puerto Rico		KP4PN	WP4QK	WP4IDY

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FCC Highlights

(continued from page 8)

004-000-00468-0. FCC said further ordering information may be obtained from the GPO Bookstore at (202) 783-3238. Cost is $3 each." *(W5YI Report,* 07/01/88)

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"The FCC in Gettysburg has instituted a procedure by which volunteer examiners listed on Novice applications are contacted to insure that they indeed did participate in a Novice examination. . . . FCC writes VE's to get verification 'whether the certification and signature on the enclosed applications is yours.' Over 600 letters have been sent out already."

The FCC advises that they are indeed finding Novices who apparently were never tested by the examiners listed on the application! *(W5YI Letter,* 07/01/88)

•

Wayne Green, W2NSD, publisher of *73* magazine, wants to revive the National Industry Advisory Committee (NIAC). Green ". . . has sent a letter to members of the Amateur Radio industry concerning the need for forming a . . . NIAC. Green says that a previous NIAC was funded by the FCC, and provided a meeting room and support materials, but austerity programs finally doomed the group." *(W5YI Report,* 07/01/88)

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Members of the ARRL Interference Reporting System (AIRS) ". . . spend a large amount of their time scouring the bands for non-amateur harmful interference to the Amateur Radio Service. Summaries to their efforts are sent by ARRL HQ monthly to FCC's Treaty Branch in Washington, D.C. for action." For further information on the AIRS program, contact ARRL HQ. *(ARRL Letter,* 07/05/88)

•

A money-saving procedure adopted by the FCC, of typing Amateur Radio licenses on carbon copies already in the mailer, has sometimes resulted in a license which is hard to read. ARRL advises: "If your license arrives in 'unreadable' condition, simply request a duplicate license from the FCC, Box 1020, Gettysburg, PA 17326, explaining the circumstances. *(ARRL Letter,* 07/05/88)

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The FCC no longer deletes the call signs of deceased amateur licensees unless their cancellation is specifically requested. Since the term of an amateur license is now 10 years, plus a two-year grace period, the family of the deceased amateur could continue to receive mail, based upon FCC records, for that period. To avoid this unwanted mail, families can send the license — or a letter if the license cannot be found — to FCC, Consumer Affairs Office, Gettysburg, PA 17325, requesting its cancellation.

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In the latest list of reciprocal countries published by the FCC, there are three new additions: Antigua and Barbuda, Dominica, and Hong Kong. *(ARRL Letter,* 07/05/88)

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The 1988 application of former licensee of Larry Kaczmarczyk, W3UQW, of Mahonoy City, Pennsylvania, for an Advanced Class license has been designated for hearing because again on three occasions he was heard intentionally causing harmful interference to radio communications.

He surrendered his license in 1985 after the FCC started license revocation proceedings against him for intentional jamming, transmission of music, broadcasting and unidentified communications. In a plea bargain arrangement, the FCC agreed to accept an application from him in one year, providing there were no violations in the interim. *(W5YI Report,* 07/15/88)

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". . . participation in other federally licensed communication activities such as Amateur Radio is being effectively prohibited in entire communities . . ." reports Dr. Wayne Overbeck, N6NB, in a study of restrictive covenants in housing developments against outside TV antennas.

"Whether they intend to or not, real estate developers are making communications policy decisions. If builders continue to impose these restrictions, there will eventually be thousands (or more likely millions) of people living in neighborhoods or entire communities where the traditional rooftop television antenna is prohibited.

"While it is true that the FCC has limited local zoning regulation of both amateur antennas and home satellite dishes, no government action has been taken limiting covenant regulation.

In their 1985 PRB-1 Amateur Radio Preemption ruling, the FCC said "[covenants are] private contractual agreements voluntarily entered into by the buyer or tenant when the agreement is executed and do not usually concern this Commission." *(W5YI Report,* 08/01/88)

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END-OF-MONTH LICENSE TOTALS

June	1988	July
45,399	Extra	45,716
98,343	Advanced	98,420
113,342	General	113,405
97,518	Technician	98,370
81,801	Novice	81,355
436,403	Totals	437,266

Just when you learn to make the most of it, most of it is gone.

ATV in TV Guide

According to sources at Triangle publications, *TV Guide* was to run a 2½-page story about Amateur Radio — specifically ham TV or ATV — in its August 27th issue. The sources for the story include former *A5 Magazine* publisher Henry Ruh, KB9FO; Tom O'Hara, W6ORG, of P.C. Electronics; Ron Cohen, K3ZKO, also a former publisher of *A5 Magazine;* and Mike Stone, WB0QCD, publisher of *Spec Com Magazine.*

The story focuses on Henry's ATV experiences with anecdotes from the others. The story explains to the non-ham reader what ham TV is, who operates it and what ham TV operators do. The article includes mentions of several public service uses for ATV, and in general puts Amateur Radio and ATV in very good light before the millions of *TV Guide* readers.

TV Guide had been working with Henry on the article for two months, and it not only covers current activity but also discusses SSTV from the space shuttle, WB8ELK's balloon ATV efforts and several ATV "firsts."

With the input from Henry and the other ATV hams, this is one article which should be very accurate in its portrayal of Amateur Radio operators and serve as excellent PR for all of Amateur Radio. □

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Technically speaking

Gary Morris, N6QAF

Clear packaging tape works well for covering dry-transfer lettering used to mark panels. It is perfectly clear and blends in with most spray-painted surfaces. *—Nevada County ARC, Grass Valley, CA* □

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 two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid July.

Worldradio, 2120 28th St., Sacramento, CA 95818.

Please mark the envelope "VE Exams."

List the location, and information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

p/r = pre-register w/i = walk-in

Date	City	Contact	Notes
Alaska			
Oct 5	Anchorage	KL7HFQ (907) 243-2221	w/i
Oct 19	Eagle River	KL7HFQ (907) 243-2221	w/i
Arizona			
Oct 1	Tucson	K7OPX (602) 886-7217	w/i OK
Nov 12	Tucson	W0YOY (602) 297-5885	30-day p/r
California			
Oct 1	Burbank	W6JEP (818) 848-9340	w/i OK
Oct 1	Van Nuys	N6LGO (818) 988-7165	p/r; ltd. w/i
Oct 8	Camarillo	N6SR (805) 484-4461	p/r pref
Oct 8	Los Altos Hills	KG6XF (408) 255-9000	w/i only
Oct 8	San Marcos	(619) 465-EXAM	p/r by 9/28
Oct 15	Chula Vista	(619) 465-EXAM	p/r by 10/5
Oct 15	Downey	K6OWA (213) 869-6683	
Oct 15	Irvine	KD6DA (213) 691-1514	p/r pref
Oct 15	Tehachapi	W6KQI (805) 822-6128	
Oct 16	Sunnyvale	W6NLG (408) 255-9000	w/i only
Oct 19	Eureka	N6KLJ (707) 442-6631	w/i OK
Oct 20	Fountain Valley	N6ISY (714) 775-6095	p/r
Oct 22	El Cajon/ Escondido	(619) 465-EXAM	p/r by 9/14
Oct 27	Long Beach	KA6HOQ (714) 897-6331; NF6X (213) 434-8278	w/i OK
Oct 29	Eagle Rock	WB6PSY (818) 710-1705; N6JFG (213) 258-4860	w/i
Oct 29	Grass Valley/ Nevada City	KD6SG (916) 273-2326	p/r by 10/1; ltd. w/i
Colorado			
Oct 8	Denver	W0IJR (303) 366-9689	p/r pref
Nov 19	Pueblo	WB0YES (303) 948-2291	30-day p/r; ltd. w/i
Delaware			
Oct 22	Wilmington	AWARE, 3208 Concord Pike 19803	w/i OK
Florida			
Oct 4	New Port Richey	AA4FG (813) 849-1224	w/i OK
Oct 10	Ocala	NT4B (904) 237-5783	w/i
Oct 15	Melbourne	N4FUY (407) 768-0888	w/i OK
Oct 20	Pensacola	AA4W (904) 968-6499	w/i OK
Hawaii			
Oct 15	Hilo	AH6P (808) 969-0222	w/i
Idaho			
Oct 8	Boise	W7JMH (208) 343-9153	w/i OK
Illinois			
Oct 1	Schaumburg	W9KGT (312) 882-5226	w/i OK
Oct 8	Oak Forest	NF9N (312) 448-9432	w/i OK
Oct 12	Leonore	Don Selbrede (815) 223-2848	
Oct 20	Chicago	W9WBY (312) 929-6550	
Oct 22	Morton	Denny Chestney (309) 662-1230	
Indiana			
Oct 8	Hammond	Mike Kasrich (219) 962-5512	
Oct 22	Highland	Charlie Sufana (219) 923-8308	
Kansas			
Oct 15	Olathe	NK0B (913) 764-6347	
Oct 22	Topeka	NQ0S (913) 273-3328	w/i OK
Oct 25	Emporia	K0JDB (316) 343-2158	
Maine			
Oct 27	Augusta	N1BCF (207) 623-4249	
Maryland			
Oct 1	College Park	NF3I (301) 963-4008	w/i
Oct 8	Andrews AFB	W2GJS (301) 868-0399	w/i
Oct 20	Towsen	Ron Derencz (301) 765-2843	w/i
Oct 23	Hagerstown	KC3TT (301) 824-3519	p/r by 10/8
Michigan			
Oct 15	Ironwood	KT9I (715) 561-2802	p/r pref
Minnesota			
Oct 15	Minneapolis	WB5MTV (612) 699-6861	p/r pref
Missouri			
Oct 13	Hazelwood	NZ0P (314) 524-3254	w/i OK
Oct 22	St. Louis	N0IS (314) 892-4434	w/i OK
Oct 28	Liberty	PHD ARA, P.O.B. 11, 64068	
Montana			
Oct 17	Billings	N7ATT (406) 656-5776	w/i OK
Nevada			
Oct 22	Reno	K7HRW (702) 972-3933	30-day p/r
Oct 29	Las Vegas	NK7N (408) 255-9000	w/i only
New Jersey			
Oct 8	Cranford	N2XJ (201) 635-7686	w/i OK
Oct 20	Bellmawr	WA2VQG (609) 546-7710	w/i OK
New York			
Oct 8	Greenvale	W2NL (516) 541-2450	w/i OK
Oct 8	Selden	George Sintchek (516) 751-0894	w/i OK
Oct 12	Bethpage	W2QUV (516) 354-6861	w/i OK
Oct 30	N. Babylon	W2DUK (516) 957-5287	w/i OK
North Carolina			
Oct 5	Raleigh	AA4MY (919) 847-8512	
Oregon			
Oct 15	White City	KC7WO (503) 773-4687	p/r by 9/17
Oct 27	North Bend	WA7PHI (503) 756-6846	some w/i
Pennsylvania			
Nov 16	Carnegie	KT3L (412) 787-3914	30-day p/r
Nov 19	Indiana	KA3JGN (412) 286-9415	ltd. w/i
South Carolina			
Oct 8	Charleston	AA4IX (803) 873-9465	w/i OK
Oct 15	Columbia	N4WR (803) 345-3373	w/i OK
Tennessee			
Oct 8	Memphis	WD4LFD (901) 386-4375	p/r by 10/5
Texas			
Oct 8	Austin	KF5NB (512) 272-8233	w/i
Oct 8	Midland	KT5G (915) 694-9450	w/i OK
Oct 8	San Antonio	NS5I (512) 681-0702	w/i
Oct 10	Brady	WD5H (915) 597-2561	7-day p/r
Virginia			
Oct 1	Vienna	NK4U (703) 691-0078	w/i
Nov 5	Middletown	NC4B (703) 869-5241	30-day p/r; some w/i
Washington			
Oct 1	Seattle	W7JWJ (206) 523-9117	w/i OK
Oct 8	Everett	KK7M (206) 355-2141	w/i OK
Oct 15	Renton	WA7UVJ (206) 854-4031	w/i OK
West Virginia			
Nov 8	Fairmont	KU8C (304) 366-0132	7-day p/r; no w/i
Wisconsin			
Oct 15	Milwaukee	KB9G (414) 351-5311	w/i OK
Nov 5	Racine	NW9P (414) 658-8390	30-day p/r

MFJ 3 KW Roller Inductor Tuner

. . . lets you get your SWR down to *absolute* minimum -- something a tapped inductor tuner just can't do . . .

. . . *plus* you get a ***peak* reading** Cross-Needle SWR/Wattmeter, 6-position antenna switch, balun for balanced lines and 1.8-30 MHz coverage...$239.95

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MFJ-986

$239.95

MFJ's innovative new Differential-T Tuner™ uses a differential capacitor that makes tuning foolproof and easier than ever. It ends constant re-tuning with broadband coverage and gives you minimum SWR at only *one* setting.

The new MFJ-986 is a rugged no-compromise 3 KW PEP Roller Inductor antenna tuner that covers 1.8-30 MHz continuously, including MARS and all the WARC bands. **The roller inductor lets you tune your SWR down to the absolute minimum** -- something a tapped inductor tuner just can't do.

A 3-digit turns counter plus a spinner knob gives you *precise* inductance control -- so you can quickly return to your favorite frequency.

You get a lighted Cross-Needle meter that not only gives you SWR, forward and reflected power at a glance -- but also gives you a **peak-reading** function! A new directional coupler gives you even more accurate readings over a wider frequency range.

You get a 6-position ceramic antenna switch that lets you select two coax lines and/or random wires (direct or through tuner), balanced line and external dummy load.

A new **current** balun for balanced lines minimizes feedline radiation that causes field pattern distortion, TVI and RF in your shack. Ceramic feedthru insulators for balanced lines withstand high voltages and temperatures.

New Antenna Tuner Technology

MFJ brings you **three innovations** in antenna tuner technology: a new *Differential-T*™ circuit simplifies tuning; a new *directional coupler* gives you more accurate SWR, forward and reflected power readings; and a new *current balun* reduces feedline radiation.

Differential-T Tuner™: A New Twist on a Proven Technology

By replacing the two variable capacitors with a single *differential capacitor* **you get a wide range T-network tuner with only *two* controls** -- the differential capacitor and a roller inductor.

That's how you get the new MFJ Differential-T Tuner™ that makes tuning easier than ever, gives you minimum SWR at only one setting and has a broadband response that ends constant re-tuning. You'll spend your time QSOing instead of fooling with your tuner.

The compact 10¾ x 4½ x 15 inch cabinet has plenty of room to mount the silver-plated roller inductor away from metal surfaces for maximum Q -- you get high efficiency and more power into your antenna.

The wide spaced air gap differential transmitting capacitor lets you run a full 3 KW PEP -- no worries about arcing.

A New Directional Coupler: Accurate SWR and Power Reading

MFJ's Cross-Needle SWR/Wattmeter gives you more accurate SWR and power readings over a wider frequency range with no frequency sensitive adjustments.

That's because MFJ's new directional coupler gives you up to an order of magnitude higher directivity and coupling factor than conventional circuits . . . *plus* it gives you a flat frequency response that requires **no** frequency compensation.

The cross-needle meter lets you read forward/reflected power in 2 ranges: 200/50 and 2000/500 watts. The meter lamp is front-panel switched and requires 12 volts.

A switch lets you select peak or average power readings.

A New Current Balun: Reduces Feedline Radiation

Nearly all commercially built tuners use a "voltage" balun. The "voltage" balun forces the *voltages* to be equal on the two antenna halves. It minimizes unbalanced currents *only* if the antenna is perfectly balanced –not the case with practical antennas.

The MFJ-986 uses a true **current balun** to force equal *currents* into the two antenna halves -- *even* if your antenna is not perfectly balanced -- so you get minimum unbalanced currents.

The *current* balun gives superior balance over the "voltage" balun.

Minimum unbalanced current reduces field pattern distortion -- which concentrates your power for a stronger signal -- *plus* it reduces TVI and RF in your shack caused by feedline radiation.

The MFJ-986 Differential-T Tuner™: Get *absolute minimum* SWR

Get the tuner that incorporates the latest innovations by the world's leader in antenna tuner technology.

See your dealer today for the new MFJ-986 Differential-T™ 3 KW Roller Inductor Tuner. Include $10 shipping/handling if ordering direct.

WHY CHOOSE AN MFJ TUNER?

Hard-earned Reputation: There's just no shortcut. *MFJ is a name you can trust* -- more hams trust MFJ tuners throughout the world than all other tuners combined.

Proven Reliability: *MFJ has made more tuners for more years than anyone else* -- with MFJ tuners you get a highly-developed product with proven reliability.

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One full year *unconditional* guarantee: That means we will repair or replace your tuner (at our option) *no matter what* for a full year.

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SPECIAL EVENTS

Enchilada Fiesta

On Saturday, October 1, the Billy the Kid Chapter of 10-10 International will be running a special event station from the Whole Enchilada Fiesta in Las Cruces, New Mexico (WM5Q).

We will be issuing certificates for $1, and will be on from about 1600 UTC to 2300 UTC. Operation will include SSB and CW, as well as packet on VHF. The suggested frequency is 28.365 MHz, but operation on other HF bands is planned.

QSL to The Billy The Kid Chapter of 10-10 International, P.O. Box 274, Fairacres, NM 88033. □

Columbus Day

The Columbus Amateur Radio Association will conduct the 5th Annual Columbus Day special event, in conjunction with the Columbus USA Festival. The festival salutes the city of Columbus and the explorer Christopher Columbus.

The event will last from 0000Z, October 8 to 2400Z, October 9. Club station W8TO will operate SSB from the festival between 1500Z, October 8 and 0300Z, October 9, and from 1500Z to 2400Z, October 9. *Suggested frequencies:* 7.240, 14.340, 21.375 and 28.500 MHz (all frequencies ± 10 kHz).

A commemorative QSL is offered to those stations worldwide who confirm a contact with W8TO. A special event certificate will be sent to those stations who contact at least 10 Columbus stations. Working W8TO counts for 6 contacts.

A plaque will be given to the station outside the Columbus area that makes the most number of contacts with Columbus stations. A second plaque will be awarded to the Columbus station with the highest total number of contacts. Exchange name, QTH and signal report. Contacts with the same station on different bands count separately.

Submit an SASE ($1 postage) or return envelope plus 1 IRC for QSL and certificate. Use 9″x12″ envelope to receive certificate unfolded. Otherwise use #10 envelope. Send QSL's and logs to Roger Dzwonczyk, WB2EIG, 283 E. Longview Ave., Columbus, OH 43202, USA. □

Fortress Monroe

The Southern Peninsula Amateur Radio Klub will operate station W4YCZ, October 8-9, from the Casemate Museum. This is located within historic Fortress Monroe and is the building where Jefferson Davis was imprisoned after the fall of the Confederacy.

Operation will be on 80 through 10M, near the low end of the General Class band. Hours of operation will be 1400-2300 UTC. There will be some CW operation in the Novice and General bands, as time permits. Send SASE's to SPARK, 172 W. Ocean Ave., Norfolk, VA 23503. □

Prater's Mill Fair

The Dalton ARC will be operating a special event station — KI4IG — from the Prater's Mill Country Fair, October 8-9. Operating time will be from 1300 to 2000 UTC on approximately 7.250, 14.250 and the Novice SSB portion of the 10M band.

QSL to: Dalton ARC, P.O. Box 143, Dalton, GA 30722-0143. Return QSL's will be a picture postcard of the mill. □

Fire Prevention Week

The Stonewall Jackson ARA (SJARA) will operate WB8ZVS in conjunction with Local 89 of The Clarksburg Firefighters Union on October 9, 1400-0100, to commemorate National Fire Prevention Week. Operations will be in the lower portion of the General 20-40-75M phone bands. CW will be done in the 40M Novice band.

For certificate, send contact number, QSL and SASE to J.R. Chiado, KA8ZQP, 289 Magnolia Ave., Clarksburg, WV 26301. □

JOTA 1988

Once again, Jamboree On The Air (JOTA) — sponsored by the World Bureau of Scouting in Geneva, Switzerland and their amateur station, HB9S — will be held the third full weekend in October. This year it will be October 15-16. K2BSA, the anchor station for the Boy Scouts of America, will be operating from the Dallas-Fort Worth, Texas area.

Thousands of stations around the globe participate. If propagation is right, it is common to work Scouting DXCC. In past JOTA's, Scouts in some remote areas like Antarctica, Ascension Island, Christmas Island, Gough and Seychelles have been heard. In the United States, many Boy Scouts of America councils and districts hold camporees to coincide with JOTA, where amateurs set up Field Day-type operations, giving campers a chance to exchange greetings with Scouts everywhere.

Generally, the exchanges include typical information: name, QTH, Scout rank, hobbies, etc.; some lead to long-lasting pen pal friendships and the exchange of photos, badges and

patches. SSTV and ATV give some an opportunity to have a "look-see" at the other guy. Other QSO's reported are via RTTY, EME, OSCAR and Packet.

Look for K2BSA, the BSA headquarters station in Texas, HB9S, the World Scout Bureau headquarters in Switzerland, T12CIE, the World Bureau Inter-American Region headquarters in Costa Rica; GB2GP, Gilwell Park, England; and for other special call signs from many countries.

Who

Boy Scouts and Girl Scouts of all ages, Scouters, former members, Amateur Radio operators. In fact, anyone interested in doing a good turn for Scouting and Amateur Radio can be involved in the Jamboree On The Air.

When

The JOTA is from Saturday, 0001 local time, to Sunday, 2400 local time, though some activity flops over from Friday to Monday to take advantage of DX time differences.

Where

Frequencies: *CW* — 3,590, 7,030, 14,070, 21,140, 28,190; *Voice* — 3,940, 7,290, 14,290, 21,360, 28,350. Please move off these calling frequencies to avoid QRM. *Packet, RTTY, SSTV, ATV* on usual frequencies. Check the Novice frequencies.

Reports

No reports in the form of logs are necessary. This is not a contest. Exchanges should be relaxed and should relate to Scouting and Amateur Radio as much as possible. Brief reports, however, are appreciated, giving Scout unit number, Council, Amateur calls used and heard/worked, numbers of participants, interesting incidents and exchanges, etc. Photos with captions are especially welcome for the BSA report to the World Bureau.

Send them to: JOTA Coordinator, International Division, S221, Boy Scouts of America, 1325 Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-2079, no later than November 15.

How

Radio amateurs, invite Scouts/Scout units to your shack. If you do not know any, contact your local Scout council service center for the name of a unit leader in your area. Or, you or your radio club may volunteer to participate in a district or council camporee that weekend. Telephone books list council service centers as "Boy Scouts of America." Call "CQ JAMBOREE" or respond to such calls. Observe all FCC regulations. Consider a Foxhunt for more fun. Call your BSA council service center if you can help.

Scouts, if you are not an amateur operator or do not have one in your unit, contact one in your area. If you need help finding one, contact: Club Services Department, ARRL, 225 Main St., Newington, CT 06111.

Certificates

Postcard-size certificates (3¾" x 5¼") are free and available to anyone participating in any way. They may be ordered beforehand for presentation during JOTA, or they may be awarded at Scout or ARC meetings later.

Send requests to: Jamboree On The Air Certificates (see address under "Reports"), with an SASE large enough to hold the cards ordered. Affix postage at 25¢ for the first eight cards and 20¢ for each eight cards thereafter. A #10 envelope is suggested for up to 16 cards; a #35 envelope for up to 40 cards. All orders must be received by December 31.

Pocket patches

Temporary insignia to wear on the right pocket of the Scout uniform or on non-uniform jackets are available at $1.50 each from: Jamboree On The Air Patches (see address above). Separate orders for certificates and patches will get them to you faster. The patches change in color and design each year. Orders must be received by December 31. □

Highest point

In Mount Mitchell State Park, the Raleigh ARS will operate W4DW, October 15-16, from the highest elevational point east of the Mississippi River (near Ashville, North Carolina). *Suggested frequencies:* lower portions of the 80-15 General phone bands and 10 Novice segment.

For special QSL, send QSL and SASE to: W4DW Special Event, Raleigh ARS, Box 17124, Raleigh, NC 27609. □

Old Timers Day

The Chicago ARC (W9CAF) will hold "Old Timers Day" and Reunion of Past Members and Friends on October 16, 1-5 p.m. at the North Park Village, 5801 North Pulaski, Chicago.

Join us on this 62nd anniversary of the club to have a memorable afternoon. Appropriate refreshments. For information, call (312) 545-3622. □

Autumn Leaf Special

The Chattanooga Choo-Choo Chapter of 10-10 International will operate KB4PIW October 15-16, 1400Z-2200Z, from the Tennessee Valley Railroad Museum in conjunction with the Autumn Leaf Special. Suggested frequency: 28.485 MHz.

For commemorative certificate, send QSL and #10 SASE to Martie Perry, KB4PIW, Rt. 3, Box 272, Signal Mountain, TN 37377. □

'The Magic City'

The Tri-County ARC will operate N0AUY from 1600Z, Saturday, October 15, to 0200Z, Sunday, October 16. This event will commemorate the 120th anniversary of the incorporation of Moberly, "The Magic City."

Operation will be in the lower 25 kHz of 80-15M and the Novice part of 10M. For certificate, send a business-size SASE to Tri-County ARC, P.O. Box 341, Moberly, MO 65270. □

USS Massachusetts

The Quinnipiac Council of the Boy Scouts will operate W1GB from 2359Z, October 21, to 1800Z, October 23, during the Jamboree On The Air (JOTA), from the Battleship *USS Massachusetts.*

N200RH, Nevada

The Wide Area Data Group, one of the two clubs that registered for the state of Nevada, decided to do it up right. During the week of October 22-28, WADG will be activating N200RH from Reno, Nevada. The group will be active on CW and SSB during the entire week, including entering the CQ WWDX SSB contest. Larry Gillespie, NF7P, has donated his award winning station for the event.

Antennas include 3 elements on 40M; 5 elements on 10, 15 and 20; an inverted Vee on 80; an inverted "L" on 160; and 38 elements on 2 (terrestrial and EME). Current operating plans are to enter the CW World Wide Contest as Multi-Multi and after the contest to have at least one station QRV at least 20 hours a day with two or more transmitters active during peak periods. Frequencies to look for us at are: 28025, 21025, 14025, 7025 and 3525 for CW, and 28495, 21310, 14230, 7230 and 3860 for SSB.

All QSL's should include an SASE and be sent to N200RH, P.O. Box 3132, Sparks, NV 89432 USA. For stations that submit confirmations for five bands, a certificate suitable for framing will be available. □

Lexington BBQ Festival

The Healing Springs Mountain VHF Society, Inc. will operate K4HOG for the 5th Annual Lexington Barbecue Festival on October 29, from 1300Z to 2100Z. **Frequencies:** *Phone* — 7245, 14245 and 28320 kHz; *CW* — 7030 kHz.

For special BAR-B-QSL, mail SASE to Healing Springs Mountain VHF Society, Inc., P.O. Box 41, Lexington, NC 27293-0041. □

Frequencies: *Phone* — General portion of 80-15M; *Novice* — 10M; and *CW* — middle of 40 and 15M Novice bands. Send SASE for special QSL to: Skip Paquette, KA1EAJ, 121 W. Dayton Hill Rd., Wallingford, CT 06492. □

DXPO 88

The National Capitol DX Association announces DXPO 88, to be held October 8-9 at Best Western Inn, Falls Church, Virginia (on Rt. 50).

DXPO 88 promises to be an outstanding specialized Amateur Radio event. If you have attended one or more past DXPO's sponsored by NCDXA, you will receive a flyer with full details. If you have moved since attending a previous NCDXA-sponsored DXPO or have never attended a NCDXA DXPO, send your name, call and full mailing address to: Stuart Meyer, W2GHK/4ever, 2417 Newton St., Vienna, VA 22180.

