WorldRadio

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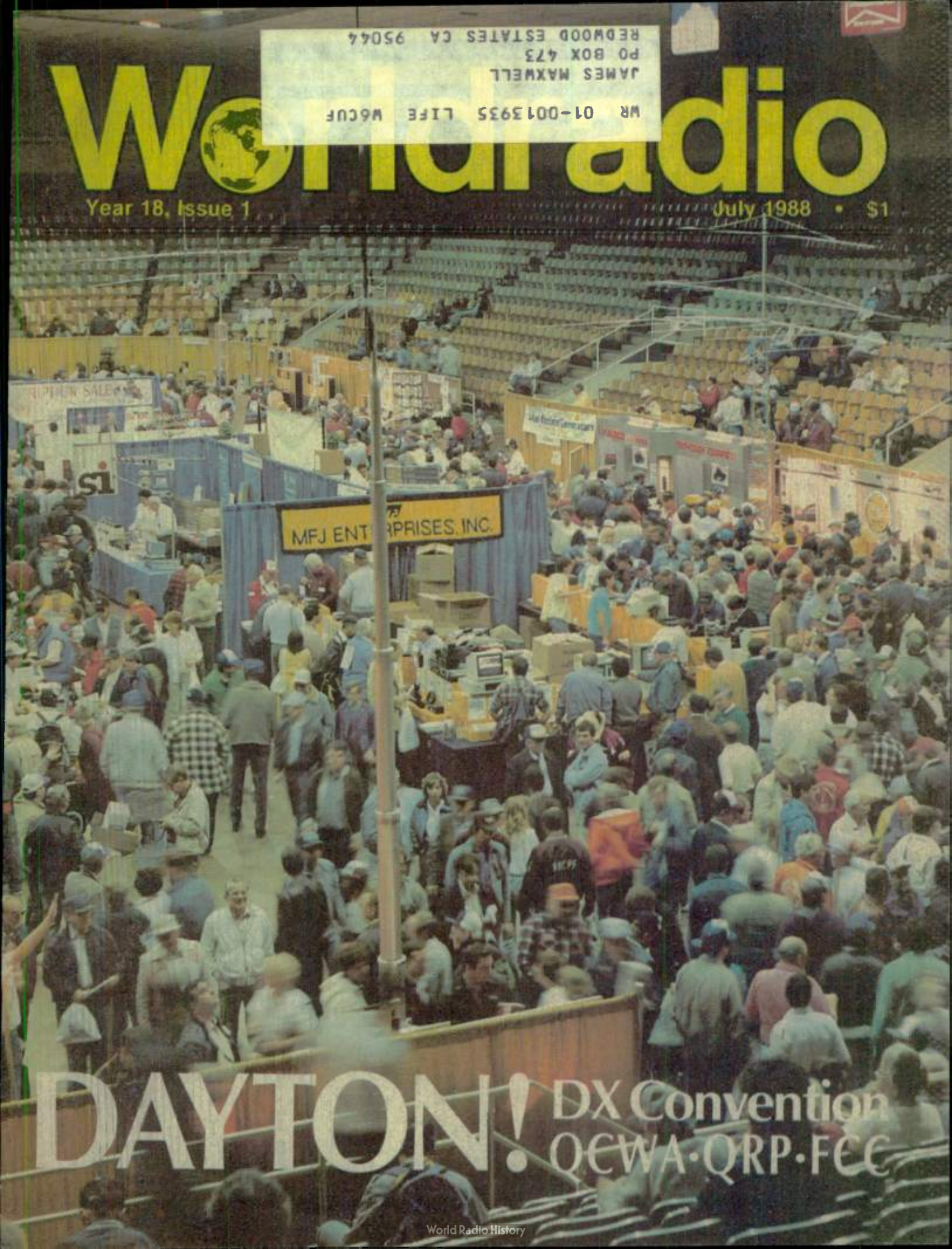

DAYTON! DX Convention
QCWA·QRP·FCC

One of the best-attended seminars at the Hara Arena was the ATV Forum. Tom O'Hara, W6ORG, of PC Electronics, thought the effort to personalize his lectern was very nice — even though one letter was left off.

DAYTON!

It's Amateur Radio's three-ring circus. And this was the 37th running of the event of tired feet and depleted wallets known as the Dayton Hamvention.

The flea market vendors whose haggling would put the bazaars of the Middle East to shame, the manufacturers (large and small) unveiling their latest electronic wizardry, and the seminars where you can pick the brains of Ph.D.'s. It all adds up to DAYTON!

Hospitality rooms for every special interest ranging from the kilowatt crowd to the milliwatt group. There's a dinner for QCWA and license tests for the potential Novice. From the "rubber duck" to the 80M Yagi, there's something for everyone.

ATV Forum

Pete Onnigian, W6QEU

This Dayton forum was moderated by Tom O'Hara, W6ORG. His opening talk about amateur television (ATV) was very interesting to those without prior information about ATV. There is a nationwide simplex frequency for ATV on 144.34 MHz, for monitoring and coordination of activities.

Tom indicated that equipment is readily available for ATV from cable-ready VCR's or VCR cameras. Both will feed an ATV transmitter. RF down-converters are available from used cable-ready tuners.

Fast scan has much less transmission range than SSB or FM, simply because the bandwidth is much greater — about 3 MHz. Since output power is limited, the speaker suggested putting the most money in high-gain antennas and low-loss feedlines. With a 1W transmitter, good coaxial cable and a 14dB gain antenna, the useful range is about 22 miles, said Tom. This is modified with lack of line-of-sight conditions caused by buildings, hills and trees which absorb these operating frequencies.

Music programming and videotapes are considered broadcasting by the FCC and are not allowed. The Commission's rules are the same as for other amateurs, complete with timely I.D. and other transmission requirements. The only exceptions, are *(please turn to page 20)*

MORE DAYTON NEXT MONTH

FRONT PAGE PHOTO: A balcony view of where the action was in Dayton—Hara Arena. *(Photo by Armond Noble, N6WR)*

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FEATURES

COLUMNS

Worldradio

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

Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio Community. We publicize and support the efforts of those who bring the flame of vitality to this avocation.

You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio.

Worldradio is an independent newspaper not affiliated with any other firm, group or organization. Its pages are open to all. Permission is hereby automatically granted to reprint from this publication with appropriate source credit. If there is something useful, we wish to share it.

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PUBLISHER'S MICROPHONE

First we give proper recognition to the latest **Worldradio** Super-Boosters, (Lifetime Subscribers): Anna (N4OZM) and Walter (WD4RAK) Bowman, Radcliff, KY; Grover Cordell, WB5FSP, Springdale, AR; Raymond Pesek, WB8NXR, Brunswick, OH; Frank Wessely, AJ9D, Park Forest, IL; Scott Jones, KB6WER, Pomona, CA; and Bud Wellman, W6RID, Mountain Center, CA.

Well, what can be said about Dayton that hasn't already been said thousands of times by thousands of hams?

One spectacular thing they did was distribute free Dayton HamVention tickets to high schools for eight counties around Dayton. How's this for a title: "Youth Activities Committee Chairman" (Terry Falknor, N8EEO)? Does *YOUR* club have such a post?

We were given a videotape to bring home. It was a half-hour on the Field Day activities of the Milford (MI) ARC, W8YDK. (You may have heard Young Doctor Kildare on FD.)

They were able to get their local cable TV outlet to play the tape and invited interested parties to come to their classes.

Popping up from the mailbag: The bottom of the letterhead of the San Benito ARC (TX) reads "Emergency Communications & Public Service." There is also an ARRL "Amateur Radio Emergency Service" decal reproduced, as well as RACES and MARS decals in miniature.

That should get the point across when they write to civil agencies in their area.

Shure Brothers, Inc., sent us their 444D microphone. I've received a great number of unsolicited comments about how nice the audio sounds.

On the other mode, while some folks squeal like a stuck pig about having to take a CW test, another group willingly takes a CW test so they can sleep in the mud and eat snakes.

The Special Forces radio operators test is now 18 groups a minute. Now, a group is not a string of five-letter words like PARIS, VOLTS, WATTS, nor is it a QSO like "my QTH is," or such. A "group" is: Y9?Z, 6Y.J4, X9.B7. There's no guessing on a test like that!

Warren Munro, KH6WM (Honolulu) says his favorites in **Worldradio** are "FCC HIGHLIGHTS, DX WORLD and the AERIALS folks."

We received a nice note from Norma Vanderhoff, W3CG, who is active in the VE Exam program in Erie County, PA.

UP1BZZ really let it rip the other night when he told a station calling him, "Don't give my call three times in a row — I know my call!" Maybe he got his point across.

Speaking of calls, please listen for the battery-powered November Six Whiskey Romeo on Field Day.

For those interested in HF Mobile, Don Johnson, W6AAQ, has a peach of a book out. Cost is $8.45 (CA residents add 6% tax), plus $1 for shipping and handling. If you just can't wait, add another $1.50 for first class. His address is Box 595, Esparto, CA 95627. It's a good one!

We invite all to express themselves on the pages here. Everyone has an article he or she could write. If you found something interesting, others will, too. And send pictures.

Even if your article was rejected by another magazine, send it to us. We think we recognize true quality better than some of the others!

By the way, any **Worldradio** subscriber we hear saying to a DX station, "Many stations are calling you" (as if he doesn't know that), gets three demerits.

If you have any opinions you will find a ready soapbox on these pages, but you must have a thick skin because we'll give those who disagree with your cherished positions equal space to rebut. In any event, write.

—Armond, N6WR

If you received this publication and are not a subscriber of WORLDRADIO, it was no accident. Please consider it an invitation to join.

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2m
UHF

Whether you're a Novice or Extra class operator, you're sure to appreciate the high power, durability and size of Yaesu's FT-23R Series mini-HTs.

To begin with, you'll find a model that's right on your wavelength. The 2-meter FT-23R. The 220-MHz FT-33R. Or the 440-MHz FT-73R.

Whichever you choose, you benefit from incredibly small packaging. (Take a look at the actual size photo.) Aluminum-alloy cases that prove themselves reliable in a one-meter drop test onto solid concrete. And moisture-resistant seals that really help keep the rain out.

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You can choose the miniature 7.2-volt, 2-watt pack shown in the photo below. And all battery packs are interchangeable, too.

And consider these options: Dry cell battery case for 6 AAA-size cells. Dry cell battery case for 6 AA-size cells. DC car adapter/charger. Programmable CTCSS (PL tone) encoder/decoder. DTMF keypad encoder. Mobile hanger bracket. External speaker/microphone. And more.

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Prices and specifications subject to change without notice. PL is a registered trademark of Motorola, Inc. FT-33R shown with optional FNB-9 battery pack.

Dick Norton, N6AA, displayed a massive research effort. With contest logs, computers and a Herculean endeavor, he showed that a lot of us are not copying as well as we think. *(N6WR photos)*

It's said that the true test of language facility is to be able to make jokes in the language. Well, judging from the laughter, Martti Laine, OH2BH, certainly has accomplished that.

39th Annual International DX Convention

John Minke, N6JM

For the true-blue DXer it is Mecca indeed. From April 22 to April 24, they gathered at the 39th Annual International DX Convention.

From 25 states and 18 countries, Amateur Radio's Jet Set descended upon Visalia, California. (Special mention must be made of the large contingent from Finland.)

Words of DXpeditions past and future, tales of the ordeals faced to give out contacts, slides and video — such is the DX Convention.

Lost in the Pacific searching for a reef, breaking a leg in a backwater country, undulating local voltages, strange food and stranger people. All this and more is the lore of the excitement called DX.

Contest DX Forum

The Contest DX Forum, chaired by Marty Woll, N6VI, was a sort of catch-all for the contest-related activities of DXing. Hugh Allen, W6MFC, of the Southern California DX Club, awarded members of that DX group various plaques for accomplishments in the DX contests sponsored by *CQ* and the ARRL. Likewise, Bob Dorsey, K4UVT, made the presentation of plaques to those deserving of the Northern California DX Club.

Bob Cox, K3EST, representing *CQ*, made presentations in the recent World Wide DX Contests. Danny Eskenazi, K7SS, received such for his record making on 75M! Others included 1986 CW winner D44BC, operated by Jim Neiger, N6TJ, and KP4A, operated by Chip Margelli, N7JA. One thing about these contesters: it will be a sure thing to work them in the contest, which is especially great if it is a new one for you.

Marty Woll then gave a short rundown on the recent happenings with the ARRL Contest Advisory Committee, such as a new Novice and Technician category in the 10M and DX contests, and establishing a voluntary DX window for 6M. A few contesters on the East Coast were pushing to allow 40M SSB operation in the 7.050 to 7.100 MHz segment. As this would only benefit them with the short-haul European contacts, it would be of no value to the West Coast contesters. Marty also expressed that the committee needed input from the membership.

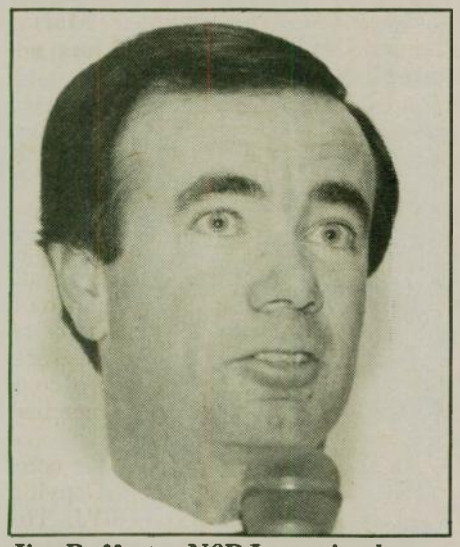
As always, no Visalia bash is complete without the Contest Copying Contest by Jim Neiger, N6TJ. The code tape, 6 minutes in length, included a total of 104 calls, many of them overlapping and at different speeds. Also, "unstable VFO's." The winners would be announced at the Sunday Breakfast.

Dick Norton, N6AA, presented the Logging Accuracy Study, used by the

Marty Woll, N6VI, ran the Contest Forum.

CQ Contest Committee for checking logs of the CQ World Wide DX Contest (CW). Included with him on this committee were Bob Cox, Jim Neiger, Fred Laun, K3ZO, and Martti Laine, OH2BH. The purpose of the study was to quantify actual logging error rates, promote accuracy, and insure that competitors are playing the same game.

The error rate seemed to come from what they call a "unique" call. The unique call can be friends operating at a multi-operator station signing their own call, DXers at the multi-op station working a new country or new band-country using their own call, the data base too small, or just a plain call sign error.



Jim Rafferty, N6RJ, was in charge of the DX Forum.

The 10 discussion topics were:

1) Do sponsors of contests have an obligation to check for accuracy enough to insure the published order of finish is correct?

2) Do contest sponsors of published records have more of an obligation than others to check logs accurately?

3) Are different perceived logging standards significant contributors to the order of published standings in contests?

4) Is it necessary for calls to be logged correctly to count?

5) Is it necessary that the exchange be logged correctly to count?

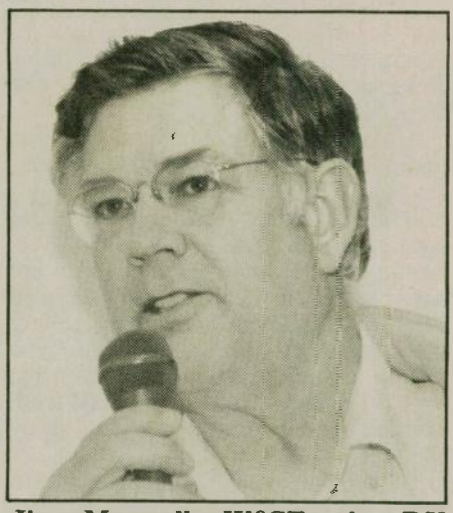
6) Should logs be penalized for illegible handwriting?

7) What is an acceptable logging rate?

8) Should penalties be imposed for incorrectly logged calls beyond removal of contact credit?

9) In the future, is it desirable or responsible for contest sponsors to require log data to be submitted on computer disk?

10) Is it desirable or reasonable for contest sponsors to require taping for contests?



Jim Maxwell, W6CF, the DX workaholic, accepted the role of Pacific Division DX Advisory Committee, to add to the already vast effort he expends on behalf of Amateur Radio.

To end the Contest Forum, Martti Laine presented a sequel to Jim Neiger's shrieking code tape. This was the Busted Call Test. Participants were given a short period of time to correct a list of incomplete or incorrect calls printed on a sheet. Some calls may also be correct, and to change them would result in points deleted from the final score.

DX Forum

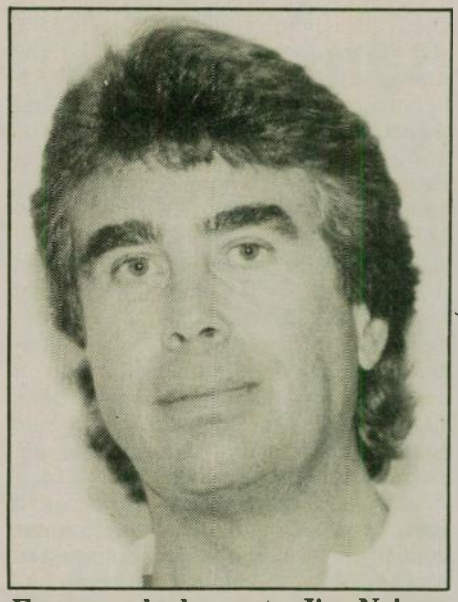
The DX Forum panel consisted of Jim Maxwell, W6CF, Don Search, W3AZD, Bob Thompson, K6SSJ, and Chairman Jim Rafferty, N6RJ. Initial introductions included recognition of the various DX editors who were present.

There was a review of DX Advisory Committee matters that included whether the CW DXCC should have all contacts retroactive to 1945 to count. The committee voted not to change the existing date. The new Western Sahara DXCC country would be a reactivated Rio de Oro from the deleted list, and new single-band DX-CC awards — 10, 80 and 40M — have been introduced, which will include contacts made back to 1945. Five-band DXCC will have a 160M endorsement.

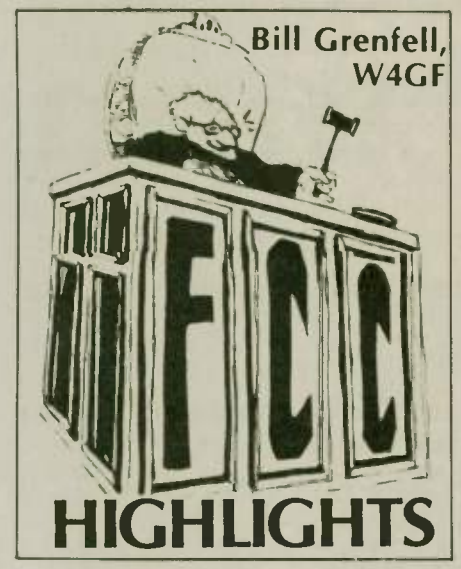
After 14 years on the DXAC, Jim said he needed a break. Any Southwestern DXers who are interested in helping out should contact their ARRL Division Director, Fried Heyn, WA6WZO.

Bob Thompson, K6SSJ, reported that after 2½ years on the committee, (really five to six), he was turning it over to Jim Maxwell, W6CF. Jim is also Editor of *The DXer*, the official newsletter of the Northern California DX Club.

(please turn to page 18)



Everyone looks up to Jim Neiger, N6TJ. Again, he presented the CW copying contest, allowing the dyed-in-the-wool phone types to realize where the real radio operating is taking place.



FCC's Part 97 proposed rewrite of the Amateur rules, PR Docket 88-139, was released April 13, 1988. The reason given was: "... because advances in technology and operating practices have made the current operating rules difficult to apply to modern communications practices." The total body of the amateur rules would be reduced by roughly 40%. Some of the changes proposed are as follows:

Emission designators would be reduced to nine, such as "phone, image, data, test," etc. Rule interpretations guiding amateurs' operation in support of public events have been codified (97.101). FCC's four-part rule of reason concerning broadcasting activities has been codified (97.219(f)).

Swap nets, permitting amateurs to participate in selling their equipment over the air without fear of being cited by the FCC for business communications, would be permitted (97.219(c)). An asking price could be mentioned, "but no subsequent negotiations or bartering may take place. If interest is expressed, the amateur operators would exchange mailing addresses or telephone numbers, and finish negotiations using a means of communication other than amateur service frequencies."

A new section called "frequency sharing" (97.217(c)) emphasizes that no frequency is assigned for the exclusive use of any amateur station. "Each amateur operator must cooperate in the selection and use of Amateur Service frequencies in order to make the most effective use of the frequencies." (97.203(b))

"... amateur equipment shall not be operated while any aircraft is operating under Instrument Flight Rules unless the equipment has been found to comply with all FAA rules." According to proposed 97.217(c) and (g), a self-assigned identifier may be used if: 1) the ID does not conflict with any other specified-by-FCC rules or by a prefix assigned to another country, and 2) the identifier is separated from the call sign by the slant mark or by the word "stroke."

The FCC is accepting comments in this Docket, PR 88-139, until August 31, with reply comments due October 31. *(ARRL Letter,* 04/22/88; *W5YI Report,* 05/01/88)

•

"There is nothing in the UPS comment which establishes anything unique about 220-222 MHz as a place to implement what the UPS describes as 'an advanced private land mobile telecommunications data network.'"

This is one of the key statements in the League's reply comments to the late-filed comments of the United Parcel Service in Docket 87-14, the FCC proposal to remove the bottom 2 MHz of the 220 MHz band from the Amateur Service."

Comments filed in the Docket by LOAD Radio and Microwave Communications Consultants stated: "The main point we want to make here is that we believe that adequate alternative 220 MHz spectrum can be found which would make it a moot point and obviate any necessity for displacement of the amateurs." *(ARRL Letter,* 04/22/88; *W5YI Report,* 04/15/88)

•

The FCC "... will not put any limit on the amount of time that an amateur station can spend transmitting bona fide news bulletins, as long as these 'narrowcasts' or QST's are directed toward the Amateur Radio community and nobody else. So says the FCC in its decision to turn down a rule making request filed by James Fisher (K4GF), of Ocala, Florida. ... Fisher had asked that amateur stations operating in bulletin mode be limited to a maximum of 10 minutes per day."

Another petition, apparently filed later by Bentley Adams, K7LR, would limit information bulletins to "a brief one-way transmission of timely news or announcements, considered to be of outstanding importance or current interest." Referring to a number of one-way broadcasts as ... (having) materialized on various amateur frequencies, that clearly violate the letter and intent of the Commission's Rules ...," he advises that "The self-described 'programming' can be lengthy — up to 45 minutes, five times per day and simulcast on several frequencies." (*Westlink Report,* 04/29/88; *W5YI Report,* 04/15/88)

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On March 7, 1988, the FCC upheld

(please turn to page 16)

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 May 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	WG0Z	KE0UT	N0JEU	KB0CMY
1	NR1C	KC1JH	N1FRJ	KA1RXU
2	WF2V	KE2GL	N2IDN	KB2FPT
3	NO3L	KD3HT	N3GEG	KA3TAW
4	AB4HW	KM4AZ	N4SRY	KC4EZD
5	AA5FO	KG5JR	N5MNB	KB5GCC
6	AA6IG	KJ6GH	N6SAL	KB6YAQ
7	WN7I	KF7JK	N7KXS	KB7EVP
8	WF8A	KE8RH	N8JLV	KB8EQB
9	NY9R	KE9KJ	N9HKW	KB9ASO
North Mariana Is.	AH0E	AH0AD	KH0AJ	WH0AAH
Guam	KH2I	AH2BY	KH2DG	WH2ALL
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6IY	NH6PB	WH6BXX
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AF	WH8AAX
Wake Wilkes Peale		AH9AD	KH9AD	WH9AAH
Alaska		AL7JV	NL7NH	WL7BRF
Virgin Is.	KP2Y	KP2BN	NP2CN	WP2AFZ
Puerto Rico		KP4OY	WP4OB	WP4HYQ

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Thank you!

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

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

SPECIAL EVENTS

Fort Laramie

The High Plains ARC will operate KB7KU at historic Fort Laramie from 0000Z, July 4 to 0000Z, July 5. **Frequencies:** *Phone* — 3.850, 7.250, 14.250, 21.360 and 28.550; *CW* — 50 kHz up from lower band edge.

QSL for business-size SASE to: KB7KU, 3642 Bighorn, Torrington, WY 82240. □

Camp Cedars

The Amateur Radio operators of Boy Scout Troop 155, Albion, Nebraska, are going to operate a special event station on the 4th of July. They will be operating from Camp Cedars, near Cedar Bluffs, while they are at summer camp.

The station call will be KAØVEU. Operation time will be from 1500 to 2300 UTC, July 4. *Suggested frequencies:* 3.725, 7.125, 21.125 and 28.125 (CW — 5 wpm please); 28.325 (phone). All Novices are encouraged to participate.

A colorful QSL may be obtained by sending an SASE to Steve Wright, KAØVEU, 929 W. Park St., Albion, NE 68620.

Camp Cedars is a camp of the Mid-America Council, Boy Scouts of America. Troop 155 is part of the Peta La Sharo District, of the Mid-America Council. This special event station is just part of the many special events planned for "Celebration Week" at Camp Cedars this year. □

Check your license expiration date.

Tom Sawyer Days

The Hannibal ARC, Inc. will operate WØKEM and issue its annual special event certificate celebrating the National Tom Sawyer Days from Mark Twain's boyhood home town, Hannibal, Missouri, on Saturday, July 2 and Sunday, July 3.

Hours: 1500-2100 UTC both days. *Suggested frequencies:* 7.240, 14.255, 21.340 and for the Novices, 28.400. To receive a certificate send a large (9×12) SASE and your personal QSL card confirming the contact to Hannibal ARC, Inc., WØKEM, P.O. Box 1522, Hannibal, MO 63401-1522. □

Olympic National Park

The Grays Harbor ARC will operate from various locations throughout the area around Olympic National Park, from 1500Z, July 2 to 2400Z, July 4, to commemorate the 50th anniversary of the park. This 900,000-acre park in the northwest corner of Washington was created on June 29, 1938.

Look for W7ZA on the lower 25 kHz of the General phone bands on 15 through 80M, and on 28.435 (± QRM) on the Novice portion of the 10M band.

For a special QSL card, please send QSL and SASE to: ARS, Joe Ledesma, KA7AIR, 516 - 6th St., Hoquiam, WA 98550. □

Happy Birthday USA

The Valley ARA will operate N4ICT in conjunction with the Statler Brothers Happy Birthday USA Celebration from 1200Z, July 4 to 0030Z, July 5. **Suggested frequencies:** *Phone* — 3.855, 7.280, 14.250 and 28.375 MHz.

Send QSL, contact number and 9x12 SASE (for the Statler Brothers Certificate) to Valley ARA, P.O. Box 666, Staunton, VA 24401. □

NAS Moffett Field Open House

The Naval Air Station (NAS) Moffett Field in cooperation with the NASA Ames Research Center ARC and the Navy Moffett Field ARC will be operating a special event station during the annual NAS Moffett Field Open House this year. The dates are July 2-4, and the station, K6MF, will be on the air from 1600 UTC (9:00 PDT) to 0100 UTC (5:00 PDT) all three days. K6MF will operate on 14.280 and 21.380 MHz, voice (A3) only.

In addition to viewing the aircraft and operations of the NAS, the Navy Blue Angels will be performing along with various NASA research aircraft.

Special QSL cards are being prepared to commemorate the special events planned for this open house. These QSL cards will be mailed to those contacts that send an SASE to: AARC, P.O. Box 73, Moffett Field, CA 94035. □

Lake Canton

Oklahoma Amateur Radio operators will conduct annual "Field Day" exercises Saturday and Sunday, July 9-10, at Lake Canton, Oklahoma. Activities begin at 3 p.m., Saturday, and continue through the night until noon Sunday. Events take place in the "Big Bend" picnic shelter.

The Lake Canton Field Day is held in conjunction with the annual IARU "Radiosport" DX Contest. Simulated emergency operations, QRP contacts, solar power, fellowship and camping are among the featured attractions of the weekend. Participation is open to all amateurs. Guests are welcome.

To highlight this special event, the Lake Canton Field Day Committee will provide a commemorative certificate for contacts with event stations WD5HPU, WA5LTM, and other amateur stations that officially operate from Lake Canton during the event. Those desiring commemorative certificates should listen in the General phone portions of the 40/20/15/12 and 10M bands. Operations will also be conducted on 6 and 2M SSB.

Contest enthusiasts should also note that Lake Canton, Oklahoma is in

Change of address?
If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

Blaine County, and that the Field Day event occurs in "Grid Square" EM-06; both the county and grid square are popular contacts when heard on the bands. For a certificate, send QSL and large SASE to Lake Canton Field Day (address information below).

Canton Lake is well maintained by the U.S. Army Corps of Engineers. Facilities include RV, camping and picnic areas, a beach, restroom/shower facilities, boat launches and paved roadways. Canton Lake is one of Oklahoma's highest — 1,638 feet above sea level, and is located 91 miles northwest of Oklahoma City.

Talk-in on 146.52 and 144.85/145.45. I-40 travelers should use the Calumet, Oklahoma repeater, 146.01/146.61.

For more information, contact Tim Mauldin, WA5LTM, Lake Canton Field Day, P.O. Box 19097, Oklahoma City, OK 73144; (405) 682-2929. □

International Hamfest

Special event station VE4IHF will be in operation to help celebrate the 25th anniversary of the International Hamfest, to be held in the Peace Gardens on the Manitoba, Canada and North Dakota, USA border. Hours of operation will be 9 a.m. to 9 p.m. CST, July 7-9, and 9 a.m. to noon CST, July 10.

To receive the "Peace Garden Award," send a QSL and 3 IRC's, along with an SAE to Dave Snydal, VE4XN, 25 Queens Crescent, Brandon, Manitoba, CANADA R78 1G1. Frequencies to be used are 1.900, 3.885, 7.230, 14.230, 21.330 and 28.330.

To receive a QSL card for the contact, send a QSL card and one IRC with an SAE to John Swanke, *(please turn to page 14)*

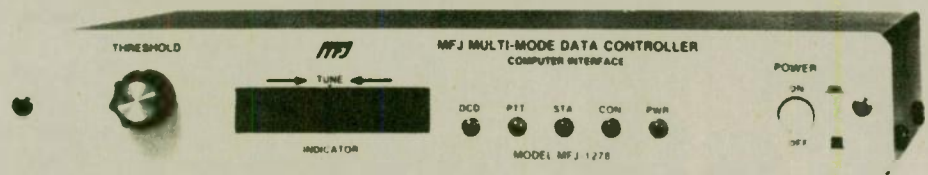
VE exam schedules

ATTN: Teachers — Send us an order for sample issues of *Worldradio*, one for each of your students!

