

World Radio

Year 17, Issue 3

September 1987 • \$1

WR 0-0013935 LIFE W6CUP

JAMES MAXWELL
PO BOX 473
REDWOOD ESTATES CA 95044

Field Day '87



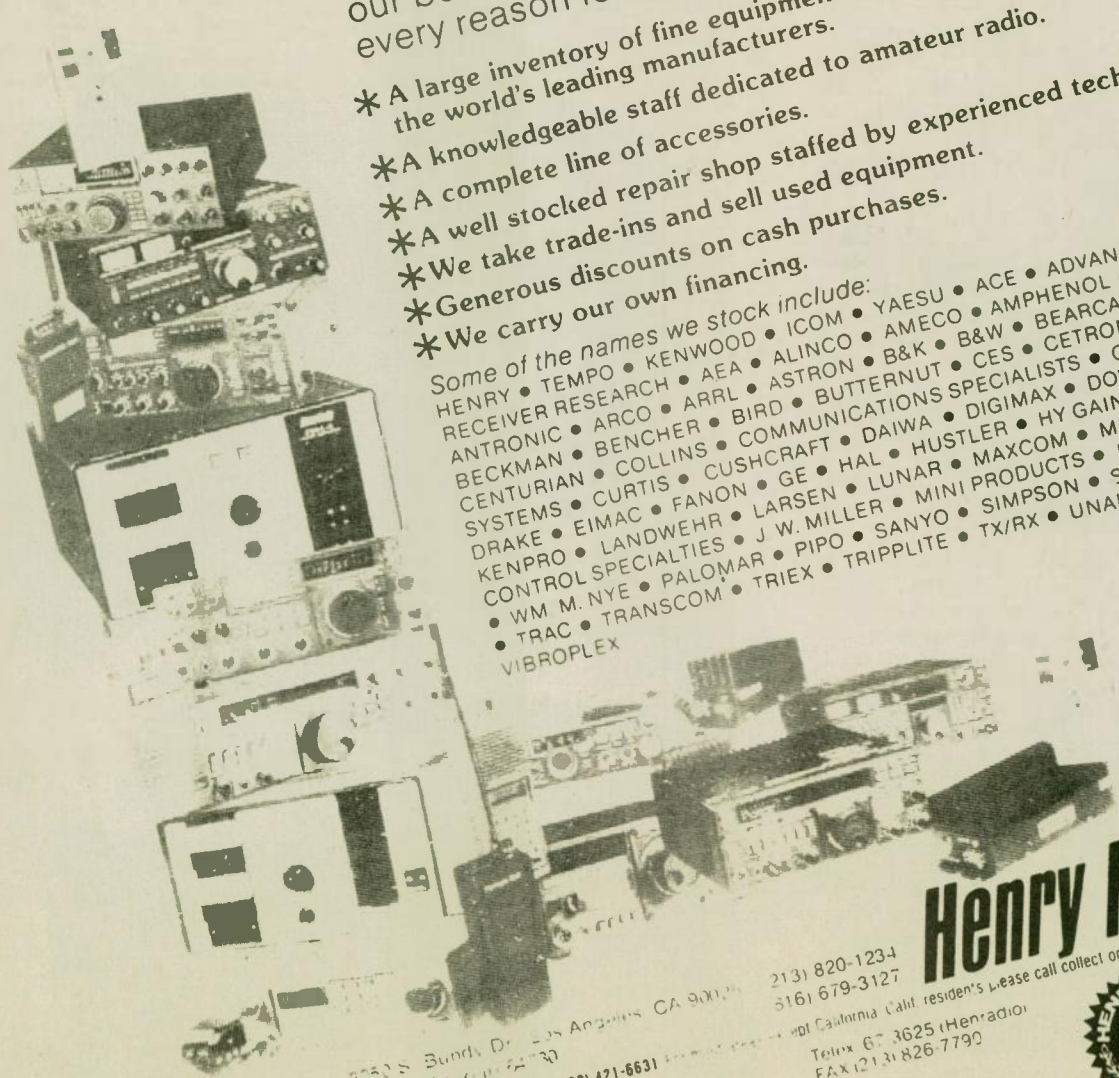
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Field Day fun is serious business

From scorching heat to teeth-chattering cold — Field Day 1987 — what fun!! Working 75 and 40 through the long night; then, with sunrise, it's 20 and 15.

And as we tear down the station, the "next year we'll do ..." has already started.

Pictured on the front page are two of the 20,000-plus amateurs who participated — Norm Brooks, K6FO, and Peter Onnigian, W6QEU, were at Field Day station N6WR. Both were licensed while high school students and were active on 160. A few years later they operated on 14 and 28, but it was a different type of QSO. Norm had crossed the Atlantic and Pete had crossed the Pacific.

Now they can put up a tent without having to dig a foxhole next to it. And

throughout the USA and Canada, radio signals were emitted from tents manned (and womaned) by Amateur Radio operators simulating emergency conditions.

This was the 51st annual exercise sponsored by the American Radio Relay League, with the purpose of successful communication, using portable antennas and without utilizing commercial power.

Yes, there is a serious side to all the fun of Field Day. That's particularly well known to clubs that have had to pull out of the Field Day event itself to go participate in the "real thing."

The stories are legion of amateurs stepping in to establish effective communications in emergency situations when normal lines of communication

used by police and government agencies have failed.

Floods, earthquakes, tornados and typhoons . . . the amateurs have been there. They'll be there when the next emergency strikes your city and they'll be the same amateurs who "practiced" on Field Day.

In a few months, 20,000 amateurs will be turning the pages of QST to "see how we did." As operating events go, it's the one "contest" where everyone wins — particularly the residents of the next disaster-struck area who have never heard of Field Day (or even of Amateur Radio), but who will have their burdens eased through the well-honed skills of the sunburned and bug-bitten Amateur Radio operators who spend 27 hours every June getting ready. —N6WR □

OH-KY-IN Field Day

The OH-KY-IN Amateur Radio Society, K8SCH, operated 3A-Ohio at Mitchell Memorial Park in Western Hamilton County, about 20 miles west of Cincinnati.

Within a 1,000' radius, there were three towers, each equipped with tri-band beams and assorted wire antennas. One station set up a Bobtail Curtain for the event. The Novice station had dipoles for 40 and 80M and a tri-band beam for 10M phone.

We had about 50 hams participate in the event, ranging in age from 12 to, well . . . let's say over 60. The Novice

station made about 65 QSO's on CW, and with the new privileges on 10 phone totaled over 350 QSO's during the Field Day effort — a record number for our club's Novice station.

Another record was set Sunday morning with temperatures dipping to 50°F, the coldest since about 1919. The CW ops were seen sending inside their sleeping bags, and occasionally warming their hands on the cooling fins of the rig, mildly complaining that they just could not seem to get the KH6 on 80.

The Field Day event is a long-awaited operation for the club, and everyone pitches in for set-up and

tear-down. The Novices, all newcomers to the event, gained several decades of experience in tower and antenna erection.

We are sure looking forward to next year, and are glad we have a year to rest up. CQ FD 1988! —Bill Simpson, K14QJ □

DX banquet

October 10 will mark the 35th anniversary of the New England DXCC Association. To celebrate this benchmark year, the annual meeting and banquet of this group will be held at the Masonic Lodge located in the downtown section of historic Concord, Massachusetts. (Time: meeting — 2 p.m.; banquet — 6:30 p.m.)

In order to help make this momentous occasion an outstanding success, our program will highlight recent DX-peditions by some of our members to the Ivory Coast and Senegal. Negotiations to obtain audiovisual material of the 3Y1 Peter I Island DXpedition for presentation also are being made.

COVER PHOTO: Norm Brooks, K6FO (left) and Peter Onnigian, W6QEU, participating in Worldradio's Field Day. (Photo by Armond Noble, N6WR)

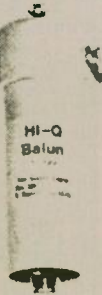
New England DXCC numbers among its membership many noted DXers, and the annual meeting/banquet is always of special interest to the DX fraternity. For more information, contact Joe Poges, W1EED, 144 Broadway, Wakefield, MA 01880. □

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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.

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Propagation lists needed

Beginning with the December '87 issue, there will be no more propagation lists for Maximum Usable Frequency in Worldradio (see page 38, this issue). That is, unless we can find a new source for the information. Bill Welsh, W6LS, will no longer be able to supply us with the lists.

If you have access to these lists, or know of someone who does, please contact Chris Wilson, KA6TAL, 2120-28th St., Sacramento, CA 95818; (916) 457-3655.

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Editorial

A lesson learned

Regardless of how the "220 Grab" comes out, I believe we radio amateurs should recognize an error in our ways has helped lead up to the situation.

Back in the '60s, when radios were crystal-controlled, it was common practice to keep the frequencies of "closed" repeaters and links secret. This was especially true on the 220 and 440 MHz bands. This was to prevent snoopers and jammers from crystallizing up on the frequencies. Of course, the frequencies were *NOT* published in any repeater directory.

Things are different now. Modern radios have fast synthesizers that can scan the frequencies in an entire band in a matter of seconds. So now, what's the point in keeping "closed" frequencies secret? Yet we continue to do so,

and do not publish them in the directories.

The FCC Bureau of Engineering and Technology said they determined there was little usage of the amateur frequencies from 220 to 222 MHz because there was nothing listed in the ARRL Repeater Directory. True! But that doesn't mean there is no usage there; it means we have been *KEEPING IT A SECRET!*

Let's wake up to the fact that there are no secrets from modern synthesized radios. Let's publish the frequencies of those repeaters and links, and if they are closed, say so.

This also applies to the frequencies of sub-audible tones. You might as well list them, too, since anyone with a new radio can figure them out in minutes.

NORM BROOKS, K6FO
Associate Editor, Worldradio

World of Amateur Radio

"Open House—World of Amateur Radio" will be conducted by Chicago ARC on Sunday, September 20, 11 a.m. to 5 p.m. at the "North Park Village," 5801 North Pulaski, Chicago, Illinois. Live demonstration of Amateur Radio, movies, info on all

aspects of Amateur Radio will be provided by expert hams.

For information, call (312) 545-3622. Novice Class license seminar will start on Monday, September 28, 7:30 p.m., for 10 weeks.

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Legal Forum

Norm Brooks, K6FO

Jim O'Connell, W9WU, was the moderator of the Legal Forum at the Dayton HamVention, April 26, 1987.

Jim explained that he is one of the ARRL's "volunteer counsel," which means he gets phone calls from radio amateurs at 11:30 at night, asking if the ham's city ordinance will allow him to put up an antenna. Of course, the city is one Jim is not familiar with, and the amateur doesn't have a copy of the ordinance! He went on to say that he and other volunteer counsel are happy to discuss such matters, but the amateur should be prepared to discuss the ordinance by having a copy in hand. And don't call at 11:30 p.m.!

Most amateurs are now aware of PRB-1, handed down by the FCC in December 1985. Although it covers four pages in the Federal Register, it has only two sentences that are any good, buried near the end. It is unfortunate that more local zoning boards are not familiar with these words. "Local regulations which involve placement, screening or height of antennas, based on health, safety or aesthetic considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practical regulation to accomplish the local authorities' legitimate purpose."

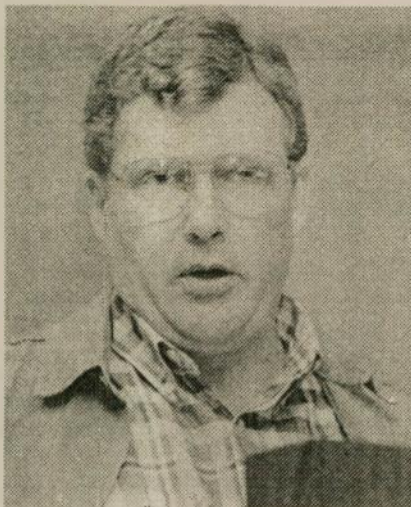
PRB-1 doesn't state any particular restrictions imposed on local municipalities. Also, for some reason, it leaves in the word aesthetics. Most states prohibit zoning only for aesthetics, but in California, the "land of the cuckoos," the California Supreme Court permits zoning solely for aesthetics.

PRB-1 is there, and it's likely the only thing we're going to get out of the Commission, because it was strongly opposed by the National League of Cities, The American Planning Association, etc. They claimed that a federal agency has no business interfering in local regulation of property and local zoning.

"It seems every amateur in the United States who wanted to put up a 70' tower got a copy of PRB-1 and rushed to his local zoning board for a permit to put it up," Jim said, "and when the board said their limit was 35', the amateur called at 11:30 p.m. to ask how come and why?"

Let's take the Glencoe, Illinois case. They came out with a complicated ordinance brought about because of Docket 85-87 from the Common Carrier Bureau of the FCC. This docket

said state and local zoning, or other regulations that differentiate between satellite antennas and other antennas, are preempted. So Glencoe said there may be one antenna or antenna support structure not exceeding 8' in size per lot.



James O'Connell, W9WU, spoke on "Amateur Radio and the Law" at the Dayton HamVention, Sunday, April 26.

The Glencoe attorneys couldn't understand our concern. They said they were imposing the same regulations on amateur antennas as on satellite dishes, and quoted Docket 85-87. Now, an 8' antenna is a functional antenna for satellite reception, but an 8' antenna for the amateur HF bands would be impossible.

What the Common Carrier Bureau was saying was that if a municipality allows other types of antennas, it may not disallow satellite dishes. Glencoe turned this around, ignoring the fact that an 8' antenna would not be functional for Amateur Radio. And when you ask the attorney if he has read PRB-1, you get a blank stare.

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The National League of Cities sent out draft model ordinances. They pointed out to the cities that their satellite dish ordinances may be illegal, and may need to be redone. So what can you do about it?

First you have to watch your papers carefully. Look for legal notices saying an ordinance pertaining to antennas is to be considered. These notices are often buried in the back of the paper; however, in Illinois, they must be in the news section and surrounded with a black border.

Get a copy of the proposed ordinance. You should have no problem getting it from the Building or Zoning Department, but you may have to pay up to \$15 for the copy.

Then talk to your local ARRL Volunteer Counsel. Have the copy of the proposed ordinance at hand; don't expect him to have it. For example, there are 922 separate units of government in Illinois, and no attorney would be expected to have all the ordinances from all of those.

Contrary to popular belief, most local governments do NOT set out to place limits on Amateur Radio when they write antenna ordinances. They are as surprised as anyone when we point out that what they propose would have a limiting effect on Amateur Radio. They have no idea of the technical requirements of Amateur Radio antennas. So you're going to have to educate them.

Some city lawyers have accused me of being against antenna ordinances. I am not. I believe a reasonable antenna ordinance is better than none at all. I feel a reasonable ordinance would state:

- 1) Antenna support structures permitted up to 65' high;
- 2) Located in rear yards only;
- 3) No limit on size of antennas;
- 4) No limit on number of antennas.

When you go before a hearing at the City Council, have as many amateurs there as possible. Never mind that they may not all live in that city. Your attorney can introduce them as "the interested amateurs." Beforehand, though, coach them as to how they should look:

- 1) No hardhats with rubber duckies coming out of the top;
- 2) No HT's on each hip;
- 3) No T-shirts with sexy ham sayings;
- 4) a reasonable business-like appearance.

It's unfortunate that you have to bring this up, but if you don't, they'll show up at a City Council meeting looking like they do here at Dayton! My wife says I'm picking on the amateurs, but I'm not. It's for your (please turn to page 67)



Over 200 students paraded through the streets of Manhattan's Lower East Side last June, as part of a community effort to rid the neighborhood of the drug menace.

'Code Not Crack' in NYC

Joseph Fairclough, WB2JKJ

The theme of the parade was "Get High on Life," and over 200 members of The Radio Club of Junior High School 22 took to the streets of the Lower East Side of Manhattan on June 1, to demonstrate just how they go about getting their high. Chanting "Code Not Crack" and praising "RST" instead of LSD, the crew was joined by several thousand other marchers representing civic and religious groups — all determined to rid the neighborhood of the drug menace.

The "Crew at 22" uses Amateur Radio daily as their theme for learning. Getting high at 22 means learning CSL — Code As A Second Language; operating the daily Classroom Net on 7.235 MHz at 1100 UTC; making several hundred contacts during any given week with old friends and making new ones all the time; learning about the world — the possibilities outside of the Lower East Side. Plus grammar and the other mechanics of English, all based on Amateur Radio.

Education Thru Communication, the official title of the special program, is funded and assisted by the Radio Club of JHS 22 NYC, Inc., which is also involved with implementing the program in other schools around the country.

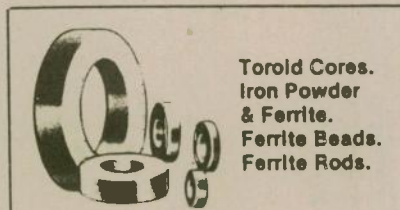
Many notables have endorsed the program: Mayor Koch, President Reagan, and thousands of hams worldwide that provide friendship, funding and technical support. However, the most powerful and important backers are the children themselves. They make the program work by working for the program. Every time a youngster comes off the street to get

on the air and meet a friend or make a new one, write a letter, get a ham publication or just talk radio, it's a step away from drugs and toward a positive experience.

The parade was a huge success and probably will become a regular spring-time event on the Lower East Side. It vividly showed the dealers, users and gangs that good, concerned people were determined to continue to make their community a safe and good place to live. The "Crew at 22" is proud to be part of this effort — to say no to drugs. For them getting high is easy: just a mic or a key, some wire and a rig. They know their friends are waiting. □

Twinkle, Twinkle...

*Twinkle, Twinkle Little Star,
How I wonder what you are,
Up above us in the sky,
Are you a Satellite, drifting by?
— Bill Plimpton, W2IXH* □



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ATTN: Technicians

If you think you will ever upgrade to General Class, remember that you must show you were licensed on or before March 21, 1987, or you will be required to take the written portion of the test (Element 3B). So, please keep your license in a safe place even if you renew as a Technician. NEVER THROW IT AWAY as the renewal license will not show the date you first received your Technician license.

—Ole Virginia Hams ARC, Manassas

Riverside classes

The Riverside County Amateur Radio Association will be offering Amateur Radio classes this fall, at Riverside General Hospital, in the D Building Solarium Room (courtesy of R.C. Lasater, Head of Physical Therapy). Each class is 7-9 p.m. Area code is 714 for all phone numbers.