As in the past, the National Capitol DX Association is going "all out" to put on a great show for all of you. If you have attended a previous NCDXA-sponsored DXPO, you know what we mean. If you have not attended one of our previous DXPO's, try it.

The speaker at the Saturday evening banquet will be Father Moran, 9N1MM. Rosalie White, WA1STO, from ARRL HQ's Educational Branch — will take part in the Saturday morning Novice DX program. Several key FCC personnel will also take part in DXPO. □

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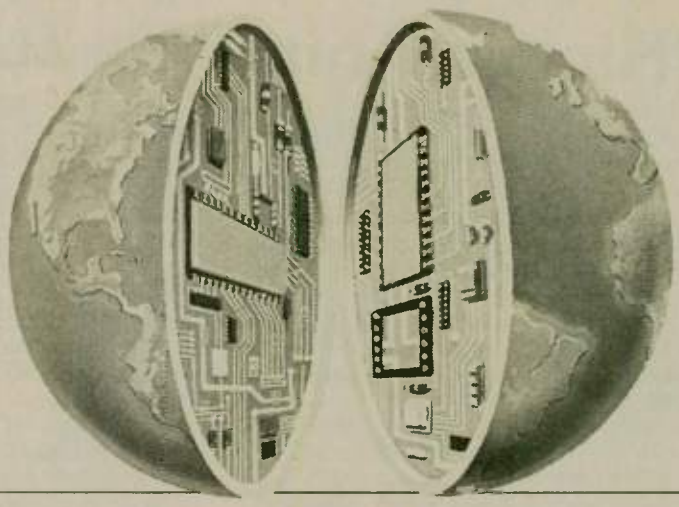

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FCC reallocates 220-222 MHz

Dave Sumner, K1ZZ

On August 4, in the face of overwhelming public opposition, the Federal Communications Commission adopted its own proposal to reallocate the 220-222 MHz frequency band from the Amateur Service to private land mobile use.

The reallocation proposed by the FCC 18 months ago to address what it said were critical land mobile needs and a desire to promote spectrum-efficient technology, attracted strong criticism from the nation's 435,000 radio amateurs and the many public-safety and disaster-relief organizations who rely on amateurs in communications emergencies.

The thoughtful protests of many thousands of citizens became a part of the official record of the proceeding. Dozens of Congressmen expressed their own opposition to the Commission, as did the Department of Defense, on its own behalf and that of the National Communications System. Yet it was not until United Parcel Service filed comments, six months later, that a significant user of the proposed new land-mobile band went on record as desiring the reallocation.

Despite this clear testimony that the original proposal was not in the public interest, the Commission's action appears to be identical to its first proposal, without reflecting any additional understanding of Amateur Service needs. In its presentation of the item for Commission consideration, the staff of the FCC Office of Engineering & Technology stated that the reallocation represented just 2% of the presently available amateur spectrum — a figure that was echoed by Chairman Dennis Patrick.

"We're shocked and disappointed at the Commission's action," said Larry Price, W4RA, president of the American Radio Relay League. "The 2% figure has no basis in fact. As we've pointed out throughout the proceeding, the 2 MHz the Commission is intent on taking away from the Amateur Service represents more than 15% of our international primary allocations between 30 and 24,000 MHz."

The FCC tried to soften the blow by saying that the remaining 3 MHz would be available to amateurs on an exclusive basis, and by expressing its continued strong support for the Amateur Service.

"It's nice that the Commissioners want to be seen as supporters of Amateur Radio, but actions speak louder than words," observed ARRL Executive Vice President David Sumner, K1ZZ. "The notion that existing amateur operations below 222 MHz can all be reaccommodated in the remaining 3 MHz is fanciful, and not supported by the public record. On the other hand, the spectrum efficiency of narrowband land mobile technology has been seriously challenged in engineering circles, and may in fact be illusory.

"About all that can be said for the Commission's action is that it provides a fertile field for arguments in support of reconsideration or reversal."

"We've lost a battle, but not the war," Price commented. "The League will continue to pursue every available administrative, judicial and legislative remedy to ensure that radio amateurs have access to the spectrum they need to serve the public." □

Ham seeks support in legal battle

A July 5th ruling by the Sixth Circuit Court in Champaign County, Illinois — dismissing an eviction suit brought against Iván L. Ruiz, NP4-BU, by Winfield Village Cooperative in Savoy, Illinois — has been appealed to the Appellate Court of Illinois in Springfield, Illinois.

Ruiz was accused of creating a nuisance in his townhouse when shortwave transmissions from his Amateur Radio station were detected on some neighbors' telephones, stereos and VCR's. The Cooperative claimed this action violated Ruiz's Occupancy Agreement, leading to an alleged breach of contract.

The appeal asks that the Appellate Court of Illinois overrule Judge Harry E. Clem's decision of July 5 which cited federal preemption in matters involving radio frequency interference by FCC-licensed Amateur Radio stations. The appeal also asks that the case be sent back to the lower court for trial.

To date, the Ruiz family has incurred legal expenses of close to $3,000. The appeal is expected to cost an additional $5,000. Ruiz asks that individuals and Amateur Radio organizations support this important precedent-setting case by contributing to the Ruiz Legal Defense Fund, 302 W. Paddock Dr., Savoy, IL 61874; (217) 356-4423. Any amount would be greatly appreciated.

The case against Ruiz began in February 1988 when a neighbor filed complaints with the FCC claiming that her stereo unit, telephone and other home electronic devices were picking up Ruiz's shortwave transmissions. Ruiz's repeated attempts to help his neighbor with this radio frequency interference problem was met with contempt and refusal on the neighbor's part to install filtering on the affected home electronic devices, even when these were supplied by Ruiz.

Ruiz's neighbor also refused to follow FCC recommendation that the manufacturers of affected home electronic devices be contacted for remedial action.

Ruiz sought help from staff of the Electrical Engineering Department of the University of Illinois at Urbana, Illinois, including Jim Coleman, KA6A, and other outside sources who determined that Ruiz's equipment was operating within FCC guidelines, and as such, not at fault.

An expert hired by Winfield Village

(please turn to page 20)

Bill Schrader, K2TNO, discussed receivers at Dayton's HamVention '88, covering the evolution of the tube to complete solid-state receivers.

Antenna Forum

Pete Onnigian, W6QEU

Several speakers addressed antenna matters from zoning to high-gain beam designs at the Dayton Hamvention this year. Always a highly popular topic, the forum rooms were crowded. Slide show and video presentations were used to display information.

David Pruett, K8CC

Dave, who is an electrical engineer with an automotive firm, described the mechanical and electrical properties of a good monobander for serious contest work. And Dave should know, as he is currently the antenna column editor of the *National Contest Journal*.

One of the first parameters to consider, said Dave, was to determine if the antenna should be designed for maximum forward gain, or one that would have the best side and rear lobe rejection. While that question is argued at great length, Dave chose the one with the best side and rear lobe rejections, as many contesting locations are full of problems for local and distant QRM. Rejection of these noise sources is more important, he felt, than an additional dB.

For the workhorse bands of 10, 15 and 20M Dave set the bandwidth figure for VSWR and pattern at 1%. That is, the VSWR should not be more than 2:1 and the pattern should hold up, over a 1% frequency change. For example, on 20 that is about 141 kHz. He chose the design center frequencies of 28,300, 21,200, and 14,150 kHz. And for gain he picked 8dB as the minimum value. This brings the boom length down, which in turn is really responsible for the gain, to about ¾-wavelength.

The next logical choice was the front-to-back ratio, which was to be -20dB or better. Dave said the F/B ratio is a function of frequency in beams, but through the bandwidth of interest, this should be at least 20dB down.

The remaining electrical specification was the VSWR. It was established as a maximum of 2:1 across either the phone or CW portion of each band. He had several reasons for picking this rather high value for contesters.

Big DXers, said Dave, use stacked arrays which have VSWR problems, as an upper or lower or both beams are switched in or out. In addition, wide operating frequencies within the band would produce high VSWR values, so the 2:1 value was chosen as the maximum. These beams were to be used with a good antenna tuner, which could be rapidly manipulated to present a lower VSWR to the transceiver.

Dave said he would have the beam antenna boom supported at its weight center, and would require at least 24 inches of clear space for the beam to be rotated *around* the tower. It is his feeling that not all contest antennas must be at the tops of their supporting towers; you can also mount them at the tower sides. A new firm demonstrated this method with excellent equipment at the Visalia DX Convention in April.

The NBS 5-element monobander antenna was examined, and Dave found that its gain was the main criterion. All elements are equally spaced. That antenna accordingly has excellent main lobe gain of more than 10dB/d, but not too much front-to-back or side rejection.

Final K8CC design

After evaluating several designs, he settled on the NBS 5-element beam on a ¾-wavelength boom. However, he tweaked the design with his computer program, and was able to get a bit more than 10.5dB/d with an overall design frequency center at 28.3 MHz. This was accomplished by lengthening the second and third directors and shortening the first director.

Although he has built several of these modified NBS design units, he has not yet had the opportunity of antenna pattern range testing. However, he felt comfortable with their performance.

Antennas supported by dirigibles

Well, not really dirigibles, but small balloons that look like dirigibles! And they are not Zepps, hung from a Zeppelin! At the Antenna Forum, Don Daso, WA8MAZ, described how he used helium-filled Kytoons to support his low-frequency antennas.

Because of their high cost ($225) and problems associated with high winds, these balloon-supported antennas are temporary and may be best used during contests.

In a recent contest, Don described the use of his Kytoon sky hook which held his ¼-wave vertical on 160M above a well-laid-out ground radial system. The Kytoon — which comes in a 1′×1′ box, 1½′ long — holds 225 cubic feet of helium. That is the contents of a normal tank of gas. While the lighter-than-air balloon will lift 9 lbs., it leaks some gas. However it will stay up at least four days, with ade-

(please turn to page 24)

Legal battle

(continued from page 18)

Cooperative independently confirmed that Ruiz's station was technically sound. This expert also concluded that the home electronic equipment affected by Ruiz's operation was inadequately shielded at the point of manufacture.

Because this case has reached the Appellate level, the resulting decision will establish a legal precedent having wide-reaching impact over the entire Amateur Radio community across the United States, says Ruiz's attorney Frederic M. Grosser. Attorney Jim O'Connell, W9WU, who has also been involved in this case, is expected to file a "friend of the court" brief on behalf of Ruiz. □

Paddle-powered FD

LOREN BARBEE, WB0YOW

Members of the Sooland Amateur Radio Association (SARA) conducted the annual Field Day exercise at a new location this year. In past years, Field Day has been held at various locations; unfortunately, all were remote and hard to get to.

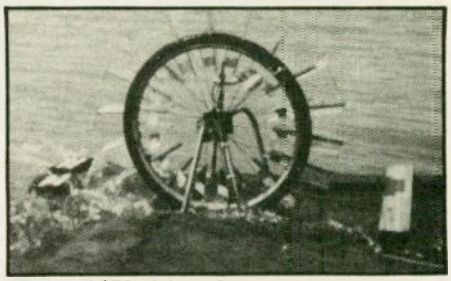
This year we obtained permission from the city of Sioux City, Iowa to set up in the riverfront park, which is immediately adjacent to downtown.

Since we were so near the Missouri River, some of the more enterprising members conceived the idea of a water-powered generator. The current in the river at this point is approximately 6 mph. However, there was a piling which extended into the river (placed here by the Army Corps of Engineers for bank stabilization some years ago). Just off the end of this piling, the water speed was much faster, accelerated by the funnel effect of the piling. This was chosen as the place for the generator.

The water wheel we used was made from a discarded bicycle. This bike wheel was fitted with stainless steel paddles which mounted to the spokes on one side of the wheel. Then the wheel was mounted in the frame and attached to the two main floats (4x4's).

The 12V bicycle generator (donated by Albright Cycle) was then mounted to the unencumbered side of the wheel.

A test run was made a week or so before Field Day. This test uncovered a problem with the generator speed. The wheel ran well, was stable in the water and had plenty of torque, but it generated insufficient rpm. The output of the generator was only about 5V.



This 12V bicycle generator was used by the Sooland ARA on Field Day this year.

To solve this problem, Otis Baker, KA0VOE, fabricated a mini-gearbox which worked flawlessly. With the addition of a small storage battery, this unit powered a converted CB rig which was used as a QRP 10M station.

Others involved in this endeavor were Alan Pederson, KA0VNM; Wayne Warwick, N0GSS; and Doug Potts, KA0VHV. □

Malibu hams go solar

Bill Edler, WB6DLI

The Malibu (California) Sheriff's Disaster Communications Service (DCS) conducted a 24-hour emergency exercise on June 25-26, coinciding with Field Day.

Amateurs used privately owned equipment to augment regular Sheriff's Department disaster communications devices.

The DCS Unit, formerly called RACES (Radio Amateurs Civil Emergency Service), conducted this exercise for the third year, using only solar power for electricity. The solar panels are made by Heliopower and furnished to the Malibu Unit by Heliopower Corporation and Henry Radio of West Los Angeles.

Approximately 50 solar panels were used to provide power for the exercise. Large batteries were charged to provide power to the radios for nighttime use.

The exercise was held on the grounds of Circle X Ranch, formerly owned by the Boy Scouts of America and now a part of the Santa Monica Mountain Conservancy. □

Amateur Radio on the Iditarod

Part II

Here is the second of a two-part article on Iditarod '87, including information on the 1988 race. As with Part I (page 22, September issue), this article is a compilation of stories written by Iditarod ham participants. The stories were compiled by Anne Gibson, NL7DG.

Relay stations

Band conditions have been marginal on HF (3.940 MHz) the last few days as dog mushers pass through the checkpoints winding their way to Nome. Arctic blizzards are facing the front runners, and several teams have holed up at Kaltag and Unalakleet, waiting out the 70 mph winds and the 50° below zero temperatures. Betty Menard, KL7NG, is trying to make contact, but is met with only silence. Rosemary Hanrath, KL7LA, picks up the call.

Montana Creek is the home of KL7LA and Del Hanrath, KL7JKW, who have served as relay station since the Iditarod race began. Located 100 miles north of Anchorage at the foot of Mt. McKinley, their antennas cover the entire state of Alaska. If they can't copy a signal on the airwaves, almost no one else in the state can either.

At least 40 more radio operators back up the trail communications from as far away as Portland, Oregon to John Burke, KB6GOZ, on the U.S. Coast Guard cutter *Midget*.

KB6GOZ picks up KL7NG's call as well, and Bemji has made contact. Her message is vital. Susan Butcher, front runner in this year's race and previous winner, has just arrived in Shaktoolik with 12 dogs. The world is waiting for this news.

But that is not the only important message relayed through the system of dedicated operators. One message concerns rookie musher, John Gourley, who checked out of Koyuk at 1705 hours (AST) on the 20th with 11 dogs; it's the 23rd of March and he has not been seen. Winds in the area are estimated at 70 mph, temperatures 40-50° below zero. Ground blizzards have grounded all airplanes along this part of the trail. Pilots are standing by for a break in the weather, and snowmachines are sent out from Koyuk and Elim, to search the 48 miles of trail between the two villages. No musher is found.

The 2M satellite link goes down and communications between checkpoints is dependent upon relay stations to copy and forward their traffic. The hour is late, skip conditions have stretched out, and Dave Rabe, N7IKH (Wheeler, OR), informs the group that he copies all stations and will stand by on frequency! Eventually, the musher is located and the race goes on.

Lest you think that CW (Morse code) is a thing of the past, Bob Douglass, N7HER, is heard calling in his arrival at Unalakleet — but without a microphone! He was keying his transmitter with a screwdriver stuck in the microphone jack.

In White Mountain, near the end of the race, Sharon Dean, KL7VL, had lost audio on 2M and HF was practically wiped out, so she kerchunked the repeater to send her reports to Nome concerning the four teams in White Mountain.

It takes dedication to serve as a relay operator, but there is a compelling force that draws us back each year. New friendships, new operating techniques, new antennas planned for the next race. And when we meet during the year we always say, "Whew! I'll never get that involved again!" But we always do.

Sharon Dean, KL7VL/White Mountain

This winter was my fourth trip out on the Iditarod Trail. I've been on seven different checkpoints now and my friend, Murphy, has been with me every time. We flew out on a commercial flight to Nome, then by "bush" plane to White Mountain.

About 70 miles east of Nome, White Mountain is located on the Fish River, sheltered by a small mountain for which it is named. It is a native village of about 250 people. I stayed in one of the village's city buildings, where we had heat and electricity but had to haul water from the lodge.

My equipment was a Kenwood TS-530S HF and a Kenwood 7950 2M. My antennae were an 80/40M dipole and an 11-element beam.

I like to sleep in my sleeping bag right by the radios for two reasons — passing traffic at night and being there to talk to mushers whenever they come into the checkpoint. The radios were on all night because mushers were coming and going night and day.

A blizzard caused a lot of static electricity and played havoc with my HF. It scared the heck out of me because I didn't know what it was at first. I couldn't even touch the radio it was so bad. This was about 4 a.m., and I didn't waste any time in getting hold of someone.

Once I understood the weather condition which was causing the problem, I unplugged the radio, disconnected the antenna and grounded the radio to a nearby copper pipe I hadn't seen before. Needless to say, the static electricity disappeared.

When Susan Butcher was due to come through, the Fish River began to look like a small international airport with all the small planes on it. The people were friendly and helpful.

White Mountain is on a hill and I sure did develop some good leg muscles running up and down during the 10 days I was there. Some of the nights were fantastic for stargazing, and the sunsets were some of the best

I have ever seen. The temperature went down to about 0°.

Lil Marvin, NL7DL/Nome

There were three main radio amateurs at Nome — the last stop on the Iditarod Trail, roughly 1,049 trail miles from Anchorage. The head ham was Marge Austin, KL7VY; second-in-command Shari Runyan, AL7FJ; and myself, Lil, NL7DL. Also helping out at Nome were Jim Moody, NL7C; Bill Hall, KL7IKR (whose wife, Pat Danly, KL7DS, was musher #14); and Lois English, NL7KE, logistics director, whose husband is Ted English, another musher.

The ham shack was located at the town community center at the north end of Front Street, the main road in Nome. The room was about 15′ x 20′ or 30′. We shared the room with the computer programmers who entered all our dog and musher traffic into their computers.

We used both HF (Kenwood TS-430S) and VHF. HF was on 3.940 and VHF on 145.07/67. HF communication was off an 80M dipole on a fiberglass "hot stick" about 30′ high and guyed to the roof. We used commercial power.

HF communication was good when the bands were open. VHF was spotty at first because the antenna was located inside a metallic building. The hams had been told by city officials that they were not to drill any more holes in the building wall to run cable through.

One of the local hams, Ed Trump, AL7N, sets up the Nome ham headquarters every year. He noticed that next to our shack was a shelf containing the mushers' mailboxes (where we put the traffic going directly to the mushers) and behind that was a door.

Resourceful Ed simply moved the mailboxes, removed the doorknob, ran the coax out through the hole, replaced the mailboxes and put the antenna outside. The antenna worked just fine after that!

At the beginning of the race, headquarters is officially in Anchorage. As the mushers approach Nome, generally about a day or so before the first musher is expected in, headquarters is then officially transferred to Nome. This system allows headquarters to be closest to the mushers.

Hours at Nome could be very long. Frequently, headquarters was open all night if several mushers were expected in. We slept, ate and took breaks whenever the chance arose, as we never knew when there would be another.

The race was won by Susan Butcher, her second Iditarod win, making 1987 the third year in a row that a woman has won. It was an exciting conclusion, with Nome crowded with visitors who fly in just to be there to greet the winner.

1988 Iditarod

The winner of the 1988 Iditarod was, again, Susan Butcher — her third win and the fourth in a row to be won by a woman. A total of 53 mushers were entered in this year's race, of which 45 finished. Fifteen of the mushers were first-time Iditaroders.

This year, 20 Alaska radio amateurs manned the trail checkpoints. Harvey Rookus, NL7DK — who was in charge of Trail Communications — held down two checkpoints due to cancellations by volunteers who had conflicting work schedules.

Harvey was at Rainy Pass (where he got snowed in for four days) and at Elim. About 60-70 ham volunteers also did shifts at the Anchorage Headquarters, keeping communications open around the clock.

The Iditarod Trail Committee had severe financial setbacks from the 1987 Iditarod. However, this did not affect services provided by or to the ham volunteers. □

A plug from Briem

On his coast-to-coast call-in program July 29-30, from KABC Los Angeles, Ray Briem, N6FFT, devoted three hours to explaining Amateur Radio's virtues to his audience.

His guests were April Moell, WA6OPS, Joe Moell, KØOV, and Lenore Jensen, W6NAZ, who took turns answering questions from callers. Adding to the information were many licensed hams from across the country who phoned in with interesting anecdotes about their own experiences.

The address of ARRL was given several times for listeners wishing additional information.

Ray remarked that his computer listings of calls waiting "lit up like a Christmas tree," so great was the apparent interest.

He's been on KABC many years from midnight to 5 a.m. Pacific Time, weeknights, covering current events on his popular program. □

AWARDS

Goldwater receives AEA award

Senator Barry Goldwater, K7UGA, has been selected to receive the third annual AEA Amateur Ambassador Award from Advanced Electronic Applications. Senator Goldwater was chosen from over 100 nominations of amateurs possessing the qualities of "ambassador" for the Amateur Radio Service.

Nominations were judged on the criteria of dedication to Amateur Radio, positive influence on those outside Amateur Radio, and initiation of special projects or programs to promote the Amateur Service. Of the many excellent candidates for the award this year, Goldwater was chosen for his lifelong work in public service with consistent support of Amateur Radio.

The award was to be presented at the 1988 ARRL National Convention in Portland. Mike Lamb, N7ML, President of AEA, gave the award and a check for $1,000 to Senator Goldwater at the banquet on Saturday, September 10. □

PBBS founder

The Rocky Mountain Packet Radio Association (RMPRA) is pleased to recognize Jeff Jacobsen, WA7MBL, as its "Amateur of The Year, 1987." Jeff was instrumental in the acceptance and rapid growth of packet radio. Without the Packet Bulletin Board System (PBBS), many of today's active packet radio enthusiasts might have abandoned the mode.

Jeff saw the need for an easy-to-implement bulletin board system. Not only did the system need to be user friendly, it had to operate on readily available hardware. Jeff was the first person to release a PBBS which operated on the MS-DOS standard. The availability of inexpensive hardware and operating systems, coupled with the ease of implementation and use, set a new standard for packet systems.

Not being content with his first release, Jeff continued to "fine tune" and add new functions. Soon the WA7MBL PBBS software became a worldwide standard. Other PC-based BBS systems followed Jeff's MS-DOS lead.

Jeff's bulletin forwarding techniques were immediately credited with eliminating significant packet channel congestion. The "OS" function has provided several "forward thinking" individuals a springboard to serve the packet community with additional PBBS functions.

Jeff continues to devote time and energy to improve the state of packet radio. The Board of Directors and membership of the Rocky Mountain Packet Radio Association are pleased to honor Jeff as the "Amateur of The Year, 1987." □

Young amateur wins

The Space Coast Amateur Technical Group congratulates Ron Heise, KC4CXQ, of Indialantic, Florida for finishing first in the South Florida Section of the ARRL's Novice Roundup contest held in February. Ron finished second, behind a station in the North Florida Section.

Ron is 12 years old and passed the Novice Amateur Radio exam at the end of 1987. □

Beacon LU4XS

Beacon LU4XS has been located near the MOAT River in the southeast border of Tierra del Fuego Island, on MOAT Ranch, since 1983. TX 2W out crystal-controlled. 5/8 vertical antenna 9M high. Powered by 12VCC 120A battery. Frequency 28.220 kHz. All the reports will be answered with a postcard.

Send to: Grupo Argentino de Radiotelegrafia; P.O. Box 9, 1875 Wilde; Buenos Aires; ARGENTINA.

Antenna Forum

(continued from page 19)

quate lift capacity for a ¼-wave wire — long enough for the usual weekend contest.

Because of their size, these mylar Kytoons fly best in winds of about 5 mph. They turn into the wind due to their fins and blunt nose. They do not stay completely vertical, but depending on wind velocity, may vary as much as 45° from the vertical.

These make excellent sky hooks to support 160 and 80M antennas during Field Day. Don cautions: Be sure you have enough clearance from power and utility lines. Caution is seriously advised.

Modern receivers

Receivers were discussed during the Forum by Bill Schrader, K2TNO, because — as he said — they are part of the loop in receiving signals. Bill went through the evolution of tube to complete solid-state receivers, together with their comparisons of performance.

In many ways, transistorized receivers are better than their tube-type parents. Dynamic range and front-end noise problems, however, are the most common complaints with solid-state transceivers. Other problems include poor front-end sensitivity and selectivity, and input impedance matching.

Bill highly recommended pre-selectors which provide selectivity, impedance matching and in some cases, front-end signal gains over the receiver's noise floor.

Bill said, "If the noise level goes up when the antenna is connected, you don't need a pre-selector pre-amp. Add a pre-selector if your receiver fails this simple test."

80M Yagis

Yes, amateurs are making and/or buying 2 and 3-element Yagi antennas for this band. Dr. James Breakall, WA3FET/6, described his computer work in tapering the elements and loading them, to cut down on physical size. There is, of course, some loss of gain, but the other parameters surely beat two ½-waves in phase using wire!

Dr. Breakall described the reduction in back and side lobe levels and the elevation patterns resulting from parasitic type antennas, and the need for gain at appropriate take-off angles relative to other commonly used antennas. He felt the 2 and 3-element Yagi antennas outperform most other commonly used antennas for DX.

He has worked up a computer program for analysis of antennas, not only in free space but over common ground using the method of moments. He has named that program MINI-NEC. The availability of this computer program will be given by sending an SASE to him at: 11900 Empire Grade Rd., Santa Cruz, CA 95060. □

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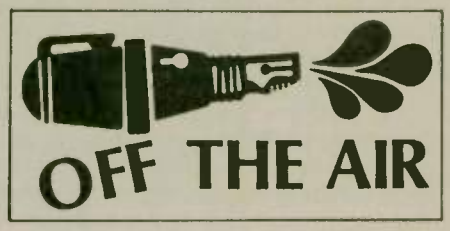
- Stores Standard Repeater Offsets In Memory
- Full Range of Accessories
- 220 MHz and 440 MHz To Follow Shortly

(Optional EBP-2NAZ Ni-Cd battery)

Alinco's products are carried by these fine dealers

A-Tech - Burbank, CA
Amateur & Advance Comm. - Wilmington, DE
Amateur Comm. ETC. - San Antonio, TX
AES - Milwaukee, WI
AES - Orlando, FL
AES - Clearwater, FL
AES - Las Vegas, NV
Austin Amateur Radio Supply - Austin, TX
Barry Electronics - New York, NY
Burghardt Amateur Center - Watertown, SD
Colorado Comm Center - Denver, CO
Delaware Amateur Supply - New Castle, DE
Doc's Communications - Roesville, GA
El Original Electronics - Brownsville, TX
EEB - Vienna, VA
EGE, INC. - Woodbridge, VA
EGE, INC. - Salem, NH
Erickson Communications - Chicago, IL
F&M Electronics - Greensboro, NC
Floyd Electronics - Collinsville, IL
The Ham Station - Evansville, IN
The Ham Hut - Amarillo, TX
Hatry Radio - Hartford, CT
Henry Radio - Los Angeles, CA
Hirsch Sales Co. - Williamsville, NY
HR Electronics - Muskegan, MI
HRO- Anaheim, CA
HRO - Atlanta, GA
HRO - Burlingame, CA
HRO - Oakland, CA
HRO - Phoenix, AZ
HRO - San Diego, CA
HRO - Van Nuys, CA
HSC - Santa Clara, CA
HSC - Sacramento, CA
HSC - Sunnyvale, CA
International Radio Systems - Miami, FL
Jun's Electronics - Culver City, CA
Kennedy Associates - San Antonio, TX
KJI Electronics - Houston, TX
Madison Electronics - Houston, TX
Maryland Radio Center - Laurel, MD
Memphis Amateur Electronics - Memphis, TN
Michigan Radio - Mt. Clemens, MI
Mission Consulting - Houston, TX
Missouri Radio Center - Kansas City, MO
M&G Electronics - Miami, FL
Omni Electronics - Laredo, TX
Quament Electronics - San Jose, CA
RF Enterprises - Merrifield, MN
R&L Electronics - Hamilton, OH
Reno Radio, Reno, NV
Rwendell Associates - Derry, NH
Rogus Electronics - Southington, CT
Rosen's Electronics - Williamson, WV
Ross Distributing Co. - Preston, ID
Satellite City - Minneapolis, MN
Tel-Com Electronic Comm. - Littleton, MA
Texas Comm. Center - Houston, TX
Texas Towers - Plano, TX
VHF Communications - Jamestown, NY
Williams Radio Sales, Colfax, NC

CANADA:
Canadian Distributor
Texpro Sales Inc. - Burlington, Ontario
(416) 332-5944



Inadequate system

As a long-time CW operator, I feel I have to share my strong feelings about the inadequate "T" of the RST system. I have read where some think the "T" should be dropped because "everybody sends T-9 anyway." And they're right. The "T" system doesn't cut it at all. Read the definitions and see what I mean.