Date	City	Contact	Notes
Alaska			
July 2	Fairbanks	AL7IF (907) 474-0842	w/i
July 2	Juneau	KL7KD (907) 789-0292	w/i
July 6	Anchorage	KL7HFQ (907) 243-2221	w/i
July 20	Eagle River	KL7HFQ (907) 243-2221	w/i
California			
June 30	Long Beach	KA6HOQ (714) 897-6331;	
July 28		NF6X (213) 434-8278	w/i OK
July 2	Burbank	W6JEP (818) 848-9340	w/i OK
July 3	Watsonville	WX6A (408) 255-9000	w/i only
July 9	Apple Valley	K6BET (619) 244-6080	
		WB3KMZ (619) 240-2025	w/i OK
July 9	Concord	WW6H (408) 255-9000	w/i only
July 9	Jackson	WZ6Y (209) 295-7947	p/r by 7/5
July 9	Long Beach	NN6Q (213) 420-9480	p/r pref
July 9	Los Altos Hills	KG6XF (408) 255-9000	w/i only
July 9	Santa Barbara	KB5AH (805) 966-6620	p/r pref
July 9	Van Nuys	N6LGO (818) 988-7165	p/r; ltd. w/i
July 16	Tehachapi	W6KQI (805) 822-6128	
July 17	Sunnyvale	W6NLG (408) 255-9000	w/i only
July 20	Eureka	KB6FIW (707) 442-9245	w/i OK
July 30	Eagle Rock	WB6PSY (818) 710-1705;	
		N6JFG (213) 258-9127	w/i
July 30	Ridgecrest	WA6KZV (619) 375-7245;	
		ND6Q (619) 446-3320	p/r pref
Colorado			
July 9	Denver	W0IJR (303) 366-9689	p/r pref
July 25	Boulder	N0BWS (303) 530-1872	
Delaware			
July 23	Wilmington	AWARE, 3208 Concord Pike, 19803	w/i OK
District of Columbia			
July 9	Washington, D.C.	W3WOX (301) 423-0179	w/i
Florida			
July 5	New Port Richey	AA4FG (813) 849-1224	w/i OK
July 11	Ocala	NT4B (904) 237-5783	w/i OK
July 16	Melbourne	N4FUY (407) 768-0888	w/i OK
July 21	Pensacola	AA4W (904) 968-6499	w/i OK
Guam			
Aug 14	Windward Hill SDA H.S.	AH2S (671) 646-7611	p/r; some w/i
Hawaii			
July 16	Hilo	AH6P (808) 969-0222	w/i
Idaho			
July 9	Boise	W7JMH (208) 343-9153	w/i OK
Illinois			
July 9	Oak Forest	NF9N (312) 448-9432	w/i OK
July 13	Lenore	Don Selbrede (815) 223-2848	
July 17	Bloomington	Denny Chestney (309) 662-1230	
July 19	Aurora	N9AKE (312) 892-1252	w/i OK
July 21	Chicago	W9WBY (312) 929-6550	
July 31	Peotone	NF9N (312) 448-9432	p/r by 6/30
Indiana			
July 2	New Castle	Peggy Coulter (317) 288-0481	
July 2	South Bend	NI9Y (219) 255-4455	w/i OK
July 9	Hammond	Mike Kasrich (219) 962-5512	
July 23	Highland	Charlie Sufana (219) 923-8308	
Kansas			
July 23	Topeka	NQ0S (913) 273-3328	
Maine			
July 1	Augusta	N1BCF (207) 623-4249	
July 9	Rockland	KX1I (207) 594-5612	

Date	City	Contact	Notes
Maryland			
July 9	College Park	NF3I (301) 963-4008	w/i
July 31	Howard Co. Fgds.	KQ3S (301) 953-1065	
Massachusetts			
July 16	Melrose	NC1V (617) 665-6061	w/i
Michigan			
July 3	South Haven	WD8AGC/WD8MEU (616) 637-3905	w/i
July 9	Dearborn	(313) 676-6248	
Minnesota			
July 16	Minneapolis	WB5MTV (612) 699-6861	p/r pref
Missouri			
July 30	Kimberling City	NQ0G (417) 739-2888	
Montana			
July 18	Billings	N7ATT (406) 656-5776	w/i
New Jersey			
July 2	Alpine	NZ2T (201) 348-0575	w/i OK
July 9	Cranford	N2XJ (201) 635-7686	w/i OK
July 16	Pennington	AA2F (609) 737-1723	w/i OK; call
July 21	Bellmawr	WA2VQG (609) 546-7710	w/i OK
New York			
June 28	New York City	KD2IZ (212) 838-5995	w/i OK
July 9	Greenvale	W2NL (516) 541-2450	w/i OK
July 9	Selden	George Sintchek (516) 751-0894	W/i OK
July 13	Bethpage	W2QUV (516) 354-6861	w/i OK
July 17	N. Babylon	W2DUK (516) 957-5287	w/i OK
July 21	New City	Robert Douglas (914) 623-5551	w/i OK
North Carolina			
July 6	Raleigh	AA4MY (919) 847-8512	
Ohio			
Aug 6	Mentor	KO8O (216) 256-0320	25-day p/r
Oregon			
July 2	Portland	Randy (503) 649-5066	w/i only
July 28	North Bend	WA7PHI (503) 756-6846	some w/i
Pennsylvania			
July 2	Erie	W3CG (814) 665-9124	w/i OK
Aug 17	Carnegie	KT3L (412) 787-3914	30-day p/r
Tennessee			
July 9	Memphis	WD4LFD (901) 386-4375	2-day p/r
Texas			
July 9	Austin	KF5NB (512) 272-8233	w/i
July 9	Midland	KT5G (915) 694-9450	w/i OK
July 9	San Antonio	NS5I (512) 681-0702	w/i
July 11	Brady	WD5H (915) 597-2561	7-day p/r
July 30	Houston	NZ5V (713) 497-8750	w/i OK
Utah			
July 20	Salem	KF0Q (801) 423-2506	
Virginia			
July 23	Richmond	WU4G (804) 798-5191	w/i
Washington			
July 2	Seattle	W7JWJ (206) 523-9117	w/i OK
July 9	Everett	KK7M (206) 355-2141	w/i OK
July 16	Renton	WA7UVJ (206) 854-4031	w/i OK

MFJ multi-mode data controller



MFJ *shatters* the 6 mode barrier *and* the price barrier with the MFJ-1278 and gives you . . . Packet, RTTY, ASCII, CW, WEFAX, SSTV and Contest Memory Keyer . . . 7 digital modes . . . for an affordable $249.95

Amateur radio's newest multi-mode data controller -- the MFJ-1278 -- lets you join the fun on Packet, RTTY, ASCII, CW, Weather FAX, SSTV and gives you a full featured Contest Memory Keyer mode . . . you get 7 modes . . . for an affordable $249.95.

Plus you get high performance HF/VHF/CW modems, software selectable dual radio ports, precision tuning indicator, 32K RAM, AC power supply and more.

You'll find it *the most user friendly of all multi-modes.* It's menu driven for ease of use *and* command driven for speed.

A high resolution 20 LED tuning indicator lets you *tune in signals **fast** in any mode.* All you have to do is to center a single LED and *you're precisely tuned in to within 10 Hz* -- and it shows you which way to tune!

All you need to join the fun is an MFJ-1278, your rig and any computer with a serial port and terminal program.

You can use the MFJ Starter Pack to get on the air instantly. It includes computer interfacing cable, terminal software and friendly instructions . . . everything you need to get on the air fast. Order MFJ-1282 (disk)/MFJ-1283 (tape) for the C-64/128 and VIC-20 or MFJ-1284 for the IBM or compatible, $19.95 each.

Packet

Packet gives you the fastest and most reliable error-free communications of any amateur digital mode.

With MFJ's super clone of the industry standard -- the TAPR TNC-2 -- you get **genuine TAPR** software/hardware plus more -- not a "work-a-like" imitation.

Extensive tests published in *Packet Radio Magazine* ("HF Modem Performance Comparisons") prove the TAPR designed modem used in the MFJ-1278 gives better copy with proper DCD operation under all tested conditions than the other modems tested.

Hardware DCD gives you more QSOs because you get reliable carrier detection under busy, noisy or weak conditions.

A hardware HDLC gives you full duplex operation for satellite work or for use as a full duplex digipeater. And, it makes possible speeds in excess of 56K baud with a suitable external modem.

Good news for SYSOPs! New software lets the MFJ-1278 perform flawlessly as a WORLI/WA7MBL bulletin board TNC.

Baudot RTTY

You can copy all shifts and all standard speeds including 170, 425 and 800 Hz shifts and speeds from 45 to 300 baud. You can *copy not only amateur RTTY but also press, weather and other exciting traffic.*

A high performance modem lets you copy both mark and space for greatly improved copy under adverse conditions. It even tracks slightly drifting signals.

You can transmit both narrow and wide shifts. The wide shift is a standard 850 Hz shift with mark/space tones of 2125/2975 Hz. *This lets you operate MARS and standard VHF FM RTTY.*

You get both the American Western Union and the international CCITT character sets. Autostart for unattended reception and selectable "Diddle".

A receive Normal/Reverse software switch eliminates retuning and Unshift-On-Space reduces errors under poor receiving conditions.

ASCII

You can transmit and receive 7 bit ASCII using the same shifts and speeds as in the RTTY mode and using the same high performance modem. You also get Autostart and selectable "Diddle".

CW

You get a Super Morse Keyboard mode that lets you send perfect CW effortlessly from 5 to 99 WPM, including all prosigns -- it's tailor-made for traffic handlers.

A huge type ahead buffer lets you send smooth CW even if you "hunt and peck".

You can store entire QSOs in the message memories, if you wanted to! You can link and repeat any messages for automatic CQs and beaconing. Memories also work in RTTY and ASCII modes.

***A** tone Modulated CW mode turns your VHF FM rig into a CW transceiver* for a new fun mode. It's perfect for transmitting code practice over VHF FM.

An AFSK CW mode lets you ID in CW.

The CW receive mode lets you copy from 1 to 99 WPM. Even with sloppy fists you'll be surprised at the copy you'll get with its powerful built-in software.

You also get a random code generator that'll help you copy CW faster.

Weather FAX

***You'll** be fascinated as you watch WEFAX signals blossom into full fledged weather maps on your printer.* Other interesting FAX pictures can also be printed -- such as some news photographs from wire services.

Any Epson graphics compatible printer will print a wealth of interesting pictures and maps.

Automatic sync and stop lets you set it and leave it for no hassle printing.

You can save FAX pictures and WEFAX maps to disk if your terminal program lets you save ASCII files to disk.

Pictures and maps can be *printed to screen in real time or from disk* on IBM and compatibles with the MFJ-1284 Starter Pack.

You can transmit FAX pictures right off disk and have fun exchanging and collecting them.

Slow Scan TV

The MFJ-1278 introduces you to the exciting world of slow scan TV.

You'll not only enjoy receiving pictures from thousands of SSTVers all-over-the-world but you can send your own pictures to them, too.

You can print slow scan TV pictures on any Epson graphics compatible printer. If you have an IBM PC or compatible you can print to screen in near real time or from disk with the MFJ-1284 Starter Pack.

You can transmit slow scan pictures right off disk -- there's no need to set up lights and a camera for a casual contact.

You can save slow scan pictures on disk from over-the-air QSOs if your terminal program lets you save ASCII files.

The MFJ-1278 transmits and receives 8.5, 12, 24, and 36 second black and white format SSTV pictures using two levels.

Contest Memory Keyer

***Nothing** beats the quick response of a memory keyer during a heated contest.*

You'll score valuable contest points by completing QSOs so fast you'll leave your competition behind. And you can snag rare DX by slipping in so quickly you'll catch everyone by surprise.

You get iambic operation with dot-dash memories, self-completing dots and dashes and jamproof spacing.

Message memories let you store contest RST, QTH, call, rig info -- everything you used to repeat over and over. You'll save precious time and work more QSOs.

You get automatic incrementing serial numbering. In a contest it can make the difference between winning and losing.

A weight control lets you penetrate QRM with a distinctive signal or lets your transmitter send perfect sounding CW.

More Features

Turn on your MFJ-1278 and it sets itself to match your computer baud rate. Select your operating mode and the correct modem is automatically selected.

Plus . . . printing in all modes, threshold control for varying band conditions, tune-up command, lithium battery backup, RS-232 and TTL level serial ports, watch dog timer, FSK and AFSK outputs, output level control, speaker jack for both radio ports, test and calibration software, Z-80 at 4.9 MHz, 32K EPROM, and socketed ICs. FCC approved. 9x1½x9½ inches. 12 VDC or 110 VAC.

Get yours today and join the fun crowd!

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or to order call toll free
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Special Events

(continued from page 11)

KAØSLI, P.O. Box 304, Lakota, ND 58344. Postage rates vary between the two countries; therefore we are asking for IRC and self-addressed envelopes.

Flat Hammock Island

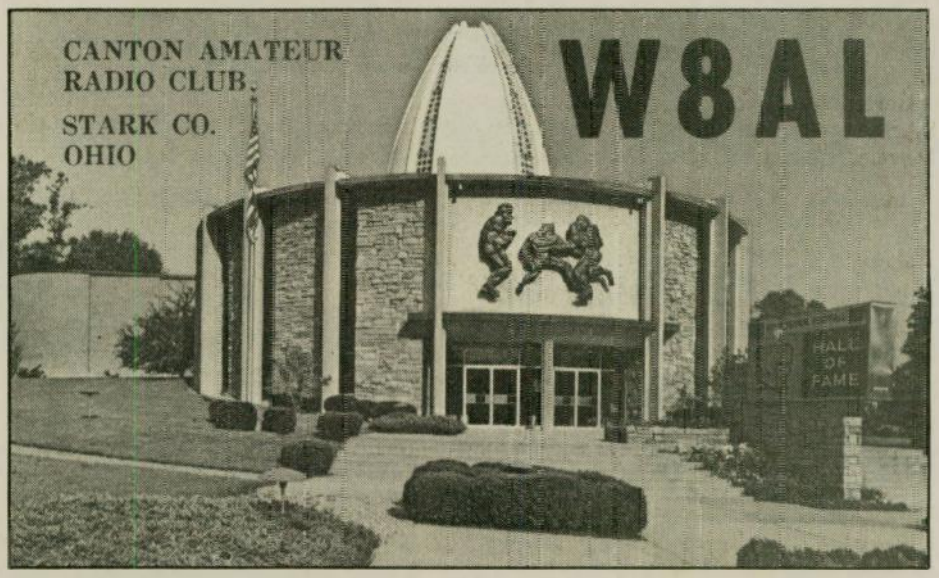
For only the fifth time in history, HF Amateur Radio is going to Flat Hammock Island. Tri-City ARC will mount its 5th annual expedition on Sunday, July 17, and will operate from this unique, uninhabited island from 1300Z to 2000Z.

Look for KA1BB in the lower 20 kHz of the General Class phone and CW bands, 20 and 40M; the center of 40M Novice band; and the 2M SSB band. QSL with SASE via Tri-City ARC, Box 686, Groton, CT 06340. □

Barnstable County Fair

The Mashpee ARA, the Barnstable ARC and the Falmount ARA (all on Cape Cod), will conduct a first from the area: a special event station from July 26 to 31, from the Barnstable County (Massachusetts) Fair. This fair has been in existence since 1884 and is attended by more than 200,000 people yearly.

Operations will be on 10, 15, 20 and 80M, from 2 to 9 p.m. each day. Free radiograms will also be sent direct from the radio booth. Certificates available; send SASE's to John F. Barrows, W1HCR, P.O. Box 932, E. Falmouth, MA 02536. □



Pro-Football Hall of Fame

The Canton ARC will operate special event station W8AL to celebrate the Pro-Football Hall of Fame Greatest Weekend on July 25-29, 2200-0200 UTC and on July 30-31, 1700-2300 UTC. **Frequencies:** *SSB* — 7.270, 14.270; *CW* — 7.060, 14.060; RTTY and Novice operation possible also. SWL's welcome! For an unfolded certificate, send your QSL and a 9x12 SASE with 2 units of first class postage.

For a QSL or folded certificate, send your QSL and a #10 (business-size) SASE to Randy Phelps, KD8JN, 1226 Delverne Ave. SW, Canton, OH 44710. □

Michigan yacht race

The Eastern Michigan ARC (K8EPV) will commemorate the 63rd Port Huron to Mackinac Island Yacht Race, July 16-17.

The station will operate from 1400Z to 0200Z each day. Frequencies will be: *Phone* — 3.910, 7.235, 14.235, 21.235, 28.235, 28.335; *CW* — 3.710, 7.110, 10.110, 21.110. A beautiful certificate will be issued upon receipt of a large (#10) SASE, with your QSL, sent to K8EPV, 654 Georgia, Marysville, MI 48040 (Callbook address is NOT good). □

Oswego County air show

The Oswego County ARES and the Fulton ARC will operate KY2F July 23-24, 1500Z-2300Z each day from the Oswego County Air Show. Operation will be in the lower third of the General 40, 20, 15, 10 and 2M bands and the Novice portion of 10M.

For certificate, send a large SASE to Fred Swiatlowski, KY2F, P.O. Box 5227, Oswego, NY 13126. □

Chesapeake Bay estuary

The Laurel ARC will operate special event station W3GFS from 1800Z, July 23 until 1800Z, July 24. Operation will be from a small uninhabited island in the Chesapeake Bay, the world's largest estuary.

Frequencies: lower 25 kHz of 80 through 10M General bands and 147.54. Attractive 8″×11″ certificate for SASE. QSL to LARC, P.O. Box 1436, Laurel, MD 20707. □

Bix Biederbeck Jazz

The Davenport RAC will again operate WØBXR during the Bix Biederbeck Memorial Jazz Festival, at varous times during the festival week, July 22-30. Operation will be on phone

and CW, 80-10M, 10 kHz up from the lower end of the General Class band edges.

Certificates for your QSL and SASE, via Davenport RAC, 2131 Myrtle, Davenport, IA 52804. □

Long Island Mobile ARC

The Long Island Mobile ARC will operate special event station W200VL from July 23 to 29. CW and phone operations will be conducted on all HF bands. QSL with SASE via WA2-KXE, 162 West Hudson St., Long Beach, NY 11561. □

Balloon rally

July 15-17 marks the 12th anniversary of the Great Wellsville Balloon Rally. From the first rally on July 9, 1977 in which 15 hot air balloons participated with a crowd of about 8,000 spectators this rally has grown to over 40 hot air balloons participating, with crowds of over 60,000 spectators in attendance.

The Alleghany Highlanders ARC will operate a special event station, W2SAM, that weekend. Operation will be in the lower portion of the General SSB bands (80-40-20M), Saturday, July 16, from 10 a.m. to 6 p.m.

A special balloon postcard is available for a 4½x6 SASE or 16¢ in mint postage and a gummed address label from John S. Babbitt, Square Woods Dr., Canisteo, NY 14823. □

Iowa bicycle ride

RAGBRAI XVI (*Register's* Annual Great Bicycle Ride Across Iowa) will be observed with a special event station, operated by Don Schmidt, WØANZ, and Chris Chirron, WBØ-RSW, from each of the eight stops made on the 433-mile route.

The ride will begin July 24 from Sioux City and end July 29 in Fort Madison. The call will be WØANZ. Operation will be from 12 noon to 10 p.m. each of the seven days. *Frequencies:* 3.916, 7.216, 14.316, 21.316, 28.416, plus the nearest 2M repeaters.

A very special QSL shows the route taken. The top 100 stations, working most stop-over cities, will receive official RAGBRAI XVI endorsement. Guest operators are welcome to come help out.

For more information, contact Chris Chirron, WBØRSW, 3841 Amherst, Des Moines, IA 50313.

RAGBRAI's humble beginning was in the spring of 1973, when the *Des Moines Register's* feature editor John Karras — an avid bicyclist — suggested to a fellow writer that they ride across Iowa on their bikes and write about their experiences. This was suggested to the Public Relations department, who liked the idea, and a three-man team was organized to handle the logistics.

A six-day ride was laid out and the original three, plus 300 friends, made the ride across the state. Among them was an 83-year-old man from Indianola who captured the hearts of all who read about the ride.

1974 had about 2,700 riders, and it kept increasing each year. RAGBRAI IX had the worst weather, 1982 was the longest (523 miles), and in 1982, Clarence Pickard — then over 90 years old, was struck by a car during the winter months in Indianola, and the ride that year was known as RAGBRAI XI "Clarence Pickard Memorial Ride" in his memory.

The 1988 RAGBRAI XVI lasts from July 24 to July 30. It is estimated that 95,000 to 120,000 people have ridden at least some part of route. RAGBRAI XVI will probably have upwards of 7,500 riders, 500 support vehicles and cover a total of 433 miles between Sioux City and Fort Madison, Iowa.

Don Schmidt, WØANZ, and Chris

(continued on next page)

FCC Highlights

(continued from page 8)

its $1,450 assessment against David Ackley, W4UWH, St. Thomas, Virgin Islands ". . . for transmitting on a frequency not assigned to holders of Technician Class amateur licensees, failing to give his station call sign and maliciously interfering with another amateur station." (*Westlink Report,* 04/29/88)

•

Radiation from a discarded TV distribution amplifier in a residential complex was found to be the source of interference to a local repeater in Detroit, Michigan. The source was traced through the cooperative efforts of the Motor City Radio Club and FCC Engineer Pat Patterson over a period of several weeks. (*Westlink Report,* 04/09/88)

•

Last December's recognition by FCC of two 220 MHz repeater coordination organizations and call for cooperation has obviously failed since one body has filed suit against the other. The ARRL has written Private Radio Bureau Chief Ralph Haller ". . . asking him to use his good offices to help arrive at a solution to the problem . . ." The *ARRL Letter* is intended to assist the FCC in setting up a face-to-face meeting at an FCC office." (ARRL Washington Area Coordinator's Report, 04/15/88)

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The ARRL's April 15, 1988 Washington Area Coordinator's Report includes his meeting with Robert McNamara, who recently succeeded Ray Kowalski as Chief, Special Services Division, Private Radio Bureau. The Division oversees amateur, amateur-satellite, RACES, CB, radio control, aviation and marine radio services. The report concluded with: ". . . Bob McNamara is a good listener, fast learner and will be a good guardian for Amateur Radio."

•

"The FCC recently denied a petition by Ben Johnson, NYØO, . . . to amend Section 97.23 (by) eliminating the 5 wpm code requirement for Novice and Technician Class Amateur Radio licenses."

In denying the petition, the Commission stated that Treaty obligations require that "any person seeking a license to operate the apparatus of an Amateur Radio station shall prove that he/she is able to send and receive text correctly in Morse code signals." (These requirements may be waived under ITU rules in the case of stations making use of frequencies above 30 MHz.)

"The Commission cited three reasons for retaining the telegraphy requirement: First, a 5 wpm code requirement does not constitute a significant entry barrier to the Amateur Service; second, knowledge of the Morse code continues to be relevant to everyday usage; and third, a code requirement for every license class is important for maintaining the traditional public service role of the Amateur Service in emergencies." (*ARRL Letter,* 04/22/88)

•

The FCC denied a petition filed by Howard McKeathian, N6ELL, to amend Section 97.7 of the Rules, to expand the frequency privileges of Technician Class licensees. In denying the petition, the Commission stated "the operator license classes and associated privileges were developed to provide motivation for amateur operators to advance their skills in both communications and technical phases of the radio art 'and' nothing in the McKeathian petition indicates the basic structure of amateur licensing is falling short of its goals." (*ARRL Letter,* 04/22/88)

•

Amateur Radio antenna towers up to 75′ high are now legal in Newport Beach, California. "After nearly three years discussion, the city council voted (unanimously) to accept the new ordinance and cited PRB-1, the FCC preemption order, as being partially instrumental in making the vote unanimous. The ordinance requires antennas to be lowered to 28′ when not in use (except vertical 'whip' antennas).

"All existing antennas in Newport Beach are 'grandfathered;' however, they are required to comply with the ordinance 'to the extent that they are capable of doing so without modification.' All pre-existing towers must be brought up to standards if relocated or expanded."

•

END-OF-MONTH LICENSE TOTALS

February	1988	March
44,205	Extra	44,617
98,408	Advanced	98,505
113,949	General	113,900
94,361	Technician	95,256
82,390	Novice	82,705
433,313	Totals	434,983

Special Events

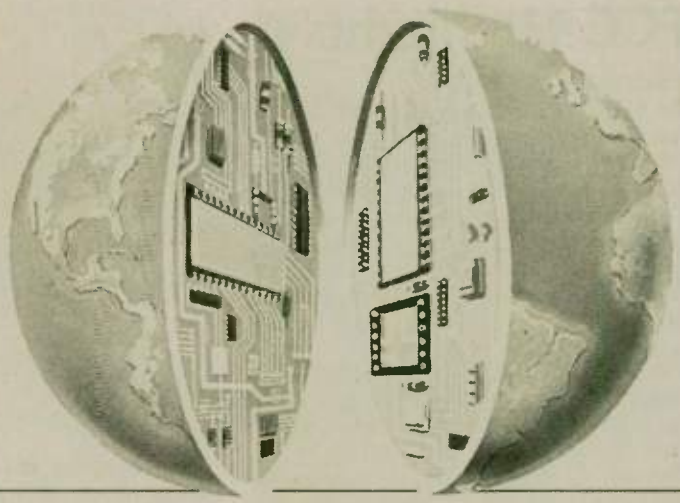
(continued from page 15)

Chirron, WBØRSW — both *Register* employees — plan to ride at least one of the days and to bring a little of the festive atmosphere to the Amateur Radio fraternity through their special event station. Four of Don's children will ride while Don drives the RV and, along with Chris, will set up the radio and antennas in the city at the end of the day's ride. If all goes well, perhaps this too will become an annual affair.

Several major newspapers, including the *New York Times* and the *Washington Post,* have covered the ride. In 1986, the NBC-TV Today Show was on the ride, as was Arizona Governor Bruce Babbitt and his family. In 1987, NBC-TV featured RAGBRAI on its Sunday evening news. At least three half-hour television shows about the ride have been produced.

Anyone wanting further information about the ride may contact RAGBRAI Coordinator, Don Benson at (515) 284-8285, or Lois Peterson, (515) 284-8282, WATS (1-800) 532-1455 or write RAGBRAI, P.O. Box 622, Des Moines, IA 50303. □

WITH CIE, THE WORLD OF ELECTRONICS CAN BE YOUR WORLD, TOO.



Look at the world as it was 20 years ago and as it is today. Now, try to name another field that's grown faster in those 20 years than electronics. Everywhere you look, you'll find electronics in action. In industry, aerospace, business, medicine, science, government, communications—you name it. And as high technology grows, electronics will grow. Which means few other fields, if any, offer more career opportunities, more job security, more room for advancement—if you have the right skills.

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MAIL TODAY!

OUCH! The W6 QSL Bureau displayed cards never sent to the intended stations because there were *NO* envelopes at the bureau.

• *A smile is contagious* •

Us is here! Howard Shepherd, W6US, Jim McDonald, N7US, and Bill McConnell, N9US.

Convention

(continued from page 7)

Don Search, W3AZD, of the DXCC desk in Newington, discussed various DXCC matters. New DXCC Rules and Listings are now available. He had brought 150 copies with him to the convention but had quickly sold them out within a half hour. Contact your local Amateur Radio supplier or ARRL headquarters for additional copies.

Don said that there are presently about 2,800 DXers on the Honor Roll. Some DXers had been knocked off — probably because they didn't work Peter I Island or didn't submit their cards in time for the listing.

There was a remark that certain contests be eliminated from the DX bands, which was quickly countered with the remark, "Keep ragchewers out of the DX bands."

Don asked the members of the Honor Roll their feelings regarding the overall DXCC countries worked vs. current DXCC countries worked. The feeling was that they liked the overall count.

With the recent rumor of Spratly Islands DXpedition, Don gave us a little history on the islands. The island group became a DXCC country in 1966 when six countries laid claim to those South China Sea islands. Several countries now occupy the islands, and it is really not safe to mount a DXpedition there. Also, oil may be there! China makes its claim that dates back to 200 B.C.

Other items included a rumor that the Peter I Island DXpedition team may be making a DXpedition to Bouvet Island next year. There has been nothing submitted on the Soviet DXpedition to Viet-Nam.

Step right up! ARRL DXCC Countries List, only a dollar. It peels potatoes, it slices onions, only a dollar.

A question was raised as to why Sardinia counts as a DXCC country when it shouldn't. This goes back to the pre-war DXCC when there was no formal criteria, and was therefore "grandfathered" into the post-war DXCC.

There was also a question regarding validity of contacts made with Palmyra Island as the owners will not allow permission to operate. This was due to the litigation involving a former operation. Don informed us that there is more than one owner of the island, and that permission had been given by one of the owners. Operation will be acceptable provided they stay on the property.

New DXAC member, Jim Maxwell, W6CF, asked the feelings of the DXers present if they wanted additional countries to the DXCC list or less. The general feeling was that the DXers didn't care one way or another. Finally, it was mentioned that only four DXCC countries have not been on CW since 1975; those prefixes are 4W, 7O, YA and ZA.

Banquet

Following the Saturday evening banquet, the usual introductions of the Northern and Southern California DX club officers were made. Hugh Allen, W6MFC, presented the special annual DX awards to members of the Southern California DX Club, which included the W6AM Award to Joe Locascio, K5KT, and the DXer of the Year to Art Enockson, W6EA.

John Attaway, K4IIF, one of the DX editors of *CQ*, presented John Troster, W6ISQ, with a plaque to commemorate his induction into the DX Hall of Fame (see article, page 39). Several past inductees were present that evening, including Martti Laine, OH2BH (1972), Lloyd and Iris Colvin, W6KG and W6QL (1976), Hugh Cassidy, WA6AUD (1980), Ron Wright, ZL1AMO (1985), and Kan Mizoguchi, JA1BK (1987).

John also awarded a plaque of the Contest Hall of Fame to Al Slater, G3FXB. Only two have been awarded for this recent award. One of them — Katashi Nose, KH6IJ — was present at the banquet.

Breakfast

Following the buffet-style breakfast the following morning, additional DX contest awards were awarded by Bob Cox, K3EST, for participation in the 1986 *CQ* World Wide CW DX Contest. For his All Band Single Operator, Dick Norton, N6AA, received a plaque for high score. The team at KP2N was likewise awarded a plaque for their Multi-Band, Multi-Operator effort. The award was accepted by Tony Rogozinski, N7BG. A special trophy

Al Slater, G3FXB, received the Contest Hall of Fame award from John Attaway, K4IIF, at the DX Convention banquet. ***(Photo by Gordon Girton, W6NLG)***

was awarded to the JY7Z operation for the 1986 SSB portion of the contest. Jim Neiger, N6TJ, accepted the trophy for this team.

During the Contest Forum on Saturday, two contests were included: Jim Neiger's CW copying contest and Martti Laine's Busted Call Contest. Jim was on hand to announce the winners of both contests. For the Busted Call Contest, Glenn Rattmann, K6NA, was third, with Dick, N6AA, second with 47 out of 50. Fred Laun, K3ZO, won first place with 48 out of 50.

A total of 80 DXers made an attempt at the code copying contest. Jim remarked that on some entries the only correct call were their own calls. Out of a possible 104 calls sent, N6VR copied 16; N6IG, N9US, N7NG and N6AA copied 17; WA6VEF and KQ2M copied 18; W6YA copied 21; and Fred Laun, K3ZO, was a winner again with a total of 28 correct calls. □

MORE ON THE DX CONVENTION NEXT MONTH

If you didn't understand capacitive or inductive reactance before you went into the room, Ken Glanzer, K7GCO, had you understanding it by the time you left.

Antenna tuners

Peter Onnigian, W6QEU

Ken Glanzer, K7GCO, who has been working with tuners for years, gave a talk at Dayton on his favorite topic. He believes that tuners available on the amateur market are over-designed and have too many knobs, bells and whistles! His answer to all this is a simple one-knob unit.

It turns out that his one knob also works a capacitor so that the inductance and the capacitance are varied at the same time. His condenser goes through 360° rotation for every one roller turn!

Ken has a favorite length for transmission lines. He told the avid crowd that the electrical length should be a multiple of ½-wavelength. With 66% velocity, the cable will be about 136′ long for 80M, and will work well to 10M. For low loss he recommended Belden 8813, but commented that this would be longer than the lower velocity line, and is not too flexible.

By making the cable electrically a ½-wave or a number of ½-waves, the impedance at the antenna is brought down to the tuner. Since it is not transformed by the feeder, it becomes easier to trim the antenna feedline to resonance with a good one-knob tuner!

"Judge" Glanzer's basic tuner is an L circuit, requiring a roller inductance and one variable capacitor. The capacitor is switched before or after the inductance. This gives the tuner the ability to match 50Ω to higher or lower values than 50Ω. Since the voltage is low in this circuit even for 1kW, receiving-type condensers may be used.

Ken showed color slides of his various antennas, which included wires and parasitic beams. One very interesting antenna was a 20M circularly polarized beam. This antenna consistently had a stronger signal on it than his wire or other linearly polarized antennas, he said. □

VHF-UHF Forum

Pete Onnigian, W6QEU

Dr. Rick Dorsch, NE8Z, is a medical doctor and his most serious hobby is working 6 and 2M DX in South America! Speaking to an eager VHF crowd in Dayton, Rick described his eight years in Ecuador as a doctor in the boondocks of a country where the sun is directly overhead at noon, and sense of direction is completely lost as there are no shadows.

Rick believes in beacons to indicate sporadic propagation which is responsible for VHF DX. He was instrumental in establishing one on 50.110 MHz, which has been operational for several years in Ecuador.

While in the Galapagos on a vacation, he took his very transportable 3-element, fast breakdown 6M quad, which he now has named the Galapagos Quad, This radiator proved to be very good as he has worked 47 states on 6 from Ecuador. He worked these stations in a 1½-hour sporadic E layer propagation. Rick claims he worked all JA prefectures in two minutes during a good break for long skip recently.

Dr. Rick Dorsch plans to be in the Galapagos during the next CQ WW contest. He will also be on 6M, so look for him after working the HF bands.

Kent Britain, WA5VJB

Kent described in his talk, as part of the VHF-UHF Forum, how simple 10 GHz hamming can be. You don't need money, nor a Ph.D. in electronics, and you don't have to have a 1,000′ tower, said Kent.