Novice — Tuesdays, 9/15 - 12/1; Lee Brown, N6HGT, 684-6720. Tech/Gen. — Mondays, 9/21 - 11/23; Arlo Myers, WA6UDR, 686-7473. Advanced — Saturdays, 9/26 - 11/28; C.N. Walker, W6KXN, 689-5922. Extra — Wednesdays, 9/23 - 11/25; Joe Storto, WV6L, 780-1149. Code only — Thursdays, 9/24 - 11/26; Horst Messmer, N6OHE, 735-6297. —Frank H. Johnson, W6KIJ □

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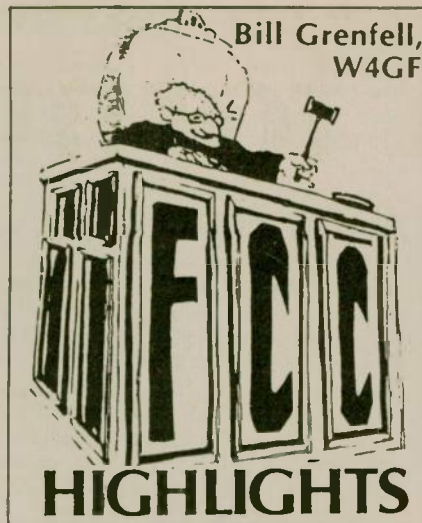


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Concerning FCC's General Docket 87-14, which proposes to take 220-222 MHz away from amateurs and assign it to Land Mobile Services, the ARRL President has talked to an FCC Commissioner, its Chief Engineer and the Deputy Chief of its Private Radio Bureau and their staff members, explaining why the FCC should not adopt this proposal. Similar meetings were scheduled to take place with other high-level FCC officials in July.

Congressman Tauke (Iowa), Bates (CA) and Smith (OR) have sent fine letters asking that the Commission not dislodge amateurs from 220-222 MHz. A letter of support for continued use of 220 MHz has been sent to the FCC by the American Red Cross. At the request of several petitioners, due to the disorganized state of the more than 20 volumes of comments, FCC extended the date for reply comments to July 31. (ARRL Report, 06/25/87; ARRL Letter, 06/30/87)

The ARRL is drafting a Request for Temporary Authority (STA) for about 40 stations to participate in a controlled study of HF packet networks. "Under the STA, these stations would be permitted to operate HF packet nodes under automatic control (automatic packet operation is allowed above 50 MHz but not on the HF or MF bands). The study will be limited to six months." (ARRL Letter, 06/02/87)



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The ARRL has filed comments in FCC General Docket 87-107, urging that the "antenna" position of consumers TV antenna-cable ("A/B") switches be required to be grounded when not in use, so as to minimize interference to amateurs. The "A/B" switch would allow consumers the choice of switching from the cable system to the antenna to watch local stations directly, or vice versa.

"This switch has the potential for causing cable signal leakage over a wide spectrum, including amateur frequencies, or conversely, to allow amateur signals to enter the cable system, causing interference to cable users."

ARRL argues that a 90dB isolation factor should be required for these switches. The FCC has proposed 60dB to meet its Part 15 technical standards. The FCC extended the reply comment deadline to July 10. (ARRL Letters, 06/16/87 and 06/30/87)

Importing and selling illegal video "TV Genie" transmitters has resulted in a conviction of a Las Vegas corporation owner on nine counts. "The TV Genie was designed to connect a video source, such as a video cassette recorder or camera, and transmit the signal over the air to a nearby TV receiver. FCC regulations do not permit this type of operation." (ARRL Letter, 06/16/87)

Credit for a liberalized Kansas City

antenna zoning ordinance is given by a local attorney to the effect of FCC's PRB-1. PRB-1 is the FCC statement of federal preemption of state and local regulations pertaining to amateur antennas. (ARRL Letter, 05/16/87; W5YI, 06/15/87)

An aircraft hijack was stopped at San Juan, Puerto Rico via Amateur Radio when the pilot, Neil Coulston, KB4CCW, established contact with an FBI negotiating team using a combination of a 2M repeater and a special telephone hook-up. Cecil McBride, KF4FZ, Daniel Worley, KP4CD, and the pilot's wife, Mary, KV4KD, were involved in the communications. Unfortunately, "There was serious intentional jamming of the repeater during the early part of the emergency." (by David Ackley, W4UWH — reported by KV4FZ).

He is reported to have been involved in previous jamming incidents. Complaints have been filed with the FCC and FBI. "It was determined that the hijacker was a Viet-Nam veteran who suffered from Post-Viet-Nam Shock Syndrome." (W5YI Report, 06/15/87)

"The FCC no longer deletes calls of Silent Keys unless its cancellation is specifically requested." In order to avoid receiving correspondence which is sent based upon FCC records, families of deceased amateurs should send the license, or a letter if the (please turn to page 10)

Amateur Radio call signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of July 1, 1987.

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 17325.

Radio District	Group A	Group B	Group C	Group D
	Am. Extra	Advanced	Tech. Gen.	Novice
0	NZ0F	KE0OX	N0IFJ	KB0AYS
1	NK1V	KC1ES	N1EZX	KA1QQQ
2	NX2S	KE2AZ	N2HIX	KB2EBW
3	N13L	KD3DP	N3FQE	KA3RZG
4	AB4CA	KK4OL	N4QNK	KC4AZZ
5	AA5AU	KG5AI	N5KYN	KB5DYT
6	AA6DL	KI6VB	N6PVF	KB6TGU
7	WD7G	KF7BK	N7JON	KB7CNT
8	NX8P	KE8MT	N8IOP	KB8CWS
9	NT9L	KE9FG	N9GRH	KA9ZET
N. Mariana Is.	AH0E	AH0AC	KH0AI	WH0AAG
Guam	KH2E	AH2BR	KH2CR	WH2AKY
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6IC	NH6KG	WH6BTI
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AC	KH8AD	WH8AAW
Wake Wilkes Peale		AH9AC	KH9AD	WH9AAG
Alaska		AL7IZ	NL7KU	WL7BPG
Virgin Is.	KP2T	KP2BI	NP2CE	WP2AFR
Puerto Rico	**	KP4NR	WP4IX	WP4HHI

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

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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.

FCC Highlights

(continued from page 8)

license cannot be found, requesting cancellation, to FCC, Consumer Affairs Office, Gettysburg, PA 17326. (ARRL Letter, 06/02/87)

FCC has released a June 4, 1987 update of its "International Amateur Radio Arrangements" Public Notice, which adds Sierra Leone to the "Third-Party arrangements" list and Cyprus to the "Reciprocal Operating Arrangements" list. It also adds the following text:

"A foreign national who will be in the United States for an extended period of time is encouraged to obtain an FCC amateur license. An FCC-issued Amateur Service license may be obtained by anyone, regardless of nationality, upon passing the requisite qualifying examinations.

"Where an alien has taken advantage of the opportunity to hold an FCC-issued license, there is no need for a reciprocal permit, since that person may operate an amateur station in his or her own right. Neither a U.S. citizen, regardless of any other citizenship also held, nor an alien holding an FCC-issued Amateur Service license is eligible for an FCC-issued reciprocal permit.

"When an alien holding an FCC-issued reciprocal permit obtains an FCC-issued Amateur Service license, that person's operator privileges derive from the FCC license. Thus, when an alien obtains an FCC-issued Amateur Service license, it supersedes any FCC-issued reciprocal permit held." (FCC, 06/04/87)

"This new rule will ... unduly discourage many reciprocal licensees

from taking a U.S. examination. Reciprocal now receive the equivalent of an Extra Class license. Reciprocal would not want to take a U.S. exam unless they were sure they were going to pass the Extra Class to avoid losing privileges." (ARRL Letter, 06/30/87)

Sheffield Wilds, W4GVD, has petitioned the FCC to "... restructure the amateur licensing system to eliminate all current classes and replace them with two classes ... such as Class B and Class A. Class B would combine current Novice and Technician Classes with operating privileges as currently structured for the Technician. Class A would combine the privileges of the current General, Advanced and Extra licenses.

"The examination would remain about the same as currently required for the General Class with the CW requirement reduced to 10 wpm — if indeed the Commission decided that there is any necessity or a requirement beyond the 5 wpm level." The '86 Callbook lists W4GVD as Advanced Class. (W5YI Report, 06/15/87)

"The ARRL has requested the FCC to allow special commemorative call signs in celebration of the bicentennial of the U.S. Constitution. "... the proposal asks that amateurs operating in their traditional call sign districts be authorized to replace the numeral in their call sign with a two-digit numeral corresponding to the order of entry into the Union (or in the case of the 13 original states, the order of ratification of the Constitution) of the state from which the operation takes place. W9PAX will be used at the 10th Pan American Games held in Indianapolis, Indiana, August 10 through 23, 1987. It is reported that the ARRL is trying to get FCC approval to use W87PAX!

At the Dayton Hamvention FCC Forum last April 26, FCC's Personal Radio Branch Chief advised that the FCC has not issued a special call for over nine years and that they have no

resources to do so. It looks like the FCC can't even make one exception without getting more requests for special event calls! (W5YI Report, 06/15/87; ARRL Letters, 06/16/87 and 06/30/87)

While the FCC said at the Dayton Hamvention FCC Forum (April 26) that the only call signs issued are those made alphabetically by computer, the effect of the Commission's PRB-3 statement will change all that. "The FCC would continue to issue 2x3 call signs with their computer, starting a new NA to NZ series. (2x3 means two letters before a numeral, then three letters after the numeral.)

"Then a contractor in the public sector (who has not yet been selected) will issue 1x2, 2x1, 2x2, 1x3 or 2x3 call signs from the other 12 million available. An amateur would use either his FCC-issued or contractor-issued call sign when he identifies his station."

James C. McKinney, formerly Chief of FCC's Mass Media, Private Radio and Field Operations Bureaus, has been appointed Deputy Assistant to the President and Director, White House Military Office (effective July 1, 1987). While Jim has not held an amateur license because he regarded it as a possible conflict of interest, let's hope he will now join us in the amateur bands. In my opinion, he has been one of the most fair-minded, even-handed and talented of the Bureau Chiefs at FCC.

For a while this spring, the backlog at FCC's Gettysburg facility was such that applicants for new licenses were waiting as much as 12 weeks for their licenses. Some additional personnel were promised for the amateur processing line to work off the backlog. A recent report from a volunteer examiner advises that his latest class got their tickets in just four weeks. (ARRL, 06/25/87; ARRL Letter, 06/30/87)

(ED: Assistant Editor Jennifer Kinugawa got her Novice call — KB6TAA — three weeks after taking her exam.)

"... New amateur licensing so far this year is running 70% ahead of 1986." In May, FCC processed 18,889 applications, including 6,797 new amateurs. This brings the five-month total for 1987 to 14,679 new amateurs. The figure for the same period last year was 8,613. (ARRL Letter, 06/30/87)

"The FCC's Novice Enhancement proceeding is doing what was intended ... that being to interest newcomers

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 ICOM - Order Model I for Icom (2AT/02AT). Slides on bottom of radio.
 TEMPO, SANTEC - Order Model T (Simple mod). Write for spec sheet/info on other radios.

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in pursuing the Amateur Radio hobby. Ninety-three percent (6,567) of the new applicant Form 610 applications processed during May 1987 entered Amateur Radio at the Novice level." (W5YI Report, 07/01/87)

Commencing with the August ARRL membership expiration notices, members are being reminded of their FCC license expiration date. (ARRL Letter, 06/30/87)

Errata in the "End-of-Month License Totals": 1) April 1987 - *General Class* 114,943; 2) February 1987 -

Extra 41,462; Advanced 97,727; General 115,535; Technician 85,913; Novice 81,445; Total 422,082. (July Worldradio, June AUTO-CALL, June Radiosporting)

END-OF-MONTH LICENSE TOTALS

April 1987		May
41,634	Extra	42,136
97,504	Advanced	97,880
114,943	General	115,045
86,118	Technician	87,631
82,734	Novice	86,175
422,933	Totals	428,867

Wormhole

A KU band satellite link (called the wormhole) has been established between the University of Maryland and San Jose State University (California), with a packet station connected to each end. Milt James, KA6NZJ, and Robby Robinson, N6LAM, have used this capability to hold packet QSO's with stations in the Maryland area.

This temporary non-amateur transcontinental link is an exciting preview of the AMSAT Phase-4 geosynchronous satellite amateur packet link planned for 1989.

- Golden Empire ARS, Chico, CA



ICOM

KENWOOD

YAESU



IC 735

HF Equipment	List	Juns
IC-761 New Top Of Line	\$2499	Call \$
IC-735 Gen. Cvg. Xcvr	999.00	Call \$
IC-745 Gen. Cvg. Xcvr	1049.00	Call \$
IC-751A Gen. Cvg. Xcvr	1649.00	Call \$

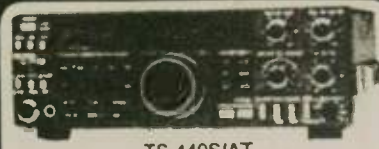
Receivers	List	Juns
IC-R7000 25-1300 + MHz Rcvr	1099.00	Call \$
IC-R711A 100 kHz-30 MHz Rcvr	949.00	Call \$

VHF	List	Juns
IC-275A All Mode Base w/PS	1199.00	Call \$
IC-275H All Mode Base 100w	TBA	Call \$
IC-271A All Mode Base 25w	859.00	Call \$
IC-27A FM Mobile 25w	429.00	Call \$
IC-27H FM Mobile 45w	459.00	Call \$
IC-28A FM Mobile 25w	429.00	Call \$
IC-28H FM Mobile 45w	459.00	Call \$
IC-38A FM Mobile 25w	459.00	Call \$
IC-38H FM Mobile 45w	459.00	Call \$
IC-02AT FM HT	299.00	Call \$
IC-02AT FM HT	399.00	Call \$
IC-2AT Micro HT	329.00	Call \$

UHF	List	Juns
IC-475A All Mode 25w	TBA	Call \$
IC-471A All Mode Base 25w	979.00	Call \$
IC-47A FM Mobile 25w	549.00	Call \$
IC-48A FM Mobile 25w	459.00	Call \$
IC-4AT FM HT	339.00	Call \$
IC-04AT FM HT	449.00	Call \$
IC-4AT 440 FM HT	TBA	Call \$
IC-3200A FM 2m/70cm 25w	599.00	Call \$

220 MHz	List	Juns
IC-375A All-Mode, 25w, Base Sta.	TBA	Call \$
IC-38A 25w FM Xcvr	459.00	Call \$
IC-37A FM Mobile 25w	499.00	Call \$
IC-3AT FM HT	339.00	Call \$
IC-03AT Deluxe HT	449.00	Call \$

1.2 GHz	List	Juns
IC-1271A All Mode 10w	1229.00	Call \$
IC-120 1w, FM, Xcvr	579.00	Call \$
IC-12AT Deluxe 1w HT	459.00	Call \$



TS-440S/AT

HF Equipment	List	Juns
TS-940S/AT Gen. Cvg. Xcvr	\$2249.95	Call \$
TS-940S Gen. Cvg. Xcvr	2049.95	Call \$
TS-930S/AT Gen. Cvg. Xcvr	1849.95	Call \$
TS-830S Xcvr	1099.95	Call \$
TS-430S Gen. Cvg. Xcvr	859.95	Call \$
TS-440S/AT Gen. Cvg. Xcvr	1199.95	Call \$
TS-440S Gen. Cvg. Xcvr	999.95	Call \$
TL-922A HF Amp	1499.95	Call \$

Receivers	List	Juns
R-5000 100 kHz-30 MHz	899.95	Call \$
R-2000 150 kHz-30 MHz	649.95	Call \$

VHF	List	Juns
TS-711A All Mode Base 25w	899.95	Call \$
TR-751A All Mode Mobile 25w	599.95	Call \$
TM-221A Compact FM 45w	399.95	Call \$
TM-2530A FM Mobile 25w	429.95	Call \$
TM-2530A FM Mobile 25w	469.95	Call \$
TM-2550A FM Mobile 45w	559.95	Call \$
TM-2570A FM Mobile 70w	259.95	Call \$
TH-21BT FM, HT	259.95	Call \$
TH-205 AT, NEW 2m HT	259.95	Call \$
TH-215A, 2m HT Has II All	349.95	Call \$

UHF	List	Juns
TS-811A All Mode Base 25w	1049.95	Call \$
TR-851A 25w SSB/FM	699.95	Call \$
TR-9500 10w All Mode	649.95	Call \$
TR-9500 10w All Mode	419.95	Call \$
TM-421A Compact FM, 35w	449.95	Call \$
TM-411A FM Mobile 25w	359.95	Call \$
TH-415A 2.5w 440 HT	269.95	Call \$
TH-41BT FM, HT	649.00	Call \$
TW-4100A, 2m/70cm FM	649.00	Call \$
TR-50 1w 1.2GHz FM	549.95	Call \$

220 MHz	List	Juns
TM-3530A FM 220 MHz 25w	449.95	Call \$
TH-31BT FM, 220 MHz HT	269.95	Call \$



FT 757GX

HF Equipment	List	Juns
FT-ONE Gen. Cvg. Xcvr	\$2859.00	Call \$
FT-980 9 Band Xcvr	1795.00	Call \$
FT-757 GX II Gen. Cvg. Xcvr	1079.95	Call \$
FT-767 4 Band New	1895.00	Call \$

Receivers	List	Juns
FRG-8800 150 kHz - 30 MHz	599.95	Call \$
FRG-9600 60-905 MHz	679.95	Call \$

VHF	List	Juns
FT-211RH FM Mobile 45w	459.95	Call \$
FT-270RH FM Mobile 45w	439.95	Call \$
FT-290R All Mode Portable	579.95	Call \$
FT-23 R/TT Mini HT	299.95	Call \$
FT-209RH FM Handheld 5w	359.95	Call \$

UHF	List	Juns
FT-711RH FM Mobile 35w	TBA	Call \$
FT-730R 10w 440 FM	399.95	Call \$
FT-770RH FM Mobile 25w	479.95	Call \$
FT-73 R/TT Mini HT	314.95	Call \$
FT-703R/TT 440 HT	299.95	Call \$
FT-709RH FM HT 4w	359.95	Call \$

VHF/UHF Full Duplex	List	Juns
FT-726R All Mode Xcvr	1095.95	Call \$
HF/726 Module for 10,12,15M	289.95	Call \$
430/726 430-440 MHz	329.95	Call \$
440/726 440-450 MHz	329.95	Call \$
SU-726 Sate Duplex	129.95	Call \$
FT-690R MKII, 6m, All Mode, port.	569.95	Call \$

Dual Band	List	Juns
FT-2700RH FM 2m/70cm 25w	599.95	Call \$
FT-727R 2m/70cm HT	479.95	Call \$

220 MHz	List	Juns
FT-109RH New HT	379.95	Call \$

Repeaters	List	Juns
FTR-2410 2m Repeaters	1249.95	Call \$
FTR-5410 70cm Repeaters	1289.95	Call \$

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VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid July.