According to the 1979 Radio Amateurs Handbook, 22-5, "T" is defined as follows:

T1—60-cycle AC or less; very rough and broad
T2—Very rough AC; very harsh and broad
T3—Rough AC tone; rectified but not filtered
T4—Rough note; some trace of filtering
T5—Filtered rectified AC, but strongly ripple-modulated
T6—Filtered tone; definite trace of ripple modulation
T7—Near pure tone; trace of ripple modulation
T8—Near perfect tone; slight trace of modulation
T9—Perfect tone; no trace of ripple or modulation of any kind

I think that most hams (CW ops, anyway) will agree that the "T" choice listed above is very inadequate in today's technology. They need to be upgraded to have meaning, so that a report of T-4 or T-5 means something. Therefore, I suggest the following.

The following "T" designations represent more realistically the needs of today's CW operator. The tone is perfect except as listed.

T-1—Unstable; check transmitter at once
T2—Hum on note (probably power supply-related)
T3—Watery (aurora or polar effect)*
T4—First part of first character cut-off (probably by VOX)
T5—Dual tones (probably J2A emission with carrier present)
T6—Clicks and chirps
T7—Chirps
T8—Clicks
T9—Perfect signal
(*Not an equipment issue, but rather one of propagation)

The order of the above "T" reports is arbitrary. Perhaps a majority of CW operators should decide on the final order.

In order to gain attention by the appropriate authorities on this "T" issue, we CW ops needs to voice our dissatisfaction with the present system.

If you agree that this sort of change is needed, please write to your favorite ham magazine or the ARRL and let them know you agree that the "T" in RST is in Transition, not Through.

KEN ARCHBOLD, W6TMA
Morgan Hill, California □

A Morse Tutor fan

Are you having fun yet with Morse code? Well, let me tell you about a product that can make your day.

Morse Tutor is what it's called and it's written by GGTE. They have put together a package that will expand your knowledge and make either learning or bringing your code speed up to whatever speed is humanly possible, really enjoyable.

The program is simple to load into your IBM or compatible computer. The instructions — well, I only read them once and found them short and sweet.

Operating the program is what's most fun. You can choose from any of the 12 lessons, and the word speed is adjustable from 1 to over 100 wpm. Both the standard and Farnsworth methods are available for you to use.

You calibrate the computer for accuracy the first time you use the program. Then you choose the standard or Farnsworth method. Next you adjust the code speed (and character speed if you are using the Farnsworth method), and the tone frequency to suit your pleasure.

Once you have made these selections, Morse Tutor remembers the settings. Of course, you can always change them during the lessons or the next time you run the program, and the new settings will be remembered. You're now ready to move into the lessons where you can learn new characters, or review characters and words randomly, or copy random QSO's. The instructions highlight each step on your monitor as you proceed.

I found myself putting the code aside after obtaining my Extra Class license. Deep inside I wanted to improve my proficiency, but I hated those code tapes. Anyway, when I found Morse Tutor, I found what it took to spark my interest in code again.

When you see the faces of those who see and hear this vessel of learning for the first time, it's wonderful. This product is truly remarkable and may there never be code-free Amateur Radio. Long live the code! Thanks, Warren Hoffnung, KF6VV, for this product and its nominal price.

CHUCK ROSS, WX6R
Huntington Beach, California □

51 years later . . .

I had an interesting surprise the other day. I had finished running a phone patch for a ship off Gibraltar, and when I signed off with him, W2JOE called me and asked if I was the same Charlie Stevens he had QSO'ed way back on September 18, 1936.

I replied that I was, then looked in my file of cards received in the '30s and found his QSL card—the date was the same as he said.

It is a mystery to me how he remembered me after 51 years. To make it more difficult, the QSL card I sent him had my call letters printed wrong. When I received his card, I hadn't received the corrected printing from the printer, so sent him one of the ones with the wrong call. I made a notation on the card stating what my call should read.

I have 453 old QSL cards. I checked these against my present card file, and his was the only one I had worked previously.

CHARLIE STEVENS, W1HWG
Stafford Springs, Connecticut □

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If the *Titanic* had been a soap opera, it would still be sinking. —*Arrowhead RAC, Duluth, MN*

Silent Keys

Larry Flavin, W3CV

It is with sadness that I report the passing of Lawrence "Larry" P. Flavin, W3CV, of Butler, Pennsylvania on July 24.

Larry had been employed as an electronic engineer with various radio and television stations, including WQED (the first educational TV station in the United States), which he helped get on the air in 1953.

We had planned to have Larry put on a program for the BCARA on his WQED experiences, but his illness intervened.

He had worked for the United States Lines for 20 years, and served with the Merchant Marine for 24 years. His periods at sea precluded attendance and active participation in the BCARA. However, he was able to chase DX over the years and was a member of the ARRL DXCC Honor Roll having worked 313 of the 317 current DXCC countries. He had a total of 349 countries which included now deleted countries, and 5BDXCC.

I last talked to Larry in June after the Breeze Shooters Hamfest at White Swan (where he won a 2M hand-held), and he told me of his illness and his feeling of regret that he probably would not live long enough to work Spratly Island (1S) as it was one of the countries he really wanted. As I drove by his QTH, I would look at his beam and note that it was usually on a different heading from day to day, indicating he was still active chasing DX, which he did until the big switch was thrown for the final time at 1 a.m. Sunday at his home.

His station consisted of equipment to cover 160M up to and including OSCAR, which was all state-of-the-art to go with his Amateur Extra Class license.

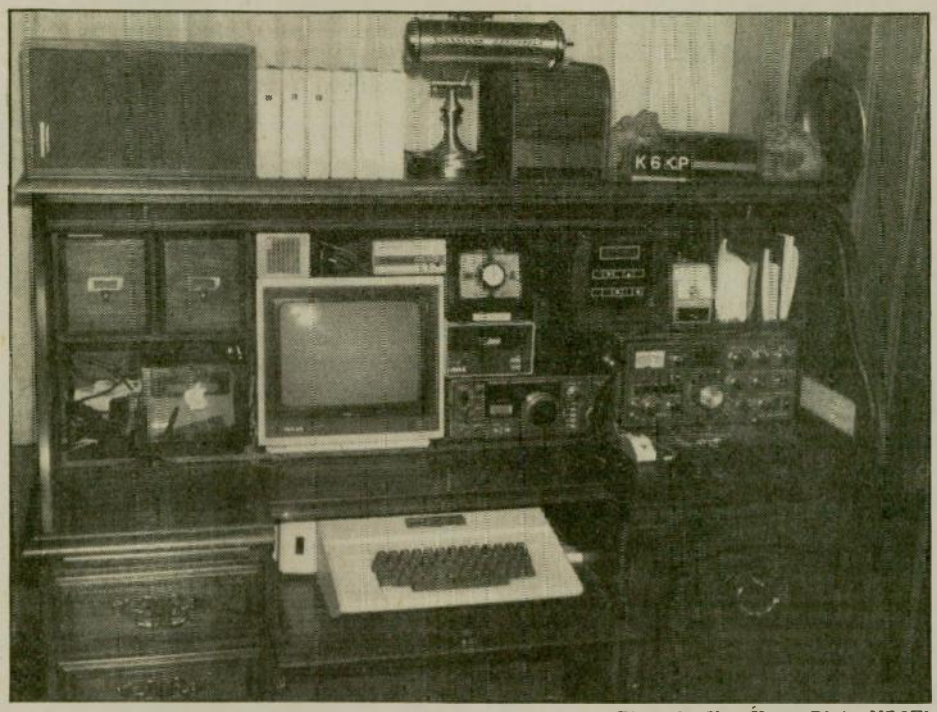
Born in Chicago, Illinois on June 2, 1917, he was the son of Lawrence J. and Helen Lehane Flavin. Surviving are his wife, Jennie Moll, a sister, and several nephews and nieces. —*Submitted by Gerald Wetzel, W3DMB* □

Solder is cool

Lead melts at 620°F.; tin melts at 446°F. But if these two metals are melted and put together, it is called solder and solder melts at 356°F.
—*Porter County ARC, Valparaiso, IN*

K6KP STATION APPEARANCE

Send **Worldradio** *a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.*



(Photo by Ken Kemp-Blair, NO6E)

Lee Mann, K6KP, of San Dimas, California, is our October winner. Following is a description of Lee's equipment, as well as an explanation of the reasons he's chosen this type of set-up.

Amateur Radio has many facets that are hobbies in themselves: building equipment, antennas, DX, code, TV, etc. Here, over the years, many of these things have been experimented with. However, now the big thing is compactness. With the current state of the art, equipment has become so much smaller that it can be stashed in much less space.

For a number of years, the rigs here were enclosed in a cabinet that once held an old B&W TV and a record player. When not in use, the doors were closed, leaving just one other piece of furniture in the room. Then came along home computers, which messed up everything.

After using the computer on a table-like desk in conjunction with the cabinet, a special computer "roll-top" desk was found at Penney's that would hold everything. The desk, 52" wide, has many compartments.

At the right, a TS-820S covers the low bands. An SWR meter and digital clock are above. In front is a Kenwood R-1000 receiver with general coverage; above sits an Apple disk unit, an ICOM 2M rig and an antenna rotor control. Also in front is a 12" TAXAN monitor, and above, a Kantronics interface for CW and RTTY, with a computer disk file at the left.

The front of the desk drops down and the top working space pushes back so an Apple computer can be pulled out.

The drawers to the left contain tape recorders and other things. At the right is a door to an Epson printer that can be rolled out.

Below the computer and back under the desk top, a wooden panel can be easily removed for access to a linear amplifier.

On the very top of the desk are disk files, speaker and a 24-hour clock. □

Be safe . . . attend club meetings

DO NOT ride in an automobile; they cause 20% of all fatal accidents.

DO NOT stay at home because 17% of all accidents happen in the home.

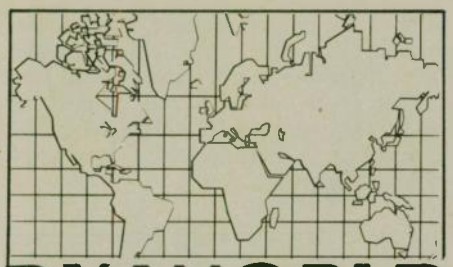
DO NOT walk around on the street; 14% of all accidents happen to pedestrians.

DO NOT travel by air; 16% of all accidents are the result of these activities.

ONLY .001% of all accidents occur at Amateur Radio club meetings.

Obviously the safest place to be on meeting night of each month is at the radio club meeting. Be sure to attend all club meetings and avoid dangers set forth above.

—Arrowhead RAC. Duluth, MN □



DX WORLD

John F.W. Minke III, N6JM
6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

24-25 Sept Scandinavian Activity Contest (SSB)
01-02 Oct NCCC California QSO Party
01-02 Oct VK/ZL Oceania Contest (SSB)
15-16 Oct RKDDR Worked All Y2 Contest
15-16 Oct VK/ZL Oceania Contest (CW)
29-30 Oct CQ World Wide DX Contest (SSB)

W-100-N

340. WA1ZIC Frederick L. Covell (All CW)
341. W6TUI William Woody

Malyj Vysotskij Island (4J1FS)

According to *QRZ DX*, the following breakdown of contacts for the 4J1FS DXpedition was received from Martti Laine, OH2BH:

USA	5,830	Japan	2,172
Europe	5,820	Other	1,013

The first contacts with the United States and Canada were KJ0B, NR1R, K1RM, VE3CPU and VE3ICR.

New Caledonia (FK)

Albert Gazengel, FK8FL, and George Todori, FK8FS, are two of the several active ones that have been on 20M CW recently. In fact, we heard them working each other recently, and this was high in the CW portion of the band. Look for Albert near 14.048 MHz around 0600 UTC, and Georges near 14.057 MHz about the same time.

If you need New Caledonia on 40M, Georges, FK8FS, has also been on that band being worked from the Midwest on July 23 at 1215 UTC, on 7.005 MHz.

Marcel, FK0BA, has been active on 15M working eastern Canada on SSB. Look for Marcel around 0330 UTC. And on 20M SSB we have the following:

FK8FR	14.275	1030
FK8FU	14.285	0530
FK8GB	14.168	0600
FK0AW	14.155	0600

Lebanon (OD5)

There are many stations to pick from for this one, with all the activity on 20 and 15M. If you need this one on CW, try the following:

OD5LX	14.023	0230
OD5PL	21.025	1930
OD5SM	14.020	2345

Now, if you can't stand CW, and swear by SSB, try these:

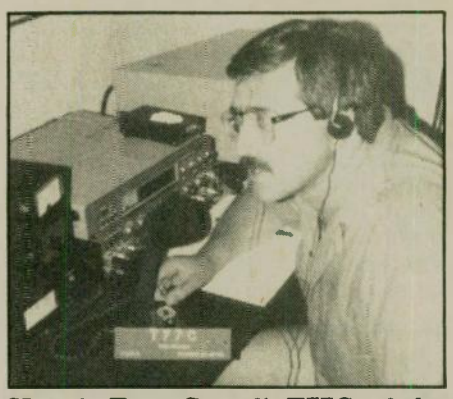
OD5AS	21.250	0345
OD5BU	21.245	0400
OD5KV	14.180	0530
OD5NF	14.183	0100
OD5NT	21.232	2300
OD5PL	21.301	1730
OD5RF	21.227	1430
OD5VT	21.251	1730
OD5WA	21.294	1130

Aruba (P40)

Within the pages of *Long Skip*, we find this item of interest about a local DXer — Carl Cook, AI6V. Carl will again lead a group to Aruba for the *CQ* World Wide DX Contest, where they will attempt to set a record signing P40V.

All contacts will be automatically acknowledged with QSL cards via the bureau. You will not need to send a card, unless you need one faster than the bureau system. Additionally, a certificate will be sent to all who work P40V on four or more bands.

To receive the certificate, send your QSL cards received with return postage to Carl D. Cook, AI6V, 11407 Tower Hill Road, Nevada City, CA 95959.



Here is Tony Ceccoli, T77C, of the Republic of San Marino. Tony is busy here in a SSB pileup. Active since 1973 with 150,000 QSO's in his log, Tony is the only active CW operator from that country. His present line-up of equipment includes a TS-830S with a 2kW PEP power amplifier. Tony's antenna is a 2-element Delta Loop for 10, 15 and 20M. *(Photo courtesy T77C)*

Surinam (PZ)

Lie, PZ2AC, says he is the only PZ2 call on the air from Surinam, and is also the most active one of all the stations. Lie works both CW and SSB.

Lie, PZ2AC, is the only active station from the second district in Surinam. His equipment is as shown with a Hy-Gain TH7DX tribander.

There really isn't that much activity from Surinam. Much of it is near 14.109 MHz working PA0 stations in Europe. Take a listen for the following:

PZ1AR	14.226	1145
PZ1AV	21.031	1945
PZ1DV	14.014	1230
PZ2AC	14.026	0345
PZ2WR	14.007	0415

Central African Republic (TL8)

A YL/OM team, signing with the calls TL8DS and TL8SC, are reported to be active on 15M near 21.240 MHz, between 1930 and 2030 UTC. TL8SC has also been active near 21.306 MHz at 1300 UTC working the Europeans.

Other calls from this one include TL8FF near 21.268 MHz at 1800 UTC, TL8HW on 21.341 MHz at 1930 UTC, and TL8CK on 21.159 MHz at 1530 UTC.

The Long Island DX Bulletin reports that TL8DN will soon have a big signal from Bangui, who will be sporting a new tower and cubical-quad. If you work Margie, send your QSL request to Arthur Hubert, N2AU.

Pacific tour

Peter Kolehmainen, OH1RY, will soon depart on another one of his Pacific tours. Accompanying him will be Vili Flink, OH2BAZ, for the five-week trip, leaving Helsinki on October 13.

The list of Pacific island countries will include the following: Tahiti (FO5), South Cook Islands (ZK1), Fiji Islands (3D2), Wallis Island (FK8), Vanuatu (YJ8), Tonga (A35) and Niue (ZK2). They probably will visit Fiji twice, the second time just before the visit to Niue.

Peter, OH1RY, will be in Vanuatu (YJ8) for the *CQ* World Wide DX Contest the end of October, while Vili, OH2BAZ, will be busy over in Tonga for the CW types.

10M DXCC

The first 10 to receive certificates for the new ARRL 10M DXCC were issued in order of the total country count. Congratulations to the following DXers:

1. W4DR	317	6. K2ARQ	297
2. G3KMA	315	7. W9ZR	297
3. K2FL	315	8. JG1NBD	296
4. K4DY	308	9. K3BEQ	295
5. K2OLG	298	10. N4WW	294

Those VI88 calls

Neil Penfold, VK6NE, informs us that the prefix VI88 has only been issued to the Wireless Institute of Australia for use by clubs in the various states, with two exceptions. The calls assigned to the states are as follows:

VI88ACT	Australian Capital Territory	(VK1)
VI88NSW	New South Wales	(VK2)
VI88VIC	Victoria	(VK3)
VI88QLD	Queensland	(VK4)
VI88SA	South Australia	(VK5)
VI88WA	West Australia	(VK6)
VI88NT	Northern Territory	(VK8)
VI88WIA	Federal Executive of the W.I.A.	
VI88ABC	Polonia Radio Club	

No VI88 call for the 9th call area has been issued. Neil mentioned nothing about Tasmania (VK7). No other stations have been authorized to use this special prefix.

Australian amateurs may, however, use the "AX" prefix in place of their normal VK prefix at their option. This is available to the end of 1988, the bicentennial year.

Japanese ham statistics

The JARL News says that according to a report released by the Telecommunications Bureau of the Ministry of Posts and Telecommunications, as of March 31, the agency has issued a total of 1,608,128 Amateur Radio operator licenses. The breakdown by class is as follows:

First Class:	12,615
Second Class:	48,224
Telegraph Class:	89,313
Telephone Class:	1,457,976

In addition, 825,153 Amateur Radio station licenses have been issued. As of March 7, the membership in the JARL (Japan Amateur Radio League) was 143,626.

NCDXF

The Northern California DX Foundation announces that Rusty Epps, W6OAT, has been elected the new president of the NCDXF, with Stan Kaisel, K6UD, as vice president. NCDXF is now entering its 18th year of supporting Amateur Radio activities, and in particular, DX-related activities.

The Foundation has also been responsible for many of the 14.100 MHz beacons that have been installed around the world. Unfortunately, the W6WX beacon has been stolen. Sometime during one afternoon in July, the W6WX trailer at Stanford University which housed the beacon was broken into. Only the Kenwood TS-130, power supply and special controller were taken. Other equipment and expensive tools were not taken. Obviously, the thieves knew exactly what they were taking.

DX Prediction

Maximum Usable Frequency from West Coast, Central U.S., and East Coast (*courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22180*).

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.

OCTOBER 1988

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(11)	12	17	(9)	15
12	(10)	11	15	(9)	14
14	27	11	14	22	**34**
16	31	11	18	22	**40**
18	31	(11)	(19)	18	41
20	25	29	30	(11)	42
22	21	**33**	**36**	(10)	41
24	18	**33**	**40**	(9)	**28**
2	14	**29**	**40**	9	**24**
4	13	15	**26**	9	**20**
6	(12)	13	22	10	17
8	(11)	12	19	(9)	16

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(13)	9	16	(9)	15
10	(13)	9	14	(9)	14
12	34	9	14	22	**32**
14	**40**	9	21	**25**	**37**
16	**42**	(9)	(18)	23	**40**
18	31	(9)	(20)	19	41
20	25	19	30	(11)	42
22	21	25	37	(10)	**40**
24	18	23	**38**	9	**27**
2	16	(12)	24	9	**22**
4	15	(11)	20	9	19
6	(14)	(10)	17	9	17

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	(13)	(9)	(15)	(9)	16
9	(13)	9	14	(9)	14
11	**35**	9	14	**23**	**29**
13	**40**	10	**22**	**26**	**35**
15	**43**	(9)	19	**25**	**38**
17	**35**	(9)	(17)	**22**	**40**
19	**28**	(9)	26	(11)	41
21	23	23	34	(10)	41
23	18	23	38	10	**28**
1	16	(12)	23	9	**24**
3	15	(10)	19	9	**20**
5	14	(10)	(17)	9	17

Antique QSL Department

Remember Wendell Willkie? He was the Republican's choice to run against old FDR way back in 1940. I was far too young to cast my vote for him, but I remember my folks talking a lot about him.

As the election season is coming into swing, we thought it a good time to

Past W-100-N winners

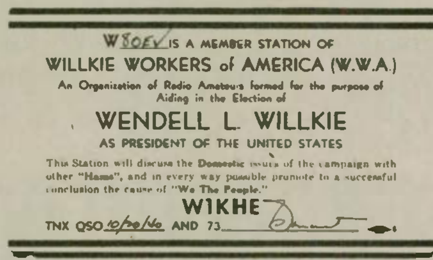
(continued)

	Call	Name	Issue listed
160.	KN7K	Vladimir J. Kalina	4/82
161.	KB8RT	Leanna Jo Shaberly	4/82
162.	W4GIO	Jerome Layfield	4/82
163.	WA7JUJ	Les L. Moller	4/82
164.	N5CSW	Jeffrey L. Poll	4/82
165.	AG1K	James A. DiSarro	5/82
166.	N4CYX	Robert W. Levin	5/82
167.	KG0N	Bruce Deinken	5/82
168.	DA1MV	Harvey Campbell	6/82
169.	VS6CT	Philip J. Weaver	6/82
170.	KA1RC	Richard C. Parker	6/82
171.	W2UT	Adolph J. Uryniak	6/82
172.	KD8V	Paul T. "Tom" Varney	6/82
173.	WB9TNQ	Martin Schwamberger	6/82
174.	W5GZI	Harold D. Howard	7/82
175.	KA4IWX	Martha A. Silver	7/82
176.	W0CON	Lloyd Brown	7/82
177.	N6NW	Neal W. Hudson	7/82
178.	WA1SMI	Robert S. Isaacs	8/82
179.	W9FNN	William D. Adams	8/82
180.	K0REF	James P. Cardin	8/82
181.	WA4NEU	Wilbur L. Roberts	8/82
182.	WD5HEQ	Perry Mannon	8/82
183.	NT4W	David L. Sargent	9/82
184.	KC4YY	Edgar A. Stalder	9/82
185.	N2BJ	Barry Jay Cohen	10/82
186.	HC2RG	Reynaldo Navarette	12/82
187.	N5AFH	Wm. M. Sullivan III	1/83
188.	KA6QPL	Larry Minihan	2/83
189.	KQ8O	James O. Cain	4/83
190.	W9LCQ	Jay K. Seyler	4/83
191.	I0AOF	Giuseppe Loreti	4/83
192.	WB4LJP	James McQueen, Jr.	5/83
193.	KC8RH	Mark Landwehr	5/83
194.	VE4AEX	H.V. "Vic" McKinney	6/83
195.	W3LPI	George B. Kabroth	6/83
196.	W3YAF	Thomas V. Winn	6/83
197.	KB3OQ	Michael F. Wilson	6/83
198.	NA4D	Lloyd C. Curry	6/83
199.	W4JFE	Frank F. Merrill	6/83
200.	W6QEUq	Peter K. Onnigian	6/83
201.	W1DOH	Charles A. Lukas, Jr.	6/83
202.	JR7ICN	Toshiyuki Kommo	7/83
203.	WA7NXL	Art Phillips	7/83
204.	W3GVR	Melmore Zugermayer	7/83
205.	KI2G	Robert T. Hynes	7/83
206.	N0BZE	Charles V. Turner	7/83
207.	KN0L	Steven P. Hutchinson	7/83
208.	WD8RTW	William B. Kephart	8/83
209.	LA2AD	Halvard Torgersen	8/83
210.	YB2BLI	Niko Indarto	9/83
211.	W8UMP	David T. Holmes, Jr.	9/83
212.	KK2J	Hugh P. Dickinson	9/83
213.	WA4GFG	Frank Goodell	9/83
214.	K7LYT	Herbert Williamson	10/83
215.	JA1VDJ	Shigeo Kanehira	10/83
216.	WA6SLO	Richard G. Whisler	11/83
217.	WA2KAB	Robert K. Weiss	12/83
218.	KS0Z	Keith H. Gilbertson	12/83
219.	KA3CTY	Arthur H. Valentine	12/83
220.	NB7Q	Neil W. Zimmerman	12/83

(Continued next month)

As for the political overtones of this card, we are not sure how such a campaign tactic would be accepted today. Probably a touch of commercialism!

Horace Goss, W1AB, reflects on the XU4XA card that we ran in the August issue and included a photo run this old W1KHE QSL card, which was submitted a couple of years ago by Mac McDaniel, W3HCW. The card was from the estate of Hiram R. Humphrey, W3OEV. As western Pennsylvania was in the 8th call area in 1940, this explains the call W8OEV.



The card was postmarked Fairhaven, Massachusetts, on October 20, 1940. On the back of the card was stamped: "No Third Term." How many remember that phrase? Well, old FDR got elected to a fourth term four years later, but didn't live to complete it.

(please turn to page 34)

DX World

(continued from page 31)

QSL card of him operating his 1939 era station. Clearly shown in the photo is the XU4XA card.

Horace had an old National NC-101X which he still has to this day. Horace's antenna system consisted of three Lazy H's 120° apart to cover the world. They were over a cattail meadow at the level of the Connecticut River, which was flooded twice a day by the tide. They laid down a nice signal on 20M all over the world.

The open-wire feedlines were nicely matched to the antennas, and the transmitter never knew when it was switched from one to another.

Horace sent along this old Zone 23 card for a contact he made with C6YZ 40 years ago. This DX station was formerly XU8YZ of Shanghai.

QSL information

DX News Sheet reports that Joe Arcure, W3HNK, who tries to assist with obtaining QSL cards with the USSR, received a pile of torn and/or empty envelopes for UV100 cards. Anyone who has QSLed via Joe for a UV100 card should send another card.