Homemade equipment for 10 and 23 GHz FM, using CW or SSB, can easily be made. "And don't forget the 903 MHz band where homemade equipment produces moonbounce all the time," said Kent. Equipment for this is getting to be as simple as a 2M hand-held unit! □

ATV Forum

(continued from page 3)

NASA audio and video announcements, and weather radar.

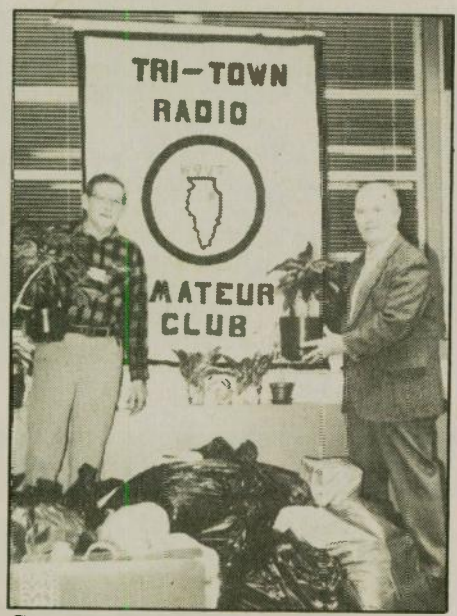
The Rose Parade was broadcast on ATV in the Los Angeles area, and was approved by the FCC.

Hot air ATV broadcasts

Another speaker on this forum was Bill Brown, WB8ELK, who had a show-and-tell of his hot air balloon activities with ATV. He really reached new heights in ATV with his balloon flights.

Bill's record-breaking contact was over 400 miles during normal propagation conditions in a balloon at 70,000 feet over Findlay, Ohio, on August 15, 1987. From 10,000 feet, he routinely makes contacts of over 100 miles. The 400-mile contact was made with KØIWA and produced a grade P3 picture at both ends. □

PUBLIC SERVICE



Standing behind a small portion of the donated items are Project Coordinator Jerry Bette, N9BMT (left) and club member Hank Dexter, K9IJC. ***(Photo by Rich Bauer, N9DKO)***

Tri-Town keeps busy

Richard Bauer, N9DKO

On Friday, December 4, the 2nd Annual Project Warm-Green concluded with the collection of warm clothing and greenhouse plants. In 1986, the Tri-Town RAC of Hazelcrest, Illinois started this project with the proceeds donated to a local veterans hospital.

Project Coordinator Jerry Bette, N9BMT, stated that the items collected last year would be going to a convalescent home for veterans. The items collected this year filled two pickup trucks and an automobile, and included men's and women's clothing, books, magazines and the greenhouse plants. □

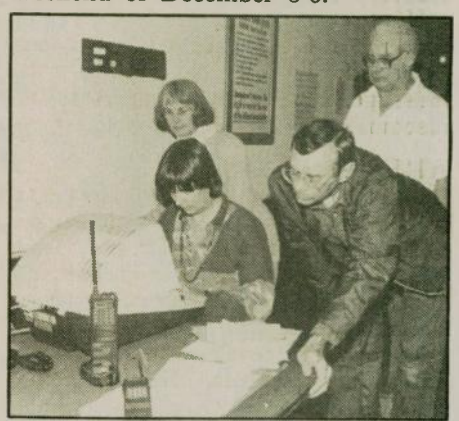
Learning experience

Randy Miltier, N6HMO

While sitting in her living room at Plaza Del Rey Mobile Home Park in Sunnyvale, California last December, Dorothy thought of her good friend in Vermont, who she hadn't spoken to in a long time. "It would be so nice to send something special, other than the traditional Christmas card," Dorothy thought.

Meanwhile, Patty Winter, N6BIS, another resident of Plaza Del Rey, was thinking of a way to expand her knowledge on the National Traffic System (NTS). Patty decided it would be a nice gesture to send holiday messages from the residents of her mobile home park to their friends around the country.

Patty enlisted help from Sil Tringoli, N6MLI, from Plaza Del Rey, and Bob Tarone, WA6ZBX, a resident of Adobe Wells Mobile Home Park across the street. The group talked to both park managers and got permission to set up operations for a few hours one day in each park during the weekend of December 5-6.



Patty Winter, N6BIS, and Bob Tarone, WA6ZBX, logging holiday messages as Park residents look on. ***(Photo by Bob Keller, KB6OHO)***

On December 5, a fourth amateur — Al Lokker, N8FEK — showed up to help. The equipment set-up was simple: a TNC-2, dumb computer terminal, a 2M radio and antenna.

Forms that described what the amateurs were doing were distributed. The forms also gave people a choice of holiday messages to send, plus space for a short individual greeting. A total of 65 messages were taken.

This public service not only helped educate the public about Amateur Radio, but also was a learning experience for the hams who participated. Patty, N6BIS, said it took some of the scariness out of working NTS. And Dorothy was glad to be able to send a special holiday message to her good friend in Vermont. □

2nd Annual ERI

Part II

Christine Wilson, KA6TAL
Editor, WORLDRADIO

"In a disaster, you want to have the lowest common denominator," Weo Moerner, WN6I, told the audience, referring to a new packet program. "You want to make sure everyone knows how to do things."

This bit of practical information was an example of the knowledge shared at the 2nd Annual Emergency Response Institute (ERI) in Cupertino, California, March 26-27.

The wisdom of Moerner's advice was made clearer when a Southern California amateur shared his group's experience with Packet during a public service event recently.

Those who *thought* they knew Packet tried sending messages by initiating "Disconnect" after typing messages. Where did the messages go? "To a Third World country, never to be seen again," said the Southern California ham.

His group now knows that if you're sending a file or message, you put "End of file" at the end of the message, and let the *receiving* station disconnect.

ARES/Data

Most of the amateurs attending were somewhat familiar with Packet radio, but as Roy Engehausen, AA4RE, pointed out — Packet is changing constantly, and there are a lot of options out there. One of the options is a new program developed by Moerner and Dave Palmer, N6KL, called ARES/Data.

After testing the FINDER program last year (see "FINDER," page 18, July 1987 Worldradio), the need for a general purpose program was realized. ARES/Data is that general-purpose packet radio data base; it is able to do the same thing FINDER did . . . and much more.

The data base for ARES/Data can store four items (for example, name, location, phone number and condition) and one long message about a given person. The meaning of the four items can be changed depending on emergency needs. (For more information on ARES/Data, write to WN6I at 1003 Belder Dr., San Jose, CA 95120.)

Packet and emergencies

The basic requirements for Packet during emergencies are: error-free hard copy (printouts), quiet (use earphones; can turn audio down), and no desense. Engehausen went on to explain:

"TNC's make up their own minds when they'll transmit, and they'll wipe out voice traffic," he said. You must be able to *separate* voice from the Packet system."

AA4RE said this could be done by frequency, distance or band. One good option, he said, is 2M for voice and 220 MHz for Packet.

Another requirement may be a voice channel to run a Packet net (net control). Engehausen suggested using two computers: one for preparing messages on diskettes, the other to send the messages.

Networks come in four types: *point to point* (between two stations); *any to any* (more than two — most TNC's allow you to multiple connect); *directed* (more than three stations, using one channel, any of which can be connected together); and *hub/star* (several stations connected at a central station).

The "hub" acts as the relay point for messages between outer points (example: a central distribution point for shelter supplies).

Of the two types of digipeaters available — Levels 2 and 3 — Level 2 is best for emergency purposes. Level 3 (Net/ROM) may be too complex to operate easily in the field.

Standard hardware, in Engehausen's opinion, includes an IBM-PC compatible and a TNC-2. As for software, if you're familiar with a particular IBM-PC and have a communications program you use on Packet, *bring it with you* the next time you're called out on an emergency.

Scott Thompson, KB6CC, discussed the differences between two firmware standards or command sets: TAPR and DED (written by Ron Raikes, WA8DED).

The DED TNC does not write immediately to the screen when doing multi-connects, while TAPR does. DED stores the channels not being used in a buffer until they are needed. TAPR has a time/date stamp. The main differences between the two, however, are the commands.

Thompson does not recommend using a monitor during emergencies; it's better to talk to specific stations. Beacons are also a waste of time during crisis communications.

TIPS: Send short packets — no more than 80 characters. Thompson has received messages with only partial sentences. Also, after transmitting, allow time for receivers to "lock up" and start listening — especially with newer synthesized radios.

Communications planning/support

Dave Larton, N6JQJ, coordinator of the ERI, gave a rundown of the 10

(continued on next page)

Help needed

Westlink and the First Amendment

Through Westlink and — more recently — *Westlink Report*, for more than a dozen years Bill Pasternak, WA6ITF, has kept U.S. amateurs abreast of late-breaking news vital to Amateur Radio's interests. Now Bill and his Westlink operation have been threatened by a lawsuit resulting from a news story he reported regarding a repeater coordination dispute in Southern California!

Bill's problems began when he reported on a conflict between the 220 Spectrum Management Association (220 SMA) — the group that has handled 220 MHz coordination in Southern California for many years, and a recently formed group that calls itself the 220 Frequency Coordination Commission (220 FCC), that also claimed to have substantial support from that area's 220 MHz community.

After allegations were made that harrassment and other illegal actions might be related to the coordination dispute, the officers of the 220 SMA were sued for libel and slander by Daniel Granda, KA6VHC, and Lewis De Payne, KA6RBJ, principals of the 220 FCC.

The suit — which includes Bill for having reported the story and also 100 yet-to-be-named "John Does" — was filed by attorney Jomarie De Payne and seeks punitive damages of $5 million and actual damages of $25,000.

It has been said that we in this country have "the best legal system money can buy," and in no case does justice come cheap. Bill, who's financed his Westlink operation largely out of his own pocket all these years, is not a wealthy man. In fact, on-going health problems have sapped whatever cash reserves he's ever had. Now, because of his reporting of important Amateur Radio news of interest to us all, he's been slapped with a lawsuit that's already cost him over $6,000 — $6,000 that he's had to go out and borrow!

We fellow amateurs have long benefited from Bill's hard work and generosity, and now it's time for us to repay our debt to Bill. I have opened a bank account in the Glenview State Bank for the Westlink Legal Defense Fund, to collect money to help pay Bill's legal expenses and defend Amateur Radio's First Amendment rights! Contribute today with a check to the **Westlink Legal Defense Fund** and send it to me, Joe Schroeder, W9JUV, Box 406, Glenview, IL 60025.

Help protect your investment in Amateur Radio by helping a fellow amateur who needs and deserves your help!

73,
JOE SCHROEDER, W9JUV
Westlink Legal Defense Fund □

Any Radio camps?

Burton E. Eaton, N2FYT, of Merrick, New York wrote to say he was interested in the "Ham Radio retreat in North Carolina" (Oak Hill Academy), in order to upgrade to General this summer.

Since Oak Hill closed down three years ago, we thought we'd ask our readers if they know of any radio camps in the eastern half of the country. You can address your answers to N2FYT at 127 Margaret Blvd., Merrick, NY 11566. □

Callbooks sold out

Radio Amateur Callbook, Inc. has announced that its stock of *1988 International Callbooks* is sold out. A new printing will not be possible.

The situation with the *1988 North American Callbook* is not much better. The publisher has a small inventory, but that stock will be gone in a few weeks.

Limited quantities of both 1988 Callbooks may be available at Callbook dealers. It's suggested you place your order now to avoid disappointment. □

DoD sides with hams

The Department of Defense (DoD) has filed reply comments strongly supporting Amateur Radio to the late-filed UPS comments in Docket 87-14, the FCC proposal to take away 2 MHz from the amateur 220 MHz band.

Calling the UPS proposal seriously flawed, the DoD said that any reallocation of the 220-222 MHz band would displace amateur packet networks and other data links which could not be reaccommodated in other ham bands. — *ARRL Letter* □

Bob will be back

Don't panic, *BOB'S CORNER* fans. Bob Decesari, WA9GDZ/6's column will appear again in the August issue. Due to circumstances and other commitments, Bob has informed us that the column will probably continue on an every-other-month basis for a while. □

Share your knowledge with your fellow amateur and Worldradio reader.

ERI

(continued from page 23)

items that every emergency responder should take with them:

1) map(s)
2) compass (know how to use it)
3) flashlight (with extra batteries)
4) extra food and water (enough for three days)
5) extra clothing (preferably wool; synthetics won't keep you warm if you get wet)
6) sunglasses (eyewash too, especially during fires)
7) pocket knife
8) matches in waterproof container
9) fire starter (candle or superfine steel wool)
10) first aid kit (snake bite kit, allergy medication, etc.)

As the 2nd Annual ERI drew to a close, Larton handed out personalized certificates to each attendee. Except for a Packet demonstration, held in Apple Computer's cafeteria, the seminar was over.

The next item on the agenda: put what we've learned into practice. □

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- Battery Save Draws 15ma For Extended Battery Life
- .16uv Sensitivity
- 144.00 MHz to 147.995 MHz
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- Full Range of Accessories
- 220 MHz and 440 MHz To Follow Shortly

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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
N&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
Rivendell Associates - Derry, NH
Rogus Electronics - Southington, CT
Rosen's Electronics - Williamson, WV
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Search for veterans

We are seeking former OSS-COMMO veterans. Responses can be sent to Jim Ranney, W4KFR, 2640 Turkeyfoot Rd., Covington, KY 41017, or myself.

JOE BLAHUNKA, W9RCJ
317 E. 2nd Street
Lockport, IL 60441 □

Before the 'first' bug

In the April 1988 issue of **Worldradio**, there appears a note from the Mt. Airy VHF Club concerning the origin of the term "bug," as used to indicate a problem with a piece of apparatus.[1] That source credits an incident in 1945 during work on the Mark II computer, where a moth had been caught in a relay, as the first such use of "bug."

Word origins are frequently lost in the annals of history, and lay hidden until we stumble across them in our readings. Such seems to be the case with the term "bug," which has been with us since at least the 1800's.

That old wizard of invention, Thomas A. Edison, wrote a letter which contained the following passage: ". . . with all my inventions. . . . difficulties arise . . . 'bugs' show themselves . . ."[2]

One biography of this great man reports that on one occasion in 1878, Edison locked his workers into their work quarters "until all the bugs had been removed" from some equipment on which they were working.[3] For a more complete treatment of this topic, see "The curse of the critters: bugs, gremlins, and mice!"[4]

And so, although the term may have had a "second birth" in the work on the Mark II in 1945, it has been around to bug us for over a century. Prior to that, who knows?

As suggested on the masthead of Gordon West's monthly column in **Worldradio**, Noah is said to have had a pair of all living things as passengers on his ark. I wonder if now and then, when the ark sprung a leak, Noah might not have blamed the problem on those notorious bugs, the termites!

1. The first bug, Jay Miller, **Worldradio**, April 1988, page 45.
2. *Edison*, Matthew Josephson, *Reader's Digest* condensed version, page 186. Originally published by McGraw Hill, 1959.
3. *Edison: the man and his work*, George S. Bryan, page 63, Garden City Publishing, New York, 1926.
4. The curse of the critters: bugs, gremlins and mice!, W. Clem Small, *CQ*, November 1987, pages 92-94.

W. CLEM SMALL, KR6A
Middlebury, Vermont □

Oldest old-timers?

Just for the record, it would be interesting to find out who, among the living, licensed amateurs were first on the air. I have compiled the following list from the *40th Anniversary Membership Directory* of the Quarter Century Wireless Association — the only publication I know of that lists amateurs by the dates that they were first on the air, as shown by documentary proof. These were on before 1920; their *current* call letters are listed:

1912
W8BU
VE3IT

1913
W2DJ
W4DH
W7HF

1914
W2AAO
W4AR
W4ZG
W5BW
W5MI
W5YV
K7AG
W7AN
W7COH
W8KS
W8QJ
W9RA

1915
W2ID
W4HW
W4KC
W7CJ
W7OS
N8DR

1916
W2CU
W3CU
K4AV
W5CVQ
K6EA

1917
W1PX
W2IP
W2PF
W2TP
W5RX
K6DW
W7AYF
W7EH
W7WQ
K8UZ

1918
none

1919
K2BC
W2JL
W2YE
W3ZG
K4HT
W4JQ
K4PZ
K4WW
W5OP
W6HHN
W8LK
W8LS
W8PO
W8RN

If I missed any QCWA members who were on before 1920 and are so listed in the directory, I apologize. The search was done manually, and I may have missed one or two. I also recognize that some whose dates are not shown in the directory may have been on before 1920, but they have not satisfied QCWA criteria for that date.

I would be interested in hearing from any of you who know of an old-timer not listed above who was on before 1920, as indicated in any kind of written document. If more are located, I will revise my list and send copies to all who send in additional calls. (Current licensees and their current calls only, please.)

J. HARVEY CHASE, W4TG
P.O. Box 160
Gray, GA 31032 □

• *For the gift that keeps on giving, see p.9.* •

China Hands Net

During World War II, I was in China (1944-45). I belong to the 14th AFA and 75th FSA, which both put out monthly magazines.

On May 15, 1987, Glenn Roberts, KU7Z, and I started a net to ex-China people, called China Hands Net. The net is on 40M (7254) at 0200Z. Also Mondays and Thursdays on 20M (14257) at 1500Z.

The 14th and 75th have put notices in their publications about this net, but since a lot of ex-China people don't know about these magazines, I thought you could help us find more "missing hands." Following is a list of the 18 current net members:

KA0ULX; KU7Z; John Sherman, KD0IB; Bob Spinks, K5QOE; Bruce Batchelor, N4ALI; Sam Steele, W8SZ; Duane Capps, W5PWJ; Ike Colo, N4MZG; Bill Hayes, W5CGY; Bob Pierce, WB0CGJ; Norm Haase, WA5CPC; "Speedy" Swift, N7CSE; Jack Petree, WB4OVX; Ernie Gilman, K3WMM; Fred Barkalow, W2BVS; Tom Cotton, N6NAJ; Dave Kaiser, K8DYX; and Richard Dager, KC8OU.

CHUCK GLANVILLE, KA0ULX
Longmont, Colorado □

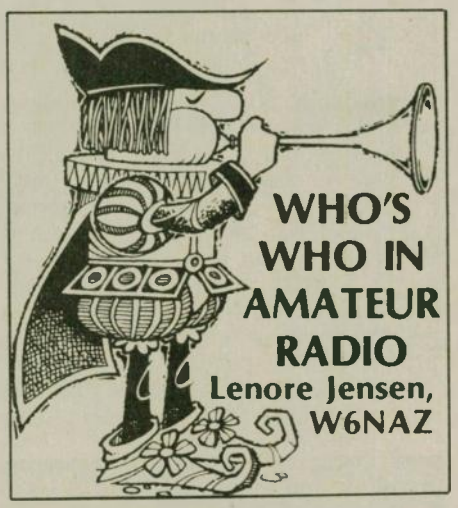
It's about time!

In the March issue of **Worldradio** (page 12), Skip Westrich, WB80WM, told us about the AT&T International Time Wheel that we could get in an astonishingly short time.

He was sure right. I got mine yesterday, only two months after ordering it. I let the Pony Express man pasture his pony in my backyard and he stayed in the spare bedroom. He had me get him up early so he could hit the road and maybe get back to Indianapolis by the 4th of July. He is pretty sure he can deliver two or three more of these wheels this year.

Just needlin' ya, Skip. I really appreciate you telling us about this handy little item. It's in my shack already.

ROY BARKHUFF, KE0JI
Norfolk, Virginia □



His friends call him "the man who can fix anything," be it theatre sound, jewelry, architectural models, artistic lighting — just name your radio problem. We're referring to Bob Burns, Jr., N6ZH.

But he'd quickly deny any such talent. However, his wife Naomi has counted the various jobs he's held and they come to 57. Once he's mastered a technique, Bob is always anxious to progress to new responsibilities. We believe he's finally found one that will hold him a long time: the American Red Cross.

But it took many steps to get him there. Son of the famous radio comic "bazooka player," he traveled with his parents' carnival and circus shows. During World War II he served in the Army as a bomb sight technician, followed by electronics school at Lawry Field, Denver. After VE day, he became Project Engineer for tests at Antarctica, dropping devices into the snow. They contained a 5M transmitter that would transmit weather information back to a ship.

A few years ago he finally learned that he had earlier worked on the mechanical part of the first airborne radar in the United States. Bob recalls, "Then, I didn't know what I was working on as I merely followed blueprints."

Attending UCLA, he became a Technical Director in the Theatre Arts Department. Bob recalls, "One day I was walking down the hall and saw a pretty girl struggling to get a flat through a door, so I helped her. Later, we were working at various theatres — she acting and I doing all sorts of backstage jobs; we married.

"I was offered a position at CBS as a draftsman, which switched to Budget Manager of live shows; then, Art Director and finally Special Effects photographer."

Having mastered those jobs, he was

intrigued to hear that the Disney company needed someone for a "secret project," which turned out to be Walt Disney World and EPCOT in Orlando, Florida. "Although headquartered in Burbank, I made 40 round trips to work as a Lighting Designer, including computerized lighting for audio-animatronics, such as the Hall of Presidents, Lincoln, and Bear shows. I catalogued every light bulb in the parks and had them checked regularly. I also worked as Special Effects designer for both Space Mountain rides.

"A highly interesting project was making architectural models of Fantasyland and the castle. They were 1/8" and 1/4" to scale and used by the estimators to determine how much steel would be required."

Amateur Radio, in Bob's case, was the outgrowth of CB which he, Naomi and son Jon used on camping trips. But in the city, they found CB too crowded. Bob studied and soon had an Amateur license (now Extra Class).

One weekend he heard a YL calling for various cities. She said the Hollywood USO had many men who appreciate phone patches home, so he joined the fun. This led to an invitation by Army MARS to run patches from Viet-Nam. Even while working at his job full time, he managed to handle 17,000 calls to stateside families.

Then he became a Reserve Officer for LAPD, joined RACES and ARES.

Bob Burns, Jr., N6ZH, and wife, actress Naomi Stevens.

He discovered the Red Cross during heavy rain and mudslides in the Hollywood hills. Answering a call for help, he soon recognized the urgent need for communicators to ride in four-wheel drive vehicles driven by "Damage Assessment" volunteers. Word could be passed immediately to headquarters by hand-held.

Later, he checked with the Red Cross to learn how he could help in future disasters; very soon he was attending classes, and Bob discovered the many needs he might fill. He soon qualified for Damage Assessment and Family Service (being sent out after an apartment house fire, for instance, to arrange for temporary housing and clothing if needed).

When great damage occurred in other states, the National sent for him to help in DSHR (Disaster Services Human Resources), sometimes for many weeks at a time.

"On October 1st, Los Angeles was jolted by a serious earthquake and I was kept busy assisting families whose homes were unsafe to enter. Surprisingly, some people were very embarrassed to accept money, but we explained to them that the Red Cross is not charity. It is mandated by Congress to help people on an equal basis with donated money. Possibly the current victims had earlier donated to Red Cross themselves."

"Finding the victims immediately after a disaster is when Amateur Radio operators can be of enormous help. They can volunteer to ride with a Survey Team. This is when the Red Cross could use an advance list of communicators."

How much better if the ham has previously become familiar with such needs. It would save valuable time when disaster strikes.

"I suggest all hams, as they read this, would at least be sure they know the location of their American Red Cross chapter."

Bob pays tribute to many amateurs who for years have given their time and talents to the American Red Cross, particularly Herbert (Pete) Hoover III, W6ZH, who rode and transmitted inside the ARC float in the New Year's Rose Parade. For a long time, Pete has served as chairman of the Communications Committee for Western Operations Headquarters.

Bob was sent to Hawaii as a Family Service Supervisor; then Typhoon Roy struck the Marianas Islands with 160 mph winds. He went to the island of Rota as Service Center Manager; 2,250 residents had suffered the loss of 450 dwellings.

Bob is "cross-trained" so he can wear many imaginary hats, such as that of National Instructor, teaching functional and supervisory classes. Once, before a group of excellent students, he was to explain audio-visual techniques including a slide projector.

"Imagine my embarrassment," he says, "when it wouldn't work. I fiddled with all the devices and stood there scratching my head. Finally, a fellow in the front row whispered, 'Plug it in!' "

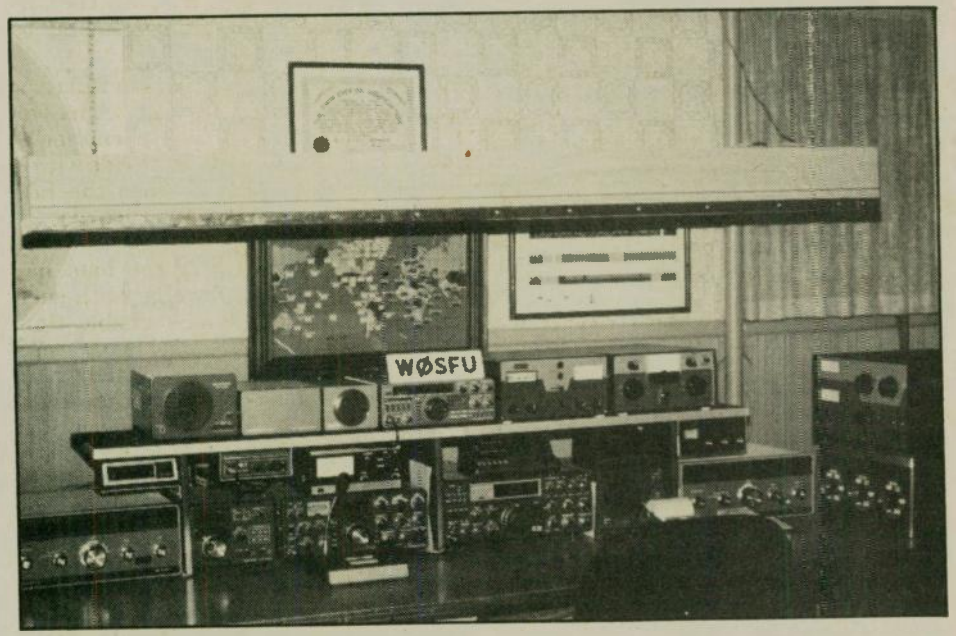
"So, there's always something to learn!" □

Are you involved in public service?

STATION APPEARANCE

JULY WINNER
Bob Parlin, WØSFU

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.



Bob Parlin, WØSFU, of Minneapolis, Minnesota, has won our July STATION APPEARANCE. Read on to learn more about Bob.

"*Top shelf, left to right:* TS-830S speaker, power supply, speaker and TS-430S, Drake C-4 console, Drake MN-2000 tuner.

"*Main table surface:* SB230 Linear, Kenwood 230 VFO, TS-830S, TS-930S and speaker—another SB230 Linear.

"*Far right:* Drake L4B Linear on top of an antenna and linear switching unit.

"Antenna on 20M is a 6-element monobander at 80', and on 10M and 15M the antenna is 3-element at 48'. A sloper is used on 40M and 80M.

"The main interest here is DX and certificate hunting. I have listed some of the main awards on the back of my QSL card. (Bob lists 54, including Bird/Paradise, Outback Award, Marco Polo Award and Arabian Knights).

"I have been licensed since 1953 and have been active ever since." □

AWARDS

Amateur of the Year

Peter Onnigian, W6QEU

Each year at the HamVention in Dayton, Ohio, an award is given to the best all-around amateur. This year there were over 1,500 letters making the nominations, with an overwhelming number choosing William "Bill" Bennett, W7PHO, of Seattle, Washington posthumously.

Bill was an avid DX hunter in his own right, but more importantly, he encouraged others to work DX on the W7PHO Family Hour DX nets. A majority of those present at the Saturday night banquet raised their hands when asked how many had gotten a new country through Bill's assistance.

From his unique location in Seattle, Bill was able to propagate an excellent signal into most parts of Asia and thus became friendly with many amateurs there. He contributed time, money and equipment to overseas amateurs, who then were able to talk to many Americans.

He particularly favored those in lands less fortunate than ours. For example, he was quite instrumental in seeing that "Lado," 1Z1A — in Burma with the Karen People's group — was equipped with radios to talk with the outside world.

Another very unusual trait of this year's Amateur of the Year was his personal help on the DX nets, encouraging otherwise hesitant operators to try again, to get through the QRM or QRN. Bill also helped handicapped hams, with speech and other problems to get their share of DX "countries."

It was simply known as the W7PHO Family Hour Net. Started in 1952, Bill had already confirmed 322 "countries," with his Big Gun operation. But Bill was not greedy; he wanted to share his good DX fortune with his fellow hams.

Bill was a prime example of a radio amateur who used his station to further international good will — another justification for our hobby. When the Viet-Nam war faded away, Bill continued to participate in the Christmas phone-patch program for U.S. servicemen overseas. A born MC and raconteur, Bill was in demand at club meetings and conventions with his wealth of Amateur Radio stories.

To make sure you got a QSL card from that rare one worked on his net, Bill managed more than four dozen QSL's — including some for the Russians, which cut a two- to three-year wait to two weeks. He and Bob Thurston, W7PGY, the ARRL Northwest Director at that time, convinced the ARRL to start the Outgoing QSL Bureau which has been so successful.

This photo of Bill, W7PHO, and his wife Ruth was taken in February 1987.

Bill also organized the Western Washington DX Club back in 1952, during the AM days. Meeting sporadically each year until 1966, it began regular monthly dinner meetings; its current membership tops 500 and is still growing. That club is one of the three sponsors of the annual Northwest DX Convention.

After retiring from teaching in the public schools in Oregon, this native Oregonian went into the heating and air conditioning business, and moved to Seattle after retirement from the active business life.

Bill and his wife, Ruth, shared much pleasure from overseas and domestic travels, as Bill was often called to speak to amateur groups and also did some mini-DXpeditions.

The ham world lost one of its greatest proponents when the key became silent at W7PHO. Bill's legacy to the hobby he loved will endure, as his contributions were major and numerous. It was befitting of the Dayton group to award Bill Bennett, W7PHO, the Amateur of the Year Award.

He died on December 23, 1987 of a heart attack within moments of operating on his 14,227 kHz Family Hour Net, at the age of 69, in his Seattle home. The amateur DXers certainly miss Bill Bennett and his many contributions to Amateur Radio. □

ARRL Northwest Division Director Rush Drake, W7RM, accepted the Amateur of the Year Award for Bill Bennett, W7PHO.

Lew McCoy, W1ICP, winner of the Technical Excellence Award.

Dayton awards

Fred Hammond, VE3HC

Fred Hammond, VE3HC, attending his 28th Dayton HamVention, was presented the *Special Achievement Award* at the HamVention banquet, Saturday, April 30.

Hammond is a director of QWCA in charge of international membership. He has been called Canada's goodwill ambassador through his contributions to Amateur Radio in China, Australia and Jamaica. He taught Chinese operators how to operate stations, and donated equipment to them and to the club station in Kingston, Jamaica.

VE3HC supplied specially-adapted transformers to the 1979 World Amateur Radio Conference in Geneva, Switzerland. He also built an antique radio museum in Guelph, containing his collection of century-old radio equipment. The museum is visited by radio people from around the world.

Lew McCoy, W1ICP

Recipient of the *Technical Excellence Award* at the 1988 Dayton HamVention was Lew McCoy, W1ICP, writer, lecturer and seminar chair, and retired ARRL employee. He was one of the few amateurs who had attended all 37 of the HamVentions.

Fred Hammond, VE3HC, won the Special Achievement Award.

McCoy started with ARRL in 1949 and worked through the years as Assistant Communications Manager, then in the *QST* technical department as technical writer. He developed the first simple standing wave indicator — the Monimatch. He is also well-known for the ultimate transmatch and other coupler circuits; he coined the word "transmatch."

During the 1950's, McCoy toured all 48 states and Canada speaking on and demonstrating the causes and cures of TVI.

(For information on the Amateur of the Year Award, *see page 30.)* □

Florida Ham of Year

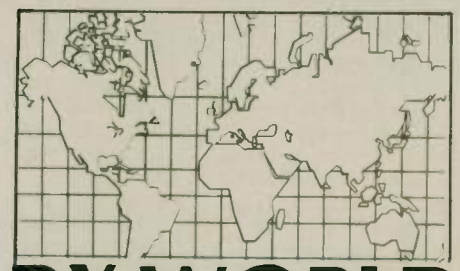
Amateur Radio operator Harry Arnold, K9ALX, earned the highest local honor on December 22 when he was given the 1987 "Ham of the Year Award," in southwest Florida.

Harry received the award for his outstanding service to the club and the community by his involvement as: net control, hamfest chairman, swapmeet/club house manager, property custodian, RACES member and Silent Key estate coordinator. □

Friends

writing about friends.

In the same town or at the antipodes, this magazine is about Amateur Radio operators. Ink on paper. A permanent record of the spirit of the enthusiastic.