Our address is Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams".

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

p/r = pre-register

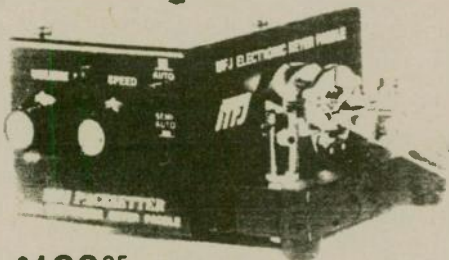
w/i = walk-in

Date	City	Contact	Notes
California			
Aug 27	Long Beach	(213) 434-8278	
Sept 24			
Aug 31	Montclair	(714) 875-6472	
Sept 28			
Sept 5	Riverside	KN6U (714) 780-2680	7-day p/r
Sept 5	Visalia	W6MUV (209) 627-5346	
Sept 5	Van Nuys	(818) 988-7165	
Sept 5	Huntington Beach	KD6DA (213) 691-1514	some w/i
Sept 5	Eagle Rock	WB6PSY (818) 710-1705	w/i
		NGJFG (213) 258-9127	
Sept 5	Burbank	W6JEP (818) 848-9340	w/i OK
Sept 5	Eureka	KF6FY (707) 822-4541	
Sept 12	Victorville	K6BET (619) 244-6080	w/i OK
Sept 12	Vandenberg AFB	(805) 937-4220	
Sept 12	Novato	N6AQY (415) 897-8950	
Sept 12	Los Altos Hills	W6NLG (408) 255-9000	w/i only
Sept 13	Loma Linda	(714) 824-1133	
Sept 13	Chico	W6YKU (916) 342-1180	
Sept 13	Campbell	(408) 243-8349	
Sept 15	El Toro	(714) 951-0336	
Sept 16	Eureka	KB6FIW (707) 442-9245	w/i OK
Sept 17	Fountain Valley	(714) 775-6095	
Sept 19	Santa Monica	(213) 475-0383	p/r by 9/18
Sept 19	Rcho Palos Verdes	(213) 644-2271	p/r pref
Sept 19	Merced	K6RAU (209) 722-7183	
Sept 26	Hawthorne	N6HCS (213) 316-2758	
Sept 27	Santa Cruz	KG6XY (408) 425-4703	
Oct 10	Camarillo	N6SR (805) 484-4461	30-day p/r
Colorado			
Sept 12	Denver	W0LJR (303) 366-9689	p/r pref
Delaware			
Sept 26	Wilmington	WB3DPJ (302) 478-2757	w/i OK
Florida			
Sept 5	Sunrise	AK4Y (305) 476-8761	w/i only
Sept 17			
Oct 3			
Sept 12-13	Melbourne	WB9IVR (305) 724-6183	w/i OK
Sept 19	Fort Myers	NH6U (813) 283-5418	p/r pref
Illinois			
Aug 27	Chicago	W9WBY (312) 929-6550	
Sept 5	Oak Forest	NF9N (312) 448-9432	30-day p/r
Oct 3			
Sept 15	Aurora	N9AKE (312) 892-1252	w/i
Sept 19	Loves Park	(815) 874-6867	p/r pref
Oct 2	Springfield	WD9EBK (217) 629-8190	w/i OK
Indiana			
Sept 5	South Bend	N19Y (219) 255-4455	w/i
Sept 7	Plymouth	KB8V [219] 784-8540	
Oct 5			
Sept 12	Hammond	AJ9C (219) 962-5512	
Sept 19	Mishawaka	K9WSX (219) 255-3889	
Sept 26	Franklin	K19R (812) 372-5006	10-day p/r
Oct 3	Speedway	KA9H (317) 241-1272	in advance
Iowa			
Sept 11	Sioux City	NF0N (402) 494-6070	30-day p/r
Oct 16			
Sept 26-27	Des Moines	NA0R (515) 967-3890	p/r by 8/26
Kansas			
Aug 28	Kansas City	NC0M (913) 262-0631	p/r pref
Sept 25			

Date	City	Contact	Notes
Aug 28	Topeka	NA0F (913) 828-3317	p/r pref
Sept 25			
Sept 12	Olathe	NK0B (913) 764-6347	p/r pref
Maryland			
Sept 12	Salisbury	K3NOQ (301) 749-7444	3-day p/r
Sept 13	Gaithersburg	Jim Kessler (301) 953-1065	w/i
Sept 20	Baltimore	Steve Silberman (301) 578-8527	w/i
Massachusetts			
Sept 5	Brewster	KY1T (617) 255-2029	w/i OK
Sept 12	Wilbraham	Yorke Phillips (413) 566-3010	
Sept 18	Holyoke	KO1R (203) 623-4850	w/i OK
Sept 19	Wellesley	KZ1D (617) 460-9059	p/r by 9/15
Sept 23	MIT-Cambridge	WA2EYC (617) 646-1641	p/r by 9/21
Oct 6	Acton	W1QLT (617) 283-8742	p/r by 9/29 no w/i
Michigan			
Sept 19	Dearborn	(313) 676-6248	
Oct 10	Ironwood	KT9I (715) 561-2802	30-day p/r
Minnesota			
Aug 29	Annandale	NA0U (612) 920-7473	
Sept 19	St. Paul	K0QBE (612) 222-7253	
Missouri			
Aug 23	St. Charles	NF0Q (314) 946-0948	w/i only
New Jersey			
Sept 12	Pennington	AA2F (609) 737-1723	in advance
Sept 12	Cranford	N2XJ (201) 635-7686	30-day p/r
New York			
Sept 12	Long Island	W2NI (516) 541-2450	
Ohio			
Aug 29	Canton	WB8VUN (216) 453-5896	
Sept 12	Columbus	AJ8J (614) 235-2745	
Sept 12	Maumee	KU8B (419) 729-5245	
Sept 26	Barberton	KA8MPH (216) 882-6387	
Sept 26	Ravenna	KJ3O/8 (216) 274-8240	
Oct 10	Mentor	KO8O (216) 951-7985	25-day p/r
Oregon			
Sept 5	Newport	W7NNE (503) 547-3083	30-day p/r
		KA7EAT (503) 547-3341	some w/i
Sept 9	Roseburg	KA7ZAG (503) 672-8446	w/i OK
Sept 19	Grants Pass	W7YQM (503) 479-3113	p/r pref
		NS7N (503) 476-6533	
Sept 19	Eugene	N7FPA (503) 343-0878	p/r pref
Sept 24	North Bend	WA7I111 (503) 756-6846	30-day p/r
Oct 3	Portland	KZ7T (503) 649-5086	30-day p/r
Pennsylvania			
Sept 5	Erie	W3NR (814) 825-2539	w/i OK
Oct 3			
Sept 16	Scranton	Bob Chime! (717) 586-2569	w/i
Sept 19	McKeesport	KQ3W (412) 466-5204	p/r & w/i
Texas			
Sept 5	Harlingen	WA2VJL (512) 399-0328	w/i
Sept 5	Midland	KT5G (915) 694-9450	w/i OK
Sept 12	San Antonio	NS5I (512) 681-0702	w/i
Sept 14	Brady	WD5H (915) 597-2561	7-day p/r
		WM5S (915) 597-0614	
Oct 17	Cleveland	N5AF (713) 592-2257	30-day p/r
Vermont			
Sept 19	Montpelier	WB1AJG (802) 433-6172	p/r pref
Virginia			
Sept 19	Richmond	WU4G (804) 798-5191	w/i OK
Oct 3	Sterling Park	Mike Weber (703) 450-2304	w/i
Washington			
Sept 12	Seattle (North)	W7WHT (206) 282-1438	w/i only; call
Sept 18	Bellingham	K7IWX (206) 734-0577	4-day p/r
			no w/i
Sept 19	Seattle (South)	N7IL (206) 242-6501	10-day p/r
Wisconsin			
Sept 19	Fox Point	KB9G (414) 351-5311	p/r pref
Sept 26	Wisconsin Rapids	K9UTQ (715) 423-6368	30-day p/r
Oct 3	Racine	N9DMP (414) 658-8390	30-day p/r

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\$129⁹⁵ MFJ-422B

The best of all CW worlds - a deluxe MFJ Keyer using a Curtis 8044ABM chip in a compact configuration that fits right on the Bencher iambic paddle!

This MFJ Keyer is small in size but big in features. It features iambic keying, adjustable weight and tone and has front panel volume and speed controls (8-50 WPM), dot-dash memories, speaker, sidetone and push button selection of semi-automatic/tune or automatic modes. It's also totally RF proof and has ultra-reliable solid state outputs that key both tube and solid state rigs. Uses 9 V battery or 110 VAC with MFJ-1305, \$9.95

The keyer mounts on a Bencher paddle to form a small (4 1/8 x 2 5/8 x 5 1/2 inches) attractive combination that is a pleasure to look at and use.

America's favorite paddle, the Bencher, has adjustable gold-plated silver contacts, lucite paddles, chrome plated brass, and a heavy steel base with non-skid feet.

You can buy just the keyer assembly, MFJ-422BX, for only \$79.95 to mount on your Bencher paddle.

MFJ's best selling TUNER
MFJ-941D **\$99.95**



The MFJ-941D is MFJ's best selling (and probably the world's best selling) 300 W PEP antenna tuner! Why? Because it has more features than tuners costing much more and matches everything from 1.8 to 30 MHz for your solid state or tube rig: dipoles, inverted vees, random wires, verticals, mobile whips, beams, balanced and coax lines.

New dual-range SWR wattmeter reads forward and reflected power in both 30 and 300 watt ranges. Convenient front-panel mounted 6-position antenna switch lets you select 2 coax lines, direct or through tuner, random wire/balanced line or tuner bypass for dummy load. New, larger, more efficient airwound inductor gives lower losses and more watts out. Plus... built-in 4:1 balun for balanced lines. 1000 V capacitor spacing, brushed aluminum front panel on all-metal cabinet. 11x3x7 inches.

RX NOISE BRIDGE

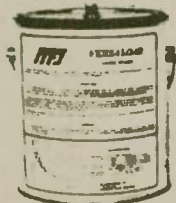
Make your antenna perform like you know it should!

MFJ-202B tells whether to shorten or lengthen antenna for minimum SWR. Also measure resonant frequency, radiation resistance and reactance.

Exclusive features: individually calibrated resistance scale, expanded reactance range, built-in range extender for measurements beyond scale readings. 1-100 MHz. Uses 9 V battery. 2x4x4 in.

1 KW DUMMY LOAD

Tune up fast, extend life of finals, reduce QRMI Rated 1KW CW or 2KW PEP for 1C minutes. Half rating for 20 minutes, continuous at 200 W CW, 400 W PEP. VSWR under 1.2 to 30 MHz. 1.5 to 300 MHz. Oil contains no PCB. 50 ohm non-inductive resistor. Safety vent. Carrying handle. 7 1/2x6 3/4 in.



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MFJ-250 **\$44.95**

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Grandmaster MEMORY KEYER
MFJ-484C **\$139.95**



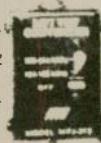
The MFJ-484C "GRANDMASTER" memory keyer is THE choice of CW contesters. Why? Because it's so easy to use, it's second nature... you don't have to learn complex commands... and it has all the features you'll ever need for easy CW.

Features like these... store up to twelve 25 character messages plus a message of up to 100 characters. Or use a switch to combine 25 character messages for up to three 50 character messages. Repeat any message continuously or pause between repeats and change or insert into a playing message by simply sending. And you don't lose your settings when you lose power.

The MFJ-484C is RF proof, sends 8-50 WPM and measures just 8x2x6 inches. It uses 12 to 15 VDC or 110 VAC with MFJ-1312, \$9.95.

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MFJ-313 **\$39.95**

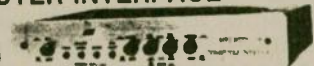
MFJ's smallest VERSA TUNER
\$59.95 MFJ-9018

The MFJ-9018 is our smallest -- 5x2x6 inches -- (and most affordable) 200

watt PEP Versa tuner -- when both your space and your budget is limited. Matches dipoles, inverted vees, random wires, verticals, mobile whips, beams, balanced and coax lines from 1.8-30 MHz. Excellent for matching solid state rigs to linears. Efficient airwound inductor. 4:1 balun

RTTY/ASCII/CW COMPUTER INTERFACE

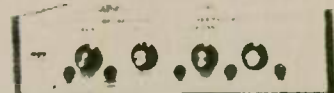
MFJ-1224 **\$99.95**



Free MFJ RTTY/ASCII/CW software on disk and cable for VIC-20 or C-64. Send and receive computerized RTTY/ASCII/CW with nearly any personal computer (VIC-20, Apple, TRS-80, Atari, TI-99, Commodore 64, 128 etc.) Use Kantronics or most other RTTY/CW software. Copies both mark and space, any shift (including 170, 425, 850 Hz) and any speed (5-100 WPM RTTY/CW, 300 baud ASCII). Sharp 8 pole active filter for CW and 170 Hz shift. Sends 170, 850 Hz shift. Normal/reverse switch eliminates retuning. Automatic noise limiter. Kantronics compatible socket plus exclusive general purpose socket. 8 x 1 1/4 x 6 inches. 12-15 VDC or 110 VAC with adapter, MFJ-1312, \$9.95.

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SPECIAL EVENTS

Safe Labor Day/Constitution

I-95 weigh station

The Tri-City ARC will operate special event station KA1BB from the Waterford, Connecticut I-95 weigh station to promote safe Labor Day holiday auto travel and to commemorate Connecticut's historical role in the creation of the U.S. Constitution 200 years ago. This event is in conjunction with the 5th Annual Stay-Awake Coffee Stop offered by Boy Scout Troop 24.

Operation will be from 1700Z, September 5 through 2300Z, September 7. Frequencies: *Phone* — 28.325, 14.295, 7.245 or 3.395 MHz; *CW* — 7.130, 7.075 or 14.145 MHz. Talk-in to coffee stop on FM-146.52 direct. QSL with letter-size SASE via Tri-City

ARC, P.O. Box 686, Groton, CT 06340.

Ledyard Fair

The Tri-City ARC will operate special event station K1FSC from the Ledyard Fair to continue the commemoration of Connecticut's historical role in the creation of the U.S. Constitution 200 years ago. Operation will be from 1400Z to 2400Z, September 11, and 1800Z to 2000Z, September 12. Frequencies: *Phone* — 14.295 or 7.245 MHz; *CW* — 7.130 MHz.

QSL with letter-size SASE via Tri-City ARC, P.O. Box 686, Groton, CT 06340. □

Heston events

Heston Steam Show

The Porter County ARC will operate N9RD from 1300Z to 2300Z, September 5-6, from the Heston Steam Museum (Heston, Indiana) for the annual Steam Show. Suggested frequencies: *Phone* — 3.966, 14.266, 21.266, 28.466; *CW* — on request.

All contacts will receive a special QSL card cancelled from a special post office at the Heston Steam Show. For more information, contact Jurgen Nittner, N9RD, or Tom Drake, KB8AC, P.O. Box 1782, Valparaiso, IN 46383.

Orval Redenbacher Popcorn Festival

The Porter County ARC will operate N9RD from 1800Z to 2400Z, Saturday, September 12, from the annual Orval Redenbacher Popcorn Festival. (See above for calling frequencies.)

For 8½" x 11" special certificate QSL, send large 9" x 12" SASE to Porter County ARC, P.O. Box 1782, Valparaiso, IN 46383. For more information, contact N9RD or KB8AC at the above address. □

Septemberfest

The Schaumburg ARC will operate WB9TXO from the Schaumburg Septemberfest site on Sunday, September 6, from 1500 to 2000Z. Suggested frequencies are 7.250, 14.250 and 28.400 MHz.

For a confirming certificate, send QSL to SARC, P.O. Box 68251, Schaumburg, IL 60168-0251. □

OK Corral shootout

The Old Pueblo Radio Club of Tucson, Arizona will sponsor the 6th Annual Labor Day special event station from the OK Corral in Tombstone, Arizona, site of the famous shootout between the Earps and the Clantons in 1881, operating under Arizona's oldest call sign — W7GV. Operation will be from 0000Z, September 5 to 2200Z, September 7.

Frequencies: *SSB* — 3.980, 7.280, 14.280, 21.380, 28.380; *CW* — 3.730, 7.130, 14.060, 21.130, 28.130; *FM* — ZIA link and packet. May operate HF RTTY and packet.

Send QSL's via W7GV, P.O. Box 42601, Tucson, AZ 85733. The commemorative QSL will be printed on a replica of the front page of the tombstone epitaph reporting the shootout. Send 8½" x 11" SASE (39¢) if you don't want it folded. For more information, contact Bill Croghan, WB0KSW, 1854 W. Domy St., Tucson, AZ 85713; (602) 622-1535. □

Trader-O-Ree

The Quinnipiac Council of Boy Scouts of America will operate W1GB during the 1st Annual Trader-O-Ree at Camp Sequassen, Winsted, Connecticut, September 11-12. Operation will take place from 2330Z, September 11 to 0400Z, September 12 and from 1200Z, September 12 to 0400Z, September 13. Suggested frequencies: *Phone* — 3920, 7240, 14290, 21340, 28400; *CW* — 3725, 7125, 21150.

For special QSL, send QSL and SASE to Skip Paquette, KA1EAJ, 121 West Dayton Hill, Wallingford, CT 06492. □

Antiques and collectors

The Hastings ARC will operate club station W0WWV at Clay Center, Nebraska Old Trusty Antique and Collectors Show, September 12-13. Hours will be 1800Z, September 12 to 1800Z, September 13, in the General portion of the 80-40-20M band.