Joe said that no envelopes or green stamps are necessary. Our personal feelings would be to send the envelope and green stamp anyway, as it is not Joe's fault. After all, he is only trying to help the DX fraternity.

Glenn Tracey, KC3EK, advises that he can no longer act as a QSL manager for any DX station. This includes the calls 6Y6A, 6Y5HN, 6Y25HN, YU7-XX, YZ7DX, 8P6OX, HK1AMW and 8P6RE.

Kappy, WA4WTG, who recently changed addresses, says the post office will not forward any mail after August 31. His new address is Bob Kaplan, WA4WTG, 718 SE 3 Lane, Dania, FL 33004.

Alex Meyer, WB6AFJ, is looking for a QSL route for VK9MR, who he worked in 1984. He said the manager was not VK9WU. That was Alex, of the Mellish Reef DXpedition by the Down Under DXers Contest Club during the *CQ* World Wide DX Contest, late October 1984. The QSL manager was given as Les, VK2WU (not VK9WU).

In case that route doesn't work, try one of the other team members, among whom were Jan Schaefer, VK2CIA, Tony A.J. Gilbert, VK3CE, and Rob McKibbin, VK5ARO.

QSL routes

AT0T	—KE3A	LS4CSI	—LU4BP
AX9LZ	—JH9GRM	LZ5A	—LZ1KDP
C43T	—YU1RL	OH0BA	—OH2BAZ
CE2DZN	—LU9FFA	OH0BH	—OH2BH
CI8CDX	—VE3CDX	OH0/K8MFO	—W8TPS
CI8COP	—VE3COP	OH0/SM0NJO	—SM0NJO
CI8CPU	—VE3CPU	OX/I2BVS	—I2MQP
CI8CR	—UA3CR	OX/I2DMK	—I2MQP
CI8CW	—VE1DH	OY0MR	—DL1RK
CI8GW	—VE3ICR	P29HS	—JH5KZC
CI8GZ	—UW3GZ	P40GO	—K5GO
CI8HO	—VE3HO	P40W	—WA4CMS
CI8JH	—VE3CKF	PZ5ES	—KX2O
CI8LVW	—VE3LVW	RD6DZ	—UB5ILA
CI8TZ	—VE3MFP	SV0FG	—KA6UUS
CI8UA	—VE3CDM	T30JS	—VK9NS
CI8XN	—VE3XN	T31JS	—VK9NS
CR5CQK	—CT1CQK	TA2AP	—KB6LEA
DK2OY/TF	—DK2OY	TL8HW	—KJ4GK
DL8UI/EA8	—DL8UI	TN4NW	—AL7EL
EJ1OOO	—EI7CC	TU4CQ	—WA0NDF
EK3DXU	—UZ3DXU	TV6MED	—FD1DBT
EK0AKA	—UA9OBA *(See Note 1)*	U19PK	—UK3A
EK0AKR	—UA9OBA *(See Note 1)*	UA3TT/UF2	—UA3TT
EK0AKW	—UA9OBA *(See Note 1)*	V21WW	—N0DH
F2DX/FJ/FS	—F6BFH	VK4CE1/ VK9X	—JA1UT
FB8WJ	—F6EAY	VP2MR	—W5STI
FO0AKV	—N6CW	VP8BFM	—GM4ILS
FO5HL	—WB6GFJ	VP8BRY	—G4ZRY
FP0MAR	—F6FNU	VQ9CQ	—N7JJQ
FT8ZB	—F6ESH	VQ9KR	—KG6DX
FY5EW	—F6BFA	XE1IKG	—WQ5Y
GB75MAL	—G4SSH	XE1IUQ/XF3	—I1CAW
GD3AHD	—G4CVZ	YB1AQC	—W4FRU
HB0/DF4GV	—DF4GV	YB8ASX	—K0IEA
HB0/ DL8GBH	—DL8GBH	YJ8AA	—JH3DPB
HD8DZ	—HC2DZ	YT3M	—YU2DBC
HG60HQ	—HA6KNB *(See Note 2)*	YW1A	—YV1AVO
HP2XVB	—KB4WZQ	Z21BA	—N5FTR
HS0A	—JA1AJT *(See Note 3)*	ZC4EE	—G4SSH
IK7JWX/4J7	—I7PXV	ZD8HR	—N6HR
IU4BU	—I4IKW	ZF2MN	—KA3MQI
J5WAD	—W3HNK	ZK1QC	—K9QVB
J28EM	—F6EAY	ZK3RVC	—VK2BCH
J79MD	—N4CRU	ZL5BA	—KB4GID
JY8KS	—VO1BD	3A2EE	—F9RM
K2BPP/6Y5	—KA2UHS	3C1JPF	—ON7GV
KA2IJ	—KB1BE	4J1FS	—OH2NB *(See Note 5)*
KB5ENR/ KH3	—KA5WOO	5H3RB	—NM2R
KC3RE/TA3	—K3BEQ *(See Note 4)*	5X5SP	—DK2RZ
KH2H	—JS6BLS	7J6CAS	—KE6PL
		7S6SO	—SM6LJU
		8P6JQ	—KA6V
		9H3IJ	—DF5BM
		9Q5DX	—KQ3S
		9Q5HT	—ON7GV
		9Q5UN	—OH3GZ

BY5NC	—P.O. Box 1033, Nanchang, PEOPLE'S REPUBLIC OF CHINA
BY5RT	—P.O. Box 707, Fuzhou, PEOPLE'S REPUBLIC OF CHINA
BY7HY	—P.O. Box 14, Yueyang, PEOPLE'S REPUBLIC OF CHINA
C6ANN	—P.O. Box 1432, Nassau, BAHAMAS
DX1DBT	—P.O. Box SM 290, Manila, PHILIPPINES
H44X	—Solomon Isle Radio Society, P.O. Box 418, Honiara, SOLOMON ISLANDS
KP4GB/ HP2	—Box 89, APO Miami, FL 34005
NH2/KD7P	—68 Betel Palm, So. Finegayan, NCWP, FPO San Francisco, CA 96630
P29DD	—P.O. Box 495, Rabaul, PAPUA NEW GUINEA
P29KF	—P.O. Box 997, Madang, PAPUA NEW GUINEA
P29KH	—P.O. Box 997, Madang, PAPUA NEW GUINEA
SV9AKD	—P.O. Box 1224, Iraklion, GREECE
UG6GAT	—P.O. Box 54, Yerevan 375020, USSR
UG6GAW	—P.O. Box 25, Charentsavan 378562, USSR
UG6GFF	—P.O. Box 78, Yerevan 375010, USSR
UI8ZAC	—P.O. Box 188, Nukus 742005, USSR
UL8LWZ	—P.O. Box 17, Kustanai 458000, USSR
UM8MDX	—P.O. Box 240, Frunze 720055, USSR
UO5OAS	—P.O. Box 507, Tirgspol 278000, USSR
UO5OAL	—P.O. Box 20, Kagul-9 278830,USSR
UO5WU	—P.O. Box 20, Kagul-9 278830, USSR
UQ1GWW	—P.O. Box 50, Riga 226010, USSR
3D2AG	—P.O. Box 184, Suva, FIJI
6T5BA	—P.O. Box 714, Khartoum, SUDAN

Notes

1. If you wish to QSL direct to UA9OBA, use P.O. Box 1, Novosibirsk-92 630092, USSR.
2. The call HA5FM has also been given as the QSL route for HG60HQ.
3. This applies for operations during the month of June 1988.
4. Europeans may send their QSL requests for KC3RE/TA3 via SM5CAK.
5. Use the following address for OH2NB: P.O. Box 63, Helsinki SF-00391. FINLAND.

Our thanks go to the following contributors for this month's column: PZ2AC, WA4WTG, W9LNQ, K3-BEQ, OH1RY, K6QS, WB6AFJ, KC3EK, W2GHK, T77C, W3HCW, W1AB, Western New York DX Association (W2FXA), Salt City DX Association (KB2G), International DX Foundation, Northern California DX Foundation, *The JARL News, The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *Long Skip* (VE3IPR), *DX News Sheet* (G4DYO), *The DX Bulletin* (VP2ML) and *QRZ DX* (W5KNE).

We are now into the month of September and contest season is upon us. A good way to sharpen our contest skills is to join in with the annual California QSO Party, sponsored by the energetic Northern California Contest Club. If everything goes as planned, N6JM will be active from rare Sierra County. Look for us the first weekend in October.

Also, the club has reactivated the old Worked All California Counties award (WACC). The award requires confirmation from all 58 of the counties and all contacts made since October 1, 1987 count. Details elsewhere in **Worldradio**. The best of DX to you es 73, de John, N6JM. □

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

ANNOUNCING!

The 1989 Worldradio DXathon

ELIGIBILITY — All licensed Amateur Radio operators, worldwide.
DATES — Start: 0000 1 January, 1989. End: 2359 31 December, 1989.

Exceptions: No contacts made during the time frame of any DX Contest will be valid. This is to be a prestigious award program, made so by its difficulty.

BANDS — 80, 40, 20, 15, 10 meter bands, plus satellite/moonbounce frequencies.

MODES — Phone, CW, Digital (includes RTTY, AMTOR, packet), Visual (SSTV), and Satellite (includes moonbounce).

Five Bands/Five. Modes equals DXathon.

CATEGORIES — There is only one category — Single Operator.

OBJECTIVE — Contact as many NATIONS on as many modes as possible. A NATION is defined as an entity with enough sovereignty to issue its own postage stamps.

VALID CONTACTS — A NATION may be worked but once, on each mode, regardless of the frequency band. This is not a five-band per mode contest.

SCORING — Final score will be the total number of NATIONS contacted on the various modes. Contact with your own NATION does not count. The highest possible score would be about 900.

SUBMISSIONS — Entries must be received by 1 February, 1990. No QSL cards need be submitted or received by the entrants. Send signed log extracts to:

WORLDRADIO
2120 - 28th Street
Sacramento, CA 95818 USA

Award winning logs will be published in **Worldradio**. Decisions of the DXathon committee will be final. The committee has the right to disqualify entries for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the DXathon Committee.

AWARDS

World Champion — The World Champion will receive a trophy significant enough to honor the effort.

Gold, Silver and Bronze Medals will be awarded for the highest scores on each continent.

Certificates will be awarded for:

A.—The highest score in each NATION.

B.—The highest score in each USA call area.

C.—The top single-band score in A. and B. above.

D.—Technician/Novice scores as warranted.

E.—High scoring 4 mode, 3 mode, 2 mode participants.

Nations with the highest participation (weighted vs. Radio Amateur population) will be honored.

In case of ties, duplicate awards will be made.

A certificate of participation will be awarded each "radio athlete."

It would be appreciated if monthly scores were sent in for publication.

RULE CHANGES — Rules may be modified in time before the contest actually starts to reflect suggestions from potential participants. Send your suggestions to Worldradio at the above address.

Rules may be modified over the years to reflect feedback from the participants. Please send copies of this page to your DX friends.

Computers and Amateur Radio

Part IV Computer communications

Vern Valero, ND1Z

Imagine what Amateur Radio would be like if everyone invented their own operation techniques. Perhaps one operator would call CQ and another would yell AMHERE. Maybe hams in Region 1 would use QTH, but those in Region 2 would use QTL for location. Or even worse, maybe stations on 2M repeaters would constantly double, triple and quadruple. Clearly, some rules and conventions are necessary.

Somehow, over the years, sets of rules have evolved to make Amateur Radio a more or less smooth operation. Many of the CW procedures and abbreviations were taken from the landline telegraphers. Some of the voice procedures were taken from the military. Some procedures were invented for and by amateurs. With the exception of the pile-up (an obvious ham tradition), the system works well.

A protocol is a set of rules established to effect efficient communications. Computers need such rules to communicate with I/O devices, operators at terminals and other computers. Computers are very fussy and cannot interpolate what the person or computer at the other side really meant.

Engineers and scientists like to view natural phenomena in terms of models. Ohm's Law is a model for predicting currents and voltages in a circuit. Complex impedance and phase is a model for describing current and voltage inconsistencies in circuits with capacitance and inductance. Likewise, a model has been developed to deal with computer communications.

The Open Systems Interconnect (OSI) model proposes a hierarchical structure with seven layers. Layer 1 is the Physical Layer, which describes the electrical signals present on the cables. The Link Layer(2) ensures that raw data can be transmitted from point to point, error free. If an error is detected in a block of data, it is resent. The Network Layer(3) imposes a unique address (a number) to every station of interest and routes data from a source station to a destination station.

The Transport Layer(4) ensures that blocks of data get delivered in proper order and assigns some logical socket number to the raw network addresses. The Session Layer(5) negotiates connections to a specific service on the target computer (such as a bulletin board system). The Presentation Layer(6) performs special processing on the data, such as translating data from Baudot code to ASCII code. Finally, the Application Layer(7) is totally defined by the user to accomplish his or her specific purposes.

In each case, a higher level calls a lower level. For example, the Transport Layer subroutines would call subroutines of the Network Layer. This is

known as an interface. A specific layer sends coordination messages to its similar layer on the other system (known as a peer layer). For example, the Network Layer on computer A would send a "Connect Request" to the Network Layer on computer B. The Network Layer on computer B would then send a "Connect Accepted" message back to the Network Layer on computer A. This is known as a protocol.

Computer communications development has had close ties with the telephone network. Government regulation and economics dictated that the common carriers would be used for data transmission. The telephone system is an analog network and computers send digital data. Devices known as Modems (MOdulator-DEModulator) were used to translate digital data to analog data to transmit over the telephone and then from analog to digital at the other side.

The early computer protocols followed the telephone system methods. In circuit switching, a computer (or I/O device) would either have a dedicated telephone line (one that never hangs up) or dial-up to establish physical connection. There were great problems with using telephone lines for data transmission. Normal voice grade lines, although reliable for voice, were very noisy over long distances to the extent that data was corrupted in transmission. Further, the speed at which data could be transmitted was limited.

Large companies were able to lease high-speed and conditioned (less noisy) lines from the telephone company. But leased lines were very, very expensive and less reliable than desired. Further, the leased line might not be used for long periods of time. That represents wasted money. Wouldn't it be great if a user was charged for the amount of data sent, rather than the time connected?

Computer communications tend to be bursty in nature. A file is sent from one computer to another in a short time, and then there is a long period of silence. Terminal users request a screen of data and then sit for several minutes reading the results.

The long-term solution evolved from a series of research efforts in the 1960's that evolved into the Advanced Research Projects Administration network (ARPANET). ARPANET sent (and still sends) data in bite-sized chunks known as packets. Data is sent within the network digitally wherever possible (such as with satellite links). Data transmission speeds within the network is very fast, and users are charged for the actual usage of the network, by the packet.

By the early 1970's, packet communications began to catch on. Representatives from the industrialized world met to map out a strategy to build an international digital network. The result was a standard known as X.25.

The X.25 philosophy involves a huge international network with each station having its own unique network address. The source is a "cloud," with the destination at the other end. The source does not need to know what links are necessary to get to the destination — only the destination's address. Further, the network is internally capable of moving packets at great speed because of the use of high-speed links such as satellite and optical fiber.

Today many nations have one or more data networks that all tie together internationally. The United States has Telenet and Tymnet, although Telenet is more widely used. It is now possible to log-in to remote systems or send data without dial-ups or costly dedicated lines. Packet communications makes it all possible.

The X.25 protocol specifies a link layer, for the time being, of RS-232. Those with home computers might notice the RS-232 plug at the back of the unit. In the future, RS-232 will be replaced with a more flexible protocol.

The X.25 link layer is known as High-level Data Link Control (HDLC). Each chunk of data that HDLC works on is called a frame. The frame contains a start-and-stop pattern called the flag. It also contains source and destination addresses, control information, and of course, user data. One station sends a "connect" packet to another station. The other station accepts the connection, and then data packets are exchanged. Eventually, the two stations disconnect and the action is over.

Amateur Radio HDLC deviates slightly from the standard HDLC. The major difference is that the "To" and "From" addresses contain call signs. (Anybody surprised?) Further, to support multiple connections, a special number is appended to the call sign. So the connection ND1Z-0 might be sending a file to NF1Z-1, while ND1Z-1 might be ragchewing with N1CPE-0.

The X.25 network layer specifies procedures for cleanly keeping track of connections and data reliability. The radio amateurs have not implemented very much of this layer, so we will not focus on it.

Amateur packet radio does not fit cleanly within the OSI model, or even within X.25. It is still evolving, and perhaps some of us will become involved in its development. In any event, the potential exists to develop a worldwide network of stations that will enable us to serve the public as never before.

The next article of the series will investigate the nuts and bolts of becoming involved with Packet radio. This mode is no longer for experimenters only. Now anyone can operate Packet.

Cheap packet

Commodore 64 users can get on packet with just software (free) and a simple modem ($20 worth of parts).

The Digicom 64 software that makes this possible was written by German amateurs and is available from Barry Kutner, W2UP, 286 Leedom Way, Newtown, PA 18940. Please enclose a blank disk, a self-addressed disk mailer with sufficient return postage, and $1 to cover copying costs. —*PARC Scope, Newton, PA*

Visit Your Local
RADIO CLUB

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

ALABAMA

Birmingham Amateur Radio Club (BARC). Meets at the American Red Cross Bldg., 2225 3rd Ave. North in downtown Birmingham, AL. 1st and 3rd Thursdays/monthly, 7:30 p.m.

Montgomery Amateur Radio Club (W4AP). Alabama State Trooper Dist. Office. Intersection of Coliseum Blvd. & Federal Dr. Randy Smith, N4LZK, (205) 832-4598. Meets 3rd Monday/monthly, 7:00 p.m.

ALASKA

Arctic Amateur Radio Club. Geophysical Institute West Ridge U of A, P.O. Box 81389, College, AK 99708. 1st Friday/monthly, 7:30 p.m.

ARIZONA

Arizona Amateur Radio Club. Meets 2nd Thursday/monthly, 7:30 p.m. 1510 E. Flower St., Phoenix, AZ. Net: W7IO Information Net every Thurs., 7:00 p.m. W7WGW/R 147.88/147.28 Rptr.

Old Pueblo Radio Club. Meets: 2nd Wednesday/monthly, 7:30 p.m. Location: Franklin Bldg., University of Arizona. N.E. corner of 5th St. & Park.

Tucson Repeater Assoc. P.O. Box 40371, Tucson, AZ 85717-0371. 2nd Sat./monthly, 7:30 p.m., Pima Co. Communicaitons Bldg., 2545 E. Ajo. Net Thurs. 7:30 p.m. 146.28/88 (146.22/82, 147.68/08, 147.70/10-PKT).

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Senior Citizens Center, Jackson, CA. Meets: first Thursday/monthly, 7:30 p.m. WA6WIY Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.

Associated Radio Amateurs of Long Beach, W6RO. P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Friday/monthly, 7:30 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

Butte Amateur Radio Club. Meets: 3rd Thursday/monthly, 8 p.m., Chico Community Hosp. Conf. Center on Rio Lindo off Cohasset Rd. Net: 28.330 Wednesdays, 8:30 p.m. For info: 893-5208, KE6EP or KB6COH.

Caltrans RACES Club. Meets at Carrows Restaurant, 1825 10th St., Sacramento, CA, last Friday/monthly, 11:00 a.m. Contact: J.J. West, N6AAD.

Citrus Belt Amateur Radio Club. 777 East Rialto Ave., San Bernardino, CA. P.O. Box 3788, Zip - 92413-3788. Meets: 1st Friday/monthly, 7:00 p.m.

Contra Costa Communications Club WD6EZC/R. P.O. Box 661, San Pablo, CA 94806. Meets 2nd Sunday at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes. For info call Don K6DPQ, (415) 222-2449.

Fresno Amateur Radio Club, Inc. P.O. Box 783, Fresno, CA 93712. Meets 2nd Friday/monthly, 8:00 p.m. Manchester School, 2307 E. Dakota, Fresno, CA. W6TO/R 146.34/94.

Gabilan Amateur Radio Club GARC. P.O. Box 2178, Gilroy, CA 95020-2178. Meets: South Valley Jr High School, 385 I.O.O.F. Ave., Gilroy. 2nd Thurs/monthly. 7:30 p.m. Talk-in 145.47/144.87.

Golden Empire Amateur Radio Society (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, Repeater 146.25/.85. Meets: 3rd Friday/monthly, 8 p.m. at 1528 Esplanade, Room 110B, Chico.

The Hayward Radio Club, Inc. Fire Station #6, 1401 West Winton Ave., Hayward, CA. Classroom in back of station. Meets: 3rd Friday/monthly, 7:30 p.m. For info contact Mrs. Elfy Griffiths N6DOC.

Hilltop Amateur Mastertie System (HAMS). Informal mtgs. weekly/Mon. 5 p.m. at Shakey's Pizza, 12924 Washington Blvd., Mar Vista, CA. Meets 3rd Mon./monthly at Bicycle Shop Cafe, 12217 W. Wilshire Blvd., W. LA. Info, N6FD 213/823-0767.

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240 Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WA6UYW Rptrs. 146.085/146.685 224.22/Down 1.6 WB6ODZ Rptr.-224.58 Down 1.6 Low-Level.

Lee DeForest Radio Club of Hemet. 1930 Local each Third Thursday at 625 Pico, San Jacinto, CA.

Livermore Amateur Radio Klub (LARK). First Presbyterian Church, 5th & L St. Bill Richards, WD6J, (415) 829-5229. Net Mondays 1900 on 147.12+. Meets 3rd Saturdays/monthly, 9:30 a.m.

Marin Amateur Radio Club (MARC) W6SG. Box 1231, San Rafael, CA 94901. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sunday AM Club at Red Cross, San Rafael.

Moreno Valley Amateur Radio Assoc. P.O. Box 1304, Moreno Valley, CA 92337. Meets: 4th Monday/monthly, 7 p.m., Moreno Valley Unified Sch. Dist. offices, 13911 Perris Blvd., Moreno Valley. Net Tuesdays, 8 p.m. 146.655/.055

North Hills Radio Club. P.O. Box 41635, Sacramento, CA 95841. 3rd Tuesday/monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA. Net 145.19 Thur. at 8:00 p.m.

North Shores ARC. (619-275-1495) So. Clairemont Recreation Center, 3605 Clairemont Dr., San Diego, CA. 1st Tuesday/monthly, 7:30 p.m. Club net each Monday, 7:00 p.m. 28.485 MHz.

Radio Amateur Mobile Society. Meets: 2nd Tuesday/monthly, 7:30 p.m. Carmichael Elks Bldg., Cypress and Hackberry, Carmichael, CA. Net Saturday a.m. 224.84 8:30/146.79 9:00.

River City A.R.C.S. Meets: 1st Tuesday/monthly, 7 p.m. SMUD Bldg., Room B & C, Elkhorn & Don Julio, Sacramento, CA. For info: (916) 483-3293.

Sacramento Amateur Radio Club. Contact: Gary Bryant, KB6KZZ, (916) 646-1171. Meets Sacramento Blood Bank, 32nd St. & Stockton Blvd., Sacramento, CA, 2nd Wednesday/monthly, 7 p.m.

Sacramento "Old Timers" Ham Radio Brkfst Club. Meets 2nd Wednesday/monthly, 8 a.m., Carrows Restaurant near Watt Ave. and Hwy 80 exit. For info contact Paul Wolf, W6RLP (916) 331-1830.

San Gabriel Valley ARC. Bowling Green Clubhouse, 405 S. Santa Anita Ave., Arcadia, CA 91006. Meets: 1st Tuesday/monthly, 7:30 p.m., except Dec. W6QFK, Repeater 147.165/765.

San Mateo Radio Club. Beresford Park Recreation Center, 28th Ave. and Alameda de las Pulgas, San Mateo, CA 94403. 3rd Friday/monthly, 7:30 p.m.

Santa Clara Valley Rptr. Society (SCVRS). P.O. Box 3085, Sunnyvale, CA 95087. (408) 247-2877. 146.76(–600 kHz), 224.26(–1.6 MHz), 444.60(+5 MHz). 2 meter/220 net Mon. 9 p.m. Mtgs.-3rd Fridays.

Shasta Cascade Amateur Radio Society (SCARS) P.O. Box 664, Anderson, CA 96007. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm., Grape St., near Parkview Ave., Redding, CA. Net 146.64 Wed., 8 p.m.

Sierra Foothills Amateur Radio Club. P.O. Box 3262, Auburn, CA 95604. Office of Education Bldg., 360 Nevada St., Auburn, CA. Meets: 2nd Friday/monthly, 7:30 p.m. Nets: Tues. 7:30 p.m. 28.443 MHz. Thurs. 7:30 p.m. Rptr. 145.43/223.86.

Solano County Amateur Radio Society. P.O. Box 457, Fairfield, CA 94533. Meets: 3rd Wed. 7 p.m., Vanden High School. 441.150+5 (Remote 145.69 simplex) PL 77Hz, (707) 448-1461.

Sonoma County Radio Amateurs, Inc. Meets 1st Wednesday/monthly (except Dec.) at the Emergency Operations Center (behind the County Courthouse), P.O. Box 116, Santa Rosa, CA 95402.

South Bay Amateur Radio Association. Los Cerritos Community Center, Fremont, CA. Dick Melcher, WA6MDI. Call-in 147.615/015. Meets: 3rd Wednesday/monthly, 7:30 p.m.

Southern Calif. Amateur Transmitting Society (SCATS). P.O. Box 1770, Covina, CA 91722. Meets: Cortez School, 2226 E. Rio Verde Dr., West Covina, CA 91791. 1st Monday/monthly, 7 p.m. (coffee 6:30 p.m.)

Southern California Six Meter Club. P.O. Box 448, Cypress, CA 90630. USB Net Tue., 8:00 p.m., 50.150. FM Rpt. Net Thurs., 8:00 p.m., 52.28/88. FM Smplx Net Thur., 9:00 p.m., 50.300.

Stanislaus Amateur Radio Assoc. (SARA). P.O. Box 4601, Modesto, CA 95352. Stanislaus Co. Administration Bldg., 12th & H Streets, 3rd Tues./monthly, 7:30 p.m. 145.39 MHz WD6EJF, 223.68 MHz.

Stockton-Delta Amateur Radio Club Inc. Meets: 2nd Thursday/monthly, 7:30 p.m., American Red Cross Bldg., 747 No. Pershing Ave., Stockton, CA. Rptr. 147.165/765. Net Wednesdays, 8 p.m.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Monday/monthly, 7:30 p.m. Pomona First Federal S&L, (basement), 399 N. Garey, Pomona, CA.

The Trinity County ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wednesday/monthly, at the CD Hall in Weaverville, 7:30 p.m. WD6FHX Rptr. 146.13/73.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets: Victor School Board Room, 6th & "A". 2nd Tuesday/monthly, 7:30 p.m. WA6EFW Rptr. 146.34/146.94.

West Coast Amateur Radio Club. Fountain Valley School. Talbert/Bushard. Fountain Valley, CA. Meets 3rd Thursday/monthly. 145.44-4Z.

Western Amateur Radio Assoc. Cerritos Park East, 166th St. and Carmenita Ave., Cerritos, CA. Meets: 1st Tuesday/monthly, 7 p.m. Rptr., N6ME 145.40/224.18 MHz.

Yucaipa Valley Amateur Radio Club (YVARC). Gibralter Saving's Community Room, 34880 Yucaipa Blvd., Yucaipa, CA 92399. Pres: Jack Prather W6KJP (714) 797-1276. Meets: 3rd Monday/monthly, 7:30 p.m.