DX WORLD

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

Activities Calendar

18-19 Jun	JARL All Asian DX Contest (SSB)
25-26 Jun	ARRL Field Day
25-26 Jun	RSGB Summer 1.8 MHz Contest (CW)
02-03 Jul	RCV Venezuelan DX Contest (SSB)
09-10 Jul	IARU HF World Championship
16-17 Jul	LCRA Colombian DX Contest
16-17 Jul	MARTS SEA Net Contest (CW)
16-17 Jul	CQ World Wide WPX VHF Contest
23-24 Jul	RCV Venezuelan DX Contest (CW)
06-07 Aug	FRR Romanian DX Contest
13-14 Aug	DARC European DX Contest (CW)
13-14 Aug	WIA Remembrance Day
20-21 Aug	MARTS SEA Net Contest (SSB)
27-28 Aug	JARL All Asian DX Contest (CW)

W-100-N

New applicants to **Worldradio's** Worked 100 Nations Award include the following deserving DXers:

331. NZ7D Arthur M. Palmer
332. KB6O Burton E. Swanson
333. WB4I Joseph W. Bische

Morocco (CN8)

According to *Inside DX*, Steve Hawley, CN8FC, is active on all bands — mostly CW. He is with the American Embassy in Rabat for a three-year tour, having already done about nine months.

Steve is active in the 10M Novice band near 28.490 MHz from 1600 UTC, and has also been reported on CW on 28.004 MHz about the same time. He has previously operated as VS6JR, F6IKG and WA4UAZ/HC1. He was the DXer from South America to apply for **Worldradio's** W-100-N, and received a plaque for his efforts back in 1979 as WA4UAZ/HC1. He was the 30th person to receive the award.

Also active from Morroco is Paul, CN8VE, who should be there for another year. Paul has been reported on 15M, both CW and SSB, on 21.009 and 21.300 MHz after 1330 UTC.

YL CN8FB, and her OM, CN8EK, are also active on SSB, and are with the Argentine Embassy in Rabat. CN8FB prefers nets as she was found on 14.160 and 14.228 MHz from 2200 UTC.

Addtional calls from Morocco include the following (in usual MHz and UTC):

CN8BX	14.090	2030
CN8CC	14.198	0200
CN8EL	28.052	1200
CN8MC	28.456	1830
CN8ST	14.181	2345

The frequency for CN8BX, of course, is the RTTY segment. More and more, new ones are showing up on this mode.

Bolivia (CP)

Here is another one you can work on RTTY. Two stations, CP8AL and CP8HD, have been reported near 14.097 MHz, at 2200 and 0600 UTC, respectively.

If you prefer the normal SSB and CW modes, take a listen for the following:

CP1BN	28.524	1730
CP1FQ	28.424	2100
CP6XH	28.522	1315
CP8CB	21.187	2045
CP8HD	7.066	0700
CP8XA	21.015	1200

The station signing CP8HD has also been reported on the top band as he had been worked early in April near 1.835 MHz around 1030 UTC by East Coast DXers.

Iran (EP)

DX News Sheet reports that several stations in Iran continue to be active. It is reported that the Communications Minister said that the licenses are invalid due to the hostile situation between Iraq and Iran, but those who do operate are "overlooked and tolerated."

EP2HZ has been reported several times between 14.182 and 14.235 MHz from 2000 UTC. We worked him mid-April on 14.220 MHz around 0230 UTC. Of course, along with him were the usual policemen informing everyone that he was no good. He was so loud he came in over the top of them anyway. As the saying goes, WFWL — work first, worry later!

Also reported from Iran was EP2DL, who was found on 14.222 MHz at 2100 UTC working into the East Coast.

Jan Mayen (JX)

Reported often in the 20M band is JX8KY, who — according to *DX News Sheet* — should be there through September. This one has been worked between 14.166 and 14.256 MHz as early as 0930 UTC and as late as 1900 UTC. Evidently, he must have a poor signal as he has been reported worked only in Europe and the northeastern United States.

Turkoman (UH)

Turkoman is one of the Soviet republics located in central Asia, and counts for Zone 17. The various DX newsletters show that at least five stations have been reported from this one during the month of April.

UH8BBU	28.568 MHz	0930 UTC
UH8BAF	14.023 MHz	0300 UTC
UH8ED	14.013 MHz	1230 UTC
UH9AWE	21.183 MHz	1345 UTC
UH9HWB	14.020 MHz	0300 UTC

Ascension Island (ZD8)

Ray, ZD8RI, has been reported working into British Columbia on 14.160 MHz after 2345 UTC. Also on this band, ZD8AE has been heard in Europe near 14.259 MHz at 1830 UTC.

Several calls have been worked from Ascension Island with several very active. ZD8HCF has been found on 14.183 at 2200, 14.243 at 0130, 21.345 at 1945, and 28.407 at 1730. All times are UTC with frequencies in MHz.

Another active call is ZD8MG. Check 14.188 at 2145, 21.093 (RTTY) at 1800, and 28.042 at 1545.

Other calls to look for include ZD8RP, who has been worked several times in the 10M Novice band. Try 28.450 or 28.324 MHz after 1700 UTC. Also, check this band for ZD8MAC, who has been found near 28.493 MHz after 1500 UTC.

North Cook Islands (ZK1)

Ronald "Bing" Crosby, VK2BCH, informed us that he was to leave May 8 for Western Samoa (5W1), the Tokalau Islands (ZK3), and the Cook Islands. The Cook Islands include both the DXCC South and rare North Cook, using the call ZK1XV. Bing, who is a retired Regimental Sergeant Major from the Queen's Royal Lancers, holds calls for both Australia and

the Cook Islands. About this time last year, he spent three months on Penrhyn Islands, in the North Cook Islands.

Bing requests that QSL requests be sent to him direct to his VK2BCH address: P.O. Box 344, Forster, NSW 2428, AUSTRALIA. Please, no QSL requests via the bureau. Be sure to include the usual SAE and green stamp or IRC's.

Marty Zimmerman, AG9Q, has also informed us that he will be in the North Cook Islands. He will be accompanied by Tony Utanga, ZK1CP, and will be operating from Manihiki as ZK1QC from June 25 through 30. Watch 14.185 and 21.285 MHz between 0200 and 0600 UTC. All QSL requests should be sent via K9QVB.

East Malaysia (9M8)

Not much has been reported from this one, although Europeans have been able to work a station signing 9M8PV on 10M. He was found above 28.500 MHz from 1100 UTC.

West Malaysia (9M2)

West Malaysia is another story, with much activity from this one. Checking the usual DX bulletins we found at least a dozen calls from this one. We have listed them according to band:

9M2AX	3.509	1400
9M2SL	3.799	2300
9M2FP	10.101	1630
9M2FZ	14.018	1730
9M2ZA	14.170	1600
9M2HF	14.176	1700
9M2BZ	14.197	1500
9M2AR	14.200	1730
9M2DW	14.200	1615
9M2AS	14.226	1630
9M2HB	14.226	1545
9M2RI	14.192	1630

Be aware that although East and West Malaysia count as two different DXCC countries, they only count as one nation for Worldradio's W-100-N.

Nepal (9N1)

Father Moran, 9N1MM, is still very active from this little mountain-top country. *The DX Bulletin* reports that he often visits 14.183 MHz from 0100 UTC. Father Moran has also been worked on 15M with a good signal into Europe near 21.157 MHz at 1115 UTC.

Three other calls have been reported from Nepal and include:

9N1MC	14.165	1330
9N1RN	21.200	1515
9N1WU	14.200	1630

IOTA

From time to time, we list various island groups that are applicable to RSGB's Islands on the Air (IOTA) program, created by Geoff Watts. Working at this awards program can be quite challenging. Unfortunately, it does not seem to have the popularity of the other DX awards programs.

The complete set of rules for this program is available from RSGB. If you want to get it in a hurry, send $3 to *The DX Bulletin*, P.O. Box 50, Fulton, CA 95439. Chod will send you a set right away.

The following is a sampling of what has been reported recently. Island groups that have their own DXCC status such as Tuvalu or Trindade are not listed, since they are easy to identify.

AS-05 Dickson Island	EX0PM	14.182 0900
AS-28 Kotel 'Nyy Island	UA0QT	14.011 0630
EU-33 Vesteralen Islands	LA9MFA	14.261 2030
EU-50 Tremiti Island	I5OYY/IL7	14.190 1415
NA-09 Cornwallis Island	CI8XN	14.190 2000
NA-19 Kodiak Island	KL7AF	14.001 1845
NA-86 Camaguey Archipelago	T47DX	21.266 1900
SA-08 Tierra del Fuego	LU6XPA	7.003 0645
SA-20 Salut Island	FY9IS	21.170 1730

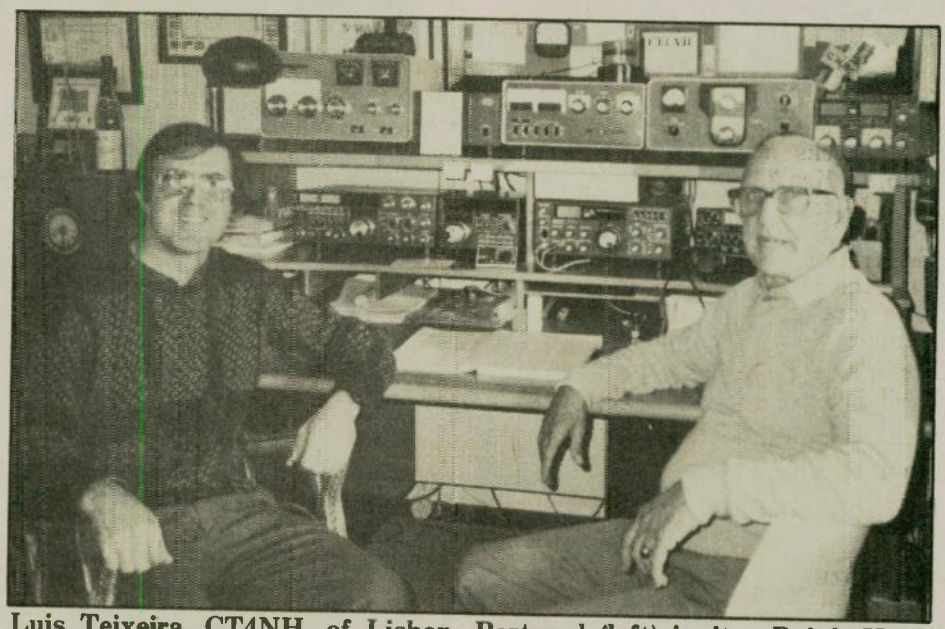
Saba Island (PJ0M)

A DXpedition to Saba Island (part of the Netherlands Antilles) by the 6M DX Society is scheduled for July 7-14, using the call PJ0M. The team will in-

clude Mario Karcich, WB2CZB, Jim Holt, N3AHI, and John Laing, W1-EXC.

In addition to 6M, the operation will include 80 through 10M, SSB and CW. Particular attention will be given to 6M multi-hop paths to Europe and the Americas.

All QSL requests are to be sent to Mario Rotondo, K2MUB. Be sure to include an SASE.



Luis Teixeira, CT4NH, of Lisbon, Portugal (left) invites Ralph Held, K6QS, into his shack during one of Ralph's recent travels. Ralph was on his way back to California when this picture was taken in December. Luis moves around also. He was one of the many visiting DXers at the International DX Convention at Visalia in April of this year. *(Photo courtesy of K6QS)*

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.

JULY 1988

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(20)	19	16	17	18
12	25	19	14	19	21
14	29	21	14	23	29
16	32	17	(13)	26	34
18	32	19	(13)	26	37
20	26	25	33	23	40
22	22	30	39	15	37
24	18	33	41	(12)	26
2	(16)	35	41	(11)	21
4	22	35	40	20	18
6	22	33	31	24	16
8	18	23	17	17	15

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	23	15	17	17	15
10	28	16	15	18	20
12	34	20	14	23	25
14	38	17	13	25	31
16	41	14	(13)	27	35
18	32	(16)	(13)	27	38
20	26	21	32	25	40
22	21	24	39	22	39
24	18	27	41	15	27
2	16	27	41	13	22
4	22	26	39	16	19
6	23	18	29	17	17

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	22	15	22	16	15
9	26	17	16	20	20
11	32	21	15	24	24
13	37	18	(14)	26	31
15	40	15	(13)	28	35
17	40	(16)	(13)	28	38
19	28	20	(23)	27	40
21	23	24	36	25	39
23	20	26	40	22	28
1	17	27	41	15	23
3	18	25	32	15	19
5	22	18	26	15	17

USSR

It looks as if things regarding Amateur Radio in the Soviet Union are improving. It is rumored that Soviet DXers may now contact native Israeli stations. Not only that, but they are now officially permitted to give their addresses over the air.

Inside DX recently listed Soviet bureaus in addition to the standard P.O. Box 88, which could produce faster results:

UD	P.O. Box 165, Baku-Center, 370000, Azerbaijan, USSR
UG	Prospekt Orjonikidze 5, Yerevan, 375000, Armenia, USSR
UF	UL. Bochorma 12, Tbilisi, 380044, Georgia, USSR
UQ	P.O. Box 164, Riga, 226098, Latvia, USSR
UP	UL. Basanavichus 15, Vilnius, 232009, Lithuania, USSR
UO	UL. Bernardatsi 59, Kishinev 14, 277014, Moldavia, USSR
UJ	UL. Sportivnaja 8, Dyushanbe, 734690, Tadjikistan, USSR
UH	P.O. Box 224, Ashkhabad, 744014, Turkmenia, USSR
UA1A	Nab. Leitenanta Shmidta 37, Leningrad, 191011, USSR
UA3A	Prospekt Vernadskogo 9/10, Moscow, 117311, USSR

Now, if this isn't enough for you, what are your thoughts of a DXpedition to the Soviet Arctic next February? *QRZ DX* reports that Valery, UA0KK, is organizing a DXpedition to Ayon Island, (IOTA AS-38 for you island hunters), to commemorate the 65th anniversary of the *Chelyuskin* icebreaker rescue.

Valery would like to invite American individuals to participate, hopefully to be the first Soviet-American DXpedition. Interested DXers should write: Valery Schinevsky, P.O. Box 44, Pevek, Magadanskaya Oblast 686610, USSR. Also, send a letter to the Central Radio Club of the USSR at P.O. Box 88, Moscow, USSR.

Geoff Watts, creator of the world-famous *DX News Sheet* (now published by RSGB), has a new publication: the USSR Oblast Guide. The contents include outline maps of all 184 oblasts, a list of oblasts in numerical order and in prefix order, plus other items of interest such as Worked 100 Oblasts Award, CQ-M Contest Rules, and R-150-S USSR Countries List. The guide has 13 pages and costs $3 (U.S.) or 6 IRC's. Send your request to Geoff Watts, 62 Belmore Road, Norwich NR7 0PU, ENGLAND. Your guide will be mailed to you via airmail.

1988 Northwest DX Convention

The British Columbia DX Club announces the 1988 Northwest DX Convention to be held at the Richmond Inn in Richmond, a Vancouver suburb, Friday through Sunday, July 22-24. The "one-track" program begins Saturday at 10 a.m.

Pre-registration is $38 per person, ($46 Canadian), with "meals only"

tickets available for your spouse or non-amateur guests at $24 ($30 Canadian).

Send your convention registration, with checks made out to B.C. DX Club, to Ken Thompson, at P.O. Box 3048, Blain, WA 98230, or 12467-53rd Avenue, Surrey, BC V3W 1A4. Pre-registration ends July 1; after that date, the cost is an additional $2.

Be sure to include this one in your summer plans. The DX fraternity up that way is a friendly bunch that will make you feel at home.

Past W-100-N winners

	Call	Name	Issue listed
1.	W8AH	Albert H. Hix	8/78
2.	DJ9ZB	Franz Langner	8/78
3.	W7OK	William D. "Don" Brickey	11/78
4.	JH1VRQ	Naoki Akiyama	2/79
5.	WA6KTZ	Terry Falke	
6.	K0VRW	Richard R. Garrison	3/79
7.	WB3CIW	Dr. Howard L. Smith	3/79
8.	WA7UVO	Robert H. Nesbitt	4/79
9.	WB8ZRV	Robert J. DeVore	4/79
10.	AI8M	David Willemin	6/79
11.	WD9CWJ	Don Bucholtz	6/79
12.	WB9TIG	John R. Hansel	6/79
13.	AB8Y	Gary F. Kaser	6/79
14.	K1RH	Ralph M. Hirsch	6/79
15.	N4MM	John C. Kanode	6/79
16.	K0LST	Louis H. Ouren	6/79
17.	WA4DAN	Murray D. Adams	7/79
18.	WA6SRJ	William J. Roth	8/79
19.	N3RL	Robert C. Landis	8/79
20.	WA1TPR	Morris Bruce Egalka	8/79
21.	WB7BFK	Beryl "Bill" E. Gosney	9/79
22.	W4TJC	James W. Tidwell, Jr.	10/79
23.	AA4NC	Will Roberts	10/79
24.	W6PYV	Arthur L. Munzig, Jr.	10/79
25.	KA5ACC	Gregg D. Breitegan	10/79
26.	N6AHU	Joseph Merdler	10/79
27.	K7RDG	Dale Green	10/79
28.	W1HR	James R. Fisk	11/79
29.	K5BLV	Howard N. Schmidt	11/79
30.	WA4UAZ/HC1	Steve Hawley	11/79
31.	K2SP	James L. Sheats	11/79
32.	K8AQM	Theodore A. Rachwal	12/79
33.	KB7HB	Bob Clay	12/79
34.	WB7PCJ	Kenneth W. Hofer	12/79
35.	W6GO	Jon Jay O'Brien	1/80
36.	K8ZLP	David Larry Armstrong	1/80
37.	KB4LX	Seymore F. Goodman	2/80
38.	WB4UBD	James A. Sladek	3/80
39.	N6AIW	Robert Dale Piedfort	3/80
40.	W2IQZ/7	Lyle O. Jevons	3/80
41.	K4JYS	William A. Stewart	3/80
42.	KL7JFV	Gregory G. Nightingale	3/80
43.	N6PV	Victor C. Besancon	3/80
44.	KB8JF	Reinaldo R. Alea	3/80
45.	KB8DB	Richard A. Walsh	3/80
46.	W0SR	James L. Spencer	4/80
47.	W7GYG	James N. Soyk	4/80
48.	K9MD	Don B. Pili	4/80
49.	WD8MGQ	John Van Putten	4/80
50.	KB9IS	Richard J. Henry, DDS	4/80

(Continued next month)

The QSL Manager

We received a letter recently regarding some misconceptions of a QSL manager. His comments read as follows:

"As an old-timer, one of the questions asked most by newcomers, and some not so new, is about the mystique surrounding the QSL manager. Is it true that it is a money-making business as he won't send a card unless you slip a $1 bill in the envelope, some requiring a $5 bill, etc.

"Perhaps it is time for us to examine this aspect of our hobby, and to tell the true story to the multitudes of confused hams out there. And who better than **Worldradio** to tell the QSL manager story, and how to deal with them. Perhaps we need a rating service, to weed out the bad ones, if indeed any exist. How about it?"

Well, first of all, we never heard of anyone making mucho bucks being a QSL manager. Would you believe the number of knowledgeable DXers who never include an SASE with their QSL requests? That $1 (alias green stamp) is normal with a QSL request to a QSL manager from another country that requires different postage than the country of the DXer requesting a QSL card. As a minimum of two IRC's (International Reply Coupons) are required for an airmail return, it is cheaper to send the $1. Have you priced IRC's lately? A $5 bill is rather high, but I suspect that is a donation to help with the costs of a DXpedition.

This whole idea of QSL managers in business to make money is rather disturbing. Most of these fellows do this out of love of the hobby and to their fellow DXer. While most DXers are out after DX, the QSL manager is busy filling out your QSL cards.

The QSL Manager, Part II

Art Hubert, N2AU, editor of *Inside DX* and also a QSL manager, offers the following hints to make the life of a QSL manager easier:

•Do not staple the QSL card to the SASE.

•Do not include the SAE and address label separately.

•Do not enclose a green stamp and no SAE; managers do not need the burden of addressing an envelope.

•If you are submitting QSL's for multiple stations in the same envelope and want the cards ASAP, enclose multiple SASE's.

•Somewhere on the envelope, write the call letters of the station whose QSL you are seeking. It makes it easier when sorting QSL's to answer for managers who handle multiple stations.

•Make sure time and date are in GMT (UTC).

•When inserting the SASE in the envelope, put the folded side down so the letter opener does not catch it when opening the letter.

We wish to add our comments regarding submitting multiple SASE's when more than one QSL card is in one envelope. Many DXpeditions use more than one person to process QSL requests and the workload is usually divided by band and/or mode. As these persons may not reside in the same area, it would only delay the return of your cards. If you are not in a hurry, fine. But it still makes the manager's job easier if you use multiple SASE's.

One more hint from N6JM. If your QSL card is the type with the QSO information printed on the reverse, be sure your call is clearly indicated on

(please turn to page 38)

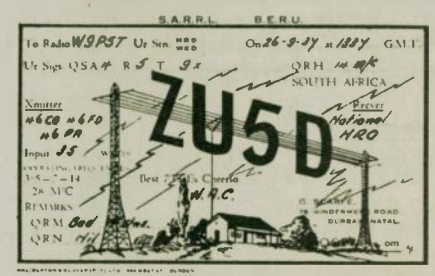
DX World

(continued from page 35)

the same side. That also makes the manager's job a bit easier.

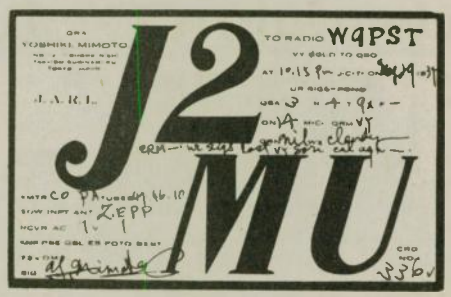
Antique QSL Department

The estate of Roy Weisbach, W9-UX, had some interesting old QSL cards. Bob Truhlar, W9LNQ, went through Roy's old cards and sent some of the interesting ones to us.



Back in 1937, when Roy was signing W9PST, he worked ZU5D of Durban in South Africa on 20M, receiving RST of 549. ZU5D was operated by George Scarfe, who was running only 35W.

Also during the same year, Roy worked J2MU of Tokyo, operated by Yoshiki Mimoto. The card shows the



time of 10:15 p.m. JCT on May 29, 1937.

The whereabouts of both ZU5D and J2MU is not known. Since these contacts were made over 50 years ago, perhaps they are Silent Keys.

QSL information

Leroy Krenek, KG5GK, has offered his services as a QSL manager for a DX station. Leroy, whose former calls were WN8DKR, WA8DKR and WA-5KZE, has been a radio amateur for 26 years and is retired from the Air Force.

Interested parties should contact Leroy at 406 East Walnut, Lagrange, TX 78945-2860; (409) 968-5952.

QSL routes

A35PP	—ZL4QS	HI3JH	—F6FNU
A35WJ	—W9GW	HK0EHM	—WD9DZV
AT0T	—KE3A	IP1ARI	—I2CZ
AT0Z	—W3HNK	JE2YRD/AH0	—JH2JCO
AY3F	—LU6FAZ	JT0TJ	—HA1KSA
BT4YL	—JA3UB	JX8KY	—LA8KY
CI8QST	—VE8TF	K2SG/NP1	—N4GNR
CR3EU	—G3PFS	K9AJ/KH5K	—WA2MOE
DA2ER	—W8IMZ	LS1E	—LU8DPM
EL2JM	—KA5ZMK	N4PW/CE3	—N4DW
EL2MS	—KD8IW	N7DF/WH2	—K0HGW
ET3JIN	—JA1BK	ND7F/WH2	—K0HGW
EX0PM	—UK3KP	P29FG	—WA0GUD
FM4DN	—W3DJZ	PP2ZDD	—W4BAA
FM5CL	—W3DJZ	SV0FE	—K0TLM
FR0EH/J	—F6FNU	SV0FG	—KA6UUS
FY0EK	—DJ5KQ	SV0GC	—WA6QDR
HC5K	—KT1N		
HD2A	—HC2GRC		

SW0GC	—WA6QDR	V47KXA	—AA4FS
SX0GC	—WA6QDR	V47NX	—AA4FS
T20AA	—N4FJI	V47NXX	—AA4FS
T30MA	—KV4AM	VK9NKG	—VK6NKG
T30NL	—VK9NL	VK9YT	—W7SW
T32BH	—F6EXV	W5SJ/VP9	—W5SJ
T32JA	—N6CW	W0RLX/KH5	—WA2MOE
T77E	—I0MWI	XE2HUM/XF4	—W6RQ
T77Y	—I0MWI	ZD7BJ	—W4FRU
TI3CF	—W3HNK	ZK1QC	—K9QVB
TI3US	—TI2US	ZP5XDW/ZP6	—N4DW
TL8TG	—KC4NC	ZS3BI	—DF2AL
TR8CC	—F2PC	ZY5EG	—N2AU
TU4BR/5U7	KN4F	ZY0TR	—PY1BVY
TY9SI	—DJ6SI (CW)	3B9FR	—F6FNU
TY9SI	—DK9KX (SSB)	5T0RIM	—W4JVU
UA0BDU/UA1O	—UA4HCU	5W1GP	—JA6QCF
V21AJI	—W2BJI	8Q7XE	—DF2XE
V47KJI	—W2BJI	9Y4DR	—WA4CUU

CN8EK	—P.O. Box 299, Rabat, MOROCCO
EP2HZ	—P.O. Box 16765-3133, Teheran, IRAN
UZ0FWM	—P.O. Box 18, Sakhalin Island, 693000 USSR
VS6VT	—D. Whyborn, L3 Pendragon, 150 Wong Ma Kok Road, Stanley, HONG KONG
ZD8HCF	—Dick Lord, P.O. Box 5220, Patrick AFB, FL 32925-1220
5W1GT	—Carol, P.O. Box 3865, Apia, WESTERN SAMOA
9J0A	—P.O. Box 32621, Lusaka, ZAMBIA
9N1RN	—Prabin, P.O. Box 634, Kathmandu, NEPAL

Many thanks go to the following for their contributions to this issue: KM6Z, WA0GUD, K2YOF, W8IMZ, KG5GK, VK2BCH, AG9Q, K6QS, W9LNQ, Geoff Watts, the British Columbia DX Club, Salt City DX Association (KB2G), Western New York DX Association (W2FXA), the Carolina DX Association (K2SD), Kansas City DX Club (AB0X), Southern California DX Club (NK6A), Redwood Empire DX Association (VP2ML), Western Washington DX Club (K7ZR), *Amateur Radio Action* (VK), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *The DX Bulletin* (VP2ML), *Long Skip* (VE3-IPR), *DX News Sheet* (G4DYO) and *QRZ DX* (W5KNE).

Contributions are always appreciated, but please allow for the lead time. We recently received information for a DXpedition to Trindade the first week in June. The announcement was posted May 2 from Tucson, which is already too late. Of course, this date would have been fine if the DXpedition was to take place a month later.

We hope all the deserving were able to work the Kingman/Palmyra DX-pedition. We returned home from Visalia in time to grab K9AJ/KH5K on 10M — a nice way to end the convention.

Palmyra Island was another matter. We had hoped to work W0RLX/KH5 on 10M as our AD0S/KH5 confirmation for that band (1981) was invalid for DXCC. However, we did work them on CW on 15 and 40M. We didn't need the band, but we did need a CW contact. This was not a list operation, so you list types who never stray away from "that's a good contact" operations lost out. Even the new Novices on 10M scored! Gud DX es 73, de John N6JM. □

John Troster inducted into *CQ's* DX Hall of Fame

John Attaway, K4IIF, — CQ Magazine *DX Committee Chairman — gave the following speech at Visalia's 1988 International DX Convention banquet, Saturday, April 23.*

A little over 20 years ago, the *CQ* DX Committee sought a means of recognizing those few rare DXers who had made enormous personal contributions to the hobby — often at great sacrifice of time and resources, and the DX Hall of Fame was conceived. More recently, we felt the need for a mechanism to honor those who have made similar contributions to contesting, and two years ago the Contest Hall of Fame was introduced.

The first to be elected to the DX Hall of Fame was Gus Browning, W4BPD, who carried out several great worldwide DXpeditions in the '50s and '60s. None of us who were active in those days will forget Gus, who operated from about 128 DXCC countries.

Also elected to the DX Hall of Fame were great QSL managers such as W2CTN and W4HNK, great writers such as Hugh Cassidy and Geoff Watts, and inspirational figures like Don Wallace.

I am pleased that we have with us today, at the world's greatest DX convention, several members of the DX Hall of Fame. I hope they will each stand and be recognized: Martti Laine, OH2BH (1972); Lloyd and Iris Colvin, W6KG and W6QL (1976); Hugh Cassidy, WA6AUD (1980); Ron Wright, ZL1AMO (1985); Kan Mizoguchi, JA1BK (1987).

Tonight we will induct into the DX Hall of Fame a man who, though shunning personal publicity, has supported DX and Amateur Radio worldwide in a very unique manner.

When a group of people decided 15 years ago to form an organization called the Northern California DX Foundation, this man was a founding member of that organization. In those early years, the NCDXF was a regular sponsor of a number of DXpeditions — most notably the Kingman Reef DXpedition that resulted in a new country. But, in a sense, the organization languished until 1979, when this man became its president.

As president of NCDXF he was responsible for moving the organization from the status of DXpedition sponsor to a broad-based supporter of Amateur Radio throughout the world.

It was through his personal efforts that the NCDXF provided direct support of Amateur Radio in developing countries. Nearly $10,000 was given to the ARRL for support of Amateur Radio education in developing countries. An AMSAT demonstration station was funded.

And please understand that he was not just another on the NCDXF Board of Directors that voted for these worthy efforts. He was the one with the original idea, who developed the concept of how support could be supplied,

(please turn to page 58)

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.

Publication contest

Proud of your club newsletter? Undoubtedly, a well-done newsletter promotes the club activities and keeps up interest in the club. The Amateur Radio News Service (ARNS), an organization of Amateur Radio publications and club newsletter editors, is conducting its annual publications contest.

The contest is designed to reward superior performance in Amateur Radio journalism, and is open to Amateur Radio organizations worldwide.

One club newsletter, published between July 1987 and July 1988, must be submitted and will be judged on the following criteria: general format, overall interest, technical coverage, club activity, editorials, membership contributions, and recruitment/training of potential new amateurs.

Newsletters will be judged compared to other entrants from like-sized clubs and will be within the categories of "Superior," "Excellent," or "Good." Each entrant will receive a critique listing both noteworthy points and suggestions for improvement.

For further information, or to obtain entry blanks, send an SASE to: Lee Knirko, W9MOL, 11 S. LaSalle St., Ste. 2100, Chicago, IL 60603.
—ARRL Letter □

Caltrans RACES is new ARRL member

James J. West, N6AAD

The Caltrans RACES Club of Sacramento, California, has been notified by ARRL of its recently approved application for affiliation. Lee Hayford, AH2W, manager of the ARRL Club Services Department, announced that the Caltrans RACES will receive Field Forum (the ARRL quarterly newsletter) and a hand-lettered charter to symbolize the event. □

Polish DXpedition: They went to Japan.

Hams assist with balloon event

Howard Wilcox, N8EHQ

The Southern Michigan ARS, working with the Mobile Emergency Team, assisted organizers of the Battle Creek International Balloon Championships held last summer, July 18-25. The two clubs worked out of trailers — the ones with antennas on top.

Although the volunteers kept a low profile, they directed traffic, helped balloon crews track drifting balloons, tried to keep bicycles and pets out of the midway, and helped hunt for a few lost children. The SMARS communicated with other amateurs throughout the world with their on-site special event station, sending out fancy certificates as confirmation.

The "road crew," as the amateurs were called, check in daily at 5:30 a.m. and 5:30 p.m., for morning and evening launches during the eight-day balloon competition.

Among those participating were Marion Davidson, WA8MFL: Rosemary Davidson, WA8VXE; Wesley Chaney, N8BDM; Duane Davis, KA8WZX; Francis Doyle, NI8C; Paul Goodin, WD8JOM; Timothy Connard, N8FBU; Gary Kyser, WB8USU; Larry Lash, KA8PZM; Louis Wessel, N8AEU; Mamie Wilcox, N8HJZ; James Yeomans, N8HTH; and Gary Williams, KA8LSH. □

Field Day in Ohio

The OH-KY-IN Amateur Radio Society will participate in Field Day 1988 on the weekend of June 25-26. Although Field Day is an ARRL contest, it is excellent practice for emergency preparedness in the Amateur Radio community.