For a QSL, send a business-size SASE to HARC, P.O. Box 128, Hastings, NE 68901. □

Buffalo Bill Days

The Pilot Knob ARC of Leavenworth, Kansas will sponsor a special event station on September 19, during Buffalo Bill Days. The call will be W0VZG. Frequencies: General phone bands, Novice 10M phone band and the local 2M band (147.00).

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To receive certificate, send QSL card and business-size SASE to Bill Meyers, WB0IEL, 202 South Main, Lansing, KS 66043. □



Waldo Gunderson, WA9WLN, of the Tri-Town Radio Amateur Club, congratulates young Suzanne Voss, KA9VNA, on being the youngest Amateur Radio operator to take part in last September's Hazelnut Festival in Hazelcrest, Illinois. (Photo by Richard Bauer, N9DKO)

Hazelnut Festival

On September 12-13, the Tri-Town Radio Amateur Club will operate special event station W9VT from the grounds of the Hazelcrest, Illinois Hazelnut Festival. Hours of operation will be from 1300 UTC, September 12 to 0300 UTC, September 13 and again from 1300 to 2100 UTC, September 13.

Operation will be on all bands 80-10, approximately 10-30 kHz up from the lower edges of the General portion of each band. 10M phone operation on 28.490 MHz in the Novice band and local 2M operation on 146.49 MHz is also planned.

A commemorative certificate will be issued to all stations working W9VT that day. Send an SASE with 1 unit of first class postage to the Tri-Town RAC, P.O. Box 302, Hazelcrest, IL 60429. — Richard Bauer, N9DKO □

Winesburg Fall Fair

The Clyde Amateur Radio Society will operate station NF8E from 1600Z-0000Z, September 19 and 1600Z-2200Z, September 20 from the Winesburg Fall Fair. Frequencies: CW — 7.125, 21.150; Phone — 3.900, 7.250, 14.300, 21.400.

For certificate, send #10 SASE to Steven Karr, NF8E, 302 Hamer St., Clyde, OH 43410. □

Pope John Paul II

Members of the Southeastern Michigan DX Association will operate special event station K8JP, commemorating the visit of Pope John Paul II to the Detroit area, September 19, 0001Z-2400Z. Operation will be 10

through 80M, both phone and CW.

For special commemorative QSL, send QSL and SASE to Larry Zabkowski, K8NLD, 18082 Gaylord, Fraser, MI 48026. □

Novices on 10M

The Wellesley (Massachusetts) ARS will operate W1TKZ to celebrate the new Novice privileges from 1300Z, September 19 to 0100Z, September 20. Operation will be USB at 28.350 MHz. All amateurs are welcome,

especially Novices and Technicians.

For a special QSL card, send a completed QSL and SASE to the Wellesley ARS, 211 Washington St., Wellesley, MA 02181. □

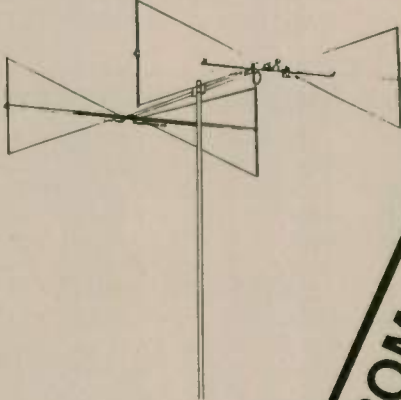


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USAF 40th anniversary

The Wright-Patterson AFB MARS station, AGA1WP, and the Dayton ARA, W8BI, will operate two special event stations September 18-20, 1300Z-2100Z each day, in honor of the celebration of the Air Force's 40th anniversary, "The Festival of Flight."

AGA1WP will transmit on the following frequencies: 3229.5, 7528.5, 14,528.5 and 20,874.5 kHz. Listening frequencies inside the amateur bands will be announced.

Amateurs are cautioned in operating "split" to be sure they are transmitting on amateur frequencies. W8BI will be operating in the General



Class phone portions of the amateur bands and in the Novice/Technician 10M phone/CW band.

A special Festival of Flight commemorative QSL is available to those making contact with either station. A QSL and SASE are required to receive the commemorative QSL. Send all QSL confirmations to W8BI, P.O. Box 44, Dayton, OH 45401.

For additional information, contact the Amateur Radio special event coordinator, Paula DiGennaro, KA8HQJ, 7136 Pineview Dr., Huber Heights, OH 45424; (513) 233-9018. □

Oil and gas boom

The Findlay Radio Club will operate W8FT on September 26-27, to commemorate the 100th anniversary of the area's oil and gas boom. Operation will be from 1700Z, Saturday, September 26 to 2200Z, Sunday, September 27 in the General Class portion of the bands, the new Novice phone band and club repeaters.

For QSL, send SASE to Findlay Radio Club, Box 587, Findlay, OH 45839. □

SCARS decicentennial

The South Canadian Amateur Radio Society will celebrate its decicentennial anniversary by operating a special event station, W5OU, from 1400Z to 2400Z on September 19. Operation will be on 7.237, 14.237, 21.337 and 28.337 SSB phone; 14.087 RTTY/AM-

TOR; 145.01 packet; 147.060(±600) FM; and 439.25 ATV.

For a certificate, send QSL and 9" x 12" SASE with 39¢ postage to SCARS c/o Davis Egle, KD5IT, 2735 Poplar Lane, Norman, OK 73072. □

Museum of Science

The Council of Eastern Massachusetts Amateur Radio Clubs (CE-MARC) will operate special event stations during the Amateur Radio exhibit at the Museum of Science in Boston, Massachusetts on Saturday and Sunday, September 26-27. Each special event station will use the call sign KA1SM.

Primary operation will be on 20M, but also check the General portion of all HF bands for periodic calls. The Novice portions of 40, 15, 10 and 1 1/4M will be active from KA1SM. The hours of operation will be 1300Z-2100Z on

both days. An attractive full-color QSL card will be sent to all stations which QSL.

CEMARC sponsors the annual Amateur Radio exhibit at the Museum of Science to show a variety of ham activities to the science-oriented public. The museum visitors are encouraged to participate in communication by several ham modes, and to learn more about the hobby. In 1986, over 7,500 people — half of them high school age or younger — attended the weekend exhibit. Because of museum changes, the 1987 attendance is expected to exceed 15,000. (See "Gather the non-hams," page 24.) □

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120 — 225 MHz Quad Available
420 — 450 MHz Quad Available

- All metal (except insulators) rugged construction
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- Weight — 9 pounds
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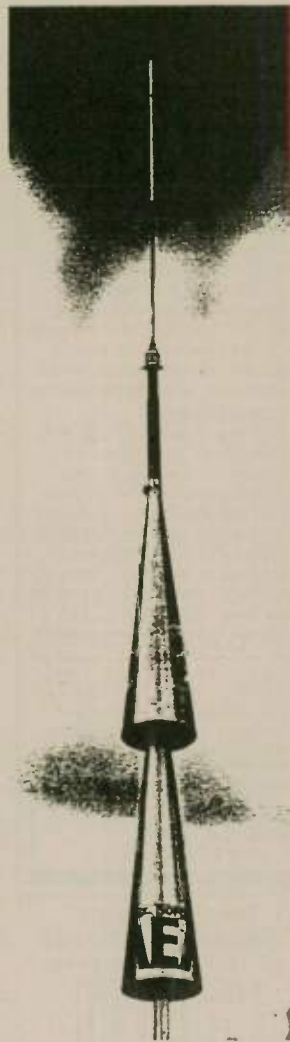
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Outstanding mechanical design makes the IsoPole the only logical choice for a VHF base station, especially for Packet operation. All IsoPole antennas yield the maximum gain attainable for their respective lengths and a maximum signal on the horizon. Exceptional decoupling from the feed line results in simple tuning and a significant reduction in TVI potential. The IsoPole antennas are all impedance matched in the factory so that no field tuning is required. The IsoPoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other, when used with SWR protected solid state transceivers. Typical SWR is 1.4 to 1 or better across the entire band.

A standard 50 Ohm SO-239 connector is recessed within the base sleeve (fully weather protected). With the IsoPole you will not experience aggravating deviation in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is not supplied).



High Performance Hand-Held Antenna — The Hot Rod

The Hot Rod antenna can be expected to make the same improvement to hand-held communications that the IsoPole antennas have made to base station operation. Achieve 1 or 2 db gain over ANY 5/8 wave two meter telescopic antenna. The factory tuned HR-1 is 20% shorter, lighter and places far less stress on your hand-held connector and case. It will easily handle over 25 watts of power, making it an excellent emergency base or mobile antenna. In the collapsed position, the Hot Rod antenna will perform like a helical quarter wave. Three Hot Rods are available; HR-1 1/2 wave 2M Ant., HR-2 for 220 Mhz, and HR-4 for 440 Mhz. Amateur Net Price on all Hot Rods is \$19.95.

For either base station or hand-held operation AEA has the perfect VHF/UHF antenna. Put more punch in your Packet station with an AEA IsoPole or Hot Rod antenna. To order your new antenna contact your favorite Amateur Radio Distributor. For more information contact Advanced Electronic Applications, P.O. Box C-2160, Lynnwood, WA 98036, or call 206-775-7373.

IsoPole Specifications

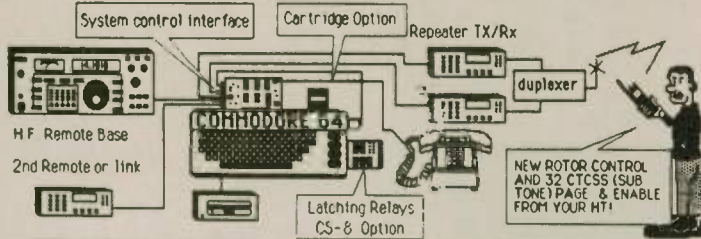
Model	144	220	440
Freq. Coverage (Mhz)	135-160	210-230	415-465
2.1 VSWR bandwidth	>12Mhz @ 146Mhz	>15Mhz @ 220Mhz	>22Mhz @ 435Mhz
Power Rating	1 kw	1 kw	1 kw
Gain**	3 dbd	3 dbd	3 dbd
Radiating Element Length	125.5" (3.2m)	79.25" (2m)	46" (1.2m)
Amateur Net Price	\$49.95	\$49.95	\$69.95

**dbd — db gain over a dipole in free space

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- * Multiple commands can be executed at once (up to 22 digits per command string)
- * CTCSS tone paging/voice paging/8 relay cont. opt.
- * Alarm clock & auto-excite command string!
- * Optional autoboot cartridge (no disk drive needed)
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Special Club Features

- * Generates random code practice @ any speed with voice feedback after each 20 random code group!
- * Set CW speed/butch/courtesy beep from your HT
- * Input up to 22 vocab words & letters as ID or mail box message @ speed dial rates from HT
- * Easy to maintain C64 computer / low cost repair!

Autopatch Specifications

- * 300 Touchtone/parameter loadable autodial numbers, inc. 10 Emergency (quick access)
- * 300 Reverse patch call signs voice paged with CTCSS activated/general & directed page modes
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- * Storage of MCI/Sprint access codes + delay digits
- * Call waiting allows switching to second call
- * Touchtones or a repeater added to the tel./speed dial
- * CTCSS paging group/ Individual or reverse patch
- * Reverse patch active in all modes

Dual Remote Base Specifications

- * HF CAT remote: Yaesu FT-757/767/980 Kenwood TS-440/940, Icom IC-735
- * 2nd remote: Yaesu FT-727/FT-767 (UHF & VHF), Kenwood: 1/711 - serial data - or use 7950 TS-250/70 with RAP 1 (row & col control card)
- * 10 HF Memory channels/enter or recall
- * Automatic USB/LSB/FM/AM mode select
- * Scan up/down, fast, slow or 100Hz steps
- * Control CS-8 relay/latch/master reset /Status
- * HF / 2nd remote Monitor only, or TX enable modes
- * All control inputs are voice confirmed including frequency, mode, scan status, time, outputs on/off
- * VHF remote, as link input, & repeater can be active

System Options

- * 8 Latching Relay control, Model CS-8.....\$79.95
- * 3 DPDT 2A relays, 5 open collector outputs + user defined? letter function name & state + automatic PTT fan control/master off code + CTCSS group call/individual (HT programmable) + Ham M rotor interface Model HM-1 \$49.95
- * Optional CMOS auto-boot 72k EPROM Cartridge programmed with your parameters \$99.95
- * Keypad Control for VHF remote, RAP 1 \$149.95
- * Super ComShack Manual (credit later)\$15.00

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includes computer interface, disk*, cables & manual, use with C-64/C-64C/C-128/SX-64 (spec inst.)

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PUBLIC SERVICE

Dam emergency test

Amateurs assist

Chuck Clark, K4ZN

"The gals will be jealous of me," said Maggi Yergin, N4MNG. "There I was at the Awendaw Fire Station surrounded by those handsome firemen, policemen, Red Cross men — the only woman in the bunch — and we were pretending we were isolated by the flood waters of the Santee River and I was the only means of communication."

Officials in South Carolina called on radio amateurs to have a large share in providing communication for agencies responding to the simulated failure of a major dam in the Santee-Cooper system in late February of this year.

In the early 1940's the South Carolina Public Service Authority, with WPA help, dammed the Santee River to form Lake Marion and diverted the water into the Cooper River so as to take advantage of a flow of up to a hundred thousand cubic feet per second at a 70' head for generating electricity. Because of the urgent need for power during the war, construction was rushed and problems developed in later years.

On July 8, 1983, a leak developed at the Pinopolis dam, and a complete collapse was feared. People living immediately below the dam were evacuated and those further downstream were warned of the danger. But it was soon discovered that the trouble was caused by the rupture of a timber cap over a pipe placed in the dam during construction and never used thereafter. The pipe was closed, the leak stopped, and people returned to their homes.

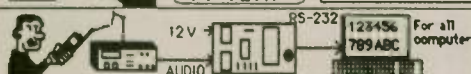
But the incident alerted authorities to the danger, and investigation showed that an earthquake such as shook Charleston in 1887 could breach both the Pinopolis and the Santee dams. It was decided to reinforce the Pinopolis dam, but to accept the risk at the Santee dam because the area below the dam is very thinly populated. That area is much as it was when Francis Marion, the Swamp Fox, used it as base of operations for harrassing the British during the Revolutionary War, and more recently

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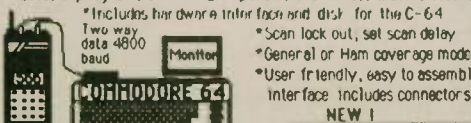


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Program your computer in basic to decode multidigit "strings", sound alarms, observe codes. Simple to install, includes basic program for C64/VIC20/C128, works with all computers!
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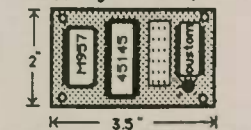
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- * Program 100 channels, including offsets, subtones, TX, RX, & all FT-727R keyboard commands. Save all sets to disk & print out
- * Loads & programs all FT-727R parameters in less than 15 seconds



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Touchtone 4 Digit Decoder & on/off latch all 16 Digits/low power



Repeater on/off Master control

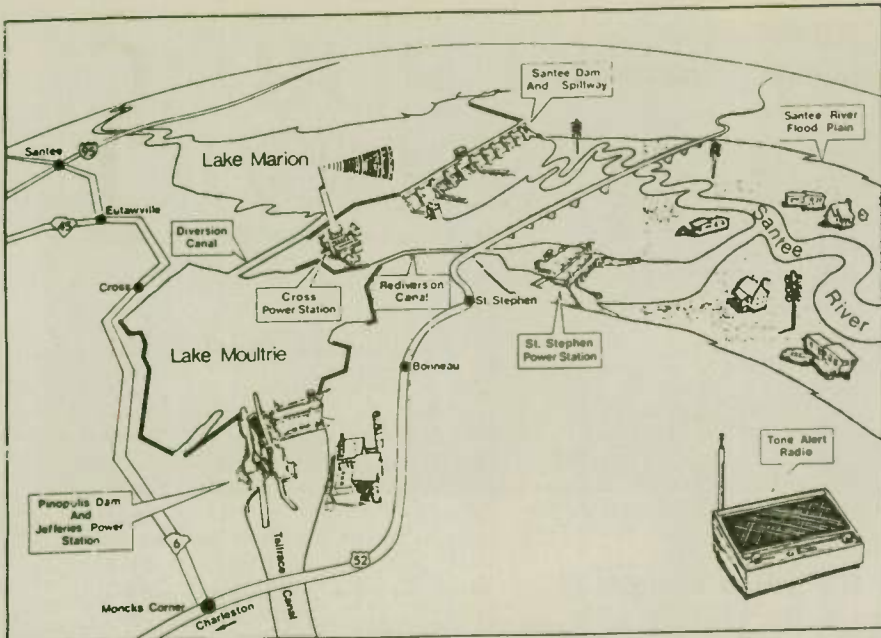
Wired and tested +5 to +12 Volts/ User programmable to 50,000 codes/ All 16 digits/Send code once to turn on, again to turn off/ Momentary & Latching output/drives relay/LED latch indicator /Optional 4 digit extra custom latch IC's \$8.95 each/add as many latches as you want to your external board. Model TSD \$59.95

Remote-A-Pad Two TSD's (above) and Row & Column control interface; all on one board, remote control of any 16 digit keypad with touchtones. Simple stand alone control card. Wired and tested.

Model RAP \$149.95

Touchtone Decoder Kit M957

Touchtone, +5 to 12V. 15ma/inc 3.58 Mhz Crystal/ 22 pin socket, Data Sheet, Sample circuits, decoder specs, all 16 TT, BCD/HEX out Model TTK \$22.95



Test on February 26 simulated failure of Santee dam and spillway, which would have released the waters of the 1,000-square-mile lakes of the Santee-Cooper system. Residents and others in the flood plain were alerted by tone alert on weather radios, by sirens and by law-enforcement personnel who contacted all persons known to be in the area.

has sheltered moonshine operations.

The drill in late February was to test the emergency plan should the Santee dam ever fail, to see whether it would be possible to give all endangered persons adequate warning to evacuate the area.