CONNECTICUT

Tri-City ARC. Groton Public Library, Route 117, Groton, CT 06340. 2nd Tuesday/monthly, 7:30 p.m.

FLORIDA

Indian River ARC, Inc. (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931. Martin Andersen Senior Center, 1025 S. Florida Ave., Rockledge, FL. Meets: 1st Thurs./monthly, 7:30 p.m.

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tuesday/monthly, 7 p.m., Melbourne Library, 2275 S. Babcock St., Melbourne, FL.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tuesday/monthly, 7:00 p.m., Helco Auditorium, 1200 Kilauea, Hilo. Talk-in on 146.76(–).

ILLINOIS

Bolingbrook Amateur Radio Society. P.O. Box 1429, Bolingbrook, IL 60439-7429. (312) 759-4747. Call in 147.93/33. Meets: 3rd Monday/monthly, 7:30 p.m.

Chicago Suburban Radio Assoc. (CSRA). P.O. Box 88, Lyons, IL 60534. Meets 2nd Wed./monthly, 8 p.m. Community Rm. Clyde Federal Savings & Loan Assoc., 7222 W. Cermak Rd., North Riverside, IL.

Elgin Amateur Radio Society. P.O. Box 1351, Elgin, IL 60120. (WB9EEA President), Meets in EOC Rm. of Elgin Municipal Bldg. 2nd Friday/monthly, 8:00 p.m.

Fox River Radio League. Valley National Bank, Lower Level, Northgate Shopping Ctr. & RT. 31, Aurora, IL. (312) 584-4925 for more info. Meets: 2nd Tuesday/monthly, 7:30 p.m.

North Shore Radio Club. Meets: 2nd Monday/monthly. Net 8 p.m. Tues. Karger Center, 1850 Green Bay, Highland Pk, IL. WB9FRM Rptr. 147.345 + 600 (PL 1B). Info: NSRC, P.O. Box 1066, Highland Pk., IL 60035.

Six Meter Club of Chicago K9ONA. Bank of Lyons, Lower Level, 8601 West Ogden Ave., Lyons, IL. 2nd Friday/monthly, 7:30 p.m. Club Rptrs: 146.37/.97, 448.30/444.30.

INDIANA

Fort Wayne Radio Club. James Wolf, KR9U, P.O. Box 15127, Fort Wayne, IN 46885. The Salem Church. Meets: 3rd Friday/monthly, 7:30 p.m.

Northeastern Indiana Amateur Radio Club. P.O. Box 745, Auburn, Indiana 46706. Meets: 2nd Tuesday/monthly, 7:00 p.m. at members homes. Daily traffic net at 2300Z on 147.96/36 MHz, the WB9VDK rptr.

KANSAS

Kansas City Heart of America Radio Club. Red Cross Building, 211 West Armour Blvd. Meets: 3rd Tuesdays/monthly, 7:30 p.m.

MARYLAND

The Peninsula Radio Operators Society (PROS). Family oriented activities, training and exams held throughout the year. PROS Rptrs. 146.925 and 146.625. PROS, P.O. Box 2315, Salisbury, MD 21801.

MICHIGAN

Hazel Park Amateur Radio Club. Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. 2nd Wed/monthly, 7:30 p.m. Sept. thru May. 147.51 Simplex Call-In.

Oak Park Amateur Radio Club. Oak Park Community Center, 14300 Oak Park Blvd. (same as 9½ Mile Rd., west of Coolidge). Oak Park, MI 48237. 2nd Monday/monthly, 7:45 p.m. Talk-in on our 224.86 Mhz or 146.64 Mhz.

MISSOURI

PHD Amateur Radio Assn. Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tuesday/monthly, 7 p.m. Red Cross Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEBRASKA

Pioneer Amateur Radio Club (PARC). P.O. Box 445, Fremont, NE 68025. Meets: 4th Friday/monthly, 7:30 p.m. at Keene Memorial Library, 1030 North Broad. Wed. ARES net 146.67 19:30 CDT/19:00 CST.

NEVADA

Frontier Amateur Radio Society (FARS). Meets: 1st Friday at Fly-N-Chef, 7 p.m., Scenic Airlines Terminal, McCarran Airport, Las Vegas, NV. Net Mondays 7:30 p.m. 145.39. Info: Bob Herrell, WB5PTO, 641-6682.

Las Vegas Radio Amateur Club (LVRAC). Meets: 2nd Tuesday/monthly at 7 p.m., Nevada Power Building, Wengert Rm., 6226 W. Sahara Ave. (Near Jones). Net Tuesdays 8:00 p.m. on 146.94 MHz. Info: Call Lyle at 456-9510.

Nevada Amateur Radio Assoc. (NARA) 2333 Rodney Cir., Reno, NV 89509. Meets: 3rd Tuesday/monthly, 7:00 p.m. at First Federal Savings & Loan Bldg., 2330 So. Virginia St., Reno, NV.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover NH 03820. (603) 742-0130/755-2600. 2nd Sunday/monthly, 7:00 p.m. Dover Dist. Court. Talk-in 147.57.

NEW JERSEY

Bayonne Emergency Mgt. ARC (BEMARC). 16th St. & Ave. A Firehouse, Bayonne, New Jersey 07002. Rptrs: 145.430 & 224.-280. Meets: 2nd Tuesday/monthly, 7:30 p.m.

Delaware Valley Radio Assoc. (DVRA). Our Lady of Good Counsel Church. 137 W. Upper Ferry Rd., West Trenton, NJ 08628. Meets: 2nd Wednesday/monthly, 8:00 p.m.

Gloucester County Amateur Radio Club (GCARC). Woodbury V.F.W. 1st Wednesday/monthly, 8:00 p.m., Woodbury, NJ. Talk-in 147.18/78. For info call K2JF (609) 589-2318.

South Jersey Radio Assoc. (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Jan.-Oct. 4th Wed./monthly, 7:30 p.m. Nov.-Dec. 3rd Wed. due to Thanksgiving and Christmas. Talk-in 145.290 rptr. Club call K2AA.

NEW YORK

Communications Club of New Rochelle, NY. Harrison Street Firehouse. Bill McCarren, K2LV, (914) 738-0768. Meets: 1st Monday/monthly, 8 p.m.

Genesee Radio Amateurs (G.R.A.M.). N.Y.S. Civil Defense Center, State St., Batavia, NY 14020. Meets: 3rd Friday/monthly, 7:30 p.m. 147.255+ W2RCX.

Hall of Science Amateur Radio Club. P.O. Box 131, Jamacia, NY 11415. HOSARC, 2nd Tuesday/monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park at 7:30 p.m. The tristates' only 3-band linked rptr. system 144.300 S/223.600–/445.225–.

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. Non-profit org. uses Amateur Radio to enhance education of young people, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL!

Westchester Amateur Radio Assoc. (WARA). Scarsdale Village Hall, Scarsdale, New York. Meets: 1st Wednesday/monthly, 8:00 p.m. For info call B. Dubbs, Pres. (WA2FSR). (914) 725-1191.

NORTH CAROLINA

Raleigh Amateur Radio Society, Inc. P.O. Box 17124, Raleigh, NC 27619. Club net nightly, 8 p.m., W4DW, 04/64. Meets: 1st Wednesdays/monthly, 7:30 p.m., YMCA. 18th Annual Hamfest, April 16, 1989.

NORTH DAKOTA

Forx Amateur Radio Club. United Hospital, Grand Forks, N.D. Call-in 34/94. Meets last Tuesday/monthly, 7:30 p.m.

OHIO

Amateur Radio Fellowship (ARF). N8HUN, Linda Delugach, Sec. P.O. Box 2486, Streetsboro, OH 44241. Meets: 1st Sat./monthly at Kent Wally Waffle. KA8PHO rptr. 147.675/.075.

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Center, Jefferson, OH. 3rd Tuesday/monthly, 7:30 p.m. County Rptr., 146.715.

Northern Ohio Amateur Radio Society (NOARS). K8KRG/WB8JBM, P.O. Box 354, Lorain, OH 44052. Meets 3rd Mondays/monthly, 8 p.m. at Gargus Hall. Info: George, W8ANM, (216) 933-2841. Ohio's largest general interest club.

OREGON

Salem Amateur Radio Club (SARC). Northwest Natural Gas Auditorium, 3123 Broadway N.E., Salem, Oregon 97303. Talk-in 146.86. Meets 4th Tuesday/monthly, 7:30 p.m.

PENNSYLVANIA

Butler County Amateur Radio Assoc. Meets: 1st Tuesday/monthly, 7:30 p.m. at Red Cross Bldg., 312 Mercer St., Butler, PA 16001. Call-in 147.96/36

Mercer County Amateur Radio Club W3LIF. P.O. Box 996, Sharon, PA 16146. Meets: 4th Tuesday/monthly at 7:30 p.m. at Shenango Valley Medical Center, Farrell, PA. Net, Thursdays 8:45 p.m. on 147.75/15 W3LIF/R.

Warminster Amateur Radio Club. P.O. Box 113, Warminster, PA 18974. Meets: 1st Wednesday/monthly, 8:00 p.m. at St. Johns Lutheran Church, Hatboro, PA. Net Wednesdays, 8:30, 147.09/69.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK). Meets: 1st and 3rd Tuesdays, Salvation Army Community Bldg., Hampton, VA. Operates 148/13 147/73 Rptr., VEC Information (804) 851-5573.

WEST VIRGINIA

Jackson County Amateur Radio Club. D. Geneal Bailey, NK8P, Sec.-Treas. 113 Winters Dr., Ripley, WV 25271. First National Bank of Ripley. Meets: 1st Thursday/monthly, 7:30 p.m.

WASHINGTON

Mike & Key ARC K7LED. Good Neighbor Center, 305 So. 43rd Street, Renton, WA 98055. Meets monthly on 3rd St., 10 a.m.

North Seattle Amateur Radio Club (NSARC). Meets: 3rd Tuesday, 7:30 p.m., (except Jul. & Aug.) at the First Interstate Bank, 30th Ave. NE and NE 125th St. (Lake City) in basement. Info: Mike Jr., W7WHT, (206) 282-1438 or P.O. Box 20279, Seattle, WA 98102.

WYOMING

University ARC. 146.01/.61 Meets: 1st Tues., 7:30 p.m. Sept.-May. U.W. Physical Plant Bldg., 15th & Lewis St., P.O. Box 3625, Laramie, WY 82070. June-Aug: Bernie Club picnics Wednesdays.

WEST GERMANY

Wiesbaden Amateur Radio Club (WIESARC), DA1WA. Meets 2nd Tuesday/monthly at Stadion Restaurant, Wiesbaden. Steve Hutchins, DA2HS, Box 4205, APO NY 09633. PH: (011) (49)-6725-3462. American and German members.

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 Street, Sacramento, CA 95818.

QUARTER CENTURY WIRELESS ASSOCIATION INC.

Esther Given, W6BDE

Election returns are in and the Quarter Century Wireless Association congratulates Lew McCoy, W1ICP; Leo Meyerson, WØGFQ; Esther Given, W6BDE; Fred Hammond, VE3HC; and El Charlton, W5MD. These incumbent directors were re-elected and will serve a two-year term commencing September 1, 1988 and concluding August 31, 1990.

QCWA's four major officers and five of its 10 directors are elected in odd-numbered years. The other five directors are elected in even-numbered years. This system operates so that there is continuity in personnel on the board of directors. The board will always have previous members familiar with the organization's procedures.

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Vic Clark Chapter 91, hosts for the 1988 QCWA Convention in McLean Virginia's Hilton, September 23-25, are planning interesting new attractions in addition to the usual features of past conventions.

Stuart Meyer, W2GHK, Technical Program Chairman, announces that Ralph Haller, N4RH, Chief of the Private Radio Bureau; Robert McNamara, Chief, Special Services and John Johnston, W3BE, Chief, Personal Radio Division — all high-ranking personnel of the Federal Communications Commission — will take part in a "Face the Members" Forum on Friday, September 23, at 2:30 p.m. at the McLean Hilton.

QCWA members attending the convention will not want to miss this opportunity to hear from and talk with these policy-making specialists.

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The QCWA was well represented at the recent 54th Annual International Glacier-Waterton Peace Park Hamfest held at Three Forks Campground in Essex, Montana. QCWA's president, Leland Smith, W5KL; secretary, Jim Walsh, W7LVN; and director, El Charlton, W5MD, drove to East Glacier National Park from their respective QTH's and participated in this "Hams Across the Border" gathering. It was attended by 225 U.S. and 125 Canadian amateurs, many of whom are members of Wild Rose Chapter #151 in Alberta.

During the hamfest, Montana's Treasure State QCWA Chapter 104 held its annual meeting with 40 members attending, several of whom are Canadians. The QCWA National officials were featured guests. The following day, President Smith, Director Charlton and their wives drove up into Alberta.

Business commitments prevented secretary Walsh's stay-over for that visit. Daily schedules on 20M mobile were operated by W5KL as he and his YF — Helen, WA5WAR — traveled through the West.

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The spring issue of *The QCWA Journal* carried a president's message concerning the recently established QCWA Building Fund. Response has been very positive, and plans are underway to set up a campaign with goals and time frame attractive to individual members and chapters for the future needs of the association.

A major contribution was recently made to this fund by Gator Chapter 32 and Pelican Chapter 128, who hosted the 1986 QCWA Convention. The donation represented the proceeds over expenditures for that event.

•

A recent report in this column named members who were high scorers in QCWA's CW and Phone QSO parties held last spring. One of the fringe benefits of such participation is the opportunity to qualify for special certificates of operating accomplishment.

The following members earned QCWA certificates during the QSO parties:

Worked 100 QCWA Members — Jim Wilcox, K4JAP; Marshall Killen, VE3KK; Walter Read, W6ASH; Bill McGrannahan, KØORB; William Ward, N3WW; Jim Rounds, K9WA; Jim Villasana, K6NQ/7; Leath Padgett, N6PWS; and Jack Miller, W9WYN.

Worked Members of 60 Different QCWA Chapters — K4JAP, W6ASH, K6NQ/7 and W9WYN.

Worked QCWA Members in All 50 States — William Moore, W9WM.

•

Fulmore Middle School in Austin, Texas held an imposing ceremony on May 16 when their club station, N5FQM, was dedicated to the memory of W.E. (Pete) Peterson, W5OY, who became a Silent Key in June 1987. The following December, Pete's YF — Adella — donated his entire ham station to the school's Amateur Radio club.

Members of QCWA Chapter 76 in Austin — along with faculty member, Joe Farley, N5FQM — installed the equipment and dipole antennas. A plaque honoring Peterson's 62 years in Amateur Radio was posted in the new station. The event was recorded by two local TV stations and aired on their evening news.

Farley founded the school's ham club and states that students discover new insights into science, math and social awareness through exposure to Amateur Radio. □

Who said that?

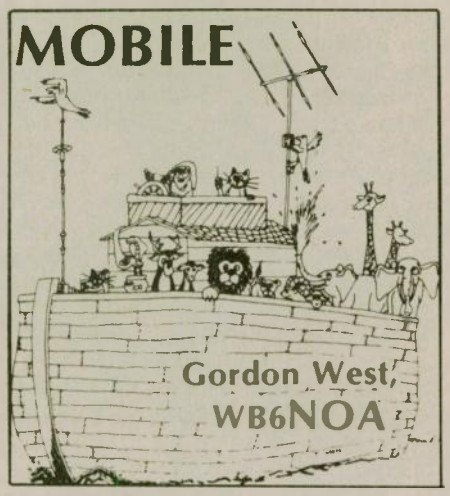
"No worries, Boss. Nobody's going to buy those little Japanese cars."

"Who on earth would want six bottles of the same thing in a package with a handle on it?"

"Watches with no hands? You're crazy."

"Oh, come on! Don't tell me they can put music on Scotch tape."

—Charro, Brownsville, TX □



Large gain 2M antennas

Your typical mobile 2M antenna only offers 1 or 2dB gain over a reference 18" ¼-wave spike. The most popular mobiles are the Larsen (Vancouver, WA) ⅝-wave base-loaded whips with a myriad of mounting options.

Metz stainless steel base-loaded whips (Laconia, NH) are ½-wave and are ideal for fiberglass boats and motorhomes. The DC shunt-fed Metz requires no groundplane directly beneath its coil. Hustler (Mineral Wells, TX) also has an exciting lineup of top-performing base-loaded 2M whips.

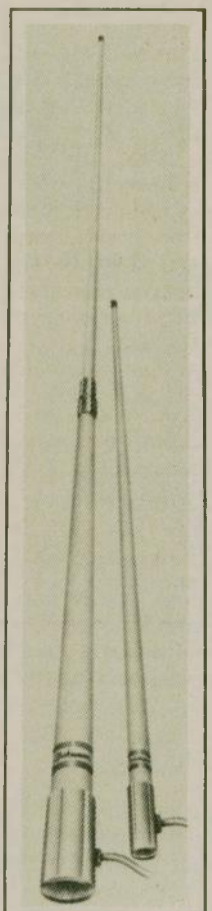
3dB gain may be achieved by going to the taller Hustler Model CG-144. This antenna is suitable for a ball-mount, and features ⅝-wave over ¼-wave collinear stacking. The more elements stacked, end-to-end and phase-fed, the lower your angle of take-off radiation and the higher gain achieved for more distant 2M contacts.

If you are really looking for the ultimate in omni-directional gain, consider the *fiberglass* 6, 9 and 10dB gain super antennas! These are the antennas you may see at repeater sites, and they also make great portable high-gain antennas for motorhome and marine mobile work. Needless to say, they are too tall for regular vehicular mounting!

The 23′ 9dB and 10dB gain antennas are usually one piece and are designed expressly for repeater station use.

- 10.5dB gain Shakespeare, Model 476-1 (no longer in production)
- 10dB gain Celwave PD-200 (formerly Phelps Dodge) "Stationmaster"™
- Morad (Seattle, WA) 10dB gain, Model VHF-146
- Ireland (Miami, FL) 9dB gain, Model FI-912

These antennas are characterized in the "fiberglass" category, ideal for mobile marine, repeater site, and possibly mobile home use.



2M fiberglass 6 and 9dB gain antennas

There are also many styles of commercial collinear antenna systems constructed of aluminum manufactured by Cushcraft, Hy-Gain, and several other leading antenna manufacturers.

If you're looking for a big 2M repeater "stick," a best value (high gain, low cost) is available from Morad, 1125 NW 46th St., Seattle, WA 98107; (206) 789-2525. It's a terrific performer I have tried personally aboard a boat, as well as a repeater location. It's all one piece and must be delivered by truck.

My previous "best base" 2M antenna was the Shakespeare Model 476-1, but this antenna is no longer in production. The last one I saw was at the Dayton swap meet, and the guy really didn't know what a terrific performer he had!

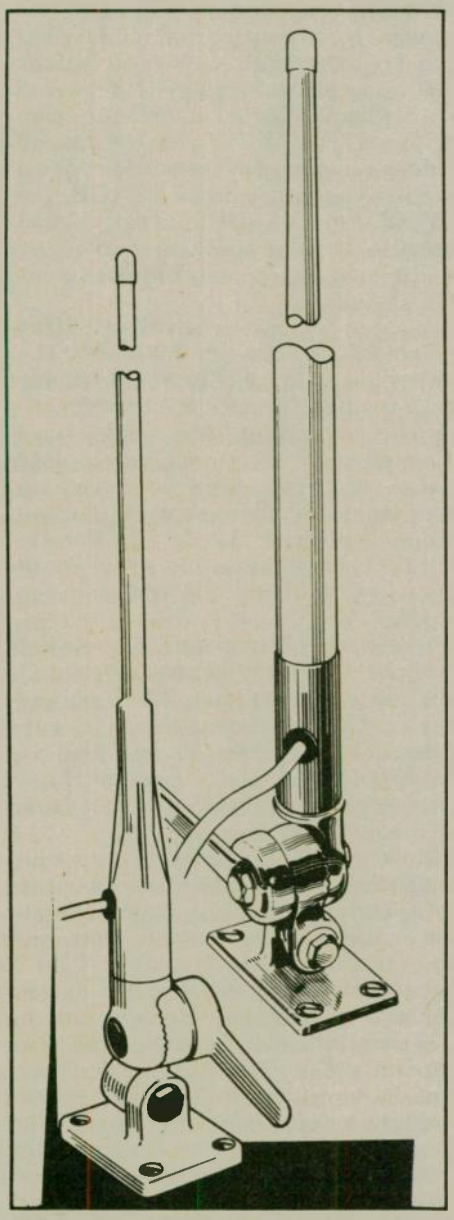
Now let's get reasonable — a one-piece 21′ antenna is pretty tall for most mobile marine and mobile home installations. What's the next best scaled-down omni-directional, 2M antenna that offers exceptional gain? I think I found it!

A company called Ireland Tune-Tenna Systems, Inc., 5101-B NW 36th Ave., Miami, FL 33142 (305/633-8185), ATTN: Frank Ireland, builds

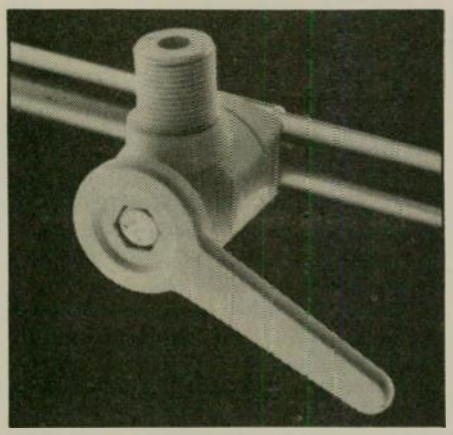
their own 2M, 2M and marine, and marine VHF antenna systems featuring collinear stacked elements inside a white fiberglass sleeve, and they unscrew in the center for easy storage.

Although Frank attaches some extra healthy dB ratings on his antenna systems that seem a little high for their height and phased sections inside the tube, they are nonetheless the best performers when it comes to an 11′ fiberglass pole that separates in the center.

The Ireland Model FI-912-2P is probably the most spectacular performer because of its ultra-wide band width. It covers from 140 to 165 MHz with incredibly low VSWR. It's rated at 9dB gain — but in the real world, is really about 6dB over a reference ¼-wave spike. This antenna is UPS shippable, with the top section 87″ long and the bottom section 50″ long, and they simply screw together. The weight is an incredible 36 oz. with overall length of 11′5″. The base ferrule is chrome-plated brass with 1″-14 threads — your standard pipe mount.



Fiberglass high-gain antennas require 1″ base mounts.



Motorhome 1″ base lay down mount

Frank terminates the antenna into 20 feet of junk coax cable. Cut off all but a few inches of the chintzy RG-58U solid center conductor, and attach some *REAL* coax cable, such as RG8X — or better yet, RG-213. Or better yet, RG-9913 (Belden). Make sure you don't actually pull out the coax cable from its inside connection up the antenna post. God knows what's up there, but it sure works well on 2M and VHF marine!

Frank says he's going to some better coax shortly, so let's hope you get the new version.

So if you're looking for more omnidirectional coverage, on the 2M band as well as possibly the marine VHF band with one nice, white fiberglass antenna system, consider these fiberglass performers. Inside their hollow body are phased ½-wave and ⅝-wave sections that lower the angle of radiation. The closer your signal is to the horizon, the better your range.

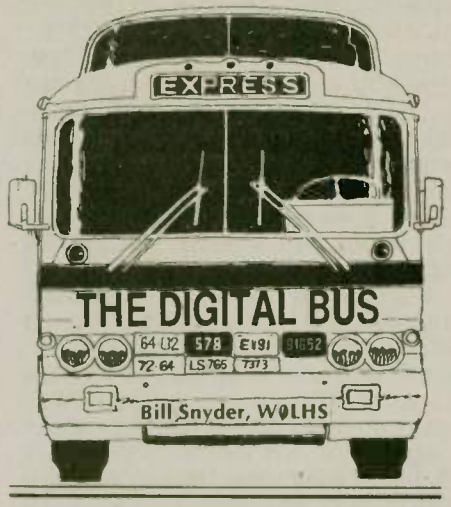
These antennas are not intended for mobile-in-motion use! They are simply too tall. However, aboard a boat or when you stop your motorhome at that secluded campsite, these white fiberglass performers will really kick out a signal that will be heard loud and clear on the 2M band. □

Come back, repeater

One of our club members told a funny story about an event which occurred in Texas some years back. It seems one of the local hams had been licensed for many years but had never made any contacts on a 2M repeater.

After some encouragement over a long period of time (and the gift of an old but fully functional radio), the local hams finally heard the old-timer on the repeater one day. He was really "into it" and having a great time. Suddenly the repeater identified, as repeaters do. The old-timer said "The CW station, I missed your call, please come back."

No one had the heart to tell him on the air what it was (and besides they were probably all laughing too hard).
—Antelope Valley ARC, Lancaster, CA □



Among the real pleasures of Amateur Radio is meeting in person those people you have known over the air but never seen. If you are like me, you form a mental image of the person behind the call sign, and then have it destroyed when you meet the ham in the flesh.

I recently had that experience when I made a one-day visit to Seattle. I visited a ham I had only known by long-haul, multi-relayed packet radio. His name is Tad Cook, KT7H, and for a long time he has been relaying to me, via packet, a RTTY DX report compiled by AMTOR from VK2SG and other sources.

I had visions of a rather stern, elderly man who carefully assembled this valuable weekly report. Well, when I called Tad and made an appointment to visit his diggings, I knew my mental image was all wrong. And as it turned out he is a bright, fun-loving ham who delights in what he is doing.

Tad apologized for the appearance of his shack in advance, but don't we all? Tad was in the process of installing a new AT clone, so he had a good excuse for the disarray of stuff on the bench, the floor and the chairs. But ain't this the way it's supposed to be when you change gear in a ham shack?

Tad and I have a very good packet path to each other. We have had enroute times of only four hours from North Dakota to Seattle via WAØLRE, KDØEM, VE4BBS, W9ZRX, WB7DCH, N7HFZ and KE7OM. This is a mix of 2M and HF. When things are working, it works great.

Lately I have been addressing all of my out-of-our-area traffic by ZIP codes because it speeds up the traffic flow. A message to a strange BBS call sign might be delayed a day or two in each station along the way, because if the address BBS call is not in the forwarding station's file, the message stops moving until the auto-forwarding file is updated by the system operator (SYSOP). He will probably have to query the White Pages, with a few hours or days delay, and then rewrite his FWD file to accommodate the new BBS call sign.

When I was sending everything to call sign addresses, I would send a message to the next two forwarding stations telling them what to put in their files so the message would move along. Now, with ZIP codes to sort out the routes, this action is a thing of the past. They move right out with no SYSOP action along the way. The same thing when I get messages. The CONFIG file strips off the local ZIP codes on those addressed to my area, or forwards them along if they go elsewhere — all sight unseen and unaided by human hand.

It all started when I asked for hams everywhere to send me a message via packet. I got traffic from all over the country, and with a few exceptions due to accidental erasure, I answered all of them. When I addressed them WX1XXX @ WY1YYY, we had all kinds of hangups in the stations down the line. I think I drove VE4UB, the SYSOP of VE4BBS, nearly mad because he had to change so many routings to get the traffic out of his HF station.

Back in the days when all call signs reflected the district in which the owner lived, it probably wouldn't have been too bad, because a W6* wildcard in the forwarding file would have directed the traffic to California. But today, with call signs all mixed up geographically, it won't work. For example, WØRLI is in California, KB2VO is in Florida, and so on. So, to my way of thinking, ZIP codes are the answer.

I recently participated in a packet seminar at a local hamfest. I printed out my old forwarding file from the days of the "send me a message campaign." It was over 25 feet long — nothing but call signs. Each of those represented an answer to an incoming message.