OH-KY-IN will set up this year, once again, at Mitchell Memorial Forest off Buffalo Ridge Road in Miami Township, Hamilton County, Ohio. The public is invited to stop by the Field Day site to learn more about Amateur Radio. □

Suggestion for clubs

Willis Smith, WD4CHP

We have many hams in the area with call letter license plates that I am not familiar with. I thought that if we could make a note of them and call someone who has a current Callbook to find out if they are local residents, we could invite them to our meetings and try to get them to join our club.

I know most of you through working on the 2M band and I know there are many who never get on that band. Many of them work the low bands or aren't on the air at all. So let's give it a try.
—Ft. Myers ARC, No. Ft. Myers, FL

It's only fair

Ron Jakubowski, K2RJ

Last month, I — along with another club member — visited the widow of a Silent Key to help her determine the worth of the remaining items in the shack. Like many of us, this ham had been a collector and prided himself on having a part for anything (built before 1968!). The widow thought she had a veritable gold mine — unfortunately she was disappointed.

The scene repeats itself year-in and year-out and lays heavily on us who are called to help liquidate estates. It seems cruel for a widow to rent a dumpster to dispose of many of her husband's treasures.

I would like to suggest that all hams,

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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.

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

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 at Esplanade House, 1528 Esplanade. Room 101, 3rd Friday/monthly, 8:00 p.m.

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). St. Bartholomew's Episcopal Church. Meets: 3rd Saturday/monthly, 9:30 a.m. Net Mondays 7:00 p.m. 147.12+. For info call WD6J, (415) 829-5229.

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.

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 "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 Fernando Valley ARC, (W6SD). Meets: 3rd Fri./monthly, 7:30 p.m. 261 C.C.G. CA Air Nat'l Guard, 15900 Victory Blvd., Van Nuys, CA 91406-6449. Exams: 8 a.m., 1st Sat./monthly. Pre-reg. via P.O. Box 3151, Van Nuys, CA 91407.

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. U. of the Pacific, RM 122, Kensington & Mendocino. 2nd Wed/monthly, 7:30 p.m. Rptr. 147.165/765 Net Wed. 8:00 p.m.

Tehama County Amateur Radio Club. 13620 Trinity Ave., Red Bluff, CA 96080. Meets: 1st Friday, 7:00 p.m. Lincoln Street School. Net Wednesday 8:00 p.m. 147.705 rptr.

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. 1st Tuesday/monthly 7:00 p.m.-145.400.

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.

Sarasota Amateur Radio Ass'n, Inc. Meets: 3rd Tues./monthly, 8 p.m. on the 6th floor (board rm.) of the County Admin. Bldg., corner of 301 & Ringling Blvd. Club Rptr. W4IE, freq. 146.91/31, open to all. Phone patch *Up #Down. Welcome.

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.

Dupage Amateur Radio Club W9DUP. Mid-America Savings & Loan, 55th & Holmes (55th St. near RT 83), Clarendon Hill, IL. 4th Monday/monthly, 7:30 p.m. Club rptr. 145.250 — 600 kHz.

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.

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.

MISSOURI

Heart of America Radio Club. 211 W. Armour, Kansas City, MO. Meets: 3rd Tuesday, 7:30 p.m.

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.

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.

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

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 –.

Radio Club of Junior High School 22 N.Y.C. 111 Columbia St., New York, NY 10002. "At The Core of The Big Apple," QSLs invited. For info contact WB2JKJ and "The Crew" learning English thru Ham Radio at (516) 674-4072, 24 hrs.

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. (RARS). P.O. Box 17124, Raleigh, NC 27619. Meets: 1st Wed./monthly, 7:30 p.m., First Presb. Church. Club net daily, 8 p.m. on RARS 04/64, W4DW. Annual Hamfest, 2nd Sunday in April.

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

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.

It's only fair

(continued from page 40)

especially those over 50, take a good look at all that junk they are storing in the basement, attic or garage and get rid of anything that hasn't been used in the last five years. If you think something is too valuable to throw out, get the opinion of another — preferably younger — amateur. He may help you get a new perspective on things.

This would be a good time to make a log of all your station equipment and what it is worth. I might suggest that the figures be reviewed by another ham for realism. If you don't have the time or stomach for doing the above, at least think about taking out an extra $1,000 life insurance policy for the specific purpose of your junk. It's only fair.

— *Cincinnati ARC, OH* □

di-dit-dah-dah-di-dit

What would you like to read about? Send in your suggestions to **Worldradio,** 2120 28th St, Sacramento, CA 95818.

'Writing dates' correction

A few of our readers have brought some errors to our attention ("Writing dates," page 39, June **Worldradio**).

When written out numerically, July 6, 1988 is usually done this way in the United States: 7/6/88, not 6/7, as the article stated. 6/7/88 is used by the U.S. government and foreigners. 7/VI/88 should read 6/VII/88.

Looks like we should have run this one in our April issue. □

Esther Given, W6BDE

The Quarter Century Wireless Association boasts a current membership nearing 11,000 licensed radio amateurs, whose enthusiasm for the hobby has spanned 25 or more years. Most of these experienced hams have celebrated 40 or more birthdays, and Amateur Radio has played an important part in their lives.

QCWA members share their dedication developed over the years by seeking to promote Amateur Radio to people of all ages and by perpetuating experiences that have been pleasant, enjoyable and vital to the history of their chosen hobby.

An ARRL experiment is about to get underway in Florida's Tampa/St. Petersburg area, to offer Amateur Radio communications training to senior citizens over 50. Seniors successful in acquiring a ham license are not expected to swell QCWA's membership ranks, but the opportunity to present a new and enjoyable pastime for people who have retired, relocated in a new community, or are anxious to acquire communications skills is the kind of challenge that should be supported and endorsed.

QCWA salutes this activity. If successful, this pilot program is expected to be expanded nationwide.

•

QCWA's Board of Directors held their annual spring meeting in Irving, Texas, April 8-9. All but one of the 14 board members were present. In addition, three candidates for board positions in the upcoming election attended as invited guests to observe the meeting, visit headquarters and become acquainted with the procedures.

President Leland Smith, W5KL, presided and the agenda contained many items for consideration. Reports presented by the officers, committee chairmen and the general manager indicate QCWA is a thriving organization showing constant progress and growth.

An important item of organizational improvement is the establishment of closer lines of communication between the board of directors and the chapter officers. A synopsis of the minutes will appear in the spring issue of the *QCWA Journal.*

•

The 1988 QCWA National Convention will be held September 23-25, hosted by Vic Clark Chapter 91. Convention site will be the McLean Hilton in McLean, Virginia. Chairman of the event is Jack Kelleher, W4ZC; co-chairman Elmer Jones, K4EUX, and secretary James Wilcox, K4JAP.

The Washington, D.C. area offers many educational and historical places of interest to visitors, and a large turn-out is expected. Special tours of NASA and Goddard Space Center are planned if sufficient interest is generated.

•

The folks at Baton Rouge's Chapter 109 are well organized under the chairmanship of El Charlton, W5MD, in preparing the 1989 QCWA Convention for their fair city.

It is vitally necessary these days to plan and finalize arrangements at least two years ahead for large groups whose functions require housing, meeting rooms, banquets and other allied services. So Mid-Continent Chapter 35 in Kansas City, Missouri voted at their April 21st meeting to submit their bid to the Board of Directors to host QCWA's convention in 1990. They named Dr. Bill Grannahan, KØORB, to head the Convention Steering Committee, and planning is already underway to attract QCWA members to "The Heart of America" in '90.

•

QCWA welcomes its latest Chapter #165 in York County, Pennsylvania. Members residing in the vicinity of York are encouraged to contact the new chapter's secretary, William Boyer, W3AMQ, 21 South Findlay St., York, PA 17402.

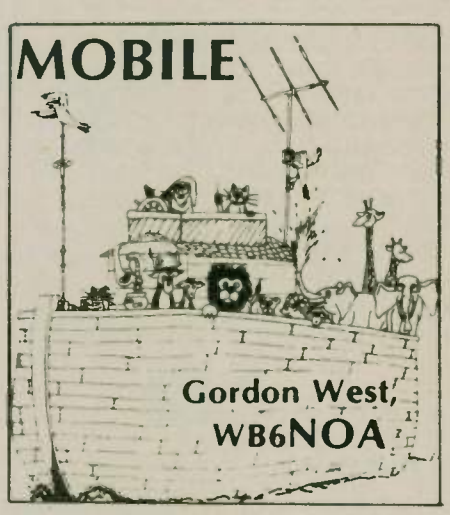
Whenever a new chapter is established it provides a haven of fellowship for QCWA members in its sphere of influence. Most chapters, in addition to meetings, have one or more nets enabling their members and friends to meet on the air frequently. □

Don't do it!

Our amateur licenses aren't typed directly as they once were. They are produced as carbon copies in self-mailers. A nice cost-saver for the government, but the printing is a bit weak at best and sometimes is nearly illegible. The temptation is to go over the call sign, etc. with a pen to "enhance" the appearance. DON'T DO IT.

An altered license, whatever it's for, is a voided license. If it's presented to a VE team for an upgrade exam, for instance, it's likely to be rejected. If your license is not clearly imprinted with your call, class, dates, etc., request a duplicate by letter to FCC, Box 1020, Gettysburg, PA 17326, explaining the circumstances.

Same thing goes for your driver's license and auto registration. Don't make a mark on the face of them. If necessary, request a correction card from the state by using the proper form. —*Penn Wireless Assn., PA* □



Digital mobile compasses

Since you are a ham, you're probably into gadgets. Here's something that is truly more than a gadget, and it takes on a whole new meaning when it comes to determining magnetic direction. Whether you operate maritime mobile aboard a boat, navigate the highways with a mobile home, or simply want the latest type of compass for your vehicle, fluxgate digital compass technology may be just for you.

The fluxgate compass determines magnetic heading from a remote sensor that is placed on the outside of your metal vehicle frame. On boats, it's placed out of the way and free from nearby metallic objects. On steel boats, it's placed up on the mast.

Bright, bold, digital LCD numbers read out your magnetic course. Here's the best part of fluxgate technology: Remote-mounted, bold, LCD digital readout; No lag or overshoot with abrupt heading changes; Selectable off-course alarm; Adjustable backlighting for nighttime use; Selectable damping; and Heads-up remote mounting.

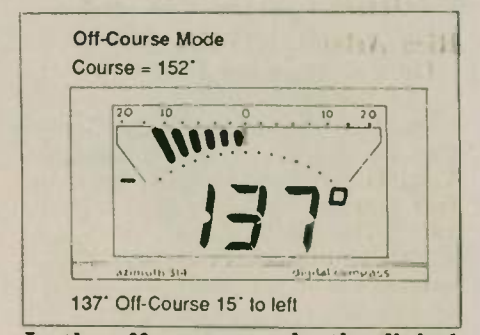
The remote readout is digitally fed using cable about the size of RG-58. It goes anywhere—it's unaffected by metal, so mount it in your cockpit, by the steering wheel, or anywhere you want to see those bold digital readouts of your magnetic course.

Add as many repeater stations as you would like. Put them in every cabin or every room in your mobile home. This way you can always keep track of the direction you are heading, no matter where you are in your RV or on the boat. You can even set an alarm to alert you if whoever is running your vehicle or ship strays off the desired direction.

Azimuth 100 Digital Compass

Inside the externally mounted fluxgate sensor is a new type of heading circuitry that differs dramatically from traditional fluid-filled floating compass cards. Magnetic compasses are fine and reliable, but they are easily thrown off by nearby metal cans. They often lag or overshoot during a quick change of direction, and the typical floating compass card is usually hard to resolve down to the last degree at a distance.

Inside the microprocesor brain is the fluxgate sensor which measures magnetic fields with a saturable inductor. Remember how an electric current



In the off-course mode, the digital compass shows you how far off course you are from your last reference headings. This particular display shows you are off course 15° to the left.

in a wire generates a circular magnetic field around the wire? A wire wound in a coil generates an essentially uniform field inside a solenoid. A toroid confines the magnetic field almost entirely to the inside of the coil. The amount of current and the number of turns in the winding determine how much flux is inside the toroid.

An induced AC current exists in a secondary winding only when the primary current is changing. An induced voltage potential exists in a coil only if the flux through the coil is changing, either due to current changing or due to magnetism.

This means that the earth's magnetic field will not induce a current in a

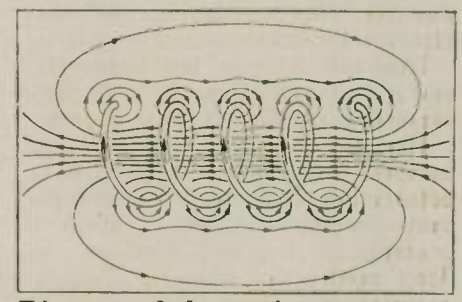


Diagram of electronic compass

stationary coil since the earth's field is not changing. But if we drive an AC signal in the toroid and sample the changing flux caused by the AC drive signal, the device may mathematically analyze the two magnetic fields and derive your magnetic course being steered.

While this is a simple explanation of what goes on in the inside, you can see the immediate benefits of no moving parts, no lagging compass card, and a device that draws only about 1 amp of 12V and accurately gives out your heading—updated every half second.

In small vehicle or marine installations, the fluxgate assembly can even be combined *inside* the digital readout assembly. This can be seen in the ac-

Product Review #2

Rich Arland, K7YHA

Let's continue our Field Day product review by looking at an antenna from Jim Thompson, W4THU, and the Radio Works of Portsmouth, Virginia. I have known Jim for about four years and have watched his company, The Radio Works, grow substantially. Jim offers a wide range of antennas to fit any budget or lot size. Quality antenna products and quality service are Jim's trademarks.

Originally, when I contacted Jim about reviewing one of his antennas, I was thinking in terms of a G5RV dipole. However, Jim pursuaded me to give the newest addition to his growing antenna farm, The Carolina Windom, a try instead. Since I had the room to erect large wire antennas, I jumped at the chance, as I had never used a Windom antenna before.

The Carolina Windom has been developed over the last several years by Jim Wilkie, WY4R, Edgar Lambert, WA4LVB, and Joe Wright, W4UEB. Jim Thompson, W4THU, helped optimize the dimensions and enhance the line isolator portion of the antenna. The overall dimensions of this Windom variant are 132', with a 22' vertical radiating element attached to the feedpoint.

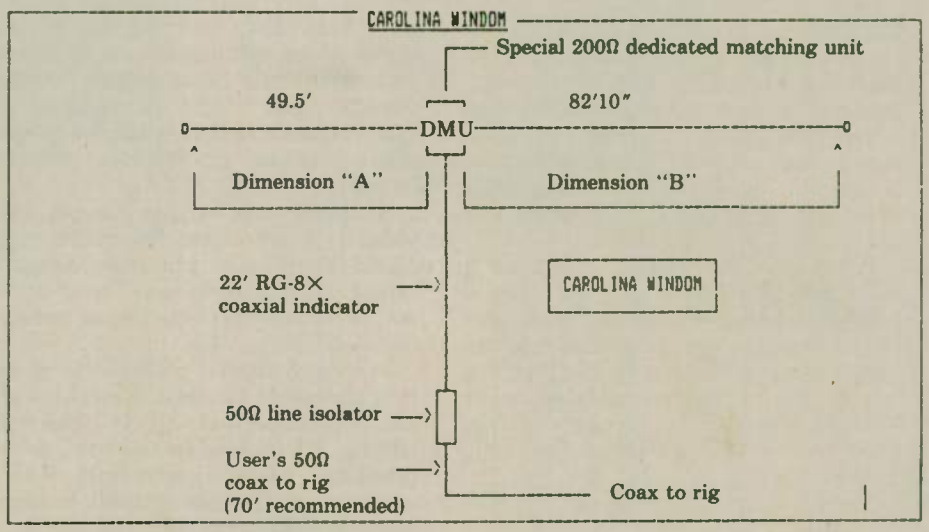


Figure 1 — **The Carolina Windom**

If you are now using a full-size 80M dipole at your QTH, you will have enough room to convert to the Carolina Windom with no problems. The nice thing about this particular antenna is that it can be adapted to virtually any surrounding location. Jim told me that many hams were using this antenna in various configurations including flat-top, inverted Vee and sloper. The bottom line is: don't be afraid to bend it around to fit your unique requirements.

I obtained my Carolina Windom from The Radio Works while snow was still on the ground. Having to wait for a break in the weather heightened the anticipation of how well this antenna would perform. Reviewing the instruction manual (which is very well documented), I was impressed with the effort that went into designing this particular antenna. The concept of having both horizontal and vertical radiation patterns within the same antenna design was intriguing.

The Carolina Windom is an off-center-fed dipole (see *Figure 1*). The feedpoint is 49.5 feet from one end via a special 200Ω Dedicated Matching Unit (DMU). The DMU is connected to the feedline through a 22' vertical coaxial radiating element and Line Isolator.

The Line Isolator determines precisely which portion of the vertical feedline radiates and also acts as an

Mobile

companying photograph of the KVH Industries "Azimuth 100" all-in-one digital sensor with the traditional LCD moving compass card-type scale on the outside perimeter (KVH Industries, 850 Aquidneck Ave., Middletown, RI 92840; 401/847-3327).

This unit sells for less than $400, and is just as accurate as a twice-as-expensive, traditional ship compass.

The self-contained "100" digital compass may also be used portable for determining magnetic bearings to distant directions. It works great in transmitter hunting because you don't need a few seconds to let the compass settle down when you quickly change the direction in which you are aiming the antenna. It instantly comes up with your new magnetic direction (either magnetic north or true north—however you wish to calibrate it).

If you're into boating, flying or cross country RV'ing, a digital compass might make an interesting companion in addition to your traditional floating magnetic card compass.

While I don't think the new digital compasses will ever replace magnetic compasses, the new digitized displays are far easier to see, instantly react with course changes, and give nearsighted folks like yours truly and Worldradio editor, Chris, a great opportunity to see a new course at quite a distance! □

RF choke for the remainder of the feedline to keep it from radiating. This produces not only a horizontal radiation pattern (normally associated with a dipole antenna), but a vertical radiation pattern as well. This combination results in an all-band antenna with great DX potential. (The antenna will withstand full legal power.)

While the antenna is billed as a multi-band radiator, you *must* use a transmatch (tuner) on the output of the transceiver to overcome feedline impedance variations on the various bands. Bandwidth is fairly wide on 75/80M, allowing you to operate from the CW to the phone portion without much retuning.

The Carolina Windom can be purchased fully assembled (like the one I obtained) or as a kit. Parts quality is very high. Jim manufactures his own baluns and line isolators at his plant. Dissatisfied with commercial baluns on the market, Jim set out to learn all he could about them and produce his own version that he could guarantee to work in specific applications. This antenna is an outstanding example of engineering and research put into practice.

The baggie of parts for the antenna was inventoried and hook-up was completed within 15 minutes. Jim included Coax-Seal™ to weatherproof the coaxial connectors on the DMU, Line Isolator and feedline. The antenna wire was rolled out and the center was cranked up into my 50′ pine tree in a matter of minutes. The end of the 82′ leg was placed in a tree at the end of our yard (about 25′ up). The 49′ leg was tied off to the end of the house. A shallow inverted-Vee configuration resulted from this placement. Coax was run into the shack and the antenna placed on the air.

First check-out was on 20M. 1:1 SWR was easily attained, and several QSO's were made with my Argonaut 509 at the 2W level. Signal reports were 539 and 559. I switched to the G5RV dipole, and there was a noticeable drop in the receive S-meter indication.

Back on the Windom, using 40M yielded three more contacts with much the same observations. Received signal strength on the Windom was one to two S-Units higher than on the G5RV.

Transmit RST reports were inconclusive when switching between the Windom and the G5RV. This I attribute to the subjective nature (or possibly misinterpretation) of the readings at the distant end location. Some stations reported a dramatic increase (in one case, my signal report went from 339 to 559 going from the G5RV to the Windom), while others said there was little difference between the two antennas.

Over the next several days, all bands were tried with similar results. In most instances, the Carolina Windom seemed to yield better receive signal levels and more reliable communications out past 400 miles than my G5RV. I attribute this to the vertical and horizontal radiation patterns produced by the antenna system.

Going on the assumption that a 1-2 S-Unit increase in receive signal level *should* yield a similar increase in transmitted signal, I feel that the Carolina Windom is a superior antenna to my G5RV dipole.

The Radio Works has many other antennas available besides the Carolina Windom. If you want high-quality antenna systems that will fit your budget, write to Jim Thompson, W4THU, at The Radio Works, Box 6195, Portsmouth, VA 23703. Don't forget to tell him you saw it in **Worldradio!** □

A Product(?) Review

The Bandsmasher

Have you heard those absolutely monstrous, massive signals on 20M lately?

Have you heard those operators talking to stations when the 200′ tower boys can't even tell there's a signal there?

Well, you're probably getting beaten out by the astute amateurs who answered an advertisement in recent issues of 23 Skidoo. (Name changed.)

For a mere $5, the ad promises plans for an antenna (80-10M) which delivers 30dB gain over a dipole. (And to think that those giant monster curtain arrays at VOA, BBC, Radio Moscow, etc. deliver only a paltry 17 or so dB.)

Methinks the Mensa isn't reading his own magazine because he wouldn't allow such an advertisement.

So, off went our $5. Back came the directions for . . . aluminum foil in your attic — only six strips, 30′ long and 1½′ wide! (Folks, this is *TRUE!!*)

But wait . . . it gets better! We are also promised 100dB gain in major lobes, 30dB in minor lobes, *AND* it's *omni-directional!* Wait, that's not all. The antenna has a zero degree angle — perfect for DX work!

Now, you may not realize what a *great* antenna this is. 30dB gain with an input of 1kW gives an ERP (effective radiated power) of 1 million watts. What a boon to your neighbors! They won't have to pay the local utility for the electricity for their light bulbs.

Your neighbors will also thank you for turning them into intellectuals. They'll have to read books because they sure won't be watching much TV while you're on the air.

But wait! That's only 30dB in the minor lobe. Let's move off just a bit to 33dB. Now we have 2MW ERP. For you, the band is always open everywhere.

In the 40dB lobe — 10MW ERP. Your neighbors will love you for creating a healthy neighborhood, killing all flies, mosquitos, bugs that eat roses and the like.

In the 50dB lobe (100 million watts ERP) there will be no barking dogs.

In the 60dB lobe (1 billion watts ERP), you have just spared the people of New York City from the stranglehold of Con Ed.

At 70dB lobe you have shown your beneficence to mankind, for you can now furnish all the power require-

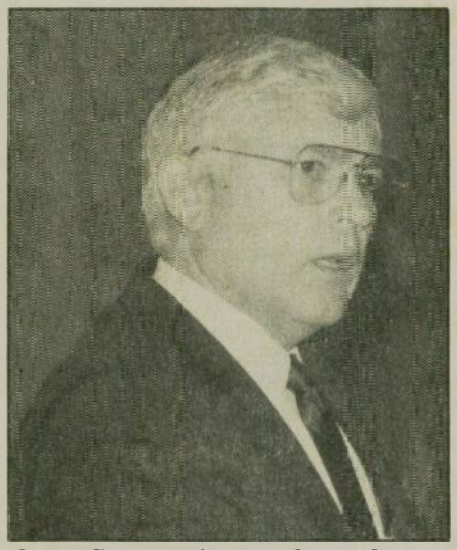
MARS Forum

Introduction

The introduction was given by Art Delperdang, Chief Navy/Marine Corps MARS:

Behind most successful programs, of which MARS is one, there are a lot of individuals who operate behind the scenes — unsung heroes who do their thing without a lot of recognition. Some of these are movers and shakers in positions where they can make things happen. We are most fortunate today to have one of those individuals with us — Mr. John Grimes.

John is a professional staff member of the National Security Council, Executive Office of the President. He is currently Director of National Security Telecommunications, and director of defense programs for Command, Control and Communication. As you know, the National Communications System (NCS) advises the President of the United States with respect to domestic, foreign and military policy involved in national security.



John Grimes, featured speaker at the MARS Forum at Dayton

Grimes was the Deputy Manager of the NCS in Washington, D.C. from 1981 to 1984. It was during that time that both the American Radio Relay League (ARRL) and all the MARS systems entered into a memorandum of understanding between the NCS and the various services. This was a very important step because it allowed Amateur Radio, and MARS in particular, to be recognized at very high levels.

Grimes was born in Frederick, Maryland in 1935, is a graduate of the University of Arizona, and earned a Master of Science degree in Public Administration from Shiffenburg University. He is a graduate of the U.S. Army War College, Carlyle Barracks, Pennsylvania; the Federal Executive Institute, Charlesville, Virginia; and attended Harvard University National and International Security Policy Program.

His awards include the U.S. Army's Exceptional Meritorious Award, the AFCEA Meritorious Service Award, the Presidential Rank Award for meritorious senior executives, and the Secretary of Defense Civilian Meritorious Service Award.

John Grimes' remarks

I think I'm preaching to the choir. One of the things I was going to try to do was to impress on all amateurs who were not members that they should become members of MARS.

This being a communications group, I'm not sure we're going to communicate with all the hams out there on the importance of belonging to MARS.

This reminds me of a story — about the lady who went to a divorce lawyer for advice. He asked why? What grounds do you have? She answered we have half an acre. The lawyer shook his head and asked what is the grudge — do you have a grudge, or does he have a grudge? She said no, we have a large carport on our place.

Product Review

ments for the Third World.

On the 80dB lobe you have assured the freedom of the USA, for with a power gain of 100 million and your 1.5kW output amplifier, you alone, from your shack, are the SDI program.

On the 90dB lobe you have destroyed OPEC because you are charging up all battery-powered cars in the country. Because of you, everyone is abandoning gasoline.

On the 100dB main lobes (that's a power gain of 10 billion), and thus with your humble California Kilowatt, you are now Ruler of the Universe.

Hah, you *really* showed your parents, who said that if you didn't stop playing with your radio and get to your schoolbooks, you'd never amount to anything.

And it all came to pass because you were reading a ham magazine published in Peterborough, New Hampshire, and purchased plans from an Extra Class amateur living in an apartment in Queens Village, Jamaica, New York.

All of this for only $5. Ain't ham radio grand? —*Kurt N. Sterba* □

Finally, in desperation, the lawyer asked does he ever beat you up? Oh no, she replied, I get up an hour and a half before he does every morning. What seems to be the problem, he asked, why do you want a divorce? She replied "The idiot can't carry on an intelligent conversation!"

This being a communications group, I'm not sure we're going to communicate with all the hams out there on the importance of belonging to MARS.

Most hams already have a mindset on their role in emergency communications. And MARS, of course, does more than handle morale and welfare messages. Its responsibilities are to the Armed Services — that's what its charter is all about — to be in a standby or readiness mode to pick up and support that critical mission of this nation, whether it's an aircraft crash, an earthquake or a war.

Interoperability

As I walked into the arena out here, I felt good about the word "combined." For those who follow what's going on in Washington, and are aware of the infighting that goes on between the military departments — we cannot afford it.

MARS is the same way. Only it's more critical to MARS than it is to the military services. Combined and interoperability brings you into that. In Washington, everything we do is in the name of interagency.

The NCS is made up of 23 federal agencies. The reason that organization was born, created in 1963 by President Kennedy, was brought on by the Cuban missile crisis. The Department of Defense activities, primarily Navy; the FAA (Federal Aviation Administration) was to control the aircraft in the Caribbean; and the State Department, the diplomatic operations — these could not interoperate.

After that event, President Kennedy caused a study to be done which pointed out the critical interoperability problems. Thus was born the NCS. This was reaffirmed in 1984 by President Reagan, when he signed an executive order, making it a permanent organization.

New defense policy

I'd like to elaborate a little more on what's happened in the last seven or eight years in this administration.

There has been a lot of new policy, or rewritten policy, on national emergencies. The president quickly started his strategic modernization program, with the B-1's, new missiles and all those things. You can debate what it has done to our budget, but the fact is that this administration did emphasize national security.

The mobilization planning at that time was about 20 years old. It was based on a much different threat. So during those first three or four years, a new policy was generated in national security emergency preparedness. FEMA (Federal Emergency Management Association) got a new lease on life, and NCS got a new lease on life. These are things that are close to you as well as to the military services. A lot of money was pumped into the military to improve our capabilities.

The "Hot Line"

Another example of how critical things were during this period was the Moscow "Hot Line." That thing had been around since the Cuba Missile Crisis, for the president to be able to communication with Gorbachev.

I use the word communicate rather than talk, because he does not talk. It is a facsimile machine. We modernized to improve the communications between Washington and Moscow. It works over their satellite system and our Intelsat, as well as over transoceanic cable for reliability.

Planning

That's where those national plans came in — our Amateur Radio agreement with the ARRL, to which I was a party in the 1983 time frame, and which MARS also signed. We recognized the criticality.

History will go back and show who is the first person on the scene. Who has the capability if the power company goes out and the telephone systems go out? (Their batteries are good for only 24 hours, if at all.) Some of the newer telephone companies, since divestiture, have not built in the fuel capacity the old AT&T system had. So we have become more dependent on your systems and capabilities.

In recognition of how critical things were after divestiture, the president decided to bring in representatives of the industry. They formed a committee of the 30 top telecommunications executives. They advised the president of what could be done to improve the survivability of our telecommunications network.

Also, to save money, survivability features are being built into the national telecommunications network as it is being built or added to. It's much cheaper to do it then than to add it later.

An example in the satellite world is where we have buttoned up the Tele-

metry, Tracking and Control (TT&C) of commercial satellites so that the Soviets from Cuba cannot spook those satellites, move them around on orbit, and burn up the fuel in times of national emergency.

We just signed some contracts with the satellite companies, so that one company will take over the satellite housekeeping functions of another in case a ground control station is taken out.

These are things we're spending some big bucks on — up to $30 million a year.

EMP

We're also telling the telephone companies some of the smart things they can do for EMP (Electromagnetic Pulse). This is a concern there is a lot of hype over, yet there is disagreement. Some think everything's going to stop, others think nothing is going to happen.

We have found there are some smart things that can be done to equipment and systems that will buy a lot of insurance against EMP. Bonding, grounding, lightning arresters, shielding — those kinds of things. We know things can be done so that those systems will survive. We share this information — some classified, some not — with the companies.

HF shares

This leads into a thing that I will take some credit for. It's called HF shares. This is a shared federal resources program throughout the federal government.

When I was head of NCS, I wanted to look at what radios were in the government inventory and their various modes of operation. We also looked at what was being procured at the time. These were the fixed plant-type radios, not tactical. That included the MARS capability, too.

The purpose was to see how we could interoperate these systems and develop a federal standard to get back to a "vanilla" interface in times of national emergency. This was important because some radios were hoppers, while others had some sophisticated types of sidebands, and it was important they could talk to each other in times of emergency.

Many have microprocessors. We're in the process of standardizing these, so that in times of national emergency these radios can interoperate, even if it takes little black boxes.

You may not be aware of how pervasive the FAA HF radio system is out there, backing up the VHF system in case there is a major outage of their microwave system.

The Veterans Administration has a very pervasive HF system including some 400 medical facilities around the country, for use in an emergency. FEMA provides connection between state governments and the federal agencies. The Federal Highway Administration has just finished a major exercise on their HF system.

Those assets are very critical in times of very severe national emergency. Today we're very fortunate that any major emergency in the last 200 years has been on a limited regional basis. Perhaps the Civil War was the most widespread. But we must always be prepared.

Signal to Soviets

When we are prepared, we throw a signal to our adversaries that we can operate under emergency conditions. It's very crucial. The president is required every year to provide a national security strategy report to the Congress. In that, open to the public, go the signals to the Soviets. Our B-1's, B-52's, our missiles. Coupled with that is the capability of civil defense, national defense, continuity of government — all that is in there as a deterrent to the Soviets.

In essence, what he says is, "no matter what you guys do, we have the infrastructure, the telecommunications business (which involves you people) to handle any of those situations. We're going to stay — to maintain a constitutional form of government."

The 2M network

There's a new area coming into play more and more — your 2M system and your local nets. This has been so responsive that I don't think we can ever do without it. The key thing is that these things are being operated every day, just like your telephone system which operates every day, and if you ever go into war or any other national emergency, you can depend on what's being used every day. If you try to institute something that's new and unfamiliar, it's going to fall flat on its face.