On Friday, February 20, a briefing meeting was held at the headquarters building of Santee-Cooper in Moncks Corner. The meeting was chaired by John Dulude — a civil engineer and superintendent of general construction for the utility, with other top management personnel, plus officials from the governor's office, the State Highway Patrol, Wildlife Service, National Guard, the disaster preparedness directors of the seven counties involved, National Weather Service, Red Cross and Amateur Radio.

Then at 10 a.m. on Thursday, February 26, a workman lifted the float of a flood-warning sensor to simulate the dam failure. The dispatcher sent someone to verify the dam failure, and on receiving his report, activated warning sirens at 10:45 a.m. and put the emergency plan into operation.

Someone remarked that you wouldn't have had time to read through the 3"-thick plan in a real emergency to know what to do. But in this instance everything went smoothly.

Amateurs provided communications when regular channels were declared not functioning, and provid-

ed all communications for the Red Cross. The local voice repeaters and a packet digipeater, plus simplex voice operation were adequate to handle all communication needs. Amateurs were also able to use the repeaters for unrelated communication most of the time without delaying messages that would have been essential in a real disaster.

The authorities involved were impressed with the performance of the amateurs. In fact, some of the officials involved even expressed an interest in joining the amateur ranks themselves.

Ron Corso, observing the test as representative of the Federal Energy Regulatory Commission, said that the Commission had reservations about approving the warning system instead of rebuilding the dam, but that performance on this test should lay their fears to rest.

Lessons learned (hopefully): Go to officials with answers, not with questions — especially with questions they can't answer. Don't ask them things like what frequencies to use; that's for you to decide.

Amateurs active in the test included Mert Mertins, K4AQB; Mike Bennett, WA4YUY; Roger Eslick, KB4VT; Ernie Mertins, WD4ESF; Lavern Griffin, N4OBN; N4MNG; Chuck Clark, K4ZN; Bill Jones, N4MNH; Werner Dolder, AA4IX; Jim Surrells, WA4NIE; Ben Singletary, K4ULT; Hunter Wood, W4ANK; and John Pegues, KA4ABW. □

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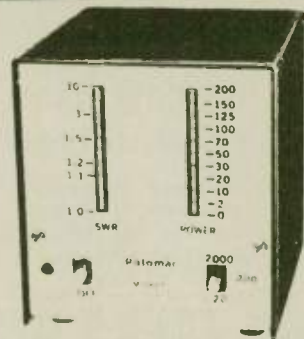


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Easter rescue from Ascension Island

RSGB (Radio Society of Great Britain) member Brian Tutt, G4ZZK, found himself the centre of media attention over Easter after he answered a Mayday call on 21 MHz from a sinking yacht off Ascension Island.

At 1630 GMT on April 18, he was waiting to call ZS1JD on 21.326 MHz when he heard a weak and broken Mayday signal; Brian called the South African station to see whether he had any more information and then rang the local coast guard.

Nothing more was heard from the sinking vessel, but next morning the coast guard rang back to say that Brian's action in telephoning them had probably saved the lives of the two yachtsmen, who were now safe and well on Ascension. It seems that the coast guard alerted the Royal Air Force, who had a Hercules inbound from RAF Stanley on the Falkland Islands to Ascension at the time. Another Herc out of RAF Lyneham in Wiltshire apparently dropped supplies and a dinghy to the yachtsmen.

—Radio Society of G.B. □

Quick-thinking hams save yacht and crew

Three women on a yacht that ran aground off the coast of England are alive today thanks to the quick thinking of some United Kingdom amateurs.

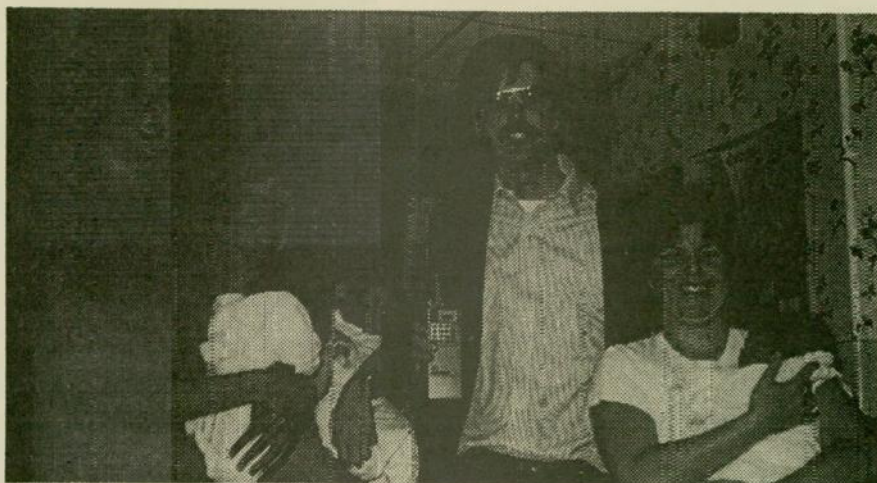
On Saturday, March 7, a group of amateurs were searching the area near Burnham on Crouch for an ideal site from which to operate the British VHF National Field Day when they spotted the boat in distress. It was a pleasure yacht that had gotten stuck on a sand bar about 400 yards off shore.

Fortunately, two members of the Amateur Radio team were yachtsmen themselves. They quickly recognized the danger and contacted a station in the town of Sandwich using the nearby Madinstone repeater. He, in turn, called out the coast guard which arrived in less than 30 minutes, even though they had to trek through heavy marshlands. Within minutes, a lifeboat was also on the scene along with a rescue helicopter from a nearby Royal Air Force base.

Three women were removed from the stranded vessel, after which the boat was righted and taken in tow. According to the coast guardsmen on the scene, it was definitely the quick action of the radio amateurs that saved both the stranded yacht and the lives of its crew. (via RSGB HQ, GB2RS)

—Westlink Report □

20 WORLD RADIO, September 1987



Rod Swiderski, NU2M, and nurses

Hams help hospital

The Radio Amateurs of Eastern Long Island were asked to provide standby back-up at the Southampton Hospital, on Wednesday, February 25, between the hours of 4:30 and 6:30 a.m., while the hospital phone system was being enlarged to accommodate more extensions.

The group of Amateur Radio volunteers was organized by Bill

Yamka, N2DXG, and Charlie Styler, WA2UEZ, who were joined by Richie Sellentin, NR2L; Susie Yamka, N2GYR; Mary Sellentin, N2GTK; Rune Pehrson, W2JMI; Rod Swiderski, NU2M; and Serge Popper, N2DEJ. These eight hams were stationed at strategic locations throughout the hospital, thereby providing radio communications on the 2M amateur band.

In addition to the in-hospital communications, the 2M system also has the capability of accessing commercial telephone lines through the 2M repeater owned by Charlie Styler and located in Southampton Town. The Radio Amateurs of Eastern Long Island is a group that shares the hobby of Amateur Radio, thereby creating a vast, expert communications system. Distances covered by this system are as local as communications within a building and extend to reach anywhere in the world.

The Radio Amateurs of Eastern Long Island make themselves available as non-commercial communications back-up for any occurrences in which they may be needed and may be reached through the ARRL District Emergency Coordinator Paul Lindgren, at (516) 324-1542. □

'No thanks'

The CRRL announced that Petro Canada, the official sponsor of the Olympic Torch Relay, has elected to provide its own communications and politely declined the offer of Amateur Radio communication assistance. It appears that next year's torch run will be handled entirely through commercial frequencies and neither amateur nor citizens band participation will be needed.

—Fox River Radio League, Aurora, IL

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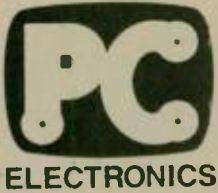
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Any Tech class or higher amateur can get on ATV. If you have a camera you used with a VCR or SSTV & a TV set, your cost will just be the TC70 and antenna system. If you are working the AMSAT satellites you can use the same 70cm antennas on ATV.

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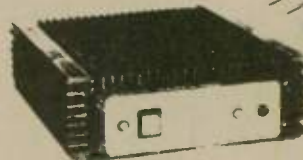


TV CAMERA

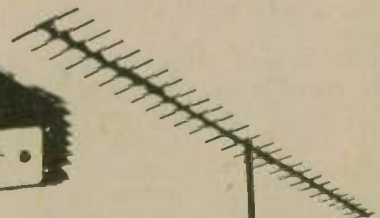


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HAMS! Call or write for full line ATV catalog....downconverters start at only \$59



Shelley Patz, N6KAG, watches Steve Ng, N6IQA, conducting a 2-meter net from Los Angeles County RACES control station, K6CPT.

Public Service her hobby, Radio a tool

Public service is her hobby, and Amateur Radio is one of the tools of her hobby. An interview of Shelley Patz, N6KAG, and a review of her resume supports that analysis of her present and past activities. Shelley is more than an active member. She is also a leader despite her youthful 24 years.

Jim Johnson, WA6FUT, who is the Chief Communications Officer for the Los Angeles County Disaster Communications Service, recently announced the promotion of Shelley to the Executive Staff position of Communications Services Officer. The 1,000-plus member Los Angeles County Disaster Communications Service (DCS) organization is the only organization, under Los Angeles County ordinances, authorized to provide county governmental auxiliary communications under RACES Rules and Regulations.

Shelley's new responsibilities include supervising: the operation of the County Informations Center (CIC), which is the county RACES headquarters facility; support Emergency Operations Centers (EOC's) located in each of the many county department headquarters; and RACES field equipment such as portable repeaters and communications vehicles. She is also responsible for the supervision of planning activities, drills, exercises and all quick response

teams. Shelley supervises four Staff Officers who are responsible for several of these activities.

In addition to supervising these specialized activities, Shelley must be prepared to serve as the Acting Chief Communications Officer during extended operations.

Shelley first joined DCS in 1982 when she accompanied her husband Dan, N6FIT, to CIC on his Monday evening drills as a CIC operator. Getting her Amateur Radio license soon followed as she spent her Monday

evenings working on DCS record-keeping chores. After getting her ham license, Shelley was soon appointed DCS Records Officer. This responsibility was followed in turn with appointments as Support EOC Staff Officer, then CIC Staff Officer.

During these years, Shelley was active in the planning and operations of the DCS participation in the 1984 Olympics in which the DCS provided back-up and support communications for the Olympic Security Coordination Center, (responsible for coordinating security communications for international, federal, state, county and city security agencies). She also supervised DCS participation in the Mexico City earthquake operation.

When not busy with her DCS responsibilities, Shelley also serves actively with the Tournament of Roses Radio Association (TORRA) as one of the net control operators. Recently, she has become busy learning to operate her IBM computer at home. It looks like packet radio might be in her future.

In her spare time, Shelley is a Rescue Certified Scuba Diver, and is enrolled in the National Divers Alert Network. She is also a member of the U.S. Coast Guard Auxiliary. — Robert F. Zeiter, W6NAA □

Rose Festival Parade

The Rose Festival Grand Floral Parade was once again a success, thanks — in part — to Portland/Vancouver area hams. Amateur Radio operators provided a continuous communication link along the entire parade route connecting Rose Festival Association Directors to the parade chairman who controlled the parade.

With the exception of one breakdown that caused several chain-reaction gaps, the parade's flow was exceptional. Parade chairman, Larry Scruggs, was impressed with the level of sophistication of both our equipment and operators. When he found out that many of us had never worked together before, and in several cases had never met, he was amazed at the ability of hams to quickly organize and accomplish a complicated task by meeting the needs of the parade.

Larry intends to invite us back again next year and suggested that there may be an expansion of our duties and responsibilities. Thanks to a great TEAM!

—Hoodview ARC, Portland, OR; submitted by James W. Fox, N7ENI □

An organization of amateurs licensed over 25 years who are interested in preserving the history and traditions of Amateur Radio and in pioneering the developments of the future.

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'The real thing'

Walt Popelar, KA6OMK

A smoldering fire in a large salvage yard in National City, California (near San Diego) forced the evacuation of over 2,000 people from schools, businesses and homes Friday, May 22. At least 13 people were hospitalized for smoke inhalation.

The fire started in the morning with a large plume of smoke drifting over the city. City officials feared the smoke might contain a large amount of cyanide fumes due to the mixture of burning materials, so police were ordered to barricade the area surrounding the fire and to begin evacuating people.

At this point, authorities notified Dick Cupp, K6SJA, of the Red Cross, who in turn notified the South Bay Emergency Coordinator Lloyd Beauregard, WD6CSS. The local ARES was immediately activated. Seven hams plus Lloyd and his mobile communication truck reported to the Fire Command Center for duty.

Approximately 1,700 youngsters, in one junior high and two elementary schools, had to be evacuated. Two hospitals in the area required radio contact with the Command Center. Assignments were made and things started to move. The elementary school children were taken to one of our parks while the junior high group were transported to Chula Vista, an adjoining city. Unfortunately, a wind shift carried the smoke over the park where the evacuees were and they had to be bused again to another park.

As evening approached, reports from the fire were not encouraging and cyanide tests had not been completed, so school officials ordered the youngsters into a school adjoining the park for shelter. Fortunately, no cyanide fumes were detected in the smoke samples after the fire was finally brought under control.

City fire and police officials thanked the radio amateurs for their cooperation as the evacuation in its entirety was handled very professionally.

We have had many drills, but this was the real thing. However, one thing we learned during this incident was that portable antennas for hand-helds is a must as it was often difficult to communicate in some locations.

Operators who took part were: Lloyd Beauregard, WD6CSS; Chet Coderre, W6YVY; Dick Cupp, K6SJA; Ralph Evans, W6VMN; Ernie Rubino, WA6RPP; Bert Chase, W6IPQ; Walt Popelar, KA6OMK; and Robbie Robins, W6ZVA.

A smile is contagious

ICOM provides communications

Over 200 bicyclists started on the adventure of a lifetime, on June 1, 1987 — bicycling from Seattle, Washington to Atlantic City, New Jersey, to benefit the American Lung Association (ALA). By the time the riders reached the shores of the Atlantic Ocean on July 12, 1987, they had logged over 3,150 miles.

The TransAmerica Bicycle Trek was the largest special event in the history of the ALA. The goal was to raise over \$1 million to benefit programs in the ALA's three main areas of emphasis — smoking, as the major preventable cause of lung disease; occupational and environmental health; and the continued fight against specific lung disease.

A major concern with a race this size is rider safety. To coordinate emergency traffic as well as routine messages required to keep 200 trekkers happy and safe, a communications network had to be developed coast to coast.

Over 60 volunteer Amateur Radio operators were recruited along the course to pass information and calls for assistance to and from riders and the trek emergency vehicle staff. Due to the unique nature of the event and the distance required for communica-

tions, Trek Director of Communications — Gene Underwood — specified ICOM ham radios as a must because of their advanced features and their reputation for reliability.

When contacted, ICOM America, Inc., of Bellevue, Washington, agreed to design and organize an entire communications system for the big race. ICOM also provided all necessary communications equipment for the event. This included an ICOM IC-735 transceiver and antenna tuner, an ICOM IC-28H 2M radio, and an ICOM IC-38A 220 MHz radio for each of the five emergency support vans.

Each checkpoint located on the course from Seattle to Atlantic City was equipped with an ICOM IC-28A 2M radio for communication with support vans and ham operators. All emergency personnel were fitted with ICOM IC-02AT 2M hand-helds and ICOM IC-03AT 220 MHz hand-helds for emergency road communications.

Amateur "Hi"

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

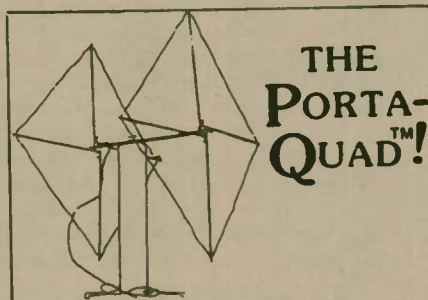
This AMATEUR "HI" entry is from Ed. Hopper, W2GT, of Rochelle Park, New Jersey, who received 2CJA in February 1922 and W2GT in 1930.

Back about the mid-1920's, before international prefixes had been assigned to amateurs, a couple hams and I often spent the evening at the QTH of Lou Brandt, 2LE — now a Silent Key.

He had a fine QTH atop one of the hills on the outskirts of Paterson, New Jersey. He had a fine rig and a long-wire antenna that ended atop a 75' pole in the back yard.

One evening, Lou worked a Central American station on fone, and when the station was told that we were in the United States, he said, "Then you must know my friend, Bill Brown. He also lives in the United States." Needless to say, we rolled on the floor full of laughter.

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Proud to be an amateur

Al Vayhinger, W9ELR

On November 3, while tuning the 20M band, I heard Glenn Baxter, K1MAN, of the International Amateur Radio Network (IARN) on 14.275 talking to a ham in San Salvador about an earthquake that had occurred there October 10.

As all of the telephone lines were out of order in San Salvador, it was apparent that a volunteer ham was needed there to pass emergency traffic and coordinate the activities of volunteer medical personnel that were already in the country.

Glenn accepted my offer to go to San Salvador. Mario, YS1TG, came on the frequency and offered to be my host while I would be in the country. The following Friday, with suitcase in hand and a couple of 2M transceivers, I arrived in San Salvador. Mario had suggested I use his HF radio at his home.

Meeting me at the airport were Richard Horner, KZ1P, and Chester Stemp, YS9CHE. Richard was a volunteer from the States and had been there about two weeks operating and repairing a lot of radio and medical equipment. Chester was an American living in San Salvador and speaks Spanish fluently.

Shortly after my arrival, we began making plans for a team of nine volunteer medical doctors — headed by Dr. Young, K4FSE — to arrive from Columbia, South Carolina. We were in daily contact with either Walt Ockoskis, K4VMG, or Bill Weathersbee, WB4UGV, in Columbia, making arrangements to get the medical team into the country.

I must stop at this point and acknowledge the tremendous assistance given by the members of the San Salvador ARC. In addition to Mario and Chester were Maggie, YS1ZA; Magda, YS9MBB; Francisco, YS1AZ; another Francisco, YS1FB, and many more local amateurs who went out of their way to assist in the overall emergency and make the Americans feel at home.

On several weekends, the local amateurs took the American group to the beach, which was about one hour's drive from the city. We will always remember those beach parties and the great hospitality of the local ham club.