Now, with ZIP codes to sort the mail, the forwarding file is about 3 feet long, and I rarely look at it because the stations down the line from me have a similar file. Of course, I still have all those call signs in it. I'm not going to toss all that work away.

Which brings up the point of all this harangue. One California station has advised us that the use of ZIP codes conflicts with the NTS and should not be used for mail between stations. He cites a number of reasons, among them geography. So my thoughts are this: if the U.S. postal system devised the ZIP codes to take care of

geographical distribution of mail, why are we not using it?

By the use of wild cards and the stripping/translation feature of the software, it is possible to lay out a forwarding file combination that will take care of the problem. The post office has a ZIP code directory for sale that has maps of the three number areas. For example: my BBS strips off ZIPS for 581*, 582* and 565* simply by putting those numbers as shown in the CONFIG file. All others are passed on as they should be.

I will admit that in a populated area it might take a lot of doing to pass traffic to the right place, but I'll bet it can be done by juggling the CONFIG and FWD files in the BBS. I might be wrong, so I'll entertain packet messages straightening me out. My address is W0LHS @ 58103, or W0LHS @ W0LHS if you're from the old school.

VE4UB adds this comment to the ZIP code addressing controversy: "If some think that the HF system bulletin boards should contain every BBS call sign in their forwarding files, they are out of touch with reality. The ZIP code system is the only way to fly for the U.S. stations, but Canadians have to rely on call signs because our postal code won't work."

Other stuff

Now that Kantronics has issued new firmware for the KAM PBBS, I automatically forward incoming traffic to a batch of local hams. Works great.

Paul Cook, KT7H, recently forwarded to me — via packet — QST information on an AMTOR/packet gateway operated by WA8DRZ in California. Now we have a direct link to the U.S. packet network through an AMTOR gateway. It is called APLINK.

To access it, call WDRZ in Mode A (ARQ) on 14.0725, 14.0735, 14.0745 or 14.0755 kHz 24 hours a day. When linked, simply log in by sending LOGIN (URCALL) after the system signs on. Do not send +? as the system controls the link. New stations must register by using the "NEW" command. Type HELP (CR/LF) at the initial prompt for more details. (If you try this system, let me know how you like it. Bill)

Eavesdroppings

HAVE WORKED 3365 COUNTRIES ON CW/SSB, THAT'S ENOUGH ... I HAVE THE BUFFER FULL NOW, HOW DO YOU GET IT EMPTY? ... IT TOOK ME 47 YEARS TO GET ON RTTY, MORE OR LESS ... I MANAGED TO GET THE COMPUTER TO CALCULATE ORBITS, SO THOUGHT I WOULD TRY RTTY ... MY SON IS INTO WASTE MANAGEMENT WHILE I AM INTO WAIST MANAGEMENT ... THE WOODPECKER IS SURELY A GOOD PROPAGATION INDICATOR, HE'S ALWAYS UP ON THE GOOD DAYS ... I TRY TO WORK SANDWICH CALLS LIKE W0HAH, W3MUM AND WA4VWV ... I HAVEN'T HEARD ANY DX THIS MORNING EXCEPT YB0, 9M6, UZ0, AND A FEW JA'S ... FAMILY HERE IS 2 KIDS, 2 HORSES, 2 DOGS, 2 CATS, 12 CHICKENS AND A DESCENTED SKUNK ... MY FINGERS ARE RUSTY AND MY BRAIN NEEDS SOME WD-40 ... I TURNED THE BEAM AWAY FROM YOU AND YOUR SIGNALS CAME UP DRAMATICALLY ... THE CALLBOOB DOESN'T LIST HIM AT ALL ... WITH THAT DX NEWS I AM SURE THE CW AND SSB GANG WILL BE BOILED UP BADLY ... MANY B-I-I-I-I-G GUNS ARE ON RTTY DX THESE DAYS ... I AM COMPUTER RICH AND MONEY POOR ... ANY IRC'S TO COVER POSTAGE WOULD BE APPRECIATED BY MY WIFE ... OKAY, LID, BACK TO YOU ... LAST NIGHT I WORKED A NEW COUNTRY BUT I CAN'T REMEMBER WHAT IT WAS ... YOUR SIGNALS CAME UP BUT THE BAND WENT DOWN ... DURING WORLD WAR ONE HAMBURGER WAS CALLED SALISBURY STEAK AND SAUERKRAUT WAS KNOWN AS LIBERTY CABBAGE ... IF CARROTS WILL IMPROVE YOUR VISION, WHAT FOOD WILL FIX YOUR HEARING? ... WELL, OLD TIMER SEVEN DEE TREES FROM THIS NORWEGIAN.

As a parting shot, I would like to invite readers with access to the packet network to send me a message using W0LHS @ 58103 as the address. Let me know if you get any flak from anyone about doing it. I'm sure by now that my call is in the high-frequency BBS network, so W0LHS @ W0LHS would be no problem. So let's test the ZIP code theory. 73 de Bill Snyder, 1514 So. 12th St., Fargo, ND 58103. DIT DIT. □

Colton classes

Amateur Radio classes for Novice through Extra will be held Tuesdays, from 6:45 to 8:30 p.m., at Colton High School, 777 West Valley Blvd., Rm. 506, in Colton, California. The classes are sponsored by Colton High School and the Citrus Belt ARC.

For more information, call Carl Gardenias, WU6D, at (714) 864-4498, or Keith Tomas, KB6QXR, at (714) 824-8364. —*Jo Stringfield, N6NTJ* □

OH-KY-IN classes

The OH-KY-IN Amateur Radio Society is once again offering Amateur Radio classes September 15. These Novice through Extra classes will be held weekly in the basement of the Price Hill Baptist Church, 4431 Glenway Avenue, Price Hill, Ohio.

For more information or to register, call Bruce Vanselow, N8FWA, at (513) 251-1555. □

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Contact Worldradio for hamfest prizes.

Ray Clark,
K5ZMS

1988 Summer Es season results

May and June brought far better Es conditions here than indicated by the activity on 6M, according to totals provided by Pat Dyer, WA5IYX. His monitoring of 88-108 MHz shows 12 days of May providing 18 different openings for a total of 1,505 minutes of Es activity — twice as much as May 1987!

June was even better, with 26 days of June providing 65 different openings for a total of 4,610 minutes of Es activity. There was more Es activity in June than during the whole of 1985!

One would think that July totals would also be high. That was not so, as July only had 19 days providing 32 different Es openings, generating 1,110 minutes of Es activity. The decrease wrecked the 4th Annual CQ VHF WPX Contest, as the amount of Es activity over that weekend in this area was greatly reduced this year.

It remains to be seen how August will pan out. The evening of August 2 has already brought us double-hop Es activity to New England.

1989 Kingman (and others) HF DXpedition

Ian Campbell, VE3IEO, has announced the details of the 1989 Kingman, Palmyra, Suwarrow Island, Rarotonga and Kiribati DXpedition. In January 1989, eight Amateur Radio operators and four crew members of the ship *Varua* are undertaking this DXpedition.

The operators are an international group of the highest calibre and have been individually chosen for their expertise in each function. The crew at present are Fred Furrer, HB9AEE; Willy Ruesch, HB9AHL; Jacques Caillet, F5II; Ian Campbell, VE3IEO; Greg Potter, NM2L; Bruce Miller, ZF2KN; and Victor Carnuccio, KD2-HE.

With an expense in excess of $50,000 U.S., the expeditioneers would appreciate any equipment and financial support to help make the operation a success. All equipment will be fully insured and treated with care.

6M operators please take note: There is already an FT-726 with 6M module and a 4-element Yagi on hand. The expedition will have a rig monitoring 50.110 at all times.

I have been asking for years that HF DXpeditions take 6M with them, particularly during periods of increased sunspot activity. Here is one group that is going to do it. Now it is your turn to show your support.

Donations can be sent or pledged to: Ian Campbell, VE3IEO, 12 Bell Harbour Place, Woodbridge, Ontario, CANADA L4L 6W2. Ian's telephone number is 1-416-856-5547.

Jimmy Treybig, W6JKV's next DXpedition

Jimmy says he will take to the field, probably sometime during this coming November. It looks like he will visit J52 sometime around the middle of that month.

The best thing I can tell you is to keep in contact with myself, Bill Tynan, W3XO, or Jimmy for further details. Also, keep in contact with the 28.885 coordination frequency, as Jimmy will pass the information on there as soon as he nails down all the particulars.

DX report

Dick McCurdy, WA1GTP, says it pays to check higher in the band. He did on June 6, and worked 18 G's on 50.4! He was running only 40W and worked some G's running only 2½W with RST 5x9. This is just one report of working Europe well above 50.2. Remember, if you don't hear anything around 50.110, you had better check higher in the band.

He also reports contacts on May 10, with HH7, VP5 and LU8. On June 9, with FP0 and on the 12th with C6A.

Bill Tynan, W3XO, reports hearing VP5 and YS1 on July 19.

Arnaldo Coro Antich, CO2KK, is said to be listening on 50.110 now, so I guess that means he must have obtained some equipment from somewhere. Please let me know if he is worked.

Most of the KH6's have worked Bob Autry, WY5L/KH3, by now. The KH6's are now on the 28.885 coordination frequency, having given up on the

lower one. Dave Sublette, KX6DS, has reportedly been worked in KH6 recently. BY1PK and three other BY stations are now active on 6M.

Did anyone hear or work Joe Mancuso, KG6JDX, while he was on Guam, July 25 through August 14? If so, please let me know.

Lynn Hammond, KL7IKV, wants you to know he has not given up on 6M, even though they seldom get any activity. They just recently got their first JA contacts again, on May 31. He worked four JA's. The following week he could hear JA's working KL7NO in Fairbanks, and into the West Coast, but he could not raise a one of them. The last time he worked a JA was March 7, 1982!

Lynn said if anyone still needs a QSL from him, he would appreciate hearing from them. He will be glad to QSL.

Even with July Es totals off here, I have still received reports of Es openings between Europe and the United States on several days in July.

Status of the Falkland Islands SMIRK/WB4OSN-donated rig

The Swan 250 donated by Joe Picior, WB4OSN, and transported to England through SMIRK, is in the hands of Bob Anderson, G4RHA. This is according to a letter I received from Fred Simpson, VP8PTG, recently.

Fred is in England now, on holiday, and will be taking the equipment back with him when he returns to the Falklands around the end of August. He is very keen to get it on the air. He and Bob will bench and air check it before he leaves. He expects to be QRV on 6M by September 6.

Solar activity

Recent solar information predictions indicate steadily increasing sunspot activity equal to or greater than that of Cycle 19, 20 or 21. Indications are that we may see solar peak in November/December of 1989, with a predicted smoothed sunspot number of 180.

I am reading from a chart put out by the National Geophysical Data Center in Boulder, Colorado. It uses a 90% confidence level, which means that the solar peak could see a smoother sunspot number of 229 in November, or 231 for December 1989. Be advised that these predictions could also go the other way, and the numbers could be considerably less than the prediction.

If this prediction holds true, we should see some F2 activity occur perhaps by the time you read this, as the smoothed numbers climb into the lower to mid-100 range in September, October, November and December.

By February, March and April of 1989, we should see smoothed numbers in the 130-175 range. By fall 1989, we should be approaching a maximum of 180 smooth sunspots or more. Others say we will max out in late 1990. Of course, we won't find out what the smoothed numbers were until about six months after the fact.

Keep in mind that the daily, unsmoothed numbers will range much higher (or lower) on some days, bringing daily sunspot activity way up (or way down), depending on what is happening on the face of the sun.

The best advice I can give you is that if you are not on 6M yet, get on now. Secondly, keep the rig on at all times you are home and listen for openings. Thirdly, keep listening to the 18 after-the-hour WWV forecasts for daily solar information.

Fourthly, if you have HF capabilities, get on the 28.885 coordination frequency. That will let you know faster than anything as to who is hearing what F2 activity where, and when you are likely to get your crack at it.

The Canada Award

Back in the late 1970's and early 1980's, there was a beautiful Canadian award available for working all Canadian call areas. Many on 6M earned that award.

It seems that the awards manager has been changed. It used to come out of Vancouver, British Columbia. Can one of our Canadian members advise me as to whom one would apply for this very prestigious award?

SABA-PJOM DXpedition results

This DXpedition netted about 100 U.S. contacts in W1, 2, 3, 4, 5 (Louisiana and Oklahoma), 8 and W0, three G's, PZ1AP, and 8P6. They had seven hours of European TV signals one day. Thanks to the whole crew for this DXpedition.

Who will be first to receive 6M DXCC?

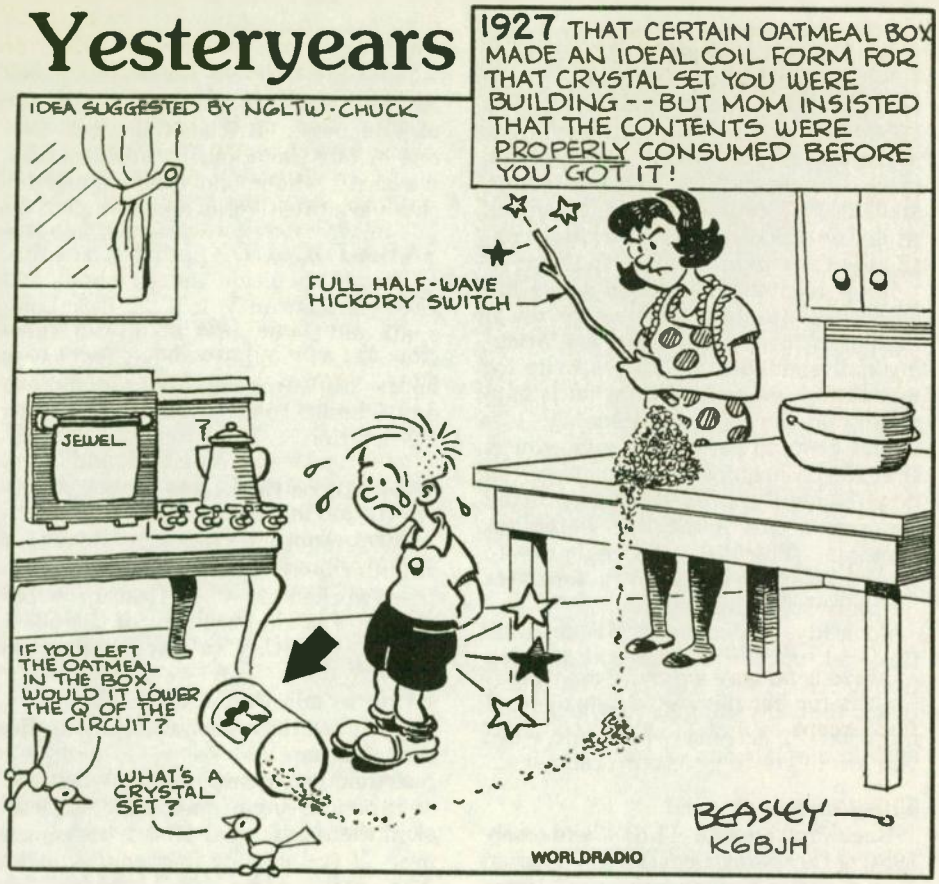
E.D. Rogers, PY5ZBU (G3MWM, I am informed), claims to have 95 countries worked on 6M. That probably puts him at the forefront of the quest for 6M DXCC. Can anyone else top that?

Due to space limitations, I am not able to continue the Equipment Report this month.

Remember, it feels better when you do it on 6! See you on the Magic Band all of a sudden! □

••• *TALK TO THE WORLD!* •••

Yesterdays



10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ

10-10 19636

Milwaukee 1989

In last month's column we announced the 1989 10-10 International Net Convention. Everything is going full steam ahead for August 11-13, 1989 at the Red Carpet Hotel in Milwaukee. Hank Hiett, WD9FCQ, 10-10 #25891, has been named Convention Chairman, replacing Joe Williams, editor of the *10-10 International News*, who was chairman of the organizing committee to have the convention in Milwaukee.

Hank is busy getting volunteers for all of the committees that it takes to put on an undertaking of this magnitude. Watch for more information regarding advance registration, housing, etc. in the near future. In the meantime, mark the dates of August 11-13 on your 1989 calendar.

10-10 Scholarship

Applications for the 10-10 Scholarship officially closed on June 30, and 12 applications were received by the Foundation for Amateur Radio — administrator for the two 10-10 Scholarships to be awarded for 1988. As of the date of writing this column, we do not have the winners' names, but hope to have them by next month.

If you have not sent your contribution for the 10-10 Scholarship Fund, it is not too late. The 10-10 Scholarship fund is an ongoing fund, and 10-10 will sponsor two scholarships each year. 10-10 needs your help in keeping the scholarship fund growing. Your contribution should be sent directly to Treasurer Gerry Gross, WA6PO, 10-10 #21274, at 8145 Cozycroft Ave., Canoga Park, CA 91306.

Make your check payable to "10-10 International Net Scholarship Fund." Remember: no contribution is too small. Your help is appreciated.

Hugh Sullivan, WA4QZU, 10-10 #23166

Hugh is the new Chapter Coordinator. Hugh received his ticket in 1976 and became a 10-10 member in 1978 and has been an avid "paper chaser." A paper chaser, for you new

to 10-10, is one who seeks out and collects certificates issued by the various chapters of 10-10.

Married (XYL is Verlee), Hugh has two sons, and likes golf and fishing in addition to Amateur Radio. He lives in Owensboro, Kentucky.

Hugh has made the Dayton Convention for the last seven years. We are sure he plans to continue the high-quality effort established by Connie as Chapter Coordinator.

Welcome to Hugh as a new 10-10 volunteer.

New Chapter Coordinator

It was back in the spring of 1980 that Connie Hauck, K6EXQ, 10-10 #19681, made her debut as the 10-10 Chapter Coordinator. After eight-plus years serving 10-10 in this important volunteer position, Connie has found it necessary to retire from the job that she loved and was devoted to.

Throughout those eight years, Connie maintained the chapter records, wrote her "Connie's Corner" and "Chapter Chatter" columns for the *10-10 International News* magazine, and coordinated and gave guidance to new chapters. Just maintaining current records of each of the more than 225 chapters is no small job.

Connie was a regular at Dayton each year and was a regular participant in 10-10 Forums at Dayton and other conventions around the country. All of this was at her own time and expense.

But all good things must come to an end, and so must Connie's devoted effort to 10-10. She will be moving to a location where it will no longer be possible for her to have her 10M radio. We will all miss hearing Connie on 10M and reading her informative columns in the *News*.

Connie Hauck, K6EXQ, 10-10 #19681, retiring 10-10 Chapter Coordinator

There is no way we could ever repay Connie for her dedicated time and effort except to say "Thank You" from each and every one of us.

Chapter news

The Chattanooga Choo-Choo Chapter will be operating KB4PIW Special Event Station from the Tennessee Valley Railroad Museum on October 15-16. This is in celebration of the annual Autumn Leaf Special Steam Locomotive Excursion. Approximate frequency: 28.485 MHz. Contacts will be confirmed with a free certificate.

Send your QSL card along with a business-size (#10) SASE to Martie Perry, KB4PIW, Rt. 3, Box 272, Signal Mountain, TN 37377.

A new chapter in Racine, Wisconsin. The Wind Point Lighthouse Chapter Net meets on Sunday at 2000Z on 28.555 MHz and on Tuesday at 0100Z on 28.455 MHz. If you are in the Racine area, or if conditions permit, check into this new 10-10 chapter.

If your chapter is planning a special activity, drop me a line and give me the information so we can include it in a future column.

Briefly

By the time this column reaches you, the new bylaws should have been voted upon and hopefully accepted by the membership. The planning committee of Norm Lefcourt, W6IRT, Morrie Goldman, W6EHM, and Gerry Gross, WA6POZ, has done an excellent job in putting together our new bylaws. Another example of dedicated 10-10's doing a job for all of us.

If you would like a copy of the new 10-10 bylaws, send Norm Lefcourt, W6IRT, a (#10) SASE envelope at 7713 Wilkerson Ave., North Hollywood, CA 91605.

Are your dues current? It is important for you and for 10-10 that you maintain yourself as an "active" member. If your dues have expired, send them in to your District Manager now. If you cannot find your District Manager's name and address, an SASE to me will get you all of the information you need to renew.

If you are not a 10-10 member and would like information on how you can join and receive your own unique 10-10 number, send me a "green stamp" ($1) and you will receive an information package including the latest copy of the *10-10 International News*. My address is 18130 Bromley St., Tarzana, CA 91356-1701. □

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You know you are really hooked on Amateur Radio when all of your VISA and MasterCharge reports list "Ham Radio Outlet" as the prime source of charges.

—*Western ARC, Cerritos, CA* □

It's contest time again! That's right, sports fans, once again it's time to fire up the QRP rig and jump into the melee for the QRP ARCI Fall QSO Party (CW). Red Reynolds, K5VOL, has provided me with a list of the QRP ARCI contests for the last half of 1988. So here is a brief list of what's available QRP contest-wise:

QRP ARCI Fall QRP QSO Party (CW) starts on October 8 at 1200Z and ends at 2400Z. You can only operate 24 hours of this contest max. Exchange is RST/state/province/country/ARCI number for members. Nonmembers are the same except they substitute their power OUTPUT in place of the ARCI number. Power multiplier of 7 for using 1-5W and 10 for using less than 1W (milliwatting). Power supply multiplier is 1.5 for battery power and 2 for solar/natural or battery charged by only solar or natural power. Bonus points for using homebrew gear of up to 5000 for each band that the gear is used. There is also a team competition category.

Suggested frequencies: *160M* — 1810 kHz; *80M* — 3560 and 3710 kHz; *40M* — 7030 kHz (UK and Europe), 7040 and 7110 kHz (stateside); *20M* — 14060 kHz; *15M* — 21060 and 21110 kHz; *10M* — 28060 and 28110 kHz; *6M* — 50060 kHz.

QRP ARCI Holiday Spirits Homebrew Sprint (CW) lasts from 2000Z to 2400Z, December 11. The exchange is the same as for the QRP Fall QSO Party. The RST is suffixed with "HB" for homebrew gear or "C" for commercial gear. Homebrew gear is required for the contest entry; otherwise, if you use commercial gear, your entry will be considered as a check log, only.

Power, power supply multipliers and frequencies are the same as for the Fall QSO Party. You will get bonus points for using all homebrew gear.

The QRP ARCI Winter Fireside Sprint (phone) lasts from 2000Z to 2400Z, January 15. Exchange, power and power supply multipliers are the same as for the Fall QSO Party. **Frequencies:** *160M* — 1810 kHz; *80M* — 3985 kHz; *40M* — 7285 kHz (listen down around 7040-7100 kHz for any UK/European QRPers — they will be listening up in our phone portion for your reply); *20M* — 14285 kHz; *15M* — 21385 kHz; *10M* — 28385 and 28885 kHz, *6M* — 50885 kHz.

A complete set of rules and pertinent info for these and other QRP ARCI contests can be obtained by writing: Red Reynolds, K5VOL, QRP ARCI Contest Manager, 835 Surryse Rd., Lake Zurich, IL 60047. Include an SASE with a couple of units of first class postage for a reply, contest cover sheet, log sheets, etc.

One thing that these contests will require is a dupe sheet. This is a new procedure starting with the Fall QSO party. The ARRL has a good one, or you can design your own using your PC at home. In any case, don't forget the dupe sheet.

During the QRP ARCI Spring QSO Party, yours truly managed to *finally* break a half-million points. But I still didn't get into the top 10 category! That shows there are some real serious QRP contesters out there who can rack up outstanding scores using low power. The way things stand, I'll have to call in an air strike on N3IK and W37S in order to take top spot in Pennsylvania during one of these QRP contests.

As with anything, a lot of prior planning goes into winning (or placing in the top 10) in a QRP contest. Mike Michaels, W3TS, and Ike Kerschner, N3IK, are two top gun operators who consistently place among the top 10 entrants in QRP contests. Looking over the contest results (furnished by K5VOL after each contest), I didn't feel so bad.

I was only able to work 13 hours out of the total of 24 possible during the contest. Both Ike and Mike worked almost the entire 24 hours. Therefore, if I had put more time in on the bands, I, too, would have possibly doubled my score of 500,000+ points.

The secret to success in QRP contesting is persistence and planning. Make use of all the bonus points and power/power supply multipliers. This adds tremendously to the overall score. Put the time in on the bands. You can't work 'em if you aren't on the radio! Dive in and hammer the bands for all you're worth. Tune slooooowly across the bands. Listen, listen and then listen some more. QRPers are in there, and the signal strengths will range from S-8/9 right down to the noise.

One thing that never ceases to amaze me is the way the bands change as the sun marches across the sky. Tuning across 40, 20, 15 and 10 offers surprises to the careful listener. Just when you think you have worked everything on a particular band, BINGO! Up comes a new set of

QRPers, right out of the noise.

Learn about propagation. This is one area (antennas are another) that is the lifeblood of the serious QRPer. The *Shortwave Propagation Handbook* by George Jacobs, W3ASK, is the very best book on propagation ever written. George has written the prop column for *CQ* longer than many of us have been licensed. He knows his stuff. Read and learn.

Another valuable tool for propagation is a computer prop program. Many good programs are out there; find one and learn to use it to your advantage. I prefer MiniProp (V 2.0) by W6EL. This is a gangbuster of a program. It is *very* accurate. Any serious QRP contester or DXer should consider this (or some kind of) computer prop program. It makes life simple, in a very complex world.

To bring it all together, use the maximum amount of bonus and multiplier points that you can, dedicate the time to work the bands, develop the tools (like an understanding of prop antennas), and use them to enhance your score and (to quote Sir Winston Churchill) "Never, never, never give up!"

To show you what can be accomplished during QRP QSO parties and contests, I have worked 49 out of 50 states on QRP. No big deal, huh? How about this: I have worked 49 states two-way QRP (both ends of the QSO were running low power).

Still not impressed, huh? OK. Try this on for size: during almost all of these 49 QSO's, I was running 980mW RF output power! This includes Alaska and Hawaii using milliwatt power levels!! It has taken me a while (almost three years) but it is a goal that I have set for myself, and I am well pleased with the results. If I can do it, Lord knows, you can, too.

Book review time, gang. Two books that are an absolute must on the QRP bookshelf are: *The Joy of QRP, Strategy for Success* and *The History of QRP, 1912-1960* — both by Adrian Weiss, W0RSP.

Ade was the prime mover behind the upsurge of QRP in the late '60s and early '70s. Realizing that there was a need for a forum to share QRP ideas, info and operating techniques, Ade published *The Milliwatt Magazine, the Journal of QRPp* from 1970 to 1976. These are real collectors' items, and if you can get your paws on a complete set, they are the Holy Grail of QRPdom. (I need two to complete my set of *Milliwatts.*)

Ade has been on top of the QRP movement for almost 20 years, and is the guru of modern-day QRP. His efforts and dedication to the low-power side of Amateur Radio are legendary. Ade currently writes the QRP column for *CQ* magazine.

The Joy of QRP, Strategy for Success was first published in 1985. It's a "joy" to read. Ade's readable writing style takes the beginning QRPer from the absolute basics through advanced techniques. One of the things Ade stresses is the use of books and articles to increase your knowledge of QRP.

In addition, special emphasis is placed upon setting realistic goals based upon your antennas, rig, experience level and abilities. For instance, if you only have a 40M dipole 20 feet off the ground, don't expect to work a lot of DX. Instead, realize the limitations of the antenna system, upgrade it as best you can, and *ENJOY* low-power operation; do not become a slave to it.