Talk about something new, God called the Pope with good news and bad news. He said the good news was that he was going to establish one universal worldwide church. The Pope said, "That's great! But what's the

(please turn to page 67)

I guess I fail the test as a dyed-in-the-wool DXer, although I do enjoy chasing the rare ones on RTTY. Now that I have crossed the 200 country barrier on RTTY, "new ones" are getting hard to find. The competition for new ones has reached an industrial-strength level because of the influx of new RTTY ops. Instead of being geared to a bunch of gentlemen, the protocol is now geared to a pack of wolves. But it's still fun — or is it?

The recent Kingman Reef DXpedition brought out the good and the bad in everyone, so I must relate this little drama as seen from my viewpoint.

I had a mental picture of Kingman Reef because I had seen a slide show of the previous DXpedition to that tiny little sand pile in the Pacific. I have a QSL for CW from that operation, but I need it on RTTY. So, I watched for the RTTY operations to appear this time.

I finally heard them on 20M RTTY. I had a hard time deciphering what was going on because it was apparent

we had a greenhorn operator banging the "green keys" out in that rainy, wind-swept and gas-powered generator environment.

If you didn't see the pile-up he generated, take my word for it — it was a mess! I have never seen or heard anything to match it. When Bob Leo, W7LR, and I were DXing from Africa back in 1948, I thought I had seen everything, but the KH5 RTTY pile was a DX fan's nightmare.

The poor operator was trying to work "up," but the hog-pile didn't pay much attention to anything. They called him "up," they called him on his own frequency, and they called him ad infinitum. One ZL, for example, was transceiving, and he would make each call three or four lines long! The poor DX op didn't have a chance. It was the hog-pile supreme! Nobody listened; they just called and called.

Well, operator Stu, WA0MOE, must have tossed up his hands because he called K6EV and the two moved to SSB. Stu then asked K6EV to take a list for the following night at the same time period. I heard this on phone.

Now, I have never been a "list" fan, and I have long been a non-SSB operator; but I needed the new one, so I opted for the list.

Last fall I bought a new ICOM 761 transceiver. As an afterthought I bought a microphone, but I had never hooked it up. Now I needed it in a hurry if I were to get on the list. So, I made a frantic search for both the mike and the instruction book. I found the mike in a pile of junk, unplugged the RTTY gear, plugged the mike in, hurriedly check the instruction book, and made the list before it closed. Hooray!

The next night was a complete fiasco. On SSB, Stu told everyone the rules he was invoking for the list operation, then he switched to RTTY. I heard him make one little test transmission. The signal was good. I didn't hear anything more so I tuned back to the SSB frequency.

Stu was telling the statesiders that he couldn't get the TONO TU to work. For the next 45 minutes they conferred with Japan and the USA for help. Then, when nothing worked, the DX station went back to SSB'ing the waiting mob on that mode.

The following night I was there again. I heard them fairly well. However, the signal from the reef was dropping and it was hard to understand what was going on on SSB. But I did manage to hear that they finally got the TU to work and were ready to run the list. I got really excited and tuned down to the RTTY portion of the band.

Stu began calling the listed stations. Most answered, and Stu gave them their 559 message. I saw my call come on the screen. I hit the keyboard and sent my call sign three times and the signal report "599" (a bold-faced lie) twice.

Back came Stu with this little bomb, "NEGATIVE." Then he politely gave me a second chance. I called again. The answer came back simply: "NEGATIVE," and he then called the next station on the list. I was dead in the water. Good bye KH5.

So, my first time on a "list" was a complete failure, the tears are still flowing down my cheeks, and I keep wishing I hadn't bought that damned microphone!

Eavesdroppings

CORRECTION ON MY ANTENNA, IT'S A HALT WAVE VERTICAL ... STANDBY AND I'LL BURN IT BACK TO YOU ... I AM VERY NERVOUS AS THIS IS MY FIRST TIME ON RTTY AND I THINK I FORGOT MY NAME ... I'VE BEEN ON RTTY LONG ENOUGH TO BE REAL BLAZAY ABOUT SPELLING ... I'M TAKING TIME LAPSE PICTURES OF THEM BUILDING THE POOL IN MY BACKYARD ... THIS IS GETTING LONG-WINDED SO I WILL STOP AND CATCH YOUR BREATH ... MY QTH IS IN THE VERY PICTURESQUE BECKLEY ALLEY ... I RAISE KIDS HERE, BUT NO GOATS ... I AM USING A KEYBOARD AND GETTING TIRED, SO I WILL SAY 73 AND GO TAKE A NAP LIKE THE GROUNDHOG ... I'M LOOKING FORWARD TO WARM WEATHER SO I CAN PUT UP A DIPOLE AND GET ON THE LOW BANDS BECAUSE I AM A HIGH FREQ FREAK ... MY WIFE IS ALL FOR PACKET RADIO — SHE WANTS ME TO PACK IT AWAY ... THE ANTENNA IS A HORIZONTAL LOOP SHAPED LIKE AN OCTAGON BUT MORE LIKE A CIRCLE ... MY KEYBOARD KEYS ARE TOO SMALL FOR LARGE FINGERS ... BOY, THE BAND IS IN BAD SHAPE, YOUR QRM IS COMING FROM HALF WAY AROUND THE WORLD ... JUST REMEMBER A HARD DISK IS CRASHABLE, AND IT WILL ... I'M AT THE POINT IN CW WHERE I CAN READ IT FASTER THAN I CAN WRITE BUT TOO SLOW TO COPY IN MY HEAD ... THE TU HERE IS A SACKRATT ... WOULD LIKE TO WORK YOU ON THOSE OTHER MODES, BUT CAN'T FIND THE MIKE OR THE KEY ... I HAD A BAD DREAM THAT ALL THOSE KH5 LOGS GOT WASHED INTO THE OCEAN ... CONGRATULATIONS ON YOUR RIG, IT MADE IT THROUGH THE LAST XMISSION ... STOP THAT NONSENSE CALLING EACH OTHER LIDS, YOU LIDS ... I KEPT CALLING UP2LID UNTIL I REALIZED IT WAS A "LID MANAGER" WITH A LOUSY FIST ... I LIVE OUT IN THE STIX AWAY FROM TOURISM ALOHA IN HEAVY SYRUP ... SORRY BUT A STRONG STATION KNOCKED OUT YOUR VERY STRONG STATION ... I CAN'T FIND ANYONE TO RAG CHEW WITH ON PACKET ... MY FAVORITE KEY IS THE QUICK BROWN FOXY ONE ... RTTY DX IS A HOBBY THAT COULD START A CHEAP WAR ... LET'S FACE IT GUYS, HE DOESN'T LIKE RTTY SO HE WENT BACK TO SSB.

Thanks to N3FKS, W0HAH, W0PCI, and a batch of others. 73 and happy hunting de Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 58103. Packet W0LHS @ 58103. DIT DIT. □

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10's Supply Manager

One of 10-10's volunteers, Dave Prichard, KA5OVO, 10-10 #37297, provides 10-10 with a service that most members do not even know exists. He is responsible for the printing, storing and shipping of all of the supplies that 10-10 uses. This consists of about 26 different items, from the Congratulatory Letter that new members receive to various certificates, membership cards and every other supply that keeps 10-10 running as a smooth organization.

Just how big a job is Supply Manager? Dave gave us some insight into his operation recently, and here is what it takes to keep 10-10 in supplies.

First, a room about 6′ x 6′, stacked floor to ceiling with supplies. Since Dave took over the job in August 1987, he has shipped out about 5,000 New Member Certificates and about 8,000 Membership Cards, just to name a few.

Dave says he gets from eight to 10 requests for supplies each month from the various 10-10 officials who are authorized to use the supplies Dave stocks.

With all of his 10-10 duties, does Dave have time to get on 10M? You bet he does, and he spends 25 to 30 hours a week on the radio. In addition to looking for new 10-10 numbers and new 10-10 DX countries, Dave is also Vice President of the Bay Area ARC, Certificate Manager for the Doll Chasers Certificate and is an ARRL VE. He has reached the 1800 Bar in collecting 10-10 numbers, has 10-10 Worked All States, 10-10 Worked All Continents, and has the 10-10 Countries Award with the "35" countries sticker. Dave says, "The best thing about Amateur Radio is the friends you make, and the friendliest folks are on 10M."

Dave's XYL, Jeanine, is also a ham with the call KA5SHP and 10-10 #41496. Together they put out mobile contacts as an XYL/OM team on 10M. At the home QTH in Houston, Texas, the Prichards use a Kenwood TS-430S and a Mosley TA33 beam antenna, and Jeanine keeps busy with their three harmonics. Dave and Jeanine are just another family of dedicated 10-10'ers, without whose help there would be no 10-10 organization.

Dave Prichard, KA5OVO, 10-10 #37297, 10-10 Supply Manager.

Update on the new bylaws

The Planning Committee has finalized the new 10-10 Bylaws and presented them to the Board of Directors, who have approved them. They are scheduled to be voted upon at a general membership meeting on Sunday, May 15 (the weekend after this is being written).

From all indications, the membership will approve the bylaws as amended and approved by the 10-10 Board of Directors. The committee, consisting of Norm Lefcourt, W6IRT, Morrie Goldman, W6EHM, and Gerry Gross, WA6POZ, received over 50 letters — many from overseas — with comments and suggestions relative to the restructuring of 10-10.

The committee reports that most suggestions were well thought out and appropriate, and were very useful in finalizing the revisions to the bylaws.

The committee reported that, when adopted by the membership and when they become effective, the new bylaw will provide for much more participation by the membership at large, and election of officers will be accomplished by ballots by mail. We will go into more details of the new bylaws next month.

1988 Winter QSO Party results

A total of 778 logs were received by the City of Lights Chapter of 10-10, which provided the scoring of the 1988 Winter QSO Party. The high score was turned in by Lonnie Movius, NT6B, 10-10 #39086, of Perris, California, with 840 contacts and a score of 1,469 points.

Second place went to Melvin Lehmann, KW7E, 10-10 #35635, of Phoenix, Arizona, with 628 contacts and a score of 1,091 points.

Third highest score was won by Gerald Carpenter, WD6EKO, 10-10 #40151, of Fresno, California with 522 contacts and a total score of 921 points. The top three foreign stations were: LU1ABT with 856 points for overall DX winner, PJ2WG with 610 points for second, and ZS1DL for the third place DX winner with 415 points.

The Fort McHenry Chapter was the winner in the chapter competition, with 68 logs submitted for a grand total of 10,999 points. The City of Lights Chapter ran a distant second with 61 logs submitted, but with only 6,921 points. The Houston Shot Chapter finished in third place with 28 logs submitted and 4,570 total points.

A big thank you to the City of Lights Chapter for all of their effort in providing the scoring of the 1988 Winter Phone QSO Party logs. Jerry Frieders, W9ZGP, 10-10 #12847, says they will be looking for 1,000+ entries from the Summer Phone QSO Party. Harry Syring, WB1FTQ, 10-10 #23934, has scheduled the Summer Phone QSO Party for the weekend of August 6-7. Mark your calendar and join in the fun.

If you are interested in learning more about 10-10 or would like to have your own 10-10 number, a "green stamp" ($1) to me at 18130 Bromley St., Tarzana, CA 91356-1701, will get you all the information you need including a copy of the latest issue of the *10-10 International News*, the official publication of 10-10. Best 73 es cu next month. □

DX activities

The following information was gleaned from many sources.

Guantanamo/Cuba: KG4JO to get on 6M. Dave, KG4DJ, said their radio club may replace the defective SMIRK-owned Clegg Venus. Cuba may be on 6M soon.

Grenada: Several J37's are active or want to be. Jim Langdon, J37AE, may try 6M. Don Atkinson, J37AH, will have a rig provided by Bill Sheedy, K1ZFE. J37LC needs 6M gear. J37PD is no longer active.

Falkland Islands: Fred Simpson, VP8PTG, doesn't have the SMIRK/Joe Picior, WB4OSN-provided Swan 250 yet. It wasn't taken to VP8, for some reason. Fred is to visit Bob Anderson, G4RHA/VP8BKK, in England during June and will take the rig back with him.

Faroe Islands: Jan Dam, OY9JD, is reportedly active on 6M.

Greece: "Costas" Konstantinos Fimerelis, SZ2DH/SV1DH, apparently still has his special 6M experimental license.

Jamaica: Wenty Bethune, 6Y5IC, seeking 6M gear.

Madeira: Several CT3 stations are active now.

Nicaragua: TELCOR gave SMIRK's FT-620B back to Jose Cespedes, YN3CC, with listen-only permission. We hope he can start transmitting soon.

Paraguay: Malcolm Jenson, ZP5RG, says ZP5JPL is active on 6M.

Resolute: Cornwallis Island, NWT, CI8CW, (same as VE8, counts toward Worked All Canada (WAVE) Award), (Grid ER-20?). Joint Canadian-Soviet Trans-Polar SKITREK to be active on 6M with 150W, through the courtesy of well-known 6M enthusiast, Andy McLellan, VE1ASJ. QSL to Jim Wade, VE1DH.

Grid DXpedition

The Hill Country Club of UHF/VHF Practitioners (HICCUP), The Texas Armadillo Wranglers, Goat Ropers & Bull Shippers Association — of which I am a charter member — will be operating from Pat Rose, W5OZI's ranch in DM90 during the CQ VHF WPX Contest again this year. Operation should be on 6M, 2M and 432 MHz.

DX reports

Bill Allen, W7US, worked Guido Rosillo, HC8GR, Galapagos Islands, on March 28, 1988, after working New Mexico stations on backscatter, followed by a contact with Katashi Nose, KH6IJ!

Bob Autry, WY5L/KH3, worked 10 JA's on March 30, 1988. On April 3, he worked VK's, KG6, P29, FK, H44 and VS6! He also heard VK9NI/KH1.

Raj Singh, 3D2ER, Fiji, recently worked JA's and KH6. Michael Prakash, 3D2MP, is also active.

Tom Moore, HL9TM(W7KMA), using a 5/8-groundplane at 130', recently worked H44, HL, VK and P29. He and Ken Keehner, HL9CB, are the only active 6M HL9's. Tom uses the IC-575A and Mirage A1015. Ken uses a 2M multi-mode into an MMT 50/144 transverter and 2-element quad. Tom should be in Korea until mid-1989 or 1990.

There are only a handful of CW/SSB HM's on 6M. They listen/scan 50.1-50.150. On FM — 51 MHz, where the JA's are. Packet (at 1200 baud) — 52.560 MHz. Tom hopes to have his HL9SIX beacon on 50.073 by this summer.

Lionel Curling, VK3NM, saw the worst summer Es season in the many years he has been active on 6M. The same is said by other ZL's and VK's. It started about a month late.

From November 13, 1987 to February 28, 1988, he worked into VK2, 4, 5, 6, 7, 8, ZL's and FK1. On December 17, while using an IC-502 from the back window of his car, N.L. Doak, ZL4TKT, worked Lionel! I did a similar thing on April 12, when I worked three LU's with an IC-502. Those 502's are amazing!

Eric Jauch, FOØAQ, says that on April 3, he worked VK9NL/KH. On the 11th, he worked good Es to 35 JA's, and Al Pacheco, KH6IAA, who he heard working Michael, 3D2MP. Eric uses an IC-560, and a 2-element Swiss quad.

Hal Lund, ZS6WB, reports that March 9 brought the first South Africa/European contacts in months. The Malta 9H1SIX and Cyprus 5B4CY beacons were first heard by ZS6's about 1500 UTC. By 1630 UTC, the 5B4CY beacon was 30dB over S9 in Pretoria.

A report was received via 28.885 that Jeam Pelardy, F5GZ, in Cannes, was hearing the ZS's S7. At 1730 UTC, P. Galea, 9H1BT, appeared calling QRZ. Hal Lund, ZS6WB, L.G. Dale, ZS6XJ, and S.D. Harmsen, ZS6XL, made contacts before he faded out.

March 12 brought Costas, SZ2DH, who made contacts with Hal, ZS6WB, A.L. Mynett, ZS6BMS, and P.T. Nell, ZS6ADH. Etienne Swart, ZS6CE, received a report that he was being heard in Nice, France! On March 14, Kosie, ZS3E, heard 9H1SIX and CTØWW beacons at 1800 UTC. 9H1BT was heard calling CQ, but disappeared. Both 5B4CY and 9H1SIX beacons were monitored by Hal, ZS6WB.

Kosie reported good signals on March 21 from 9H1SIX (1238 UTC-559), CTØWW (1300 UTC-599), SZ2DH (1320 UTC-559) and on the 24th from CTØWW and 5B4CY. March 31 brought the 5B4CY beacon in again, heard by L.G. Dale, ZS6XJ, 1431-1450 UTC.

Equipment reviews

I had expressed some concern to AEA Marketing Director Mike Forsyth, N7KQE, regarding the price of their new 6M SSB/CW HT. He replied

that with the cost of duty, shipping, dealer margin and the exchange rate, they cannot offer this unit for a lower price. He hopes this will not significantly affect the demand for the unit.

By the way, several of us worked Jimmy Treybig, W6JKV/5, on his Mizuho MX-6S HT while he was visiting here. It put out a respectable signal from its vertical antenna.

This month, I will review Kenwood's TS-680S, which I now own. It costs about $954 and is well worth the wait. I will not go into many of the technical specifications in the interest of saving space. You can get them from your local dealer.

It is an all-mode, 30-memory, 100W (10 on 6M) transceiver that covers from the AM broadcast band to 60 MHz. It has: F.Lock, locks frequency and mode; M V, memory transfer to VFO; M.IN, enters memory channel data; VFO/M, switches between memory or VFO; several different scan modes, such as Standard, Split and Programmed Band scanning. Each has 10 memory channels.

When you switch modes you receive a CW ID of the first letter of the mode you switched to — a definite help to the sight-impaired. Unfortunately, you do not get an audible readout of the frequency you are on.

You have semi or full break-in on CW. Power output is adjustable. The same applies to mike and RF gain, and the noise blanker. The latter has two buttons; one activates the Woodpecker noise blanker when needed. I have found the noise blanker to be nearly as effective as the one in my old Yaesu FT-625-RD, which has one of the best! The meter serves as an S meter, wattmeter and ALC indicator (switch selected). It has RIT and IF shift controls. It has a 1 MHz button that will allow you to step from the AM broadcast band to 60 MHz in 1 MHz steps. It has UP/DOWN band switches.

There are many features I like. One is the tuning knob which can be adjusted for the type of drag you like. It has Fast/Slow AGC selection. There is a built-in pre-amp that works from 21.5 up (12M, 10M and 6M), which is a definite plus. There is also a built-in 20dB attenuator selectible by push button.

On the rear deck there are: receptacles for the antenna, ground, DC power, ACC 2 jack for a packet radio TNC, ACC 1 jack, key jack, VOX controls (no built-in VOX. Buy the VOX-4 accessory), ACC 3 terminal for an AT-250 automatic antenna tuner, and remote keying jack for power amplifiers.

When using the AT-250, the TS-680S — like the TS-430 — *WILL* automatically tune up each HF band when in the automatic position. This has been verified with Kenwood, and may be contrary to what dealers tell you. The AT-250 manual only specifies automatic tuning for the TS-430, but the book was written long before this rig came out. The tuner does *NOT* work on 6M.

The mike provided is a hand mike with UP/DOWN switches. You can select certain frequencies you operate, but don't want to scan and lock them out very easily. I use Band and Program scanning a lot. I program scan between 50.1 and 50.2, and band scan the main beacon frequencies, and spot frequencies between 50 and 50.2 MHz. Once you learn how to enter, change and delete frequencies, and to use the A/B, Split and A=B buttons it becomes easy to operate.

You must keep the noise blanker level to minimum during heavy activity on the band or it will cause distortion in the receive audio. The book tells you this.

There is much more I could say, but don't have the space. I am very pleased with mine. Suffice it to say that if you are looking for a new rig that will run 100W out, cover HF and 6M, will not cost you over $1,000 and works like a champ, then this one is for you!

SMIRK now has a Yaesu FT-620B and a Swan 250 for overseas loan. Call me if you have a good candidate for both.

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

We received a lot of positive response about the May QRP column dealing with VHF QRP operation, so we're going to re-visit that unexplored territory of VHF QRP. This month we are going to show you how to modify an IC-202(S) to add an ARR pre-amp. We are also going to review the CCI 2M linear amplifier kit.

Most QRPers are real scroungers (no, not scroungy . . .). Absolutely nothing is thrown away, and everything has some value for a project "someday." Hence, the QRPer's junk box is chock full of goodies that would make a salvage yard worker drool. Being a scrounge myself, I can identify with the aforementioned portrait (and so can Tricia, my wife!). My basement is chock full of electronic goodies, for my "someday" projects. That's how I ended up with an IC-202 that "someday" I would make into my VHF QRP station.

The disaster that resulted when I tried, unsuccessfully, to compete in the January VHF contest using my unmodified IC-202 and a small Yagi, moved me to explore the various possibilities of improving the radio. I deliberately tried to keep costs down while getting the maximum improvement in specifications.

The first problem to tackle was the deaf receiver in the IC-202. Remember, this radio was produced before great advances were made in VHF/UHF receiving devices. The addition of a VHF pre-amp was mandatory.

I chose the Advanced Receiver Research (Box 1242, Burlington, CT 06013) Model P144VDA, which gives 15dB of gain with a noise figure of <1dB. This pre-amp is a dual-gate FET device that is very tame. The only way I found to install it was to mount it physically inside the IC-202 case. Problems arose when I tried to shoehorn the pre-amp into the IC-202 case. Guess what? There isn't a whole bunch of room inside the case!

Problem #1: where to put the pre-amp. After trying various places throughout the transceiver, it was obvious that in order to properly install the pre-amp inside the case, I would need to pull out the battery case and mount the pre-amp on the back side of the main circuit board, where the battery case previously resided.

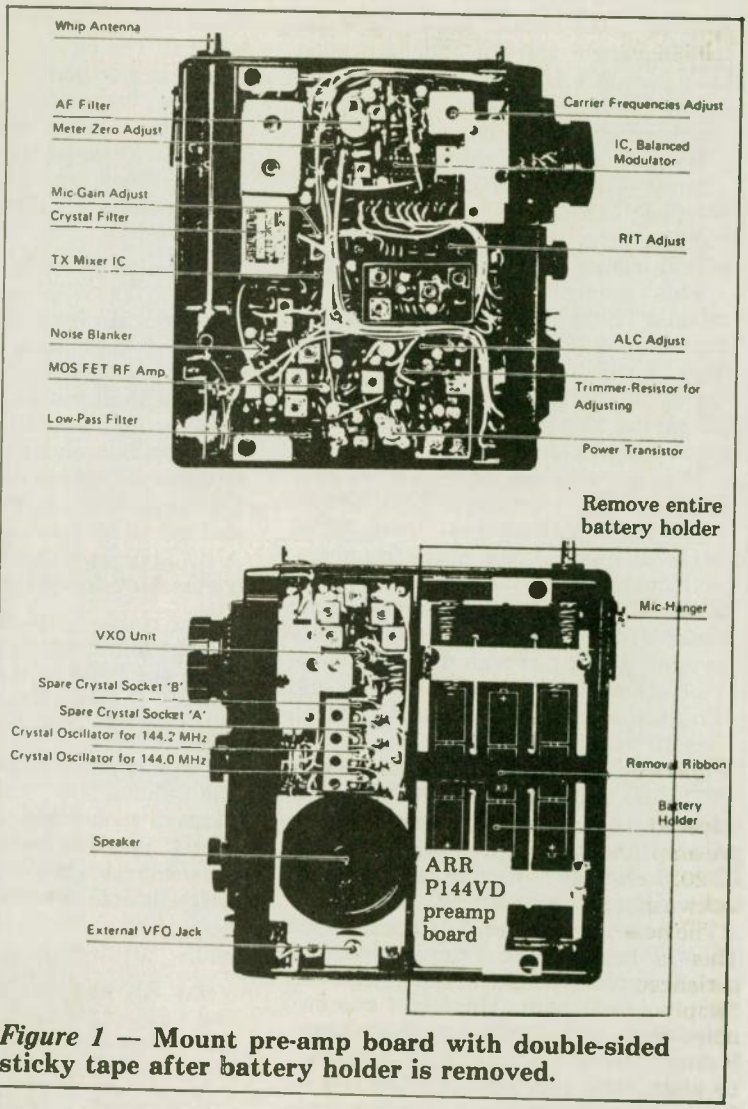


Figure 1 **— Mount pre-amp board with double-sided sticky tape after battery holder is removed.**

The battery case takes up almost half of the underside of the chassis. Pulling it out was not difficult — just a few screws and the whole assembly pops right out.

The pre-amp board was stuck to the bottom of the case frame (see *Figure 1*) with double-sided sticky tape. Power was taken from the positive side of the power plug and routed to the underside of the chassis via a convenient hole next to the antenna connector. The input/output coax cables (RG-174) were also routed through this hole.

Input to the pre-amp was taken at diode D-25 on the main board (see *Figure 2*). There is a piece of gray subminiature coax that connects at this location and runs about 2" across the top of the main board where it terminates behind coil L1 (see *Figure 3*). This coax is removed and the input coax connected from circuit board pads at D-25 to the input of the pre-amp.

Output of the pre-amp is routed back to the L1 location, where it is soldered onto the board pads behind L1.

WORD OF CAUTION: In order to solder the coax to the PC board pads behind L1, you are going to have to remove the front panel, speaker and VXO unit PCB in to gain access to the underside of the main board. This is a simple process, but it is time-consuming. Don't rush it and you'll do fine.

This completes the installation of the ARR pre-amp. Oops . . . almost forgot the ground. A ground lug is

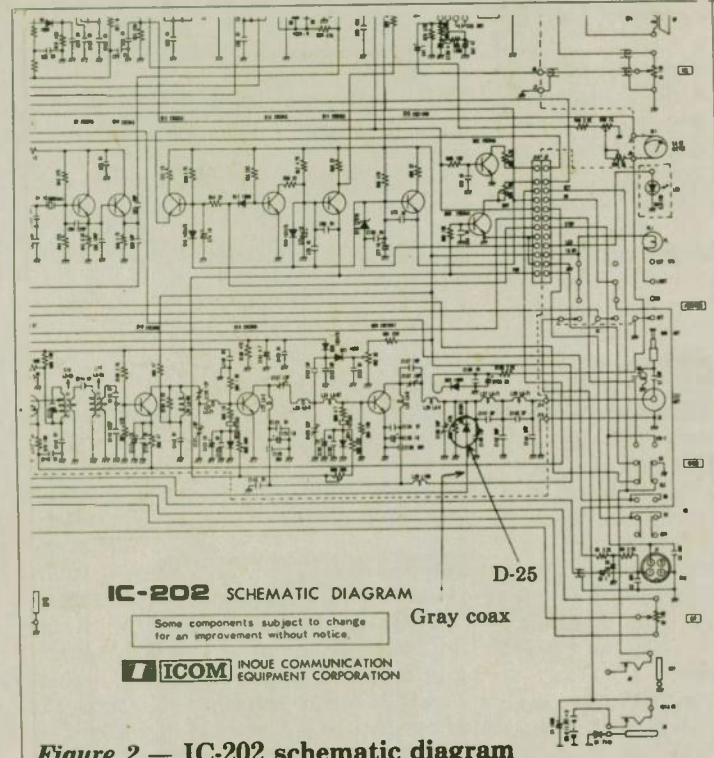


Figure 2 — **IC-202 schematic diagram**

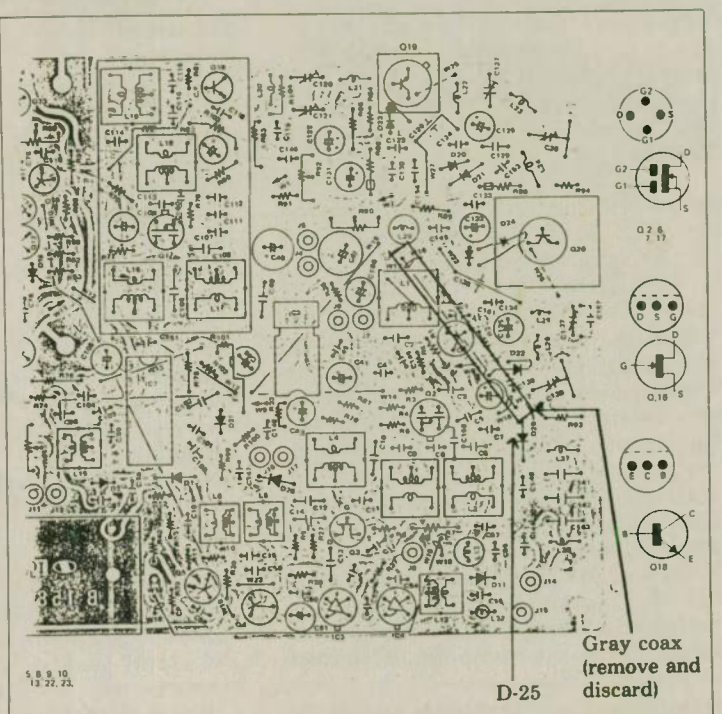


Figure 3 — **Pad at D-25 will be used for pre-amp input. Pad at L-1 will be used for pre-amp output.**

soldered to the groundplane on the pre-amp and then terminated on the IC-202 chassis with a screw and lockwasher in a nearby hole.

The next step is to tune the pre-amp. This is best done by someone experienced in tuning VHF circuitry. Simply peaking the preamp for max noise does not insure that the pre-amp is doing the best job it can. It is better to align the pre-amp by using noise figure measurements at a given frequency. This assures that the most gain for the least amount of injected noise is being realized.

The alignment of my pre-amp was done by Jerry Rodski, K3MKZ, who has forgotten more about VHF/UHF techniques and operating than I'll ever know.

With the pre-amp perking along, the difference in the receiver characteristics was dramatic, to say the least. With the pre-amp included inside the IC-202 case, no extra wires or coax protrude, enhancing the looks of the rig and drastically reducing the chances of a problem with the input/output connections to the IC-202 receiver.

The loss of the battery case was no big thing, since I use the IC-202 with an external 12V supply (or battery) all the time.

Now, on to the other major problem: getting a potent QRP signal on the air. Antennas or amplifiers? Both have their pros and cons, but a combination of both is an intelligent approach.

Absolutely nothing replaces a good, efficient antenna system. Notice I said system. Just having an antenna with a 13dB gain figure does not a good antenna system make. VHF operation is very height-sensitive. The higher you can get the antennas, the better you will get out. That's a fact of life at VHF.

Generally, the more elements, the

longer the boom and the higher the array, the better for VHF. A set of Cushcraft 11-element 2M beams fed with good quality coax (RG-213 or 9913) will get you on the air in adequate fashion.

Remember, when you stack a set of these VHF antennas on top of your existing HF beam, your windloading will increase dramatically.

WORD OF CAUTION: Figure the increased windload and take appropriate measures (extra guys, bigger rotor, etc.). Your new antenna system does you no good if it is laying in a twisted mass of aluminum at the bottom of the tower after a high wind.

Amplifiers have a place in the VHFer's shack. Operating during marginal band conditions, working auroral openings, emergency operations and net operations over a long-haul VHF path all warrant the use of an external amplifier. With that in mind, choose your amplifier with care. A little planning here will go a long way. There are many 2M amplifiers on the market, but the key here is to find one within your price range and of *moderate* power output (25 and 50W).

The Communications Concepts, Inc. (121 Brown St., Dayton, OH 45402) Model 335A-K, 2M amplifier kit, which I received for product review, is a very good choice for the QRP VHFer. The CCI kit is well thought out and uses quality parts. This kit is for an intermediate kit builder. The key is to take your time, do not be tempted to work too long at any one time, and do quality work. This will pay off during power-up when you find the thing actually works the first time!

The CCI amp is quite small, measuring 6″ x 3.75″ x 2.5″. It uses a single RF power device (MRF-240) that is driven with an input of between 200mW and 5W and will yield a power output of 5-40W. It is a true linear amplifier, which means it will work on FM, CW and SSB. The amp is biased class AB1 by a transistor biasing network.

RF switching is employed using a set of diodes and a pair of transistors to operate a relay by RF sensing at the input. RF Microstrip technology is used to simplify the construction and assure repeatable results on amplifier performance.

The CCI amp is a quality product made by Americans in America. It took me about four hours to build the kit. The only problem I had was a change in the PCB, which was not reflected in the manual.

Once a jumper was placed across the offending traces (which were not shown in the pictorials), DC voltage was then present at the RF sensing relay, and the amp worked fine. The biasing resistor tends to run *VERY* warm, but I have had no problems with the amplifier running continuously for several hours at a time. A stable DC supply that will put out about 6 or 7 amps is recommended.

Power output with my IC-202 as a driver is about 32W, which is more than enough power for my personal tastes. Price of the CCI amplifier is about $80. It's a good choice for the money.