After we made several trips to the airport to check on and expedite the arrival of medical supplies, the team from South Carolina finally arrived. They brought with them over 1½ tons of medical supplies that had been donated for the earthquake relief ef-

fort. These supplies were all taken to Chester's home to inventory and decide where they were most needed. Chester's wife was very understanding of 1½ tons of supplies on her living-room floor.

On my wife's birthday, I talked to a U.S. ham friend, Gordon, N9GDV, who agreed to order flowers to be delivered to my home in Indiana. Gordon did everything right. However, my wife happened to be listening on 14.275, which spoiled the whole surprise!

Thanksgiving Day was a big day for the American volunteer medical team. The governor of South Carolina talked by phone patch directly to members of the team.

I wish to thank everyone who so

graciously ran phone patches for the emergency in San Salvador. Several of the volunteer doctors and members of the local ham club took money out of their own pockets to purchase drugs at the local pharmacy when emergency situations arose.

I spent 30 days in San Salvador after the earthquake in which over 1,500 people were killed. Many buildings were destroyed or leaning at a precarious angle and many people were living on the sidewalks. After seeing the volunteer doctors treating children whose parents had literally no money to pay, I was proud to be a small part of Amateur Radio and able to do something to help, no matter how little.

Try it sometime. You'll like it! As the Salvadorians say, "Una experiencia inolvidable!" □

Gather the non-hams

The personal experience of communicating is one of the best ways to introduce Amateur Radio. The opportunity for a hands-on chance will be at the Museum of Science in Boston on Saturday and Sunday, September 26-27.

Encourage those you know who might be interested in Amateur Radio to see it all in action. Visitors to the annual Amateur Radio exhibit at the Museum of Science will be able to communicate with hams around the world and locally by voice, keyboard and sight using ham computers, television, satellites and high-frequency radio. They will also be able to learn some Morse code and send message traffic.

This exhibit is sponsored by the Council of Eastern Massachusetts Amateur Radio Clubs (CEMARC). All operation will be as Special Event Station KA1SM (Science Museum). Staffed by knowledgeable hams, the operating modes planned for the 1987 exhibit are packet, full duplex fast scan television, an HF SSB station, CW and voice Novice stations, and a remote base satellite station. All visitor operation is acknowledged by a souvenir certificate. Learning a few letters of Morse code also earns a certificate. A message center will accept radiogram traffic.

The Museum of Science, at Science Park in Boston (MBTA Green Line), is open from 9 a.m. to 5 p.m. Admission charges to all exhibits are: adults, \$5; children 4-14 and senior citizens, \$3; children under 4 and members are admitted free. For additional exhibit information, call the Museum Information Line at (617) 742-6088. (See "Museum of Science," page 16.) □



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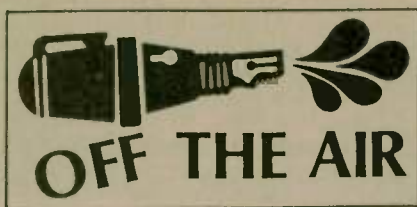
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JA's DO have their own Callbook

I noted with interest W8HYQ's letter on the number of JA's on page 26 of June *Worldradio*. As a matter of fact, there is a Japanese Callbook, and it's several thousand pages of rice-paper thick. The Callbook is published by Japan's *CQ Magazine*, and of course is in Japanese script. Monthly updates are received in each issue of *Japan CQ Magazine* as an insert.

The problem that the U.S. Callbook has with printing Japanese calls is that there is no one willing to devote time to converting the Japanese script into Roman script for our Callbook. Thus, most of the JA's whose calls are found in our Callbook are hams who have written directly to our Callbook with their addresses.

The best estimate of the number of Japanese hams currently licensed is 726,829, including 703,516 individual licenses and 23,313 club stations. This information was provided to the IARU by the Japan Amateur Radio League, and is contained in the IARU publication, *Amateur Radio Licensing Status Worldwide*, dated April 22, 1987. It can be obtained by any ARRL member for an SASE from Naomi Akiyama, N1CIX, at ARRL HQ.

FRED LAUN, K3ZO
Miami, Florida

Friendship worldwide

On March 9, 1980, I worked John Bergen, 9G1KB, in Accra, Ghana. As a new amateur, this was an exciting contact for me. John had been through Madera (California) and was familiar with the area.

About a year later, I was on my day off from the sheriff's department and was home babysitting my daughter when I got a call from the dispatcher at work. She asked, "Do you know someone from Africa?" I laughed and said, "No, why?" She said there was someone in the office from Africa who wanted to talk to me.

It was John, 9G1KB. What a surprise! We were unable to meet each other but had a pleasant conversation.

With Amateur Radio, you can have friends all over the world.

CHUCK REIRING, KD6FW
Madera, California

Rotary Club seeks help for Haiti

For the past three years, Marshfield Rotary Club has been involved in a number of projects to help schools and hospitals in and near Cap-Haitien, Haiti.

You probably know Haiti is the poorest country in this hemisphere with a per capita income of only \$77. I recently returned from Cap-Haitien where I took two doctors and an agronomist, and we found their children are dying largely from a simple lack of education.

They badly need a 5kW (or larger) 120VAC (60 Hz) automatic electric generator, either gasoline- or diesel-driven. It's difficult to explain but this is needed for a children's clinic to pump water and power microscopes and other electronic devices. This clinic has four Catholic nuns who treat approximately 180 children daily of all denominations and is the mainstay of medical laboratory work for the entire area in and near Cap-Haitien.

Also badly needed is a low-power (maximum 250W, preferably less) FM broadcast radio transmitter, antenna and studio equipment. Haitians have radios. However, they need to be taught to boil their water, cook their vegetables and wash their hands. The University Roi there will operate the station and educate the people to live.

Neither of these items need be new, but they should be operative and in reasonably reliable operating condition. These two simple needs could start saving lives immediately.

If you are able to furnish this material or can advise us of a source, please contact me. Thank you.

THOMAS F. KORN, LL.B.
District Governor's Aide
World Community Service
Committee
Marshfield Rotary Club
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Marshfield, WI 54449
(715) 387-1510

The forgotten COCO

In re: "Picking a computer," October 1986 *Worldradio*, page 40

Julian Macassey, N6ARE's *COMPUTERS AND HAMS* column in the October 1986 issue was fairly well written for entertainment value, but lacked some critical facts in his presentation. Macassey stated that there are three things that are most important in choosing a home personal computer: 1) the central processing unit, 2) the operating system and 3) the software available. I completely agree with that statement. What I found most interesting, however, was that many popular selling brands of home computers were mentioned (i.e., Commodore C-64 and Amiga, IBM PC (and clones), Apple II and Macintosh, Atari ST, etc.).

Quite a "push" and notable column space was given by the author toward the popular Commodore C-64 unit. I bet he owns a Commodore. What *Worldradio* readers were not privileged to read in N6ARE's column was that the most popular selling Amateur Radio computer of all times is the Radio Shack TRS80C Color Computer!

The COCO's 6809 central micro-processor brain is an advanced and very powerful control center that other manufacturers later copied and styled against, which still reigns supreme even today — some seven years after its initial introduction into the low-priced marketplace. Microsoft's BASIC and EXTENDED BASIC (machine language) operating system is a faster and more friendly operating system.

To fairly judge these statements, one must own and operate both brands of computers. I have both. I own three TRS80 Color Computers — all 64K and in use for primarily Amateur Radio operation. One is always on-line here "in my shack," acting as my Fast Scan TV/VCR big-lettered message character and graphic picture generator, my "interfaced" Slow-Scan/Facsimile demodulator and RTTY transcriber, my OSCAR Satellite Tracker and several other shortwave radio software functions, as well as my MAIN Telewriter word processor program and DATABASE Business Computer for my "monthly" 48-page *SPEC-COM JOURNAL* publication business. My other two COCOs are at a local college serving bulletin board and computerized spectrum analysis functions on our area UHF ATV repeater system (N9CAI/R). My Commodore C-64 computer is used mainly as an AEA PAKRATT-64 Packet Radio system. I even have my order placed for the new COCO-3 computer which will have 128K of memory (extendable to 512K) and very high resolution graphic capability.

N6ARE states the current retail selling value of a new Commodore C-64 at

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about \$150. Generally, he is correct. All computers have dropped dramatically in price since 1980. But what's this? No mention that Radio Shack TRS80C Color Computers are now selling for \$69.95 (16K) or \$129.95 for 64K! Well, let's not argue about price comparisons. Both are in the ballpark and quite affordable.

Macassey is right — "The cheapest computer" does have the most ham software! There are more "free" published (public domain) or commercially available Amateur Radio software programs for the TRS80 Color Computer than any other micro on the market, bar none. I'll match my long list of acquired quality Amateur Radio programs against anyone's Commodore list anytime! When I first bought my C-64, I literally went around to several of my friends that had owned C-64 machines and asked for Amateur Radio software. They were all very embarrassed to admit that they had acquired little and knew of few "genuine" programs other than the usual "how to make a 5-element Yagi antenna for VHF" ones. Six months passed, countless letters were sent out to magazine memberships and ads, and I have finally assembled a disk full of so-so C-64 Amateur Radio programs.

Let me tell you first hand, other than a few real nice commercial logging programs, you don't get much for Amateur Radio if you own a C-64. I have about 20 disks full of Amateur Radio programs for the COCO. COCO owners have been enjoying completely "interfaceless" (no terminal unit) Slow-Scan TV, FAX and RTTY reception now for many years. The Clay Abrams, K6AEP, former line of software set the pace for Amateur Radio CW/RTTY split-screen operations. Try and find an SSTV or FAX program without an interface for the C-64!

The popular selling *COCORADIO* 3-Disk Package for the TRS80 Color Computer (\$59.95) works all modes of Amateur Radio operation with no required interfaces and complicated external building with over 50 provided programs and two SSTV/FAX picture storage disks. (An SASE brings Worldradio readers this information — P.O. Box H, Lowden, IA 52255.)

Aside from the software misstatement, anyone who has compared "and actually worked" both models (C-64/TRS80C) soon realizes the ease of the main user-friendly operating systems of the COCO! Many commands are imbedded with the initial power-up memory of the COCO that leaves the C-64 owner far behind in having to type in simple requests. Run a comparison sometime between both models on LOAD and RUN and DIR commands, let along backup functions.

The whole point of my rebuttal to N6ARE's article is not to differ in the

general comments of choosing a computer. For the most part, his article was fairly accurate. I just think it is irresponsible for someone to misuse the power of international reading and not research all the facts about a certain given topic or subject. I am sure there are Apple, PC and other Amateur Radio

computer operators "and programmers" out there, as well, who were irritated by N6ARE's initial comments. Thanks to Worldradio for the exchanging medium to voice our differing opinions.

MIKE STONE, WB0QCD
Lowden, Iowa

Bootleg warning

Someone has been "bootlegging" my call. The call used was NS6D/KH3. Thus far, I have had to disappoint the following hams — KP4BJD, W7RO, N6KPU, KL7UR, and N5JEE. The hours of operation were June 17 and 18, from 0026Z to 0358Z. Their cards and SASE's were returned to them, with a short explanation re the "bootlegging" situation.


It's a dirty shame, when someone

goes to the trouble of working a "new one," only to find out it's down the drain. Someone is very insensitive to other hams. It has happened to me. I know the feeling.

The Western Public Service System was informed of the above, and the FCC is in the process of being notified. Strangely enough, my call was "bootlegged" exactly a year ago (late June), from this same QTH.

BILL HENDRICK, NS6D
Sacramento, California

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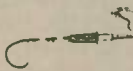
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
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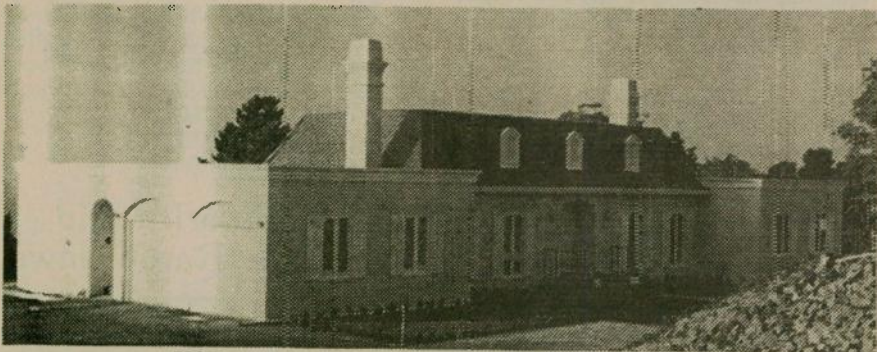
WORLD RADIO, September 1987 27

World Radio History

'Eyesore' squabble in Santa Barbara

The city of Santa Barbara has a rule that requires any new construction on land with a slope of more than 20 degrees to be under the Architectural Board of Review (ABR).

The city's antenna ordinance is quite fair, in that towers under 45 feet require no permit, and that ham antennas 45-65 feet require a permit, but no problem except safety factors, etc. However, if your property has more than the 20 degree slope factor, you are under the ABR,



Merle Parten, K6DC's "eyesore", to which his neighbors object.

and a permit can *only* be issued after your application is approved by the ABR in an open meeting after they notify all your neighbors.

Now I ask you, what neighbor is going to approve when given the opportunity to say no?

Over a year ago I applied for a two-way lot-split on my three acres of land. The total parcel had an average slope of more than the magic number, but my building parcel was less than the 20 degrees, and I would be free of the ABR control. I was not smart enough to wait out the wheels of bureaucracy, so in July 1985, I applied for a permit to erect an 80-foot (actually 73-foot) sky-needle with motor pull-down when not in use, to 23 feet. I already had the pad of 4.7 yards of concrete and four mounting bolts in place and approved by the city.

At my hearing before the ABR, I was caught totally by surprise when the neighbors presented the Board with a petition signed by 30 or so people, and endorsed by the local Home Owners Association, protesting my application. At this meeting they protested the house as well as the antenna, and the house was not even under consideration.

I guess they just didn't want a house

built on the vacant land we had owned for 34 years, *period*. They had been unsuccessful in numerous protests to the city about the house even though everything was fully approved by the ABR. It looked like they welcomed a vent for their anger by protesting my antenna.

The ABR was swayed by force of numbers and rejected my application on the spot. I was given 10 days to appeal their decision to the City Council. I

chose to drop the application for the present, and devote my waning 73-year-old energy to finishing the house and landscaping because the costs were running about \$164K more than the original estimate. I have always liked working with my hands, and I felt like doing some of the work myself, to save money.

So I thought the matter was settled, but someone kept waving the red flag and poking at the city. Santa Barbara is a small town, and some of the old-timers knew the right people, and had the right amount of influence to have the city put a moratorium on erecting all antennas over 15 feet, even TV antennas. This made me extremely popular with hams, CBers and TV dish people. The moratorium has been in effect since the end of August 1985.

The Santa Barbara ARC has been very helpful in attempting negotiations with the neighbors, trying to arrive at a compromise, but one by one they failed.

Too many neighbors with too many ideas of what they would allow me to have. When I put in the approved pad, it was placed behind the house. The antenna would nest at 23 feet when not in use, and with shrubs to soon hide even the house from view, I thought I was being fair.

I even proposed a custom-made needle, at considerable expense, that would nest at about 18 feet (right on the roof) and raise to 65 feet when in use. And I agreed to only use it during the dark hours and sunrise. No, they wanted it down at the bottom of our ravine, making it totally useless, and about 300 feet from the house.

The city was on the verge of extending the moratorium another month or two while they changed the ordinance from the fair way it was worded at present, to something else. I hate to think what that would have left me, and a lot of other people waiting to put up antennas. I gave up!

I wrote a letter to the mayor, withdrawing my application for the 80-foot tower (later modified to 73 feet for consideration). The city is now lifting the moratorium, and we are all back to base zero with a fair antenna ordinance again in effect. (for those not under the ABR's slope factor).

Ironically, at the same council meeting that voted on the measure to restore the ordinance by removing the moratorium, our lot-split was on the agenda for final approval by the city, which now removes me from control by the ABR.

When the red flag stops waving and sags a little, I will again start thinking about putting up a tower and antenna. With DX conditions quite poor, and having worked them all anyway, I am in no hurry to blow on the red flag again. Maybe I can take time to build up a little public relations while I remember the good old days when I had a big signal.

Yes, the city is aware of the FCC's PRB-1, but they are not impressed.

MERLE PARTEN, K6DC
Santa Barbara, California

(please turn to page 30)

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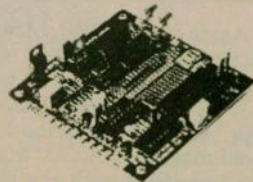
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Off the Air

(continued from page 28)

My first love

Being a newly licensed ham in a small central Florida town in the late '30s with the call W4GKL, I was in what you might call "hog heaven".

Although not able to work 20-meter phone with my class "C" ticket, I would occasionally tune across the band. Then it happened! I fell in love with a voice. This voice was the epitome of Southern womanhood, with a drawl that dripped honey.

This YL signed her call W5DEW, the Little Texas Dew Drop. This was the beginning of monitoring the transmissions of Mary Palmer, one of the most popular hams of her day.

Mary, living in Port Arthur, Texas, was instrumental in my going to Port Arthur College, one of the best radio schools in the country.

My first weekend in Port Arthur was spent visiting Mary and her husband, W5BUZ. Buzz spent most of his operating hours on 160, ragchewing with the locals. Mary was working 20-meter phone all over the world.

One of the stations Mary kept a weekly sked with was PK6XX, an expedition (scientific, not DX) in the jungles

of Papua. The operator for the expedition was Nick, an Aussie, who later came to the States. The first place he headed was Port Arthur. I have a feeling another guy had succumbed to the Texas drawl.

I passed my 2nd Telegraph and 1st Telephone at PAC and secured a job as "sparks" aboard an ocean-going tug, the *BAFSHE*, until I received my six-months endorsement which allowed me to go to the larger tankers.

WWII came along and I stayed in the Merchant Marines until 1947. In the meantime, I had to store my ham station for the duration of the war and I left it with Mary and Buzz.

In 1947, I took a shore job in sales and moved to Houston. Over the years, while rearing a family and keeping up with my career, I found very little time for Amateur Radio. I had heard that Mary and Buzz were divorced and later, that Buzz was a Silent Key.