Setting realistic goals will go a long way toward thwarting the primary bug-a-boo of all QRPers: frustration. *The Joy of QRP, Strategy for Success* is a must-read for beginner and old-pro alike.

Ade's second book, *The History of QRP, 1912-1960* is a grand look at the overall impact of QRP on the Amateur Radio scene. Again, Ade's readable style transports the reader back into the fledgling days of Amateur Radio. Historically accurate, this book shows that our early radio amateurs had "the right stuff" to make Amateur Radio the hobby it is today.

Some of the records set by QRP operators in the very early days of Amateur Radio are absolutely astounding, considering the equipment available in this time period. *The History of QRP* is the kind of book you will read and re-read, just for the sheer pleasure and relaxation it brings. The well-documented facts put forth by W0RSP will also reassure you that others have suffered the frustration and tribulation that only QRP operators know. Take heart . . . you're not alone.

Both books by Ade Weiss, W0RSP, can be obtained from Milliwatt Books, 833 Duke St., #83, Vermillion, SD 57069. Send an SASE for prices and info.

Questions/comments: SASE to Rich Arland, K7YHA, 9 Vine St., Shavertown, PA 18708. Don't forget my QRP program featured on "Ham Radio Today," via "The Voice of the Andes," HCJB, 0230/0630 UTC Thursdays (Wednesday evenings in the States) on 15155, 11775 and 9720.

People reach people through Worldradio

Product Review

MFJ accessories

RICH ARLAND, K7YHA

Lew McCoy's articles on antenna tuners (about two years ago in *CQ Magazine)* reinforced my belief that no ham shack is complete without some form of antenna matching unit. Tuners, transmatches, ATVs or matchboxes are as much a part of the amateur station as is the transceiver. They do the mundane chore of matching the feedline impedance to the transceiver, ensuring that the maximum amount of RF power gets out of the rig and into the coax.

Notice I didn't say the ATV matched the antenna to the transceiver. Nothing can do that except a perfectly cut radiating element on an even ½-wave (or multiple) of coax into the back of the rig. The antenna and that even ½-wave of coax are only going to present a perfect match at *one* frequency.

Above or below the operating frequency (Fo) there will exist a mismatch. Below Fo, capacitive reactance is observed. Above Fo, inductive reactance is present. The purpose of the matchbox is to mask these reactive components existing on the feedline, so the transmitter output sees a perfect 50Ω *resistive* load.

With the advent of the new generation of transceivers that have power fold-over circuitry in the output section (which cuts the power down as an impedance mismatch occurs), the need to employ a tuner between the rig and the feedline becomes critical.

Since this article won't delve into the mysteries of SWR and feedlines, grab a hold of some back issues of *CQ* and read Lou's articles for yourself. Better yet, lock onto Doug DeMaw's new book on antennas (from the ARRL). Doug has a knack for explaining things in a way that even I can understand!

Tuners come in a range of sizes, shapes and power ratings. You can homebrew one, if you can get the parts (try the hamfest flea markets) and want to spend the time. However, for those inclined to buy a tuner ready made, look over the selection offered by MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762.

I have been a long-time fan of MFJ accessories. The company started back in the early '70s by marketing a kit and/or pre-wired active audio filters. Literally every HW-7, HW-8 and Argonaut that I have ever owned (and I've owned a few) has had an MFJ audio filter in the receiver section.

Originally, MFJ was set up in a mobile home on the outskirts of Mississippi State College. I visited their operation in late 1974 and wrote an article for *The Milliwatt Journal*, published by Ade Weiss, W0RSP. Things have really changed in a few years. Now the MFJ accessory line offers something for everyone: tuners, filters, active antennas, noise bridges, keyers, packet radio TNC's, etc.

With the advent of the new generation of transceivers that have power fold-over circuitry in the output section . . . the need to employ a tuner between the rig and the feedline becomes critical.

My choice of a tuner for general HF work is the MFJ 941-D, which sells for about $100. The 941-D handles power levels up to 300W PEP on 160-10M. Outputs on the back include balance feedline (twinlead), end-fed wire and two coaxial antennas. A dummy load can be hooked up to the "Bypass Coax" jack which allows for off-the-air tune-ups. Either of the two coaxial antennas can be bypassed as well, allowing you to use the antenna sans LC networks within the tuner.

The 941-D also offers SWR and power metering on two ranges: 0-30W and 0-300W. The SWR bridge is accurate, even at QRP power levels; output from my Argonaut will not quite get a full scale deflection in the "SWR Set" position. However, when switching to the "REV" position to tune the controls for minimum SWR, a deep null is observed at resonance.

Pre-tuning the controls using my Palomar Engineers noise bridge took about 10 minutes for both CW and phone portions of each band. Now, all I have to do to change bands is look up the values logged using the noise bridge, set them on the ATV controls and go on the air. The preset configuration is close enough that the SWR meter hardly moves! This makes for some real fast band changing during the heat of a contest.

Construction-wise, the MFJ 941-D antenna tuner is very well made. The entire cabinet is metal (very important for reducing RF radiation that leaks out of the tuner). High-quality parts are used throughout. Two 208pF air variable ceramic capacitors are used as the capacitance in the LC network. The inductance coil in the LC network is a real coil of wire (about #18, it looks like to me), not a toroidal inductor. This is a step in the right direction.

John Collins, KN1H, has done some research on toroidal inductors and has revealed some interesting facts. On the average, a toroidal inductor will attenuate your signal by 2-4dB. Just what you need for QRP — an added handicap!

Toroids tend to saturate in the presence of strong RF fields, causing them to become lossy. While they can offer a lot of inductance in a small package, toroids are definitely not the way to go for the main inductor in an antenna tuner.

The SWR/power metering circuitry is a standard "Brune-type" bridge, common in many of the QRP SWR meters appearing in articles. Sensitivity of the bridge is controlled by a 500K Ω pot. It looks a relatively simple operation to re-calibrate the meter using this pot to provide full-scale deflection at QRP power levels.

The power metering is accurate, even at power levels as low as 10W. Comparing the 941-D's power meter against my homebrew QRP wattmeter (which is *very* accurate), shows the accuracy of the 941-D wattmeter falls off rapidly under 10W. Power metering (like the SWR bridge) is also controlled by two pots, which — by proper calibration — could be used to read power down into the QRP range. More on this after I have a chance to experiment a bit.

A 4:1 balun transformer (made out of a toroid) is used to match the balanced feedline input/outputs to the low impedance output of the tuner. This allows you to use ladder line, twinlead, or the poly-coated transmission line to feed dipoles. While most hams like to use coaxial feedline, balanced feedlines do have a place. The standard G5RV dipole, when fed using balanced feedlines, can operate on any band, 160-10M, with good efficiency.

(please turn to page 61)

Hamming it up

Dr. Thomas F. Linde, KZØT

Of all the affirming, even exhilarating, experiences I've had over the years as a radio amateur, a radio conversation with a New Zealand sheepherder named Ike brought home to me the isolation and strong desire for community experienced by so many people with disabilities.

Over the thousands of miles, my dysarthric speech hadn't stumped the New Zealander. But when I asked him what he did for kicks, he sounded irritated. "What do I do for kicks? What's 'kicks'?"

"*Kicks* is a slang term. It means recreation." I spoke slowly, carefully into the microphone. People sometimes don't understand my garbled speech.

"Listen up, bub. I'm out here 110km from civilization. I got 2,000 sheep, an old jeep, and my blessed radio. My 'kicks,' as you say, is reaching out to the world and making contact with something, someone, that can do more than go bahhhh. . ."

Ike's assertion vividly evokes the recreational problems and challenges that those who live in serious isolation face. A two-way radio system and a license granting its operator the right to use it responsibly add up to a fine recreational opportunity. They also offer a lively means of coping efficiently with loneliness.

As a boy of 7 back in 1937, I lacked practical insight into my severity of my cerebral palsy. I saw my first ham station while visiting Temple, one of my father's engineering cronies.

At last, a radio that let one talk back instead of just listening passively, I thought. Temple encouraged me to study and to take part in others' hamming by listening on the shortwave bands of the family radio.

A kindly diplomat, he suggested that being an active ham required good hand control — for constructing radios, sending code and writing down messages. He added, "You really must speak ever so clearly into the mike."

Fifty years after the fact, I realize that the essence of Temple's message was, "Kid, your speech is really tough to understand, and your dexterity won't let you do the very tasks hams do routinely. Explore your interests in a less frustrating, more rewarding way."

Today, with advances in technology and changes in the licensing law, many people with disabilities can become licensed hams.

I finally earned by General Class license after finishing graduate school. Amateur Radio has allowed me to get in touch with scores of people around the world. It's relaxing. Best of all, when I'm operating my rig, I know I'm on my own, dependent on nobody else for visiting the world. I no longer feel isolated.

Dianne Vorwald, WD9DNQ, of Wisconsin Rapids, has an Amateur Extra license. The enthusiastic Vorwald spends several hours a day on her radio, coordinating contacts between other hams, relaying messages and weather reports, and often enjoying visits with radio friends from coast to coast and overseas.

Blind since birth, Dianne now has multiple sclerosis. She enjoys her radio and says, "It's really neat meeting people from all over the world. This creates a special kind of friendship."

Kris Haas of Pueblo West, Colorado, has cerebral palsy. She communicates with family and neighbors on a programmable speech synthesizer, which she patiently commands with the head stick she wears much of the time. Her computer is wired into her ham equipment and lets her send a wide range of pre-programmed questions and answers.

"It is a way I can visit with people without them knowing I am handicapped," says Kris, who takes great joy in operating her rig without major help from her family.

The increased interest in hamming for folks with disabilities has two roots: decreased cost and increased technology.

In the last year or so the start-up cost has dipped to under $200 when secondhand gear is used. New solid-state electronic and computer technologies have multiplied recreational options for those with serious communication or dexterity problems. Hams who cannot speak hook their rigs to personal computers so they can generate clear, understandable words and sentences, then send them over the airways.

At times, I've tinkered with sending logos, cartoons, and still photos with television cameras so that others, even in foreign lands, can see them and respond.

Those who want to study to become licensed Amateur Radio operators need not prepare entirely on their own. The Courage HANDI-HAM System, a program of the Courage Center (3915 Golden Valley Road, Golden Valley, MN 55427), is a large rehabilitation facility in suburban Minneapolis that provides study materials, equipment, and personalized assistance to students working toward new or upgraded ham tickets on a "pay what you can" basis. But each student must learn the material and earn his or her own license.

The majority of the 3,500 HANDI-HAM members study at home. Student director Maureen Pranghofer, KFØI, maintains close contact with students around the country and the world — from New Jersey to New South Wales.

After passing a licensing exam, a person can feel free to communicate with the world — even with a New Zealand sheepherder named Ike — just for kicks.

(Thomas F. Linde, Ph.D., KZØT, is a clinical psychologist at the V.A. Medical Center in Knoxville, Iowa) □

Tape recorder

A tape recorder is a good thing to have in your shack. You'll have a "sound" record of interesting QSO's, events, emergency communications, etc.

Also, when after a 20-year hiatus the Glorious People's Democratic Republic of Sweetness, Light and Affluence finally allows a DXpedition in, and you are told, "Not in the log," you can send him the recording showing that he really did come back to you. □

Code Matters

Loraine
McCarthy, N6CIO
315½ Ruby, Balboa Island, CA 92662

A class special

Amateur Radio classes and home study are both excellent ways to become a ham or upgrade your license! Let's look at classes and how you can apply techniques that we use in class to your home study.

Several good examples come from the weekend classes we have been teaching in Southern California. In developing and teaching the code program for the Radio School Novice Weekend courses, I have talked to students who express concern over being able to learn the code in one weekend. Prestudy for this course is necessary and important for the student's success.

The same applies to the General Code Weekend Course. The course, which I teach, has a prerequisite of being able to copy 10 wpm. Whether in a class setting or home study, one major key to success is a *GOAL.*

The date a student is scheduled to take a class represents a goal, that time at which preparation for the license exam will take place or be completed. We've discussed goals before, so if you're doing home study, remember: set a goal for the completion of your work, and schedule time each day to complete that work.

Whether it is a Novice or General weekend class, students want to know how they will "survive" so many hours of instruction. Through interaction, variation of instruction and demonstrations, it's *FUN* and *EASY!*

Weekend classes, as well as nine-week and semester classes, offer the student a chance to make a commitment to their studies. Students studying at home will want to similarly plan their studies. A goal might be one theory chapter each week and five or six new code characters.

Weekend classes require a concentration of effort. The student is focusing on his studies throughout the weekend. Home study should also involve periods of uninterrupted study time, if possible.

In the General code weekend course, we meet on Friday evenings to warm up and assess code copying ability. Students who copy 10 wpm well on Friday evening can usually copy a fair amount at 13 wpm. Through skills practice and sample testing, the student improves steadily.

A small group of 10-12 students is ideal for this type of class because it allows individual time to be spent with each student. When I send a sample exam, I then pass out a 10-question test. The purpose is to simulate exam conditions as closely as possible.

The student takes the sample exam and when finished, turns it in to be graded. I am able to review the copy and answers and then discuss with the student areas that need improvement. Perhaps answers were missed that were readily available in copy, or maybe there were unnecessary spelling errors.

The objective is for the student to learn how to use these skills before the examination. This is the point at which many students doing home study do not establish the best program for themselves. Checking your work is most important in order to make progress.

In summary, the student doing home study should set a *goal* for themselves. Goals are adjustable, but they give one a time frame in which to work. *Make a commitment to the goal by planning a daily study routine.*

Check your work! If you are preparing for one of the code exams, it only takes a few minutes to make up some sample tests, make copies, and simulate test conditions each time you copy a sample QSO.

If you are interested in the weekend courses, the next General Weekend course will be held October 21-23, the next Novice Weekend course November 5-6, both in the Los Angeles and Orange Counnty areas. Upcoming classes in other areas for the Novice are Phoenix-Scottsdale and San Francisco in March of '89.

Radio School recently introduced the new two-tape General code short course (5-13 wpm) for $9.95 plus $2 P&H. Including a theory text, this course is $19.95 plus $2.50 for P&H.

If you would like more information about classes or would like to order a course, you can write to me: Loraine McCarthy, N6CIO, Code Programs Manager, 315½ Ruby, Balboa Island, CA 92662, or call me at (714) 675-4415.

Amateur "Hi"

Gary Gargus, N8DIU, of Lorain, Ohio is our winner this month. Read on to find out why!

I was mobile one time when a call for directions came on my 2M, wanting to know how to get to his motel a few towns over. After telling me where he was, I started to give directions like this: Keep going the same way you are, traveling at 50 mph. You should be seeing a school on your left about now. He came back and told me I was right on.

After some small talk, I told him he would be turning right at the major intersection he was approaching and to continue past a shopping mall. When he came around to tell me he was passing the mall, I came back saying, "You must be going faster than 50 mph, because you shouldn't have reached it yet, but turn onto 90 West."

Sure enough, he told me he was doing about 55 mph and couldn't get over my accuracy.

Directions continued like this all the way till I followed him to the parking lot. This is when I pulled in next to him and told him that I had been following him the entire way. □

If you are involved in any emergency communications incident, send story and photos to *Worldradio*, 2021-28th St., Sacramento, CA 95818.

AERIALS

LIL PADDLE

First of all, I would like to extend my gratitude to those who have been so kind as to write in with kind words regarding these dispatches. Gentlemen, I thank you.

Now to some problem solving. A query came in from an amateur who lives on the 12th floor of a condominium in Riviera Beach, Florida. He has 17 feet of horizontal space. What, he asks, is there to use other than mobile antennas?

Being on the 12th floor may be your salvation. One trick is to slip a wire through a length of PVC pipe which holds the wire away from the outer wall of the building. Tie a fishing weight (sinker) to hold down the bottom end. The wire will have to be at least a ¼-wavelength long on the frequency being used. This antenna must go into an antenna tuner which then goes to the rig.

Obviously, this will probably be a nighttime utilization. A good ground system, say to the cold water pipes or ¼-wave wire strapped to the ground post, will be necessary. There is always the possibility of finding some wire the exact colour of the wall of the building and sneaking by on daytime use. (Paint the fishing weight.)

If you can find some accomplices among other residents on the same floor, a horizontal wire could be used. But let us now consider having to keep everything indoors.

You mentioned you had 17 feet of horizontal space. Such is a bit over a ¼-wave for 20M. Starting where the walls meet, you could have half of a dipole run along one wall and the other half run along the other wall, and then bend it down to make up the difference.

Depending on the aesthetic factors involved, you could start in the very middle of the room, tape the dipole to the ceiling, run the wires to the corners, and then bring the wires down to the floor and along the walls.

Since in your situation it seems every dB will be precious, you might try using a loop antenna a ¼-wavelength on a side along the floor and ceiling and walls. It would look like a 1-element quad. Then you could put another element on the opposite wall — say 5% longer — to act as the reflector. Thus you have a 2-element quad for the higher frequencies.

Getting really ingenious, you could come up with a stub arrangement that would have the undriven element vary from 5% longer to 5% shorter, and it would then act as a director and you would be directive in the opposite direction. (Just think about it; you could sit around the club meetings and boast about your 2-element quad up 100 feet!)

The results on 10 and 15 could well surprise you. Or you could turn it around and — not depending on the walls — put up, say, 8′ loops supported by nylon fishing line tied to picture hanging pins, a 4-element quad facing out in the direction of the window (if that fits the dimensions of the room). You will now have a great signal someplace in the world.

One solution may be the loop antenna similar to those you saw on broadcast radio receivers many years ago. While not very efficient, they do work better than one would think and were the favorite for clandestine services for many years. You will need a tuner that works with balanced feedlines.

Another thing to try for the lower bands would be a very thin wire running to a tree somewhere (if such exists). It may never be noticed. Check it daily because if a bird flies into it, it breaks.

You didn't mention how many floors there are above you in the building. If the manager or the maintenance people don't go on the roof very often, possibly you could paint some of that very thin coax the same color as the wall and run it up to something on the roof. If they do ever find your vertical up there you could say, "It's been up there for six months now. Who did it hurt?" Sometimes less than the truth is the best defence.

To digress, when we speak of long thin wire, we're referring to enamel-covered wire. Possibly 12 stories up, with cooperating neighbors, balconies, and if the colour of the wall is right, plastic-covered wire of the right colour would never be seen. (This would be in a dipole configuration.)

Do not give up hope. Look at it this way. If the QRPp zealots can make contacts with a good antenna and no power, you should be able to do well with power and no antenna. An amplifier or a speech processor may be needed to give you the life needed. All will depend on the absorption offered by the building you are in.

If all else fails, there is 2 metres.

(Lil Paddle is an assumed name (no kidding?). She's been around radio so long that after a few sherries, she harks back to the days when "we had wooden radios and steel men.") □

California

PACIFICON '88, the ARRL Pacific Division Convention, will be held at the Le Baron Hotel, 1350 N. First Street, San Jose, on October 14-16. (See advertisement in recent issues of Worldradio for registration information.)

Eyeball QSO contest; speakers of interest to the old-timer and newcomer; ARRL forum; YL forum; VE forum conducted by Jim Clary, WB9IHH, ARRL VEC; Amateur Radio exhibitors (ICOM, Kenwood, Yaesu, etc.); ham stores with convention specials; and numerous other features of interest to hams.

Walk-in VE exams from 0900 to 1100, Saturday and Sunday. Fee is $4.55. Registration for convention not required for license examinations.

Registration opens Friday at 1200 with Friday evening sessions being a special emergency forum at 1830 followed by opening ceremonies and no-host social mixer. Registration opens Saturday at 0800 with session and exhibit starting times 0900 Saturday and Sunday. Exhibit areas will be open to non-registrants after 1000 Sunday.

Banquet Saturday night at 2000. Geffry, MØON, will be present with his escort, Padi (professional act). Geffry will be the speaker.

Talk-in on 146.385 (+600) or 442.425. Call W6UU.

For information, call (408) 243-8349, or send SASE to "PACIFICON '88," 481 Fenley Ave., San Jose, CA 95117. □

Connecticut

The 6th Annual TRI-CITY ARC Auction will be held on Saturday, October 29, at the Gales Ferry Fire House, Gales Ferry (Rt. 12 across from Dow Chemical). Set-up at 9 a.m.; auction from 10 until sold out. Admission is free and there will be food available. Wheelchair access.

Talk-in on 146.52 direct.

For information, call Tom Scott, WA2RYV, at (203) 464-6555. □

Georgia

The Georgialina Hamfest — sponsored by THE ARC OF AUGUSTA, THE CSRA REPEATER ASSOCIATION, THE GEORGIA-CAROLINA REPEATER ASSOCIATION and THE BURKE COUNTY ARC — will be held October 22-23 at the Georgia National Guard Armory, Milledge Road, Augusta, on the state line of two great Southern states.

The hamfest will be completely indoors, using the main drill hall and two large adjacent rooms. Tables (3' x 10') are $5. Table rental entitles dealer/vendor and employees admittance without ticket purchase. General admission is $3. BBQ meal is $4.50.

Talk-in on 146.94 and 444.950.

For information or to register, contact Jim Abercrombie, N4JA, P.O. Box 5943, Augusta, GA 30906; (404) 790-7802. □

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The ALFORD MEMORIAL RADIO CLUB of Stone Mountain presents Ham Radio & Computer Expo '88. The hamfest will be held November 5-6 at the Gwinnett County Fairgrounds, Lawrenceville — just 20 minutes northeast of Atlanta.

Large indoor dealer area, concession stands, RV sites with hook-ups, 24-hour security and Saturday night cookout. Admission is $5. Door prizes. Free parking. VE exams both days.

For more information, contact: EXPO '88, P.O. Box 1282, Stone Mountain, GA 30086. □

Illinois

The CHICAGO FM CLUB is sponsoring RADIO EXPO 88 on Saturday and Sunday, September 24-25. This ever-popular late-summer hamfest will again be held at the Lake County Fairgrounds, Routes 45 and 120, Grayslake.

Displays of the latest radio equipment from major manufacturers, home computer technology from the leading distributors, and thousands of dollars in prizes will be the highlights of the hamfest. Hourly prize drawings; grand prize offered on Sunday the 25th.

General admission will be $5 at the gate, $4 in advance; tickets good for both days. Children under 12 admitted free. Table reservations (8') are $7.50/day. Electricity available for campers and flea marketers at $4 per day — no exceptions. Free camping and parking. Full food service.

Talk-in on 146.76(−).

For advance tickets, send SASE to: CFMC, P.O. Box 1532, Evanston, IL 60204. □

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The SANGAMON VALLEY RADIO CLUB will hold its annual hamfest at the Sangamon County Fairgrounds, New Berlin, on September 25.

The hamfest begins at 6 a.m. and will continue until 2 p.m. Overnight camping is available Saturday night. The DeVry VE team will offer upgrade testing. Tickets are $2 each or 2/$5.

Talk-in on 146.28/.88.

For information, contact Don Pitchford, WD9EBK, P.O. Box 8252, Springfield, IL 62791. □

Michigan

The OAK PARK ARC Swap 'n' Shop will be held November 6, 8 a.m. to 4 p.m., at the Southfield Civic Center and Convention Pavilion, Evergreen Road between 10 and 11-Mile Roads, Southfield.

The pavilion will open at 6 a.m. the day of the swap for set-up. Only admissions purchased with tables will be allowed entry at that time. Tickets are $4 each; children under 12 free. Table reservations are required, first-come first-served. Tables (8') are $10 each; $25 on the day of the swap, if still available. Electricity available within 50 feet of all tables.

Featured will be contests, demonstrations, FCC information, prizes, antique radios, computer and radio dealers and good food. 146.62 check-in contest. VE3's admitted at par. Free parking.

Talk-in on 146.64 and 224.86.

For information or reservations, contact: OPARC Swap 'n' Shop, 303 S. Vermont Ave., Royal Oak, MI 48067. □

Minnesota

Hamfest Minnesota & Computer Expo! will be held October 29, 7:30 a.m. to 3 p.m., at Hennipin Technical Institute, Brooklyn Park Campus, 9000 Brooklyn Blvd., Brooklyn Park. Sponsor is TWIN CITIES FM CLUB.

Guest speaker will be Roy Neal, K6DUE, former NBC science and space shuttle correspondent and on-camera personality on *The New World of Amateur Radio.* Also featured will be packet radio demonstrations and ARRL forum. New and used Amateur Radio and two-way radio gear, new and used computers, computer software, other related electronic equipment, CW contest, *giant* indoor flea market, VE exams, plenty of free parking, and much more. Admission is $4 in advance, $5 at the door.

VE exams start at 9 a.m. and the registration cut-off date is October 22. Contact Ron Schulz, NAØU, 6308 Peacedale Ave., Edina, MN 55424; (612) 920-7473, with SASE and check for $4.55 about the VE exams.

Talk-in on 146.16/76.

For advanced hamfest tickets and information, send SASE to: Hamfest Minnesota & Computer Expo, P.O. Box 5598, Hopkins, MN 55343, or call Mike Sigelman, KØBUD at (612) 542-8450. □

Missouri

The SOUTHSIDE ARC will hold its annual Octoberfest Hamfest on October 29 at Grandview Junior High from 8 a.m. to 4 p.m. Admission is $2 each or 4/$5 in advance, 3/$5 at the door. Swap tables are $7 each (includes one ticket).

Talk-in on 147.72/12.

For information, contact: Southside ARC, P.O. Box 1142, Grandview, MO 64030, or call Walt Thomas, NB0E, (816) 763-9637. □

New York

The HALL OF SCIENCE ARC Hamfest will be held October 9 (rain date October 16) at the New York Hall of Science parking lot, Flushing Meadow Park, 47-01-111 Street, Queens. Doors open at 9 a.m. Set up after 7:30 a.m. Amateur Radio exhibit station, tune-up clinic, films. Donation is $3 per space (buyers) or $5 (sellers).

Talk-in on 144.300 simplex, 223.600 and 445.225.

For more information, call at night Steve Greenbaum, WB2KDG, (718) 898-5599 or Arnie Schiffman, WB2YXB, (718) 343-0172. □

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On Saturday, October 15, the RADIO AMATEURS OF GREATER SYRACUSE will be holding their 33rd hamfest in the Arts and Home Center at the New York State Fairgrounds, just two miles east of Thruway Exit 39 on Route 690, from 9 a.m. until 5 p.m.

Activities include tech-talks, contests, entertainment, a giant indoor flea market, many commercial vendors, and the famous Syracuse Hamfest breakfast and delicious lunch at very low prices. Also programs for non-hams.

Our improved tailgating area is still only $3 per car. Plenty of free parking. Indoor flea market is $6 per table (furnished by us). General admission is only $4 U.S. or $4 Canadian (for VE/VO's only). Under 12 free. Preregister for FCC exams by October 7. Send SASE if you need 610 form.

Talk-in on 146.31/91 and 147.90/30.

For more information, call Ed Swiatlowski, WA2URK, (315) 487-3417 or Viv Douglas, WA2PUU, (315) 469-0590 or write RAGS, P.O. Box 88, Liverpool, NY 13088. □

North Carolina

The CABARRUS ARS presents its 10th annual Country Hamfest on Sunday, November 6, at the new National Guard Armory, Hwy. 49 and Old Charlotte Road.

Doors open at 9 a.m.; dealer set-up at 6 a.m. Auction at 2 p.m. Main prize drawing at 3 p.m. Featured will be forums, concessions, hourly prizes and VE exams. Admission is $3 in advance, $4 at the door. Flea market tables are $5 each.