All for this month, gang. Don't forget, National 2M Activity Night is every Monday evening. Get on 2 and give VHF QRP operation a try. 73, Rich Arland, K7YHA, 9 Vine St., Shavertown, PA 18708. □

Foreign paper money

Buddy Hincke, WA6LFJ, is looking for foreign paper money — either for free or trade. Those interested may write to him at 1854 East Bay Drive, North Bend, OR 97459. □

Where to get maps

It's often called "The Ham's Best Friend." It is the U.S. Geological Survey quadrangle map. The maps are available from Department of Natural Resources, Division of Geology and Land Survey, P.O. Box 250, Rolla, MO 65401. $2.50 each for the 7.5 minute size. Indexes are free.
—*PHD ARA, Liberty, MO* □

Net bulletins

Your columnist receives bulletins from several nets regularly and finds them quite helpful in composing these traffic ramblings. Of course, much of the information they contain is of interest mainly to the active net members, such as births, deaths, marriages, anniversaries, new net members and profiles of net members. Also statistics, which often are not of much interest even to the members, I fear. But they often contain material that is of interest to other traffic handlers, or even to the whole Amateur Radio community.

Such bulletins generally serve to keep interest alive on the net, encourage members to take a more active part, and also serve as a soft-sell vehicle for training new members and for pointing out places where operating can improve.

Of course, it costs money to produce bulletins, and more — much more — to pay the postage. Few net bulletins boast of a circulation large enough either to attract paid advertising or to qualify for a reduced rate of postage as either second class or bulk rate third class matter. So the cost has to be borne by the members.

Nevertheless, if the bulletin seems to be serving a need, the support is usually forthcoming — usually in the form of voluntary contributions, although some groups set a fixed sum as subscription price.

Formerly, the monthly bulletin was the usual thing. But with inflation and the rising cost of postage, one issue every two or three months is becoming more common now, and it seems to be adequate.

But all the money in the world won't produce a bulletin without an editor, and usually someone has to be "volunteered" for the job — someone who has a typewriter or preferably a word processor, who is a capable writer, is experienced in net operations and in Amateur Radio in general, has the time to put the bulletin together, and has access to suitable duplicating equipment to produce the bulletin.

Fortunately, nets seem to have people that meet all these requirements,

sometimes to a remarkable degree, and most of the bulletins I've seen are quite competently produced newsletters. I said *most*, but offhand I don't recall having seen any I didn't like.

How to start one? Get together with the net manager and offer to produce a bulletin. Decide what you want to cover and the format you plan, gather enough material for the first issue, make sure the money is available for the postage, get a mailing list together and go to work. If the bulletin is any good, you'll probably get some help for the cost of the second issue.

A few things that help make a better bulletin: the names, addresses and phone numbers of the editor, treasurer, net manager, and anyone else readers might wish to contact should be prominently listed. The date of issue should also appear on page 1.

It's a good idea to do as **Worldradio** does: give *both* the name and the call sign of anyone mentioned. Include items of interest to outsiders, so that they see your gang is having a great time, and providing a service as well. That way, they will have an incentive to join the gang. A newsletter does involve work, but it is fun too, and can serve as a spur to a general increase in activity.

Ben White Day

Traffic Call — bulletin of the Hit and Bounce Net (handling traffic on 40M since 1938, except for the unpleasant early 1940's) — tells of the "Ben White Day" on January 25 of this year. It was the 25th anniversary of the death of Ben White, W4PL, traffic handler extraordinaire. He checked in on the net daily, and was usually the first one listed in the Brass Pounders League in *QST* . . . unless Mae Burke, W3CUL, happened to have a few hundred more that month. Ben's slogan was traffic — any amount, anywhere, any time.

The Hit and Bounce gang decided to list traffic addressed to W4PL on that day as a tribute to his memory. It came as a surprise when W4PL himself checked into the net and took the traffic, but this turned out to be neither a ghost nor a bootlegger. It was a legitimate call sent by a legitimate operator: Hack Van Hooser, K4KP, operating the Chattanooga club station which now has the call W4PL. Hack was using Ben White's old bug to key the transmitter.

Patriot State

Jim Hatherley, WAITBY, reported in his March/April and May/June issues of *The Networks*, on the training voyage of the *Patriot State*.

Brian Churchill, N1BBT, provided the cadets with contacts with the folks back home. Jim wondered where Brian found time to handle all that traffic.

The radio amateurs involved hope that the cadets' exposure to the benefits of Amateur Radio for seafarers will encourage many of them to use it themselves when they become officers aboard merchant ships. Jim says it's possible there may be another cruise in the summer, but at this time that is only conjecture.

Jim also tells us in the May/June issue of a trial being conducted by the Coast Guard of the NAVTEX service along the East Coast of the United States, with plans to begin operations on the West Coast later this year. This will be of interest to sea-going amateurs.

In summary, NAVTEX is a system for transmitting navigational warnings, meteorological warnings, ice reports, messages concerning radionavigation aids, and other information that could be included in the term notices to mariners. These are broadcast on the frequency 512 kHz, and can be received by nearly anyone with a stable receiver and AMTOR capability.

The stations avoid mutual interference by time-sharing the frequency and by limiting the power to that needed to cover the service area of the station, extending to about 200 miles offshore. Each station transmits four times daily.

Commercially built receivers for this service have the capability of selecting the messages the skipper wants and printing only them, except that the receiver will not reject navigational and meteorological warnings. These are always printed.

This is only a brief summary of the system — just something to bring it to the attention of our maritime mobile operators. You can get the same information without the AMTOR gear by listening on 500 kHz, especially at 18 and 48 minutes past the hour (the end of the silent period), for urgent messages, and at scheduled times for routine messages, when the Coast Guard's radiotelegraph coast stations broadcast it.

The more urgent messages will be announced by the call TTT and will be transmitted on 500 kHz, while the more routine will be sent on the station's working frequency after an announcement on 500 kHz. CW isn't dead yet! □

Please send **NEWS** and **PICTURES** to *Worldradio*

I was 12 years old when I first met my Elmer, George Sharp. It was 1951 and my school buddy Ronnie Anderson (now K6BKT) and I had put in a wire line across three vacant blocks between our houses along the Texas Gulf Coast to send code to each other. But road graders kept tearing up our wire buried under the oyster-shell road.

So we had gone "on the air" with spark coils and shortwave receivers — until, that is, a ham told us that such broadcasting was illegal! Thus we found ourselves going to George's house every week to learn enough to pass the test for the then-new Novice license. (It's a tribute to our dads that they drove us each week some distance to George's place in a nearby town. My dad also later helped me put up a homemade, full-size 20M beam — there weren't so many in those days — that dwarfed our house.)

One incident I recall was the week I proudly showed George a cigar-box "2M crystal set" I had tried to build. I recall the kind smile on George's face as he gently explained why the long wires strewn around my cardbox prevented it from working at such high frequencies. Ronnie and I went on to get our Novice tickets, among the first in the area as I recall, becoming WN5TGB and WN5UUK. After six or eight months, we finally passed the General exam (algebra is tough on 12-year-olds!) and I became W5 "Ugly Ugly Kid."

I recall another time, some years later, when we helped set up George's ham gear in his hospital room for an extended stay. There was no way to open the window to put out an antenna. That didn't stop George, however, for he had us tape a 1′ square sheet of aluminum foil on each side of the windowpane. The inside piece was connected to the rig while the antenna wire led from the outside foil to a tree. It worked great and George spent many hours on the air while recuperating.

But the most interesting story I recall George telling was about the great Texas City disaster. Shortly after World War II, a ship loaded with nitrogen fertilizer compounds caught fire and exploded at the dock by an oil refinery in Texas City. At that time, the city was comprised mostly of petroleum plants and their workers' homes. Soon each of the refineries was on fire and exploding. Large pieces of twisted steel were blown for miles by the intense explosions and many people were killed or injured.

George and a few other amateurs were among the first to reach the disaster area. They established an emergency communications center, but soon realized that more equipment would be needed. George drove back to his home, about an hour's drive away, and loaded up his car with extra gear, much of it recently acquired war-surplus radio equipment. When he returned to Texas City, however, he found the road blocked by soldiers. His explanations got him nowhere, for their orders were that no one was to be allowed into the disaster area.

George drove away from the city and stopped to think. As he looked into the back seat, covered by the badly needed communications equipment, he suddenly realized that several pieces of the war surplus gear were still stamped with big letters "U.S. ARMY." I still can see the gleam in my Elmer's eye as he described to us boys how he rearranged the gear so that those letters were in plain view, and then drove around to another entrance of the city. Sure enough, there was another roadblock. George bore down at high speed on the Marine guarding the highway. The soldier stood his ground in the middle of the road, prepared to shoot. Screeching to a halt, our Elmer pointed to the back seat and yelled, "Emergency communications equipment!" The Marine took one look through the window and waved our hero on through.

The author, John Stanford, is now Professor of Physics, Iowa State University in Ames. After nearly a quarter century off the air, he has recently become licensed again and is thoroughly enjoying hamming as NNØF. □

Old tubes wanted

Bill Welsh, W6DDB

Al Jones, K6DIA, collects and displays old vacuum tubes. He runs "Ye Olde Transmitting Tube Museum" in Crescent City, California. He is retired and invites people to view the tube display at his home (150 Tanbark Lane). His telephone number is (707) 464-6470.

The museum includes more than 900 tubes, but many types are not represented in the collection. The museum is registered as a non-profit organization, making tax benefits possible for tube donations. Donors are identified with displayed tubes.

Any direct shipment should be made via United Parcel Service. The ZIP code for the mailing address is 95531.

—Lockheed Employees Recreation Club ARC, Burbank, CA □

Troster

(continued from page 39)

coordinated with other national and international organizations, and argued his case before the Foundation Board.

Perhaps his greatest achievement was the NCDXF worldwide beacon project, which is now being used as a model by IARU societies for development of future beacon systems. Although many others contributed their time and labor to the beacon project, it was this man who was the spark plug, the visionary who convinced the NCDXF Board to fund the beacon project and who built up a team of experts to implement his concepts.

It was he who painstakingly identified the worldwide locations for beacons and negotiated agreements with the various beacon operators. It was he who personally typed out the applications and handled all special licensing procedures for the U.S. beacons at Stanford University and worked directly with the United Nations to obtain their approval for the beacon at 4UIUN. He is, in fact, the father of the worldwide NCDXF beacon project.

Please join me in welcoming John G. Troster, W6ISQ, as the newest member of the DX Hall of Fame. □

AERIALS

Lil Paddle

Amidst much weeping, wailing and gnashing of teeth, one hears, "I can't work the phone and CW bands of 80M because of the high SWR." How many times have you heard that plaintive cry — or even said it yourself?

Well, it's all nonsense! A recent magazine article fueled this madness by talking about an SWR of 8 to 1 on the band edges with an 80M antenna cut for the middle of the band.

While there are those who feel that the slightest flicker of SWR will result in either their soul wandering aimlessly through eternity and/or their Rag Chewers Certificate being taken away, we say — *SO WHAT!*

It is now time for reality to raise its ugly head. For the sake of illustration: You are feeding your 80M dipole with 100 feet of RG-8/U Foam. The loss in 100 feet at 4 MHz is .3 of a dB.

Now, a feedline with a loss of .3dB and an SWR of 10 to 1 has a mismatch loss of a "gigantic" 1dB. Yes, 1dB — about one-sixth of an "S" unit. See why we say "so what?"

Your little old tuner does its matching job, and no one can hear the difference!

This nuttiness about SWR has led to such bizarre hammy stuff as one amateur crying out loud (and a major magazine printed it) about the fact that his neighbors are complaining about his nine dipoles. He really only needs *ONE!*

Yes, only one. All bands. Put up your dipole and feed it with open wire.

Hah! you are saying. How do I get that open wire into the house? Well, just tack on 6 or 10 feet of coax to the open wire, and you are in the house just like what you ordinarily do.

"Horrible mismatch," some folks cry. *You* don't care! First, the open wire — for all practical purposes — is lossless. And how much loss, at *any* SWR, is there in a few feet of coax? (Purists may wish to use a balun.)

This SWR madness over 75/80 has resulted in one company marketing an antenna which it claims will cover the whole band — price: $230. No, this is not a self-supporting 1/4-wave vertical; this is a dipole!

Should you disregard all the above, and the fact that I've given you an every-band antenna, and are still searching for the magic of absolutely no flicker on your meter, build the following for about $30. I'll have saved you $200, and you can split it with me. Make out your check to IMRA, HANDI-HAMS, ARRL Foundation, *Auto-Call* Scholarships, QCWA or your favorite Amateur Radio organization, and I'll send it on to them.

Buy about 136 feet of eight-conductor rotor cable — get the thickest wire version.

You now have eight wires. You could cut them for, say, 3.500, 3.570, 3.640, 3.710, 3.780, 3.850, 3.920 and 4.000.

Using the "468 divided by the Frequency mHz" formula, the lengths would be 133.7, 131.1, 128.6, 126.1, 123.8, 121.5, 119.4 and 117.0.

But for those of you who put on magnifying glasses so you can cut antennas to the nearest half-milli-meter and believe there is some magic resonance because antennas "vibrate" like a tuning fork, we'll carry this to the ultimate absurdity. (See charts.)

Factor .9811049		Factor 1.0192590	
1	4,000.0000 kHz	1	3,500.0000 kHz
2	3,924.4196	2	3,567.4065
3	3,850.2672	3	3,636.1111
4	3,777.5160	4	3,706.1389
5	3,706.1394	5	3,777.5154
6	3,636.1115	6	3,850.2665
7	3,567.4068	7	3,924.4187
8	3,500.0002	8	3,999.9990

Chart A

Top to bottom 4,000.0000 Minus kHz	Wire length	kHz
3,924.4187 - 75.5813	+ 2.25333	33.54
3,850.2665 - 74.1522	+ 2.29669	32.28
3,777.5154 - 72.7511	+ 2.34093	31.07
3,706.1389 - 71.3765	+ 2.38602	29.91
3,636.1111 - 70.0278	+ 2.43196	28.79
3,567.4065 - 68.7046	+ 2.47881	27.71
3,500.0000 - 67.4065	+ 2.52654	26.67
500.0000	16.71428	

133.71428 − 117.0 = 16.71428 ft. Average 29.91 kHz per ft.

Chart B

Bottom to top 3,500.0000	Plus kHz	Minus ft.	Ft. per kHz
3,567.4065	+ 67.4065	− 2.52654	.0374821
3,636.1110	+ 68.7046	− 2.47881	.0360792
3,706.1389	+ 70.0278	− 2.43196	.0347246
3,777.5154	+ 71.3765	− 2.38602	.0334268
3,850.2655	+ 72.7511	− 2.34093	.0321772
3,924.4187	+ 74.1522	− 2.29669	.0309726
4,000.0000	+ 75.5813	− 2.25333	.0298133
	500.0000	16.71428	

Average .0334285 ft. per kHz

Chart C

The wire for 3,500 kHz is 133.71428 feet long. That's 133 feet and decimal .71428 of a foot, which (×12″) gives you 8.57136 inches. We now have .57136, which we apply against 16 (for 1/16″) and we come up with 9/16″. The antenna length is 133′8 9/16″.

The result of all this is: Having now built a frequency counter so accurate that you can call up WWV and tell them they're "a bit off" today, you can set your transmitter at 3.7061389 MHz and be really right on. Valhalla, your antenna is truly "humming."

Eureka! No more "I can't operate Phone and CW." But I wonder why I've done this. Because if all the 75 phone men go down to CW, we'll have to have a new CW abbreviation. Taking its place next to hihi, pse, tnx, fer, ur, r, ge and all that will be BG for "by golly."

Moving on to a new subject, there is a book out that tells you to lay out 120 radials, a ½-wavelength long. While that would be ideal for a vertical . . . for a Yagi, Quad, dipole, and we quote, "attached to the tower," the idea is pure hooey. (Kurt's had a deleterious effect on my language.) There's a much better way to spend the money that 4,000 feet of wire would cost . . . silver-plated coax connectors would be a good place to start.

Certainly, if you ran this radial system out maybe 20 wavelengths or so there might be a slight effect. To double-check this point, I called up my MIT friend on the phone and asked him about using the ½-wavelength radial for a Yagi, and his answer was "Balderdash!" □

End-fed ½-wavelength HF antenna

Ken Archbold, W6TMA

It seems that most amateurs use ½-wavelength antennas in a dipole configuration. It also seems that there is much confusion on feeding end-fed ½-wavelengths. The following are some thoughts on the subject.

First, as the old saying goes, a ½-wavelength is a ½-wavelength. It doesn't make much difference how the power is fed to the antenna as long as it is delivered. Dipoles are nice if the installation provides ready support for the weight of the feeders or coax, or a means of extending the feedline away from the radiator at a right angle — especially if it's vertical.

A ½-wavelength end-fed antenna, on the other hand, is fed at one of its anchor points, so the concern about the feeders is quite different. The big difference between the antennas is the feedpoint impedance. As we all know, the dipole is center current-fed and the end, voltage-fed.

Voltage feed implies high impedance (few thousand ohms) and current feed, low impedance — maybe 50Ω for a typical installation. Open-wire feeders can be used to feed either, but for this discussion, 50Ω coax is assumed.

Coax offers the convenience of neat routing in and around the shack and a pretty good impedance match to a dipole. Modern transceivers are designed to work into properly terminated 50Ω coax and thus, makes sense to consider all around.

Let's look at a 7 MHz end-fed wire. The length is standard cookbook and calculates to be 66′ to 67′. The impedance looking into the end of the wire is in the order of 3000 to 6000Ω. It depends largely on the height above ground and the diameter of the wire. For the sake of this discussion, an R of 3,600Ω will be assumed.

The characteristics of the antenna, as far as directivity and angle of radiation are concerned, are also cookbook. Information can be found in the ARRL Antenna or Radio Amateur Handbooks. A general rule of thumb is to get it more than a ½-wavelength above ground if possible, and assume maximum radiation is perpendicular to the axis of the wire.

Amateurs in the past (maybe present too, I don't know) end-fed ½-wavelength antennas with ¼-wavelength coax; ¼-wave coax is an excellent impedance transformer. One problem with this approach is that it is, by definition, very frequency sensitive. Another problem is that high voltages are encountered, and the voltage rating of the coax now becomes important.

A very satisfactory method for feeding the end-fed antenna without extra concern for the coax voltage rating — and, at the same time, obtaining an excellent match — is with an L-network.

I've heard people comment that ½-wavelength antennas are "hard to feed." I have found the contrary to be true. They are extremely easy to feed *if* a matching network is utilized. And the L-matching network is very easy to make; just a coil and capacitor — that's it.

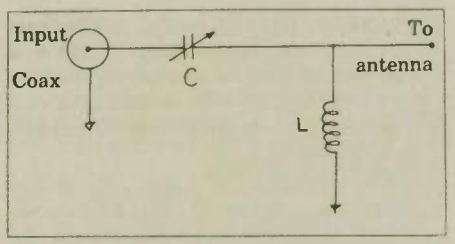


***Figure 1* — An L-network to transform the low impedance of coax to the high impedance of the antenna. A 1:1 SWR match is easily obtained at the specified frequency.**

Figure 1 shows the schematic diagram of an L-network. The coil and capacitor can be interchanged. Often the coil is placed from the antenna feedpoint to ground, as shown, in order to provide a grounded antenna.

Calculations for the various parameters are based on the following:

100W power into the L-network (most transceivers output power)

50Ω coax, terminated into 50Ω resistive

7000 kHz operating frequency

Variable capacitor with suitable voltage rating and inductor with adequate current rating.

Figure 2 represents an equivalent circuit of the network. The coil and capacitor can be interchanged without affecting the L-network function. Sometimes the mechanical mounting of the capacitor makes it more convenient to ground rather than the inductor. If this is the case and it is still desired to have the antenna grounded, a radio frequency choke (RFC) can be placed from the antenna terminal to ground.

Calculation of E_S:

$E_S^2 = P \cdot R = 100W \times 50\Omega = 5000$

$E_S = \sqrt{5000} = 70.7V$

Calculation of I:

$I = E/R = 70.7V / 50\Omega = 1.4A$

Given values:

$R_S = 50\Omega \quad R_L = 3600\Omega$

Calculation of E_L:

$E_L^2 = 100W \times 3600\Omega = 360{,}000$

$E_L = \sqrt{360{,}000} = 600V$

Calculation of coil reactance, X_L:

$X_L = 600V / 1.4A = 428\Omega \ (X_L \simeq X_C)$

Calculation of circuit Q:

$Q = 3600\Omega / 428\Omega = 8.4$

Please note that numbers are rounded and that calculations are close, but may not be exact. All results are within a few percent.

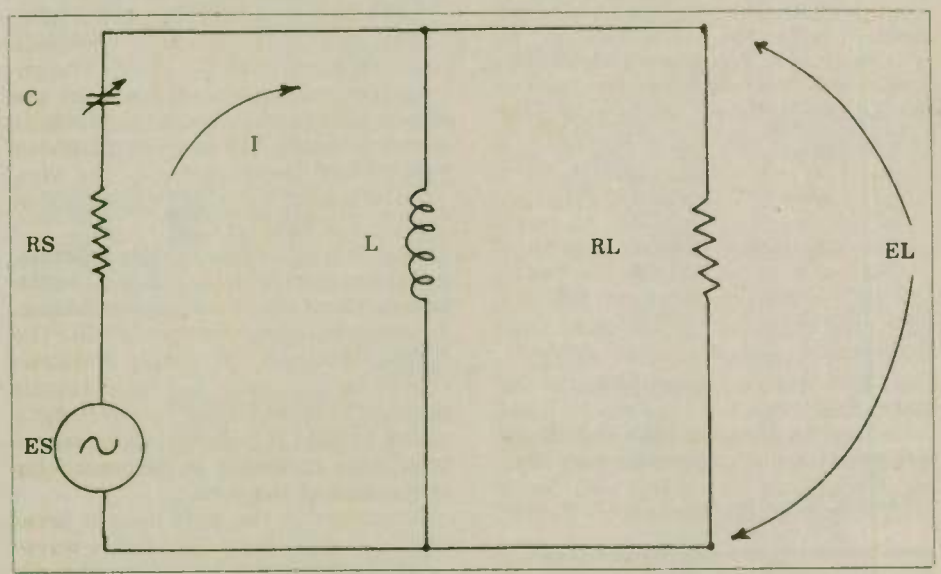


***Figure 2* — Network Equivalent Circuit. ES represents the power source (transceiver output voltage); RL represents the antenna load, EL is the voltage applied to the antenna, and RS is the low impedance (resistance) being transformed to high.**

Another way of calculating Q:

$Q = E_L / E_S = 600/70.7 = 8.4$

Since Q is quite low, the frequency where $X_C = X_L$ may not be the same frequency where the series resonant circuit is exactly resistive. This dif-

Alaska

The ARCTIC ARC will sponsor its annual hamfest/swapmeet on Saturday, August 27 at the Badger Building, Tanana Valley Fairgrounds, College and Aurora Roads, Fairbanks. Open hours are 9 a.m. to 5 p.m.

There will be exhibits and demonstrations, amateur exams and a flea market. Special features include refreshments and an activity table for children. There will be an evening dinner at a local restaurant. Admission is $1; children under 12 free. Swap tables available for $10; fee for commercial exhibitors negotiable.

For more information, contact Joan Soutar, NØAJW, P.O. Box 81389, Fairbanks, AK 99708; (907) 479-6224. □

Colorado

The SKI COUNTRY ARC Hamfest will be held Saturday, July 30, at the Colorado Mountain College Community Education Center, 1402 Blake Avenue, Glenwood Springs. Hours: 9 a.m. to 2 p.m. Swap tables, AMSAT and contest meetings, VE exams and snack bar. Free admission.

Talk-in on 146.07/.67.

Contact SCARC, P.O. Box 302, Carbondale, CO 81623; (303) 945-9342. □

Illinois

The DuPAGE ARC is sponsoring a Hamfest/Computer Show Sunday, July 10, at the American Legion Post 80, 4000 Saratoga, Downer's Grove.

Gates open at 8 a.m. Admission is $3 at the gate, $2 in advance. Features include outdoor flea market and swapper's row (indoor tables available; dealers welcome). VEC exams for all classes (please bring a copy of your license). Free parking, food and drinks.

Talk-in on 146.52, 145.250(-600), 224.55 and 442.55.

For tickets or reserved tables, send SASE to Hamfest Chairman, W9DUP, P.O. Box 71, Clarendon Hills, IL 60514, or call (312) 985-0527 evenings or weekends. □

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The FOX RIVER RADIO LEAGUE will hold its annual hamfest at the Pheasant Run Lodge located 3 miles west of Rt. 59 on Rt. 64 (North Avenue), St. Charles, on Sunday, July 17.

There will be hourly prize drawings, an indoor 26,000 sq. ft. air-conditioned commercial exhibit and flea market (doors open at 8 a.m.), plus an outdoor flea market (opens Sunday at 6 a.m.). Vendors and inside flea market set-up Saturday after 7 p.m.; Sunday set-up 6-8 a.m. Free parking for 2,000 cars, or fly in to DuPage County Airport.

VEC exams available (bring original and copy of license, plus $4.55 exact change or check). Tickets are $4 in advance, $5 at gate.

Talk-in on 145.470(-600) and 145.210(-600).

For commercial tables ($6 each), contact Kermit Carlson, W9XA, 36 W. 345 McKee Rd., Batavia, IL 60510. For advance tickets, send $4 and SASE to Phil Fors, N9FXQ, 104 May St., West Chicago, IL 60185. □

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The AMATEUR CROSS LINK REPEATER CLUB will hold its hamfest and banquet July 23-24 at the DeVry Institute of Technology, 3300 N. Campbell, Chicago. Set-up at 7 a.m.; doors open at 8 a.m.

Flea market sellers must provide tables for outdoor set-up. Commercial dealers set up inside with tables provided. Banquet price is $15 per person; Gordon West, WB6NOA, will be guest speaker.

Talk-in on 147.225, 224.480 and 443.700.

For tickets, send SASE to Peter Hughes, WB9EYR, 3315 N. Oakley, Chicago, IL 60618. For information call (312) 712-5100. □

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The ACLR/DeVRY Outdoor Hamfest will be held July 23-24 at the DeVry Institute, 3300 N. Campbell, Chicago. Doors open at 8 a.m.; set-up at 7 a.m.

Features include indoor exhibits, walk-in testing (Novice exams free), free parking, food and refreshments, prizes and banquet. Admission is $3 in advance, $4 at the gate. Banquet tickets are $15 each; banquet will be held at the O'Hare International Hotel in Schiller Park. Guest speakers will be Gordon West, WB6NOA, and Jim Georgias, W9JUG.

Talk-in on 147.225, 224.480 and 443.700.

To order advance hamfest and banquet tickets, send check and SASE to: ACLR, 3315 N. Oakley, Chicago, IL 60618; or call ACLR Information Hotline (312) 712-5100. □

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The HAMFESTERS RADIO CLUB announces its 54th annual hamfest for Sunday, July 31, at Will County Fairgrounds near I-57 in Peotone. This is a new date and new location for this year's event, marking the club's 55th year of service in the Chicagoland area.

Admission is $3 in advance, $4 at the gate; anyone over 15 years old must have a ticket. Features include ARRL/VEC examinations (contact David Brasel, NF9N, at 312/448-9432). Also prizes, manufacturers' displays and a swappers row. Commercial exhibitors will be inside air-conditioned building with convenient unloading and loading. Overnight parking, food and beverages.

Talk-in on 146.52 and 146.76.

For advance tickets, send SASE and check to Hamfesters Radio Club, 13058 Finch Ct., Lockport, IL 60441. For general information, contact John Schipitsch, W9BNR, same address, (312) 403-1043. □

A dollar won't do as much for people as it used to — and vice versa.

End-fed

(continued from page 61)

ference is very small and is noted only for general interest. ($X_L = 428$, but $X_C = 420\Omega$ is actual calculation.)

Calculation of the values of L and C:
NOTE: $2\pi f = 44.10^6 = N$
$C = 1/(N\ X_C) = 1/(N \times 428)\ 53pF$
$L = X_L/(N) = 428/N = 9.7\mu H$

Referring to *Figure 1*, add the values for the coil and capacitor; 53pF for the capacitor and 9.7μH for the coil. If exact values are not available, it will probably work just fine if the values are close because of the low Q.

Although this is not a construction note, let me just mention that the matching network assembly is very straightforward. Mount the capacitor and inductor in a metal box. Place a coax connector on one side and a feed-thru terminal on the other. Place the network such that the end of the antenna attaches to the feed-thru terminal. Adjust the capacitor for 1:1 SWR, and you're *on the air.*

Be certain that the end-fed antenna is *safely away* from where anyone can come in contact with the high-voltage points. RF burns cut deep and take a long time to heal.

One last comment. Vertical ½-wavelength antennas are a favorite of mine, and I use one on 10, 11, 12, 15, 18 and 20M. The nice thing about these being voltage-fed is that minimal grounding or groundplane is required. For some reason, most commercial HF verticals are ¼-wavelength. You can see that $1.4A^2$ times some resistance in the groundplane can quickly dissipate lots of power.

Try one — you'll like it.

NOTE: Grounding of the antenna with either an RFC or the L-network inductor is not protection against lightning. The purpose is primarily that of static discharge. □

Indiana

The COUNTY HUNTERS will hold their 20th annual County Hunter Convention, July 20-24, at the Ramada Inn-South in Indianapolis.

All amateurs are welcome to attend and participate in various activities, including tours of Conner Prairie Settlement, Indianapolis Zoo and the Indianapolis 500 Motor Speedway. The Saturday banquet will begin at 7 p.m., with the County Hunter awards and major prizes featured.

For more information and registration forms, send an SASE to Herb Morgan, WD9GBH, 735 E. 50th St., Marion, IN 46953.

Iowa

The DES MOINES RADIO AMATEUR ASSOCIATION is sponsoring its HAMFEST '88 on July 9 at the Adventureland Inn, I-80 and U.S. 65 (just off I-80 at Exit 142), in Altoona.

Hours are 8 a.m. to 4 p.m. Admission is $4 in advance, $5 at the door. Commercial exhibit tables are $40; $35 for additional tables. Indoor flea market tables are $5 each. Activities include VE testing, seminars, a climate-controlled exhibit area and a free tailgaters flea market. On-site camping, hotel rooms and amusement park are available.

Talk-in on 146.34/.94 and 440.5/445.5.

For information, write HAMFEST '88, P.O. Box 88, Des Moines, IA 50301, or contact Jim Zellmer, KA0VSL, (515) 276-8949.

Maryland

The BRATS Maryland Hamfest and Computer Fest, sponsored by the BALTIMORE RADIO AMATEUR TELEVISION SOCIETY, will take place Sunday, July 31, at the Howard County Fairgrounds, just off I-70 at Rt. 32 on Rt. 144, in West Friendship.

Indoor and outdoor exhibits, refreshments and free VE exams are featured. Access for handicapped. Tables along the indoor wall, with access to power, are $20 each; four/$75. Tables in the center (no power) are $10 each. Dealer set-up begins Saturday the 30th at 2 p.m. or Sunday morning at 6 a.m. 500 tailgating spaces go on sale Sunday morning at $5 per space. Free walk-in VE exams start at 9 a.m. Sunday.

Tickets are $4 each; children under 12 free. Tickets on sale at the gate only; no advance sales. Reserve tables in advance, none sold after July 20.

Talk-in on 146.16/76, 147.63/03 and 146.52.

For table reservatons/information, write Mayer Zimmerman, W3GXK, P.O. Box 5915, Baltimore, MD 21208.

Michigan

The AUSABLE VALLEY ARC is sponsoring its 1st Annual Swap-N-Shop on July 16, at the Mio-Ausable School M-72 in Mio. Hours are 8 a.m. to 2 p.m.; 7 a.m. set-up for vendors. Admission is $3 at door, $2 in advance. Tables $2.

Talk-in on 145.35/144.75 or 146.52.

For more information, write to Ausable Valley ARC, P.O. Box 3 Fairview, MI 48621. Or call (517) 848-5996/826-5549.

North Carolina

The CARY ARC announces its 16th Annual Midsummer Swapfest July 16, 9 a.m. to 3 p.m., at the VFW Building, Reedy Creek Road, Cary.

Air-conditioned building. Selling, bartering, haggling and visiting, open auction and drawings. No admission or commission. Tables inside are $10; tailgating outside free. Registration for drawings $3.50 each (three/$10).

Talk-in on 146.88 MHz.

Information available from Cary ARC, P.O. Box 53, Cary, NC 27511.