I am now retired and living the good life of fishing, golfing and hamming back in that same central Florida town. Some evenings, when scanning the 20-meter phone band, I hear a YL with a Southern accent and I say to myself, "Could that be the Little Texas Dew Drop?"

LEX SHACKELFORD, W5MUA
Summerfield, Florida

How about some FCC reciprocity?

The relationship between radio amateurs and the Federal Communications Commission over the years has, for the most part, been cordial. Radio amateurs have recognized the importance of regulation and have confidently looked to the FCC for it.

This spirit of cooperation was the foundation of the volunteer examination program, the hams in effect saying, "If we can be of help, we're going to help." This has involved (and continues to involve) considerable effort by the ham community. It has also removed a large and costly burden from the FCC, which chronically is underfunded and understaffed.

One would think there would be an expression of appreciation on the part of the FCC, when ham needs call for regulation. But that has not been the case.

ITEM: A recurring thorn in the side of Amateur Radio has been the problem of radio-frequency interference, when neighbors of amateurs complain that their broadcast receivers, telephones, television sets, computers and other electronic equipment pick up the hams' signals. In nearly every such instance, the fault lies in poorly designed electronic equipment being used by the neighbors — seldom with the hams' equipment or operation.

The FCC has been asked to step in and inform the complainants of the facts by enforcing type acceptance of the faulty gear owned by the hams' neighbors. But the FCC has steadfastly refused to do this.

ITEM: Regulation of amateur 2-meter operation quite naturally relies on the establishment of coordination groups for the allocations of repeater frequencies. This arrangement has long had the blessing of the FCC. However, instances arise wherein *two* coordination groups sometimes are formed, with disagreement on frequency allocations. Settlement of such disputes naturally falls within the scope of the FCC, and at first the FCC seemed to accept this responsibility.

Recently, however, the FCC changed its mind, saying it would have nothing to do with such disagreements. "Hold an election," said the FCC, "or take your disagreement to court." Either procedure would involve great expense. The FCC could settle such matters easily at no expense to the amateurs.

By federal law, the radio-frequency spectrum is supposed to be used "in the public interest, convenience and necessity." Radio amateurs are doing their utmost to this end. Why isn't the FCC doing its part?

LOUIS HUBER, W7UU
Seattle, Washington

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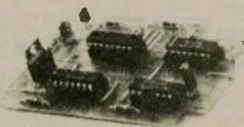
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N5TV

STATION
APPEARANCE

Allen Hebert, N5TV, of Kenner, Louisiana wins this month's *STATION APPEARANCE* with this picture of his station. Allen has been licensed since 1955 and is active on all bands — SSB, CW and RTTY.

He's a member of the Delta DX Club and the Geritol Net (80M SSB, 3.767 MHz #257). He's on the WPX Honor Roll and has won awards of excellence on both CW and SSB. Certificates he's received have been for: 5-band WAS CW and SSB "All Extra Class," 5-band DXCC CW and SSB, WPX Award of Excellence, WAZ 5-band CW and SSB, UCSA (County Hunters) with "All Extra Class Endorsement," 160M WAS "All Extra Class" CW and SSB.

"The main console in the photograph," writes Allen, "is homemade from four sheets of 3/4" plywood, and



includes a homemade U-shaped desk three levels high for equipment. It is made into an "L" with a metal desk along its side for the computer and other equipment. The certificates you see on the back wall go all around the room — over 100 of them.

"The main rig is a Yaesu FT-101ZD Mark III. Amplifier is Alpha 76. I have a total of 12 pieces of Yaesu equipment and accessories. Antennas

are two Butternut verticals — one for CW and one for SSB on 40/80/160M — and a 6-element Telex TB6EM on 50' self-supporting tower with 6 and 2M beam on top.

Three C-64 Commodore computers are used — one for RTTY and CW, another for duping and logging in contests, and a third for packet radio/AMTOR, RTTY on VHF and UHF and for general computer use." □

Off the Air

The future Novice??

Anybody want to buy a used HF rig? I admit it has been used quite a bit, but only on 10-meter SSB. Had anyone told me I would be getting out of Amateur Radio back when I first got my ticket, I would never have believed him.

I learned the theory and just enough code to get on the air and had a blast. My intentions were nonorable; I fully intended to keep up my code and work my way on up to at least General — but there was all that DX on 10 phone. Before long I had a WAS and 42 countries confirmed — and had forgotten what little CW I once knew.

Not that it mattered at that time. But then the band changed. Just like they said it would, my only phone band began to grow quieter. Some of my fellow Novices went back to studying code and those in the larger towns ended up spending all their time on 220. I just quit operating. Who wants to learn code again after working the world on phone for almost 10 years?

Wish I had listened to those guys who harped on sticking to it and getting my code speed up.

G.R. "SCOTT" CUNDIFF, N5ASD
Vivian, Louisiana □

Russian time signals?

I am interested in knowing which frequencies the Russians use in transmitting their time signals. I've never heard them. I have a Kerwood

TS-930S, so I should be able to hear them.

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AWARDS

DARC DX Awards

USA and Canada rules

These awards may be obtained by licensed radio amateurs and SWLs in the USA and Canada. All contacts must be made from the same country.

Awards for club stations will be issued to the club and not to an individual operator. The DARC DX Awards are based on the "European Country List" and the "ARRL DXCC List." All amateur bands for which the applicant holds a valid license may be used. Application forms for the DARC DX Awards are available for U.S. \$1 (or 3 IRCs), plus a business-size SASE from K1RH at the address below. The use of these official forms is obligatory.

QSL cards for all contacts claimed must be submitted with the application. Any altering or forging will result in disqualification. The service charge is U.S. \$5 (or 15 IRCs) per award. The cost for each endorsement is U.S. \$3 (or 10 IRCs). Cards will be returned via first class mail if packaged weight is less than 1 lb.; otherwise, third class mail will be used. If first class mail for

heavier shipments is desired, include extra amounts for the additional postage required (i.e., 17¢ per ounce).

For return via registered mail, add U.S. \$3.55 (or 10 IRCs). For return via certified mail, add U.S. \$1.75 (or 5 IRCs).

All applications for USA and Canadian amateurs (or SWLs) should be made out to: Ralph M. Hirsch, K1RH, 172 Newton Rd., Woodbridge, CT 06525. New award holders will be published in *CQ-DL*, the club magazine of DARC.

European country list: C31, CT1, CT2, DL, EA, EA6, EI, F, FC, G, GD, GI, GJ, GM, GM Shetland, GU, GW, HA, HB, HB0, HV, I, IS, IT, JW Bear, JW Spitzbergen, JX, LA, LX, LZ, OE, OH, OH0, OJ0, OK, ON, OY, OZ, PA, SM, SP, SV, SV5 Rhodes, SV9 Crete, SV Athos, T77/M1, TA European Part, TF, UA1346, UA2, UA FJL, UB, UC, UN/UK1N, UO, UP, UQ, UR, Y22-99/DM, YO, YU, ZA, ZB2, 1A0, 3A, 4U1 Geneva, 4U1 Vienna, 9H1.

WAE (Worked All Europe)

A certificate awarded to Amateur Radio stations for contacts with European countries on different bands.

The WAE is issued in two divisions: Telegraphy (2xCW) and Telephony (2xSSB/AM/FM). Each European country counts 1 pt. on each band. For USA

and Canadian stations, contacts on 80M and 160M count 2 pts. Maximal five bands per country can be used.

Classes: WAE III at least 40 countries and 100 pts; WAE II at least 50 countries and 150 pts; WAE I at least 55 countries and 175 pts. Holders of WAE I get a special WAE badge.

EU-DX-D (Europa-DX Diplom)

The EU-DX-D is an award that may be claimed annually. The EU-DX-D is issued in the following classes: Telegraphy — 2xSSB — Mixed modes. For the mixed class, at least 30% of the contacts must be made in a different mode.

A minimum of 50 pts. is required for the EU-DX-D per year. 20 pts. must be obtained by contacts with European countries, and 30 pts. by contacts with countries outside Europe. All bands can be used. Each country counts 1 pt., on 80M and 160M 2 pts. Stickers are available for each additional block of four European and six non-European points within the same calendar year.

The EU-DX-D may be claimed every year anew. Each year's score may be added to obtain the EU-DX-D 500 badge and the UU-DX-D 1000 trophy. There is no limit to the number of years.

Europa Diplom

The Europa Diplom is awarded for working (or hearing) amateurs in European countries. Applicants must prove a total score of at least 100 pts. Annual score — Each confirmed European country counts 1 pt. per year on each amateur band. Total score — Sum of the annual score for the year of application and the five preceding years.

Europa Diplom Honor Roll

Each certificate holder with an actual score of at least 300 pts. will be listed in the Europa Diplom Honor Roll. The Honor Roll will be published twice a year in *CQ-DL*.

To improve the score, QSL cards may be turned in twice a year. Make sure that K1RH receives them before June 15 or December 15 of each year to be considered in the subsequent publication.

Europa 300 Trophy

Owners of the Europa Diplom may obtain the Europa 300 trophy. Applicants have to prove 300 country points when counting each country on each band only once in all the years. Service charge U.S. \$10 (for 30 IRCs) for the trophy when applied together with the Europa Diplom.

Paul Mazer Honor Award

In memory of Silent Key Paul Mazer, N2PM, the Board of Directors of the New York Hall of Science ARC

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 _____ Banquet tickets (\$20.00 each) attendance limit 250 \$00
 Phone: (____) _____ Total Enclosed: \$00

has established the Paul Mazer Honor Award.

Paul was loved and respected by all who knew him. He was an outstanding president of HOSARC, a very knowledgeable instructor and a dedicated Elmer. Many of us in HOSARC joined the ranks of Amateur Radio through his efforts and encouragement.

This year at the New York Hall of Science ceremony, Paul's wife Dorothy Mazer presented this special award to Joe Fairclough, WB2JKJ. In the heart of New York City, Joe teaches a most unique English class. In fact, his junior high school English program is in contact with the world through Amateur Radio. The hobby has become an effective teaching tool at Junior High School 22 in Manhattan.

Joe developed an English curriculum around Amateur Radio. This exciting new approach to classroom teaching has gained the interest of his students and a technique for motivation. Students learn the International Morse Code at the start of the term and practice their spelling and vocabulary skills by CW. Grammar is taught using Amateur Radio publications and books as texts. Through Joe Fairclough's instruction and patience, many of his students have qualified to become licensed radio amateurs.

The members and Board of Directors of the New York Hall of Science ARC wish to congratulate Joe WB2JKJ and his kids for a job well done. — Charles B. Salzman, WB2JQD

WNZ Award for Novices and Technicians

The handsome parchment paper, hand-lettered award attests to the achievement of making and confirming "two-way communications using the U.S. Novice bands and privileges with Amateur Radio stations in at least 25 of the 40 CQ Zones."

The editors of *CQ* are proud to announce the newest achievement award in a wide array of world-class awards — the WNZ Award. WNZ stands for "Worked Novice Zones" and is available only to holders of a U.S. Novice or Technician Class license for proof of contact with at least 25 of the 40 CZ zones as defined by the WAZ Rules.

All contacts must be made using the Novice 80, 40, 15 or 10M bands, using modes authorized for those bands, and using transmitter power authorized for the Novice and Technician licenses. All contacts must be made as a Novice or Technician, although at the time of submitting the actual application for the WNZ Award, the licensee

may have upgraded to a higher class of license. Contacts must be made prior to passing the higher grade examination and receiving authorization to operate with General or higher class privileges.

The WNZ Award is available as a mixed mode, CW-only or SSB-only award. Rules for the WNZ are essentially identical to the standard CQ WAZ rules. Thus, the WNZ Award may be used to fulfill part of the ap-

plication requirement for the WAZ Award when the operator is finally able to confirm the remaining 15 zones.

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DX WORLD

John F.W. Minke III, N6JM
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Activities Calendar

- 22-23 August JARL All Asia DX Contest (CW)
- 05-06 Sept BFRA Bulgarian DX Contest (CW)
- 12-13 Sept DARC European DX Contest (SSB)
- 19-20 Sept Scandinavian Activities Contest (CW)
- 19-20 Sept CRRL Can-Am Contest
- 26-27 Sept Scandinavian Activities Contest (SSB)

W-100-N

Only one application for World-radio's Worked 100 Nations Award was received this time:

319. YC0HOB John T. Awuy

John resides in Jakarta and made all his contacts on 15M using SSB only. The earliest contact listed was October 1985.

Afghanistan (YA)

Although several calls reported to be in Afghanistan, such as YA1CW, YA0EBL, YA0DX, YA1AA, YA1AP, etc., none have been legitimate. There also had been reported a Russian DX-pedition to that country, which has been called off.

The latest information in the DX bulletins is that it is not possible to operate from Afghanistan at this time.

China (BY)

Since our feature on the People's Republic of China we have seen reports of additional stations on the air. There finally has been some activity reported from BY7KT in Guangzhou. This one was reported on CW during the early part of June; try 14.010 to 14.025 MHz between 1300 and 1500 UTC.

From Fujian province, BY5RT has been reported on 20M SSB and has been found near 14.185 MHz around 1000 UTC. The operator is reported to be a YL named He and was located at a school in Fuzhou.

Other calls include BY9RL on 14.019 MHz at 0300 UTC near the end of June, BY9AA on 14.185 MHz at 0015 UTC working into eastern Canada, and BY4AY on the same frequency at 0815 UTC mid-June. According to our list, BY9RL would be in the province of Shaanxi, BY9AA in Ningxia Huizu Zizhqu, and BY4AY would be in the city of Shanghai.

Reports in the DX bulletins are only as accurate as the information that is sent in. At times, DXers copy calls incorrectly. We have a report for BY4RH on 14.021 MHz, which very well could have been BY4RB, who is very active. Or BY9RA on 14.227 MHz reported on June 14. Perhaps this station was really BY4RA or BY9GA. Finally, we have a BY5JH reported on 14.020 MHz at 1812 UTC, who was worked by a DXer from Ontario. We think that one was 6Y5JH!

Solomon Islands (H44)

Very active from the Solomon Islands is H44RO, who shows on the bands after 0300 UTC. This station seems to favor the DX nets. Check those nets that hang about on 14.220, 14.237 and 14.309 MHz.

For those of you who wish to work DX on your own, look for the following stations, with times in UTC and frequencies the standard MHz:

H44DL	14.286	0530
H44JA	14.279	0230
H44JL	14.257	0600

Vatican (HV)

Tune in on 20M SSB if you are look-

ing for HV1CN, who has been reported several times during the middle of June between 1000 and 1100 UTC on 14.238 MHz. There was an HV3CN reported on 14.189 MHz around 0630 UTC on June 13, but this must have been HV1CN as another report had the call correct for a contact on the same frequency about the same time.

Also reported was HV3SJ who was worked by a DXer from Alberta on 14.213 MHz at 2200 UTC.

Luxembourg (LX)

Most European countries are not listed in the DX reports as they are rather plentiful on the bands — especially from the East Coast. Luxembourg could be listed in the rarer class and I'm sure many a new DXer has not worked this one. A few were listed in the reports for the month of June.

On 20M SSB, LX1BI was busy during the earlier part of the month near 14.190 MHz from 2300 UTC, while LX1DA was reported down on CW near 14.006 MHz at 2130 UTC working into the Midwest. Between 14.175 and 14.225 MHz, LX50RL was very active during the middle of the month.

On 40M, LX1BJ was reported on 7.003 MHz at 0600 UTC working the East Coast where, on 15M, LX2GB was found on 21.005 MHz at 2115 UTC.

Austria (OE)

Also from Europe, Austria often goes unreported. On 40M, OE2PAL was snagged on 7.014 MHz by an East Coast DXer at 0345 UTC on June 8 where up on 20M SSB, OE3HAU was worked near 14.152 MHz at 0445 UTC the following week.

Also on 20M, John, OE5FOL, had a booming signal here in northern California on 14.202 MHz at 0600 UTC on June 27. John is located about 100 miles west of Vienna.

Greece (SV)

Several calls were reported for this one during the month of June. Leading the pack from this one is SV1DO, who has made many DXers happy on both modes. For SSB contacts, listen about 14.198 MHz around 0300 UTC. Also, check 14.025 MHz or thereabouts after 0330 UTC. This station has also been reported on 40M near 7.005 MHz around the same time.

Also active is SV1JG who prefers CW on the low end of 20M. Check 14.014-14.021 MHz from 0300 UTC. Other calls reported include the following with frequencies in MHz and times in UTC:

SV1BZ 14.006 0445

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Many a deserving DXer worked a new one for 40M from this fellow! Meet Jean-Claude Jupin, TR8JJC, of Gabon, Africa. Jean, operating out of Libreville, is F2XX when back home in France, and also holds the calls 6W8XX and FO8KP. (Photo courtesy of TR8JJC)

SV1EV	14.210	0415
SV1PL	21.015	2145
SV1YH	14.157	0430
SV1ZZ	14.165	2245
SV1AEU	14.004	2130
SV4AAU	14.005	2000
SV8CS	14.229	0430
SV8RX	14.199	2145
SV0DK	14.196	2145
SV0FE	14.164	0115

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 Casey Base: VK0PM
 Macquarie Island: VK0DS, VK0GC, and VK0ML

But sending QSL cards to these stations is another matter. Neil Penfold, VK6NE, writes that he is having difficulty keeping up with the VK0 operators as they often do not state their home calls. Neil reports that if you would like to QSL direct, try the following address beginning with the VK0 call sign: Antarctic Division, Kingston 7150, Tasmania, AUSTRALIA. Neil says that the Tasmanian licensing authority who handles the VK0 call signs will not inform him as to whose who is in the Antarctic.

Many of the VK0 operators do have given routes. Mark Loveridge, VK0ML, who is active from Macquarie Island, requests his cards via his home call, VK5ABB, the VK5 QSL bureau, or neighbor VK5DI.

The world-renown W6GO/K6HHD List gives the following routes for VK0 calls: VK0AG to VK3BER, VK0AK to VK2DEJ, VK0AN to VK2BNA, VK0AP to VK3FR, VK0CK to VK5LP, VK0CW to N2DT

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From the Dodecanese Islands (Rhodes), look for SV5OX, who was worked on 14.010 MHz around 0100 UTC on June 12, or possibly SV0AH near 21.320 MHz around 2045 UTC.