Registration deadline for exams is October 21. Send completed Form 610 with a photocopy of your present license and code credit certificate (if applicable) and a check or money order for $4.50, payable to Charlotte VEC, 227 Bennett Lane, Charlotte, NC 28213. Bring original license and certificate to test (for ID only).

Talk-in on 146.055/.655.

To pre-register, send check and SASE to: Concord Hamfest, 2015 Applegate Dr., Concord, NC 28025 by October 28. □

Change of address?

If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

Ohio

The NORTHWEST OHIO ARC will hold its annual hamfest on October 9, at the Allen County Fairgrounds, Lima, Rt. 309E (approximately 1½ miles east of I-75). Set-up after 3 p.m. Saturday; all-night security provided.

Tickets are $3.50 in advance, $4 at the door. Tables are $8; half-tables $4. Electricity for campsites $7. VE exams for all levels (30-day preregistration requested). Send Form 610 with copy of present license with SASE to Jon Solomon, W8TY, 1370 Stevick Rd., Lima, OH 45807. Doors open for testing at 8:30 a.m.; exams at 9:30 a.m. All areas are handicap-accessible.

Talk-in on 146.67/07, 147.03/63 and 444.925/ 449.925.

For table reservations and tickets, send SASE to Lee Purdy, WD8BND, P.O. Box 211, Lima, OH 45802; or call (419) 647-6513.

Oklahoma

On October 29-30, the TEXOMA HAMARAMA ASSOCIATION is sponsoring the Oklahoma State Convention in conjunction with Texoma Hamarama '88, to be held at the Texoma State Lodge, overlooking beautiful Catfish Bay on Lake Texoma, 5 miles east of Kingston, on U.S. Hwy. 70. Doors open from 8 a.m. to 5 p.m. on Saturday, and from 8 a.m. to noon on Sunday.

Features include equipment dealers, flea market, technical forums, ARRL activities, Wouff Hong Ceremony, bingo, ladies' programs, Saturday night dance, banquet, QCWA breakfast, exams, auction and more. Special rates are available at the Lodge by calling (405) 564-2311, or you may prefer to camp in the spacious park.

Talk-in on 146.34/94 and 146.37/97.

For more information, write to Texoma Hamarama Association, P.O. Box 610892, DFW Airport, TX 75261, or call Dave Cox, NB5N, at (918) 250-2285. □

Tennessee

The Greater Memphis Hamfest and Delta Division Convention, sponsored by the MID-SOUTH ARA, will be held October 8-9, at the Memphis Cooke Convention Center.

The hamfest will last from 9 a.m. to 4 p.m. on Saturday, and 9 a.m. to 3 p.m. on Sunday. The cost to Amateur Radio operators is $5; free to the general public. Tables are $20 each. There will be a Delta Division Convention banquet and hospitality room Saturday night.

Talk-in on 146.28/88.

For information, contact: Wayne Gregory, KB4GFK, 3243 Tena Ruth Cove, Memphis, TN 38118; (901) 365-7823 after 5 p.m. □

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The 8th Annual Tri-Cities Hamfest will be held Saturday, October 15, at the Appalachian Fair Grounds, located off I-181 in Gray. The sponsors are the KINGSPORT, BRISTOL and JOHNSON CITY RADIO CLUBS.

Gates will open at 7 a.m., doors at 8 a.m. Admission is $4. Exhibit hall flea market tickets are $5 plus admission; outside flea market is $2 plus admission. Dealer tickets are $20. Tables are $4 each — limited number available. Friday night set-up available from 6 to 11 p.m. Prizes, ladies' activities and VE exams.

Registration for VE exams must be received by October 8. Send check for $4.55 (payable to ARRL-VEC) and a copy of your license — along with a completed 610 — to Jimmy Roller, N4IR, 714 Foothills Rd., Kingsport, TN 37663. Bring original license, CSCE and two I.D.'s to exam. *NO WALK-INS!*

Talk-in on 146.67, 146.97 and 146.79.

For more info or to register, contact Tri-Cities Hamfest, P.O. Box 3682 CRS. Johnson City, TN 37602; or call Wendell Messimer, K4ZHK, (615) 926-5755, or Chuck Anderson, N4IYQ, (615) 928-3132. □

Texas

The EL PASO ARC and the SUN CITY ARC will be sponsoring the El Paso Ham Fiesta on October 22-23. The Fiesta will be held at the Western Playland Pavilion in El Paso. Featured will be Miley Radio from Colorado, swap tables and prizes. Tickets are $5.

Talk-in on 146.70.

For more information, call Clay Emert, K5TRW, at (915) 859-5502. □

Illinois QSO Party

The 1988 Illinois QSO Party, sponsored by the Radio Amateur Megacycle Society, will be held from 1800Z, October 9 until 0200Z, October 10.

Suggested frequencies: 3550, 7050, 14050 *CW;* 3890, 7290, 14290 *phone.* Novices call 30 kHz above bottom end of subbands for CW and 28390 for phone. Other bands may also be used.

Exchange: Illinois stations give RST and county; others give RST and state, province or country.

Scoring: Count 1 pt. per phone QSO, 2 pts. per CW QSO. No repeater QSO's. Stations may be worked once per band and mode, and once per band/mode/county for IL mobile stations. IL stations multiply points by sum of states, IL counties, VE provinces, and a maximum of five DXCC countries (W/K and VE included). Count additional DX for points but not multipliers. All others multiply points by number of IL counties worked. IL mobiles may add 200 pts. to final score for each county from which 10 or more QSO's were made. All stations may earn one extra multiplier for every eight QSO's made with the same Illinois county.

Awards: The highest Illinois score will receive an award plaque. Certificates will be awarded to: A) 10 highest scores, IL fixed station; B) 5 highest scores, IL mobile station; C) Highest score in each state, province and country; and D) Highest club/team aggregate score.

Logs: Entrants shall submit a log containing GMT, call, RST, state or province, IL county, band and mode. *Circle new multipliers as worked.* IL mobiles must indicate county changes in log. Any station with over 100 QSO's must submit a dupe sheet. A summary sheet shall also be submitted with every log. Entries must be postmarked by November 7, 1988. Mail to RAMS, c/o Joe LeKostaj, WB9GOJ, 9134 Ewing Ave., Evanston, IL 60203. □

YL Anniversary Party

The Young Ladies' Radio League is sponsoring the YL Anniversary Party in October. The *CW* portion lasts from 1400 UTC, Wednesday, October 12 to Friday, 0200 UTC, Friday, October 14. The *SSB* section lasts from 1400 UTC, Wednesday, October 26 to 0200 UTC, Friday, October 28.

Eligibility: All licensed women operators throughout the world are invited to participate. YLRL members only are eligible for the cup awards. Non-members will receive certificates. Only YLRL members are eligible for the Corcoran and Hager Awards.

Procedure: Call "CQ YL"

Operation: All bands may be used. No crossband operation. Net contacts, repeater contacts, and contacts with OM's do not count. A station may be counted once on each band for credit. Participants may operate only 24 hours of the 36 hours of the contest. Operating breaks must be indicated in the log.

Exchange: Station worked, QSO number, RS(T) and country/state/VE province.

Scoring:

A) CW and SSB will be scored as separate contests. Submit separate logs for each contest.

B) All YL's within one of the United States (Hawaii and Alaska included) or within a Canadian province: score 1 pt. for each QSO with another station located in a state or province. Score 2 pts. for each contact with a station not located within a state or province (i.e., DX).

Definition of DX: All stations not located within a state or province, DX YL's shall score 2 pts. for each contact with a station located in a state or province; 2 pts. for each contact with a station on another continent and 1 pt. for each contact with a station on another continent. Multiply the number of contact points by the total number of different states/provinces/countries worked.

C) Contestants running with a power output of 100W or less on CW and 200W PEP or less on SSB, at all times, may multiply the results of (B) by 1.50 (low-power multiplier). The maximum power output that may be used at any time during the contest is 750W on CW and 1500W PEP on SSB.

Logs: All logs must show the operator's state/province/country to qualify for awards. Logs should also state whether or not operator is a member of YLRL. For each QSO, logs must show the station worked, QSO number given and received, RS(T) given and received, country/state/province of station worked, time, band and date. Logs must also state the power output used and the operating breaks taken.

If you have 200 or more QSO's, submit a separate log for each band and submit a "dupe" sheet. Do not send carbon copies of logs. Please print or type. Logs must be signed by the operator and no logs will be returned. Remember to file separate logs for each contest. Logs must show claimed score, be postmarked by November 11, 1988, and be received by December 2, 1988 or they will be disqualified. Send logs to: Carol Shrader, WI4K, 4744 Thoroughgood Dr., Virginia Beach, VA 23455, USA.

Duplicates: For each duplicate contact that is removed from the log by the vice president, a penalty of 3 additional and equal contacts will be exacted.

Awards:

A) For the YLAP, cups will be awarded for both the NA-YL and the DX-YL with the highest CW scores and for the highest SSB scores. Only YLRL members are eligible to receive cups. If the winner of either contest is a non-YLRL member, a first place certificate will be awarded.

If a DX-YL does not wish to receive a cup because of duty charges, a first place certificate may be awarded. Second and third place certificates will be awarded for each contest.

The highest CW and the highest phone score in each district, province, and country will receive a certificate. *NOTE:* Certificates for the highest score in a district, province or country will be awarded only if there are at least 10 valid contacts on the log.

B) *Corcoran Award:* A plaque given for the highest combined CW and phone score for YLRL members within a state or province.

C) *Hager Award:* A plaque given for the highest combined CW and phone score from North and Central America, including the Greater and Lesser Antilles, for YLRL DX members only. A duplicate plaque given for the highest combined CW and phone score from any other part of the world, for YLRL DX members only.

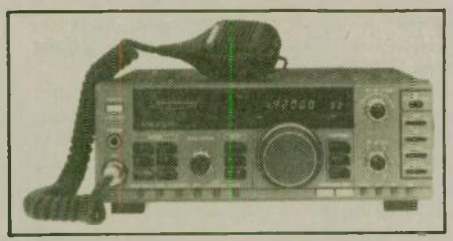
Suggested frequencies: *CW — (80M)* 3.540-3.570; *(40M)* 7.040-7.070, 3.940; *(20M)* 14.040-14.070; *(15M)* 21.120-21.150; *(10M)* 28.180-28.210. *SSB (80M)* 3.940-3.970; *(40M)* 7.240-7.270; *(20M)* 14.250-14.280; *(15M)* 21.380-21.410; *(10M)* 28.380-28.410 MHz.

NOTE: Since band allocations in other countries are often different than the USA, North American YL's should look for DX YL's in other parts of the bands, especially on 40 and 80M. □

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

Macket correction

One of our readers has informed us that the phone number listed under "Macket software" (page 58, September '88 issue), for Technical information, is wrong. The phone number should be (813) 874-2980. □



HF transceivers

Kenwood is pleased to announce two new affordable high-performance HF transceivers: the TS-140S and the TS-680S. The TS-140S is an all band, all mode, 100W HF transceiver with general coverage receiver. 6M enthusiasts will love the TS-680S — an all-band, all-mode, 100W HF transceiver, which includes a 10W, 6M section.

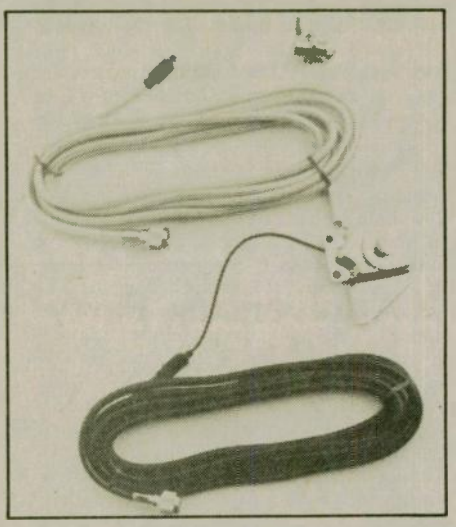
New feature! Programmable band marker. Useful for staying within the limits of your ham license. Prevents out-of-band operation! For contesters, program in the suggested frequencies to prevent QRM to non-participants.

New feature! Morse code beeper status indicator. Not only is operating mode verified with Morse code characters, but it is also used to signal empty or full memory banks, or when frequency lock is on.

Many other essential features such as dual digital VFO's, 31 memory channels (10 of which can store receive and transmit frequencies separately for repeater or crossband operation), programmable scanning, automatic selection of USB or LSB, and more. Also included are the famous Kenwood interference reducing circuits: IF shift, dual noise blankers, RIT, RF attenuator, selectable AGC and FM squelch.

A complete line of acessories is available, from CW filters to automatic antenna tuners and power supplies. See your nearest authorized Kenwood dealers for more details!

Suggested retail price: TS-140S, $899.95; TS-680S, $999.95. For information, contact Kenwood, 2201 E. Dominguez St., Long Beach, CA 90810; (213) 639-4200. □



Coax mounting kits

New low-loss coax mounting kits are now available. The CK-5LX is the 5DQEV + RG188A/u. It is usable from 1 MHz to 1.5 GHz. The CK-3LX is the 3.5DQEV + RG188A/u. It is usable from 1 MHz to 900 MHz.

Connectors are N male-type, SO-239/259, depending on the frequency application. Mounts are the magnet, trunk lip and the hole permanent-type.

The loss for the coax (per 100') is: 3.5DQEV at 400 MHz 3.5, at 1000 MHz 5.6, and 5D-QEV at 400 MHz 3.2, at 1000 MHz 5.3. (Hole-type with CK-5LX and CK-3LX trunk lip mount shown in picture.)

For information, contact NCG Co., 1275 N. Grove St., Anaheim, CA 92806; (714) 630-4541. □

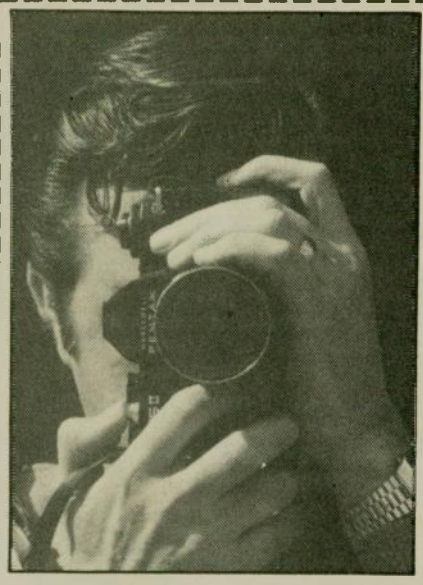
High-power linear amplifier

The HL-250U is a high-power linear amplifier designed for the amateur UHF band all-mode operation. It provides a maximum output power of 250W when driven by any 10W or 25W radio through the newly developed automatic drive level select circuit.

The HL-250U is all solid-state and is more compact than tube-type linear amplifiers. No tuning is required, and the stable high-power output is obtained without danger of high voltage.

Using the built-in low-noise GaAsFET receive pre-amp, the HL-250U enables you to enjoy a more comfortable UHF DX QSO. Due to the effective forced-air cooling, the HL-250U is reliable and stable even in continuous operation.

Suggested retail price is $824.95. Contact Encomm, Inc., 1506 Capital Ave., Plano, TX 75074; (214) 423-0024 or your local dealer for more information. □



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Radioteletype Monitoring

The Complete Guide

by Dallas W. Williams

"RTTY has become one of the fastest-growing areas of shortwave listening," according to the author of this new book, just released by Tiare Publications.

New, high-tech RTTY decoders are opening even more RTTY signals to the RTTY monitor and hobbyist. But getting the hang of it, learning how to tune in the various RTTY signal types and how to recognize all the variations, and how to spot clues that will help you identify what's being received is often difficult and frustrating for both the newcomer and the more experienced hand.

Radioteletype Monitoring eliminates much of the mystery and confusion about tuning in and understanding the RTTY signal. It offers a straightforward, no frills approach to getting the neophyte RTTY monitor off on the right foot. It'll also provide answers to questions many experienced monitors have.

The book covers: What is RTTY, The Receiver, The Demodulator, Tuning the Signal, Press Agencies, Reading the Display, Test Signals, Code Groups and Cryptos, Other Methods of Transmission, Other RTTY Sources, Teleprinter Machines, RTTY Equipment Survey, Selected Frequency List, Various Keyboards, Traffic Slugs and Circuit Identifiers.

The author has degrees in journalism and electronics technology. He has a number of years worth of RTTY experience, including the design and building of his own RTTY equipment. He holds an Amateur Radio license and programs six computers.

Radioteletype Monitoring is an easy-to-understand tour of the RTTY mode, using a minimum of jargon and a maximum of easily understood, plain English. The extensive list of active RTTY frequencies (complete with best times, calls, ID's and speed/shift information) lets the reader start to tune in RTTY signals almost at once.

Radioteletype Monitoring is priced at $9.95 per copy plus $1 shipping ($2 foreign). Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. ☐

Guide to VHF/UHF

***The Basic Guide to VHF/UHF Ham Radio,** by Edward M. Noll, W3FQJ. Tiare Publications. ISBN: 0-936653-11-6. 5½" x 8½" Trade paper, 86p. $6.95 plus $1 shipping ($2 foreign) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147, or from your Amateur Radio dealer.*

The Basic Guide to VHF/UHF Ham Radio has just been published by Tiare Publications. Written by well-known Amateur Radio and technical writer Edward M. Noll, W3FQJ, this new volume provides a down-to-earth basic introduction to Amateur Radio operating on the 2, 6 and 1.25M bands, as well as 23, 33 and 70cm.

Interest in these frequency ranges is growing rapidly, especially with recently authorized operations by other classes of operators in these bands. The book provides essential information for the Novice, new Technician, higher grade licensee and the about-to-be-ham interested in joining the action on the VHF and UHF frequencies.

The book presents a clear and easily-understood look at VHF/UHF equipment, antennas, operating techniques, repeaters, contesting and awards. Band plans for each of the VHF/UHF bands are also included.

The Basic Guide to VHF/UHF Ham Radio is must reading for anyone planning operation on these higher frequencies or just recently active in these ranges. ☐

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(916) 441-7388

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Campbell, CA 95008
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Littleton, MA 01460
(617) 486-3400 or 486-3040

MICHIGAN

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Muskegon, MI 49442
(616) 722-2246

MISSOURI

Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA

Radio World
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Boulder City, NV 89005
(702) 294-2666

OHIO

Universal Amateur Radio, Inc.
1280 Aida Drive
Reynoldsburg (Columbus), OH 43068
(614) 866-4267

TEXAS

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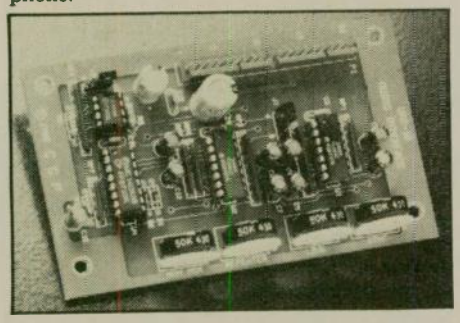
11903 Alief-Clodine Suite 500
Houston, TX 77082
(713) 879-7764

Universal audio interface

The latest addition to the Creative Control Products product line is the UAI-10 Universal Repeater/Link Audio Interface board. The UAI-10 is a low-cost, easy-to-interface repeater and link audio mixer, featuring DTMF Mute and link Monitor-Mix control.

Audio inputs consist of repeater, link, control receiver, CW/Tone, and an auxiliary input for other audio sources such as a local microphone.



Audio outputs consist of repeater, link and a DTMF output for the DTMF decoder on your controller. Each audio output is adjustable to the level required by your system.

Control inputs to the UAI-10 consist of +8–15VDC, repeater COS (which is selectable high or low), DTMF mute, and an auxiliary output from your controller for the link mute function.

The UAI-10 has provisions to mute the DTMF tones from the repeater transmit audio. The ability to mute or pass DTMF tones out the link transmit audio is also provided via a jumper on the circuit board.

Normally, full audio is present at the link transmitter audio output. Whenever the repeater COS is activated, both the repeater and link audio are mixed together, resulting in the condition called Monitor-Mix.

This monitor-mix audio is adjustable so that the link receive audio can be lower in volume than the repeater receiver audio. Also, whenever the auxiliary control input is activated, the link transmit audio will be completely muted upon repeater COS activity. Either mute or monitor-mix operation is selectable so that normal repeater audio will not be overpowered by the link receiver's audio.

The UAI-10 is the perfect answer for interfacing your repeater receiver, transmitter and link radio to any stand-alone repeater controller such as our SRC-10 Smart Repeater Controller.

Each UAI-10 comes assembled and tested, plus carries a one-year warranty. The UAI-10, with manual, is available for immediate shipment at an introductory price of $44.

For more information on the UAI-10, contact Creative Control Products, 3185 Bunting Ave., Grand Junction, CO 81504; (303) 434-9405. □

N6RJ Electronic Second Op

The Radio Amateur Callbook Inc. is proud to announce the release of a major new tool for the DXer — N6RJ's Electronic Second Op computer program. This program, written for IBM PC and compatible computers, offers a host of features essential for the DXer, the contester and any amateur seriously interested in reliable long-haul communication.

A simple installation procedure customizes the program to the user's exact QTH. The user enters the station longitude and latitude. The program then calculates precise beam headings from the station location to each DXCC country, plus an additional 195 cities. Long-path bearings are also calculated, as well as the reciprocal bearing from the foreign location to the station site. Distances are calculated in statute miles, nautical miles and kilometers.

All derived data is saved to disk for permanent reference. Data thus created is then sorted on the basis of the operator's choice of prefix, country name, CQ zone or continent, and is available for immediate reference. The sorting order may be changed at any time according to the operator's preference.

Information is displayed either in columnar tables or in full-screen displays for a given country. Unknown calls may be entered for instant identification of ITU call sign block allocation. The program will also recognize most obsolete call assignments, such as VP2L, VQ3, etc. Notes, where appropriate, are attached to some countries, such as cases where more than one DXCC country shares a call sign prefix. Tables, sorted in the desired order, may be printed at any time for use at the operating console.

Other information displayed includes a real time GMT clock, postal rates, the number of IRC's needed for an airmail QSL response, the existence of a QSL bureau, third party traffic legality, and availability of reciprocal licenses. Space is provided for entering QSO date, personal notes and QSL information. If, during initial installation, the user indicates he is not in the United States, information of specific interest to American amateurs is deleted.

A major feature of special interest to low-band DXers is calculation of daily sunrise and sunset times for all locations listed. The operator, when booting up, is asked if he wishes the sunrise/sunset calculations updated for that day worldwide. If so, the updated information — precise to the minute for all locations listed — is quickly calculated and entered for immediate inspection.

The N6RJ Electronic Second Op is distributed exclusively by the Radio Amateur Callbook Inc. and is available through better dealers everywhere; or, for convenience, may be ordered directly from the Callbook. The program is offered at $59.95, plus $3 shipping and handling. Radio Amateur Callbook Inc., 925 Sherwood Dr., Lake Bluff, IL 60044. □

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The North American Callbook lists the calls, names, and address information for over 495,000 licensed radio amateurs in all countries of North America from Canada to Panama, including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The International Callbook lists over 500,000 licensed radio amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1989 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1989, this combined Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1989 Callbooks will be published December 1, 1988. Order early to avoid disappointment (last year's Callbooks sold out). See your dealer now or order directly from the publisher.

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Publication: Callbooks - December 1, 1988
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Product Review

(continued from page 50)

Use is amazingly simple. Follow the clear-cut instructions outlined in the manual, and you will be amazed at how easy it is to tune out any reactance on your feedline. A schematic is provided with the manual, allowing you to do any troubleshooting that might be necessary. MFJ offers a 12-month warranty on this tuner. That says a lot, right there.

Using a transmatch with a modern solid-state transceiver has one other advantage. Current design trends over the last several years have led to the general practice among transceiver manufacturers of having a broadbanded RF input stage.

All necessary filtering is done in the IF strip. This places the first RF stage and first mixer at the mercy of a lot of wideband garbage that will appear at the input circuitry of the receiver. Older, tube-type rigs employed LC networks in the RF stage. This helped filter out unwanted signals and increase the overall performance of the receiver. Not so with today's crop of radios.

The 941-D will act as an LC circuit ahead of the RF stage of the receiver, thereby reducing unwanted signals in the passband. This rids the first mixer of a bunch of signals that turn into mixing products and garbage up the IF strip which, in turn, degrades the performance of the receiver. See there, and you thought that a transmatch was just to get the SWR down within reason!

Bottom line on the MFJ 941-D antenna tuner: high quality, good price, easy to use, essential piece of gear for the shack. In this day and age of "The Off Shore Empire," it is nice to see an American manufacturer in the Amateur Radio marketplace. Through their product line, MFJ Enterprises has proven that Amateur Radio equipment and "Made in America" are not mutually exclusive terms. Write for an MFJ catalog, today. And tell 'em you saw it in **Worldradio.** □

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FOR SALE — SIMPLEX AUTOPATCH SYSTEM with 25 watt 2 meter radio. This does not have to be used with a repeater. Just add your phoneline and antenna. Make and receive phone calls. After 7:00 pm, 414/545-2620. $250.00.

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92025.

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SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. *The DXers Magazine,* Drawer DX, Cordova, SC 29039.

LEARN THE CODE — A course for family members and friends who don't know the difference between a dot or a dash. Monday through Friday, 0630-0700 California local time, 3760 KHz ±A2/A3/LSB, January through December, K6RAU. Starts first Monday of each month.

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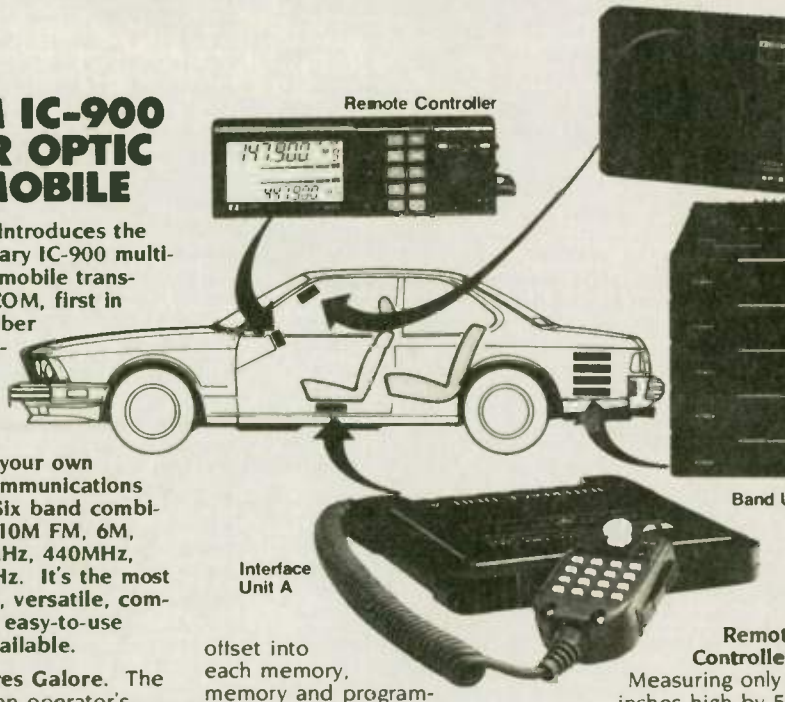

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Band Unit	Power Output	Frequency
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UX-29A	25W/5W	138-174MHz Rx; 140.1-150MHz Tx
UX-29H	45W/5W	138-174MHz Rx; 140.1-150MHz Tx
UX-39A	25W/5W	216-236MHz Rx; 220-225MHz Tx
UX-49A	25W/5W	440-450MHz
UX-59A	10W/1W	50-54MHz
UX-129A	10W/1W	1240-1300MHz

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