Ohio

The WOOD COUNTY ARC is sponsoring their 24th Annual Ham-A-Rama on July 10 at the Wood County Fairground in Bowling Green. Admission is free; doors open 8 a.m. to 4 p.m. Tables are $7; trunk sales $3 per vehicle width. Food and drink available.

Talk-in on 147.18/78 and 146.52.

Contact Jim Davis, N8DWR, 10990 Newton Rd., Bowling Green, OH; (419) 352-3321.

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NOARSFEST, sponsored by the NORTHERN OHIO ARS, will be held Saturday, July 16, at the Lorain County Fairgrounds in Wellington.

Ample indoor vendor space, plenty of flea market parking. Set up Friday after 3 p.m. with parking for self-contained campers.

Talk-in on 146.10, 146.70, 448,600 and 443.600.

For information contact John Paul Jones, WA8CAE, c/o 41751 North Ridge Rd., Elyria, OH 44035; (216) 324-3181 days or 282-4256 evenings.

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The 10th Annual TRIPLE STATES RAC Wheeling Hamfest/Computer Fair will be held Sunday, July 17, from 9 a.m. to 4 p.m. at Wheeling Park. 30,000 sq. ft. under roof and 5 acres of flea market. Family activities at the park. Admission $3 advance, $4 at the door.

Talk-in on 146.31 in/.91 out and 146.715.

To reserve space contact Sandi Williams, WB8AAV, 9 East High St., Flushing, OH 43977; (614) 968-3652. For tickets: TSRAC, Box 240, RD 1, Adena, OH 43901; (614) 546-3930.

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The VAN WERT ARC will hold its 1st annual hamfest on July 17 at the Van Wert County Fair Grounds on Rt. 127 in Van Wert.

There will be 8,000 sq. ft. indoors with outside trunk sales. Bring your own tables for outside sales. Food and drink available (no alcohol), free parking, door prizes and packet radio forum. Amateur Radio license exams (send completed FCC Form 610, copy of old license, check for $4.55 payable to Robert High, and SASE to License, c/o VWARC, P.O. Box 602, Van Wert, OH 45891).

Talk-in on 146.25/.85.

Tickets $3; tables $6 each (limited electric available); trunk sales permits $4 each. For information call Bob Barnes, WD8LPY, at (419) 238-1877, or write Van Wert ARC, c/o P.O. Box 602, Van Wert, OH 45891.

Pennsylvania

The 9th Annual MURGAS ARC Hamfest and Computer Fest will be held Sunday, July 3, at the Ice-A-Rama Coal Street Sports Complex in Wilkes-Barre.

Doors open at 6 a.m. for set-up and at 8 a.m. to the public. Admission is $3; tailgating $2 extra per space indoors. XYL's and children under 16 free. Features include special drawings, refreshments, outdoor tailgating, commercial power available, FCC exams, free parking. Abundant space indoors, rain or shine.

Talk-in on 146.61 and 146.52.

Pre-register for fee exam by sending current license number, test number and $4.55 to Joe Caffery, W3DZH, 79 Kellers Lane, Plymouth, PA 18651. Dealers pre-register by sending $7.50 in advance to Jim Post, KA3A, 15 Monarch Rd., Wilkes-Barre, PA 18702 or pay $9 at the door.

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The HARRISBURG RAC will sponsor a hamfest Monday, July 4, at the Bressler picnic grounds. Exit on #1 off I-283, take Rt. 441 north and follow signs.

Admission is $3 at the gate. XYL and kids free. Tailgating $1 per site. Tables in pavilion $5 each. Campground, motels and restaurants at Exit #1. Food available at hamfest. Vendors set up at 7 a.m.; gates open at 8 a.m.

Contact Dave Dormer, KC3MG, 131 Livingston St., Swatara, PA 17113. Phone (717) 939-4957 or BBS 1-717737-1654 between 12 p.m. and 4 p.m. 300-1200 Baud.

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(continued on next page)

QRP ARCI Summer Homebrew Sprint

The QRP ARCI Summer Homebrew Sprint (CW) will be held from 2000Z to 2400Z, Sunday, July 10.

Entry may be an all-band entry or a single-band entry. Compete against own class of entry. Certificates to the top three scores overall, and to the top score in each band for single-band competitors. Certificates will be issued to the top score in each S-P-C and class in which two or more entries are received.

Entry includes a copy of the logs and a separate summary sheet. All entries must be postmarked 30 days after the end of the contest. Late entries will be counted as check logs. Members indicate their membership number on all logs. Members and non-members indicate their input or output power for each band. The highest output power level used will determine the power multiplier. Output power is considered as half of the input power.

A summary sheet and sample log sheets are available from the contest manager for an SASE with 1 unit of postage. Include an SASE with 1 unit of postage in the entry for a copy of the contest results. (Results will be published in the next issue of the *QRP ARCI Quarterly.*) Red Reynolds, K5VOL, QRP ARC Contest Manager, 835 Surryse Rd., Lake Zurich, IL 60047. □

4th Annual CQ WW VHF WPX Contest

The 4th Annual CQ World Wide VHF WPX Contest will last from 0000 UTC, Saturday, July 16 to 2400 UTC, Sunday, July 17. The objectives of the contest are for amateurs around the world to contact as many amateurs as possible in the allotted 48-hour period, to promote VHF/UHF activity, to allow VHFers the opportunity to experience the enhanced propagation available at this time of year, and for interested amateurs to collect VHF prefixes for award credit.

Contest period: 48 hours for all stations, single or multi-operator. Operate any portion of the contest period you wish.

Bands: 50, 70, 144, 220, 432, 902 and 1296 MHz

Type of competition: *Single operator* — a) all band; b) single band; c) all band, low power; d) single band, low power. *Multi-operator* — a) all band; b) single band. *Portable* (with temporary power source only). *FM only.* The "portable" category is for single or two-operator stations. Low power is defined as 30W PEP output or less.

Stations may select one category of competition only. All transmitters must be located within a 500M diameter, or within the property limits of the station licensee's address — whichever is greater. The antennas must be physically connected by wires to the transmitters.

Exchange: Call sign and "Maidenhead" locator grid square (4 digits, e.g., FN20). If grid square is not known, station location with enough specificity to determine the proper grid may be recorded instead. Signal reports are optional and need not be included in the log entry.

Scoring: 1 pt. per QSO on 50, 70 and 144 MHz; 2 pts. per QSO on 220 and 432 MHz; 4 pts. per QSO on 902 and 1296 MHz. Work stations once per band, regardless of mode. Multiply total QSO points times the *total* number of prefixes (PX) worked. This differs from the scoring for the *CQ* HF WW WPX Contest, where a prefix counts only once regardless of band.

Example: W1XX works stations as follows:
37 QSO's and 12 PX's on 50 MHz
45 QSO's and 18 PX's on 144 MHz
26 QSO's and 10 PX's on 220 MHz
38 QSO's and 11 PX's on 432 MHz
6 QSO's and 3 PX's on 1296 MHz
W1XX's total score is: 234 QSO points × 54 PX's = 12,636

Multipliers: The multiplier is the number of prefixes worked, additive on a band-to-band basis. A prefix is considered to be the number/letter combination which forms the first part of an Amateur Radio call sign (N1, WB3, etc.). A station in a call area different from that indicated by his call sign is required to sign portable. This applies even for home stations, (e.g., WB2OTK has a licensed station in SC, but is required to sign /4 for contest purposes only).

In all cases, the portable prefix is the multiplier. Example: KT2B/3 counts as KT3 and WC2K/VE3 counts as VE3.

Special-event, commemorative and other unique prefix stations are encouraged to participate. A station who changes location during the course of the contest is free to contact as many other stations as he wishes; however, the moving station counts as only one QSO and PX *unless he changes call areas* during the course of operations. Example: K2SMN operates from the NJ/PA border; he may be counted as K2SMN for one QSO and PX (K2) by all those he contacts from NJ. He may be counted as K2SMN/3 for one QSO and one PX (K3) by all those he contacts from PA, including stations previously worked from NJ. Changing "grid squares" does not justify a new contact.

Awards: Engraved trophies will be awarded to the top-scoring stations in each category and major geographic area where competition is indicated. Parchment certificates suitable for framing will be awarded to the top-scoring stations in each category and minor geographic area where competition is indicated. Certificates may also be awarded to other top-scoring stations who show outstanding contest effort.

Major geographic areas include North America, Europe and Japan as of this writing, but may be extended to include other areas as justified by competitive entries. Minor geographic areas include states (U.S.), provinces (Canada), countries (Europe) and call areas (Japan), and may also be extended to include other subdivisions as justified by competitive entries.

Logs must be postmarked no later than August 31, 1988 to be eligible for awards. Logs should be mailed to the *CQ* VHF WPX Contest, c/o SCORE, P.O. Box 1325, Eatontown, NJ 07724 (note address change from previous years), or to *CQ Magazine,* 76 No. Broadway, Hicksville, NY 11801. □

Pennsylvania

(continued from page 63)

The NORTH HILLS ARC will sponsor its 3rd Annual Hamfest on July 10 at the Northland Public Library, 300 Cumberland Road, Pittsburgh.

Features include handicap and wheelchair accessibility, free admission, free dealer and flea market space, VEC exams, ARRL table and refreshments.

Talk-in on 147.09.

For information contact Bob Ferrey, Jr., N3DOK, 9821 Presidential Dr., #304, Allison Park, PA 15101; (412) 367-2393. VEC information contact John Rosenwald, NM3P, 400 Stevens Dr., Pittsburgh, PA 15237; (412) 931-2631. □

MARAC County Hunters CW Contest

MARAC invites all amateurs to participate in the 1988 County Hunters CW Contest, from 0000Z, July 30 to 0200Z, August 1.

General call: CQ CH

Exchange: QSO number, category (mobiles or portables only: M or P), RST. County and state (U.S. stations); others send province or country. Example: 022M 599 ORANGE CA. Stations may be worked once on each band and again if the station has changed county. Mobile or portable stations changing counties during the contest may repeat contacts for QSO points. Stations on county lines give and receive only one number QSO, but each county is valid as a multiplier for the receiving station.

Scoring: QSO's with fixed stations are 1 pt. QSO's with mobile or portable stations are 3 pts. The total score is obtained by multiplying the sum of all QSO points by the number of U.S. counties worked. Independent cities may be counted as any one of their adjoining counties, in accordance with USACA rules. Mobiles and portables who change states dur-

ing the contest calculate their score for each state separately and again for total score.

Suggested Frequencies: 3575, 7055, 14060, 21060, 28060. On 20 and 40M, mobile and portable stations should call CQ or QRZ below the suggested frequencies. Fixed stations must CQ or QRZ above the suggested frequencies.

Awards: *Certificates* will be awarded in three categories — *M)* Highest scoring station in each state operating mobile from three or more counties with a minimum of 10 QSO's in at least each of three counties. *P)* Highest scoring station in each state operating portable from a county which is not his normal point of operation when total score exceeds 1,000 pts. *F)* Highest scoring fixed or fixed portable station in each state, province (Canada) and country when total score exceeds 1,000 pts.

Plaques will be awarded to the highest scoring mobile, portable and fixed stations in the United States who meet the above requirements for certificates.

Additional awards will be issued where deemed appropriate by the awards committee.

Submit contest logs showing category, date/time (GMT), station worked, band, exchanges, location, QSO points and total score. All entries with 100 or more QSO's *must include an alphabetized list of all counties being used as multipliers, or be disqualified from receiving awards.* Enclose a business-size SASE if contest results are desired. Logs must be postmarked by September 5, 1988 and sent to: Jerry Burkhead, N6QA, 7525 Baltic St., San Diego, CA 92111. □

Florida QSO Party

The West Palm Beach ARC, Inc. and *Florida Skip* will be sponsoring the 22nd Annual Florida QSO Party on July 30-31. All amateurs worldwide are eligible and are invited to participate.

Operating times: Saturday, 1400Z (10 a.m. EDT) through Sunday, 2100Z (5 p.m. EDT).

Suggested frequencies: *Phone* — 3945, 7279, 14279, 21379 and 28479 kHz; *CW* — 3725, 7125, 14055, 21150 and 28150 kHz.

Conditions of entry: Each entrant agrees to be bound by the provisions of this announcement, the regulations of the applicable licensing authority and the decision of the Contest Committee which is final.

Valid contacts: All amateur bands 160 through 2M may be used. All stations will use separate logs for phone and CW. Phone and CW are separate contests. A station may be worked once on each band and once on each mode. Neither crossband nor crossmode contacts will count. No repeater contacts may be counted for credit. Florida stations may work other Florida stations for contest points only. Out-of-state stations may not work each other for contest credit.

Entry classes: Florida stations are divided into two classes. Class A stations are those operating portable (under FD rules) or mobile on emergency power using 100W or less output inside Florida but outside their home counties. Class B stations are all other stations operating in Florida. Entrants may be single operator or multi-operator, and this must be indicated on the summary sheet.

Exchange: Florida stations send signal report and county of operation. Out-of-state stations send signal report and U.S. state, Canadian province or DX country.

Scoring: Florida stations count 1 pt. per QSO with out-of-state and other Florida stations. Multiplier is the total of states (49 max.), provinces (12 max.), and DX countries up to 27 actually worked. Maximum multiplier is 88. Out-of-state count 2 pts. per QSO with each Florida station.

Multiplier is the total number of different Florida counties worked (67 max.). The score is the product of QSO points and multiplier. Florida Class A stations *only* multiply final score by 1.5 to obtain total score.

Awards: Certificates on phone and CW will be awarded for the top single operator score in each state, province and DX country. Certificates on CW will be awarded for the top Novice score in each state. The top scorer in each Florida county will also be awarded a certificate. Multi-operator winners will receive certificates as activity justifies.

Plaques will go to: High single operator Florida CW, High single operator Florida Phone and to the Florida club with the highest aggregate score. There is a 10-contact minimum to be eligible for a certificate.

Disqualification: The ARRL Contest Disqualification Criteria will be used in deciding upon disqualifications. Among reasons for disqualifications are improper reporting, excessive dupes, errors in multipliers, late logs and cheating.

Reporting: Phone and CW entries are to be separated with logs for each. Along with legible logs in chronological order, a summary sheet is required with each entry. Those with 200 QSO's or more must supply a dupe sheet.

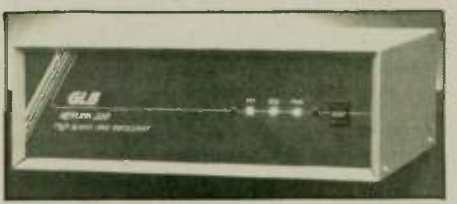
The summary sheet must contain claimed score, Florida county or state, number of QSO's, multiplier total, station call sign, entry class, power source for Class A entries and complete address. The name of the Florida club for which aggregate total credit is being assigned must also be on the summary sheet. A signed declaration that rules and regulations have been observed must also be included. A sample summary sheet is available for an SASE from the QTH below.

Deadline for entries: All entries must be postmarked on or before September 3, 1988. Mail all entries to: Florida QSO Party Contest Committee, P.O. Box 8104, West Palm Beach, FL 33407. □

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

NETLINK high-speed data transceiver

GLB Electronics has announced digital-in, digital-out data radio designed for high-speed packet linking. The NETLINK 220 features 220-225 MHz simplex operation, 2W of output and a data rate of 19,200 baud. The design was optimized for digital data transmission, providing a superior alternative to the adaptation of voice equipment.



It is adaptable for use with any Node Controller capable of generating and accepting 5V CMOS logic levels, such as the TNC2A.

The modulation method employed is FSK, requiring a 25 kHz receiver bandwidth at 19200 baud. Its operational temperature range is −30 to +60°C, making it suitable for use at sites having uncontrolled ambient temperatures.

NETLINK is compatible with virtually any data format, including NRZ and NRZI as used in packet node controllers. No external clocks or synchronization are needed. Duplicate input-output paths are provided, so that either CMOS (0-5V) or RS-232-compatible (±10V) signals can be used for data.

Through the use of PIN diodes for antenna switching and careful attention to minimizing other delays, turnaround time (the time it takes to switch from transmit-to-receive and back) is a fast 1ms, making it possible to use simplex operation at high data rates without significant loss of throughput. Since duplex operation involves expensive cavities and other difficulties, this is an important advantage.

In order to prevent the generation of interference through "key clicks," NETLINK uses time sequencing and shaping of the turn-on and turn-off envelopes.

Frequency drift is controlled by means of oven-controlled crystals and temperature-compensated oscillator circuits. In addition, a frequency tracking system (or digital AFC) is employed to keep the signal precisely centered in the receiver passband at all times.

A unique feature of the NETLINK system is that the frequency last received is "remembered" between packets. Since it takes time to center up an off-frequency signal, this feature maintains fast operation by avoiding the need to acquire the signal on every transmission.

The receiver utilizes five large helical resonators for excellent image and out-of-band rejection. A fast (1ms) squelch is available at the rear connector. Rather than using phase-linear filters with poor adjacent-channel performance, the NETLINK approach is to select a combination of filters that achieves good adjacent channel performance with reasonably good phase linearity, and to use a phase correction filter for final waveform correction. Sensitivity is rated at 0.5μV for a bit error rate of 10^{-3}. The ultimate error rate is better than 10^{-6}.

The transmitter is conservatively designed for continuous operation. Six poles of filtering keep adjacent channel interference at a low level. For unattended operation, the NETLINK radio has a key-down timer set to 10 seconds, with reset on key-up. This feature prevents accidental lockup of the transmitter with carrier on in the event of control failure.

Panel LED's indicate transmitter keying, squelch and power status. All data and control signals are brought to a DB-25S connector on the rear panel. In addition to data input/output, connections include transmit key, squelch, discriminator, tracking status and tracking control. NETLINK operates on a 12V DC supply wired to an independent jack. The antenna connector is a BNC female. All input-output signals are RFI-filtered, and NETLINK complies with all applicable sections of Part 15 of FCC rules. It also has passed tests to Part 97 specifications.

The cabinet measures 12″×10″×4″. Weight is 5 lb. 8 oz. List price: $799, $699 Amateur net. For more information, contact GLB Electronics, Inc., 151 Commerce Pkwy, Buffalo, NY 14224; (716) 675-6740. □

ATV transmitter

P.C. Electronics introduced their model TX23 1W 23cm (1240-1300 MHz) ATV transmitter at the Dayton HamVention, April 28. The small transmitter (7×7×2.5″) will now enable Novice Class or higher amateurs to transmit live action color or black-and-white composite video and audio from cameras, VCR's or computers, to other hams.

The TX23-1 is a companion to the TVC-12G receiving downconverter. ATV, once thought of as an exotic mode for the builder or advanced amateur, is now easily achieved even for the Novice with this transmitter and most all home TV cameras and VCR's.

The TX23-1 contains a 1W PEP (sync tip) transmitter, video modulator and broadcast standard 4.5 MHz sound subcarrier. The unit comes standard with one crystal on the simplex frequency of 1289.25 MHz or on one of the other customer-ordered ATV channels specified in the ARRL bandplan. A switch is provided to select video and audio input from either the 10-pin VHS-type home color cameras on the front panel, or phono jacks for other cameras, VCR's, computers or any composite video and line level audio source on the back.

A mic jack and "push to look" (same as push to talk, but this is video) jack is available for low-impedance dynamic microphones and transmit/receive switching. Two independent volume controls are provided for mic and line mixed audio levels, which are handy for voice-over descriptions of home videotapes. The external power requirement is 12-14VDC at 600mA plus whatever the connected 12V camera draws. The antenna connector is a type N, and a BNC outputs to the receiving downconverter from the built-in RF T/R relay.

The shielded cabinet of the TX23-1 is small enough to be put in a knapsack for portable work, such as a cordless camera to remote VCR or for public service events. Theoretical snow-free line-of-sight DX using the 1W TX23-1, TVC-23G downconverter and 23-element Tonna beams is 5 miles. For greater DX with mobile or base applications, the output power and the sync stretcher in the video modulator of the TX23-1 matches the 20W Downeast Microwave amplifiers linear input vs. output range.

Licensed amateurs may call or write P.C. Electronics (2522 Paxson Ln., Arcadia, CA 91006; 818/447-4565) for more information and a complete catalog of this and other ATV products for the 70, 33 and 23 cm bands. The TX23-1 transmitter is $299 delivered UPS surface in the contiguous USA. Another version of the transmitter, RTX-23, is available in a diecast aluminum box for use in repeater or link systems. □

Repeater controller

The RF Concepts RFC 8-RC Repeater Controller represents a different approach to repeater control. The RFC 8-RC was designed with emphasis placed on being a very flexible and powerful workhorse instead of providing fancy "Bells and Whistles." The result is a control system that can be expanded to handle all the requirements of large, multiple-site, interconnected systems as well as the simple repeater. The operation of the RFC 8-RC is straightforward and totally transparent to the everyday user.

The RFC 8-RC Repeater Controller provides all the functions required for standard repeater operation. In addition, facilities are provided for a control receiver, link system, remote base, CTCSS decoder input, eight auxiliary on/off outputs, and input to signal alarm conditions such as power failure or open door.

All command codes are remotely programmable as are the various timers, tone pitches and the ID message. All data is stored in non-volatile EEPROM so battery backup is not required to maintain operating parameters in case of power failure. All commands to the controller are verified with a CW message. The controller may be used as a simple repeater control system or may be the heart of a super system with multi-channel links, synthesized remote bases and autopatch with addition of various optional accessories.

The three different receiver inputs are arranged in a priority scheme that allows each input to be repeated out the other two. If a signal arrives on an input with a higher priority than the one currently active, the signal with the higher priority takes precedence. This allows signals from the remote base to be relayed to distant users on the link channel, and distant users to communicate with others on either the repeater or remote base.

The RFC 8-AP will provide a complete autopatch including the ability to control the RFC 8-RC via telephone line, as well as reverse autopatch capability. The RFC 8-RC will have an activity timer which may be

switched on or off, and a method to restrict calls to the local calling area. The RFC 8-AP also contains circuitry to decode the eight auxiliary outputs and select one of up to eight channels on the link transceiver.

The RFC 8-RB Remote Base Interface contains circuitry to interface the RFC 8-RC to many different types of synthesized transceivers. It also contains a remotely programmable CTCSS encoder. The RFC 8-RB may be used for control of equipment connected to either the link or remote base port of the RFC 8-RC.

The RFC 8-PK Packet Interface will provide a communications link between the RFC 8-RC controller and an external TNC.

The suggested list price for the RFC 8-RC is $395. For more information, contact your favorite dealer or contact RF Concepts, 8911-A Murray Ave., Gilroy, CA 95020; (408) 847-7373.

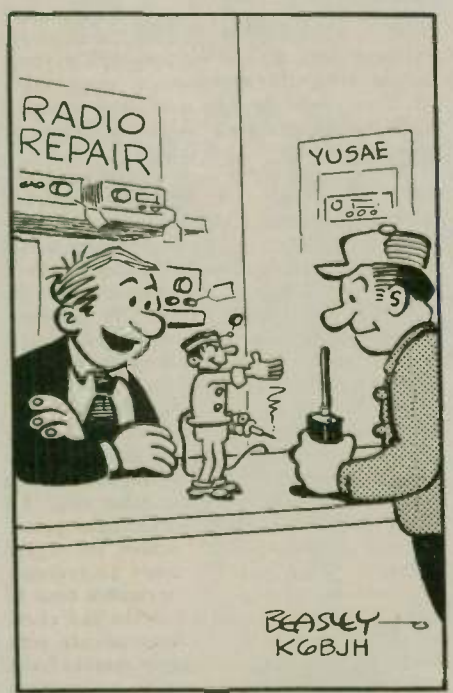
Signal intensifiers

Electron Processing, Inc. has announced the addition of a new model to their popular line of Signal Intensifier™ RF amplifiers.

New series RFSP Signal Intensifiers satisfy the need for super high gain and wide bandwidth amplification all in one package. These high performance receiver or instrumentation preamplifiers are enclosed in a rugged aluminum housing and are complete with an entirely self-contained 110VAC power supply.

Sporting a gain of 20dB and a noise figure of 3dB, the RFSP Signal Intensifier covers 50 MHz to 1000 MHz continuously. Popular BNC-type connectors are provided for input and output connections.

Pricing starts at $69.95 Amateur Net, with quantity discounts available. For more details and ordering information, contact the Sales Department, Electron Processing, Inc. at (516) 764-9798. □



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Basic Guide to VHF/UHF Ham Radio

Tiare Publications is pleased to announce *The Basic Guide to VHF/UHF Ham Radio,* by Edward M. Noll, W3FQJ.

Recent changes in the FCC's rules have expanded licensee access to the VHF/UHF Amateur Radio frequencies and opened these areas to increased Amateur Radio usage. Well-known Amateur Radio author Ed Noll brings his expertise to this subject and provides a basic look at the equipment, propagation, antennas, techniques, awards, contests and repeater operations taking place in these ranges.

We believe this is an excellent starter book, perfect for the newcomer to Amateur Radio or the ham considering getting into VHF/UHF operations.

This timely book contains many photos, diagrams and charts, including bandplans for 2, 6, 1.25M, 23, 33 and 70cm. Contains 84 5½"×8½" pages, paper with three-color cover. Includes commercial advertising. Price is $6.95 per copy plus $1 shipping in the United States and Canada, $2 other countries. Order from your Amateur Radio dealer or direct from: Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. □

MARS Forum

(continued from page 48)

bad news?" God answered, "I'm calling you from Salt Lake City."

I'm not from Salt Lake City, but from Washington. I want you to know you're not going unrecognized. I'm fortunate in having grown up with the system.

I have flown on the "Doomsday" aircraft — the 747 that we keep in the air all the time in case of a national emergency. That's to make sure we get the messages out in case of nuclear attack out of the blue. Again, capabilities of that aircraft come back to HF. Why HF? We know for sure from empirical data that the fastest recovery among the transmission modes is going to be HF.

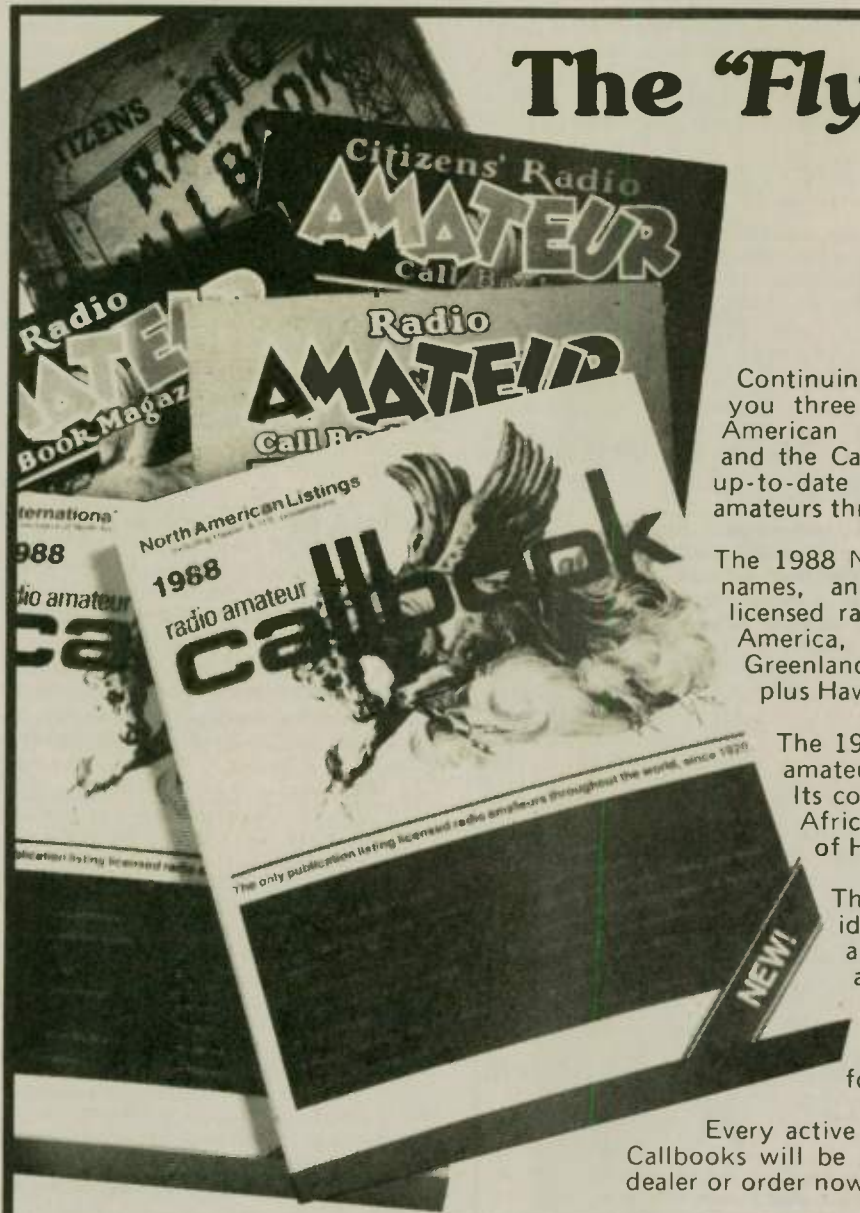
We can't depend on satellites. We don't have an anti-satellite capability because the wisdom of Congress keeps voting us down. Yet, the Soviets have missiles sitting there, ready to take ours out. The only saving thing is that we have so many in orbit, the Soviets may not have enough weapons to get them all.

We have institutionalized now, and rewritten the plans to use the 11,000 MARS members scattered throughout this country. We have set up exercises called "Night Tango." They have proved very successful.

I do want to say, in closing, that we are incorporating MARS and Amateur Radio in all our national plans. It all comes back to the word I started out with — "combined," or "interagency operation," or "interoperability." To make that work, it's more than just electrical or protocol; it's the procedural aspects.

We learned that every time we have a major glitch in one of our military operations, it almost always comes down to the procedural side of it. By having your tests and by operating on a daily basis, most of those problems go away. □

The "Flying Horse" sets the standards!



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The 1988 International Callbook lists 481,000 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).

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Publication: Callbooks - December 1, 1987
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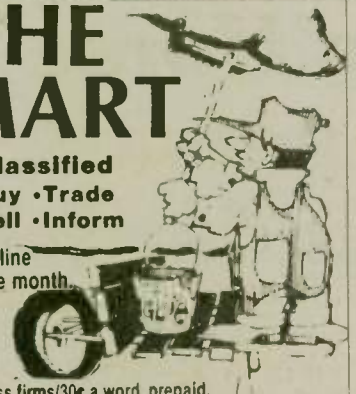

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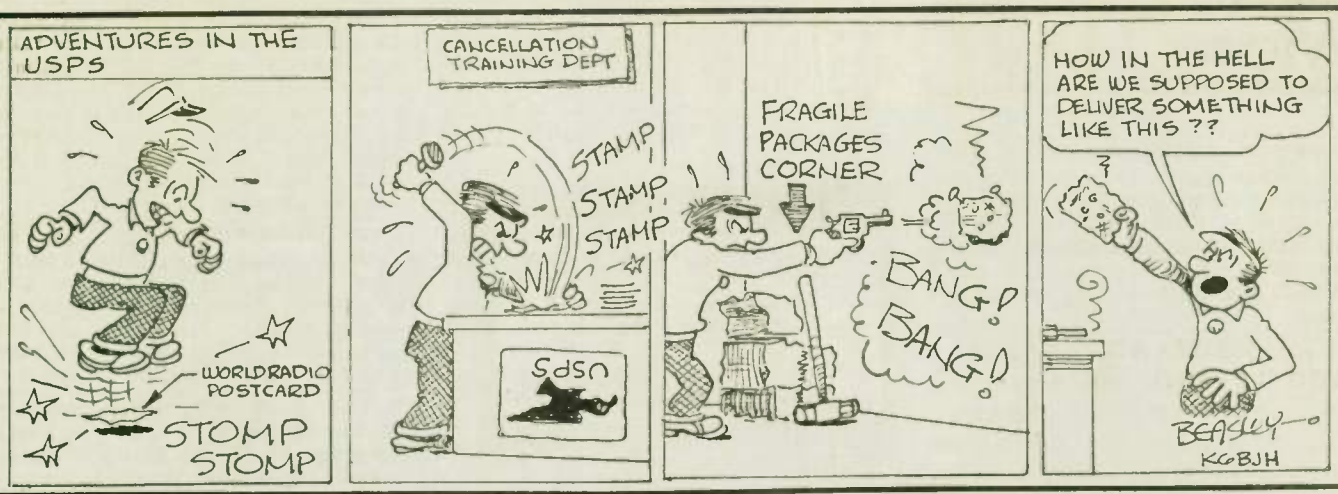

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