If you need to work Crete, listen for SV9SK, who was worked by the Europeans on 14.242 around 1500 UTC.

Notice that the above information represents three different DXCC countries. For Worldradio's Worked 100 Nations Award, it only counts as one nation.

Marion Island (ZS8)

QRZ DX reports the possibility of an August operation from Marion Island by ZS8MI. This is the former ZS2MI, the station located on the island. No other details at this time.

Tunisia (3V8)

Craig Maxey, WB7RFA, reports that he has permission to operate from Tunisia this fall. He has been given the call 3V8RFA and expects to operate October 19 through 27. These dates also include CQ's World Wide DX Contest, which Craig participated as V22A in last year's test.

Australian Antarctic (VK0)

QRZ DX reports the following activity from the Australian Antarctic

or VK6NE, VK0DA to VK9NS, VK0DJ to VK3DYL, VK0DX to VK7LJ, VK0GC to VK9NS, VK0GL to VK3YTU, VK0HI to N2DT or VK6NE, VK0JS to VK9NS, VK0NL to VK9NL, VK0PB to VK6NE, VK0PK to VK5APK, VK0SJ to VK7RM, VK0YL to VK3AH. Several of these calls are no longer active.

(please turn to page 38)

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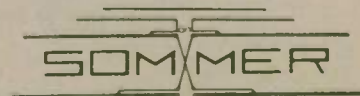


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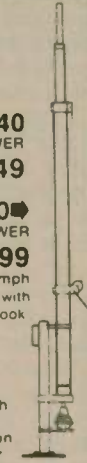
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DX World

(continued from page 35)

Feedback

Bob Gibson, KI4MI, commented on my comment, "The first station from the People's Republic of China was on the air after many years of doormat activity." Bob says, "I presume that the cadre of club station operations throughout the PRC was recruited from doormat makers of the previous era. The BY4AOM suffix probably stands for 'All Old Mat-makers.'"

When my column was published, I read my words on the "doormat" but I couldn't put my finger on it — even though it didn't look right. Now I know! That's funny. Thanks, Bob!

QSL information

We received a letter from George

Propagation

Maximum Usable Frequency
from Burbank, CA
(courtesy of W6LS)

The numbers listed in each column are the Maximum Usable Frequency (in MHz) for contacting five major areas of the world (Nairobi, Tokyo, Melbourne, Frankfurt, Rio de Janeiro) for low fire angle antennas.

You can get a free complete set of these predictions for low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). You may also request an introduction to using HF propagation predictions. Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by an SASE (54¢) envelope at least 9"×11½".

OCTOBER 1987

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	16.7	21.6	24.8	9.3	17.7
0200	12.2	18.6	25.1	8.9	13.8
0300	10.7	15.9	21.0	8.3	11.7
0400	9.9	14.1	16.8	7.0	11.3
0500	10.0	12.8	14.0	7.2	11.9
0600	10.3	11.8	12.8	9.6	12.9
0700	10.2	11.2	12.7	10.3	13.9
0800	9.8	11.1	12.6	10.5	13.6
0900	9.3	11.0	12.5	10.4	14.4
1000	8.7	11.8	13.0	9.9	13.7
1100	8.8	11.7	13.6	9.9	11.8
1200	10.0	11.3	13.1	10.4	12.0
1300	12.4	10.7	11.9	11.7	15.1
1400	15.1	11.4	12.7	14.4	19.4
1500	17.2	13.0	14.7	17.0	22.6
1600	18.6	12.7	12.5	18.2	23.9
1700	19.5	12.1	10.5	16.9	24.6
1800	20.3	13.0	11.0	15.4	25.7
1900	21.0	13.4	14.3	13.9	27.1
2000	21.6	15.7	18.0	12.1	28.2
2100	21.8	18.8	20.2	10.4	28.7
2200	21.7	22.0	21.1	9.5	28.2
2300	21.0	22.8	22.1	9.3	26.1
2400	19.4	23.0	23.5	9.3	22.3

Winford, KL7VZ, who took exception to the term "super QSL manager" for those fast turn-around QSL responses. Perhaps that was a poor choice of words on our part for basing a QSL manager on how fast a QSL manager (or DX station) responds to QSL requests. What we had in mind was to acknowledge a fast turn-around on QSL requests. It wasn't meant to discredit any QSL manager. Often the delay on QSL responses is beyond the control of the QSL manager.

George did have some valid points to add, though. George stresses the importance of having the right day, month and UTC on your QSL card. Approximately 10 to 20 of the cards he receives have mistakes in one of the three items above. Remember when you pass through 2359 UTC it becomes the following day regardless of what day it is at your location.

Another important point involves showing the date correctly. To show the date as 4/5 or 4/6 is confusing. Is it April 5 and 6, or 4 May dn 4 June? At N6JM we always spell out the month. If you can't spell the month, use Roman numerals for the month.

Incidentally, George is QSL manager for Joe Voelkelt, KL7LF/KH3, on Johnston Island. Joe mails his logs to George every Monday and George spends up to as much as eight hours processing QSL cards for every set of logs he receives.

Another very important item to include with your QSL request is the SASE. We have stressed this many times over. George says about 5% of the DX requests do include a little extra to help out, but often too many DXers don't even bother with the SASE (self-addressed stamped envelope).

George also suggests that you in-

clude the QSL manager's return address on the envelope and not your own. At N6JM we always leave the return part blank as all QSL managers we have encountered do possess a rubber stamp.

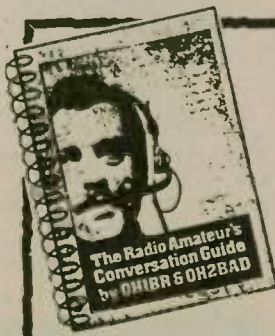
One reader wrote to us for assistance with a current address for VE2-AQS as the address given in the Callbook is no longer valid. This station is the QSL manager for 3G1B and just so happens to be a member of our club, the Northern California DX Club. The club roster has the following for VE2AQS: J. Robert St. Germain, 226 Round Hill Place, Clayton, CA 94517. Bob, if you are reading this, why don't you contact the Callbook publishers with your latest address?

In the listings for the QSL routes of the Chinese stations in the last issue, the address for BY8AC was omitted. It should read: 38 Guzhongsi Street, Chengdu, People's Republic of China. The route for BY8NC should be disregarded as the call area and the city do not compute. (Nanchang is not in the 8th call area.)

Art Phillips, NN7A, wonders how we managed to get KR7Y as the QSL manager for his operation as XE2VVKR. If I remember correctly, it picked up that information from the newsletter of the Northern Arizona DX Association, which was associated with the XE2VVKR operation by NN7A. Evidently, I was mistaken. QSL cards for XE2VVKR go to NN7A.

Prefixes

Finland stations have been using the "OF" prefix recently to celebrate 70 years of independence from the Russian Empire. When the Bolshevik Revolution broke out in 1917, Finland was able to gain its independence. The



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Baltic states followed a year later, but unfortunately, the Soviet Union took over during World War II.

The special prefix of "YZ9" was used by Yugoslavian stations to celebrate the Student World Games in Zagreb. This prefix will be used through the end of August. These calls are good for the Universidad 1987 Award, which count as 5 points each. If space allows, or if there is an interest, we will give details on this at a later date.

During Pope John Paul's visit to Poland, there were several special calls active on the bands using the "SN" prefix (SN1JP, SN5JP, etc.). If you worked one or more of these calls, see the QSL routes.

Islands

Although not necessarily related to Amateur Radio, DXers might be interested in *Islands* published by Islands Publishing Company, 3886 State St., Santa Barbara, CA 93105. Zack Schindler, N8FNR, sent us a copy of an article about Clipperton Island which was printed in the March-April 1987 issue. For subscriptions write to Islands, P.O. Box 888, Farmington, NY 11737. Cost per year is \$18.

Earl Hinz, WD6EYJ, writes that he is an author of a book on Pacific small boat cruising and is working on an updated version. This will include the outlying islands of North and South America, which includes Islas Revillagigedo, Clipperton, Cocos and Juan Fernandez.

Earl needs photographs of these islands and the source seems to be quite scarce. Are there any DXers who have visited these islands on a DX-pedition and have photos available for Earl? He will pay a nominal fee for photos he can use. Write to Earl at 1750 Kalakaua Ave., Honolulu, HI 96826. The name of Earl's book is *Landfalls of Paradise — The Guide to Pacific Islands*.

Amateur Radio stamp

The newsletter of the IARU reports the issuance of Israel's first postage stamp honoring Amateur Radio. The Israel ARC purchased a large quantity of these 2.50-shekel stamps that were first issued on June 14. Anyone who would like to obtain one of the first-day covers should write to the IARC for a reservation. The cost is U.S. \$5. Send your requests to: Israel ARC, P.O. Box 4099, Tel-Aviv 61040, ISRAEL.

QSL cards via bureaus

In the June issue of *Salt Tablet*, the official newsletter of the Salt City DX

Association (Syracuse, New York area), there is a very informative article by James Rautio, AJ3K, about QSLing the inexpensive way via the bureaus. The article is rather lengthy, so I have taken excerpts.

The ARRL QSL Bureau has both an outgoing and incoming service. For complete details see page 73 of September 1986 *QST* for the description of the outgoing bureau and a description of the incoming bureau on page 57 of the December 1986 issue.

The outgoing bureau is for ARRL members only. To use it, just take the most recent mailing label from your *QST*, enclose it with your QSL cards and fee and send it to the ARRL. The fee is next to unbelievable, \$1 per pound or fraction thereof. That's right. One dollar per pound. A pound is about 155 cards. At that price, it is almost worth membership to the League for the outgoing bureau alone (depending on how many cards you want to ship out).

They say they want the cards sorted alphabetically. You may want to sort them according to the ARRL DX countries list (i.e., SM and 7S are both prefixes used by Sweden). I'm sure the ARRL would prefer to see cards to both prefixes included under SM.

Some DX amateurs do not accept cards from their bureau and some countries do not even have bureaus. The countries that do not have bureaus are listed in the September 1986 issue of *QST*. Such countries have few if any amateurs and are usually QSL'ed direct.

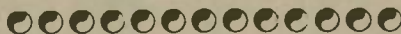
The incoming bureau goes by call area. Each bureau is run a little differently. To get details for a particular bureau, send a self-addressed stamped envelope (SASE) to the bureau (address listed in the December 1986 issue of *QST*). If you work any DX stations at all, be sure to have an account with your bureau. Many DX stations will automatically send cards to your bureau. Anyone without an account can really mess things up for the volunteers operating the bureau. The bureaus go by the number in your call, *not* your QTH. Thus, if your call has a three in it and you live in New York, go to the 3-land bureau, not the 2-land bureau.

QSL bureaus can be very slow: waits from six months to two years are typical. But with a little patience you can get a lot of QSL's very inexpensively.

Again, we would like to remind you of AJ3K's comment. The incoming bureaus are operated by *volunteers*. They give up valuable time from DX-ing to sort *your* cards. Give them a break and keep envelopes on file.

Antique QSL Department

This month's antique was submit-



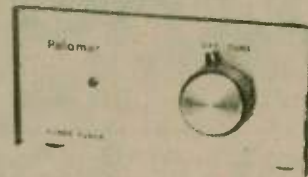
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J2KG

73 AND GOOD LUCK FUMIO MINOZUMA

QSL TRX DX FONE AND CW HUNTER HR PSR FOTOS TRX

ted by Al Phillips, W7HS, of Ogden, Utah. Al worked J2KG in Tokyo way back on June 7, 1938, while signing W6NPU. In those days Utah was included in the 6th call area. The operator of J2KG was listed as Fumio Minozuma. As to the whereabouts of this old-type amateur, we do not know.

Any readers with some interesting old QSL cards? Our supply is beginning to dry up and we are always looking for more. Any to share with your fellow DXers?

Another QSL service

Brian Treadwell, WV4V, writes that he has formed a new QSL service which includes information services, such as which countries will allow their citizens to receive "green stamps" in the mail, postage stamp services and supplies. The purpose of this service is to aid those DXers who prefer to QSL direct and hopefully speed up the QSL returns.

For further information, contact Brian at DX QSL Associates, 434 Blair Road, NW, Vienna, VA 22180. You may also phone Brian at (703) 938-1442.

QSL routes

A92EM	-G3XHZ	KH6LW/KH7	-KH6JEB
BV0AE	-JA1UT	KL7LF/KH3	-KL7VZ
BY1PK	-(See Note 1)	KX6BU	-KA8WCF
BY9GA	-(See Notes 1 & 2)		-(See Note 6)
BT0CQ	-(See Note 1)	LA6WEA	-N32D
C3OLEF	-KV4AM	LT1E	-LU8DYV
CP5XA	-DL3NAZ	LX59RL	-Bureau
CQ0FIL	-Bureau	LZ0L	-LZ1KCP
CY0SPI	-VE3FXT	NH6D/KH3	-NH6D
DUTDO	-DU6DO	OD5FB	-WA2QAU
ED5VFA	-EA5FDO	OD5LX	-SM0DJZ
EFTCW	-EA7BXL	OK5M1R	-OK3CAJ
EQ2PPP	-UP1BZZ	P29EW	-W0PSY
	-(See Note 3)		-(See Note 5)
EW6AA	-UV6AM	P29FG	-WA0GUD
	-(See Note 3)	R3SP	-U23AWR
FO0FB	-WB6GFJ		-(See Note 3)
FP K1RH	-K1RH	RP9BAA	-UA0AXX
FP W1CCN	-K1RH		-(See Note 3)
HB9LA/TF1	-F6H1Z	RP9BAB	-UA9Y1
HB0LL	-DJ9ZB		-(See Note 3)
HB0 DL2SCJ	-DL2SCJ	S79AC	-GW4ACO
HG9R	-HA9PP	SN1JP	-SP1AMU
H50C	-JA8ATG		-(See Note 7)
JY7ZY	-NS8G	SN5JP	-SP5PBE
JY4IU	-HB9AHA	SN7JP	-SP7P1O
K-NHW XV5	-W6FAY	SNWJP	-SP9PLU
KA2JF	-W6CNA	SN0JP	-SP9KZ
KC5MF	-F6GXB	SP5EXA JW	-SP5EXA
	-(See Note 4)	T19CF	-W31INK
KCTV DU1	-KCTV	T19M	-T18CBC
	-(See Note 5)	T19US	-T12US
KCTV KH0	-KCTV	T06JUN	-FSAM
	-(See Note 5)	TU2QZ	-WSSO
KCTV NH2	-KCTV	TV6CAS	-FD1LHA
	-(See Note 5)	TV7MTN	-F111WB
KG4SC	-N2DDI	TY/DL6KCA	-DL6KCA

UA1C	-RA3AR	ZY0ZZB	-PY1ECL
	-(See Note 3)	3V8AQ	-IK3DYD
UA0S	-UA9SIZ	4X11K	-4Z4IK
	-(See Note 3)	4X2J	-(See Note 8)
VK0ML	-VK5ABB	4X3N	-(See Note 8)
VP2MIU	-AB1U	4X7J	-(See Note 8)
VP2MM	-AB1U	4X8S	-(See Note 8)
W6JKV/YV0	-N6BFM	4X9B	-(See Note 8)
W9YZS/5B4	-K0TLM	5L2X	-W3HKNK
XU1SS	-JA1HQG	5L7Q	-GM4LDL
Y87MJP	-Y32YC		-(See Note 5)
YE9X	-Y05Y	5L7T	-YU1RL
YE9Z	-Y05Y	5N0WRE	-K4JZQ
VJ0ARW	-ZL1AMO	7J3AAC	-W1YY
Y27AA	-YU7MAY	7S0MG	-SM0DJZ
Y29AA	-YU7MAY	8P6B	-VE5RA
Y29IX	-YU2LIX	8P9HG	-VE5RA
ZF11C	-VE3IE0	8Q7DL	-DL9BAF
ZK2RS	-ZL4DO	9K2DX	-WA6OTU
ZY0ZPH	-PY1ECL		
BY5RT	-P.O. Box 707, Fuzhou, People's Republic of China		
C21XX	-Ed DeYoung, P.O. Box 17, Republic of Nauru		
DX1CW	-The DX Manager, Comms World of Amateurs, Inc., P.O. Box 390, Greenhills, Manila, PHILIPPINES		
EP2HZ	-P.O. Box 16765-3133, Teheran, IRAN		
FR5ES	-P.O. Box 180, St. Benoit, Reunion Island, FRANCE		
H44JL	-P.O. Box 63, Honiara, SOLOMON ISLANDS		
KK7K/DU3	-Box 13383, APO San Francisco, CA 96311		
OD5AS	-P.O. Box 121, Tripoli, LEBANON		
XX0PS	-P.O. Box 6116, MACAO		
4G1A	-The DX Manager, Comms World of Amateurs, P.O. Box 390, Greenhills, Manila, PHILIPPINES		
7Q7LW	-Helen Sampson, 57 Milford Ct., Brighton Road, Lancing, Sussex BN15 8RN, ENGLAND		

Notes

- Operations by JA70IA, JK1GDS and JRIHHL for BY1PK (August 9-10), BY9GA (August 12-13) and BT0CQ (August 16-18) go to JRIHHL.
- Operations at BY9GA by Mike, NS7Z mid-June, go via NS7Z.
- Cards for Soviet managers must be routed via P.O. Box 58, Moscow, USSR, unless otherwise noted.
- Please send cards via F6GZB through his Asian address: Jacques Calvo, 5-10-5 Shimomaguro, Meguro-ku, Tokyo 153, JAPAN.
- For address, use 1987 Callbook only.
- This applies for operator Bill only.
- The call SP1JRG was also given as a route for SN1JP.
- The address for these calls: Tel Aviv ARC, P.O. Box 1099, Tel Aviv 61040, ISRAEL.

Thanks to the following DXers and various DX publications for their contributions to this month's column: VK6NE, TR8JJC, VP2ML, N8FNR, W9LNQ, KI4MI, WD6EYJ, WD6-EAW, WV4V, W7HS, Carolina DX Association (K2SD), Salt City DX Association (KB2G), Western Washington DX Club (K7ZR), Southern California DX Club (NK6A), Northern Arizona DX Association (KD7XO), IARU (K1ZZ), *The Long Island DX Bulletin* (W2IYX), *QRZ DX* (W5KNE), *DX News Sheet* (G4DYO), *Long Skip* (VE3IPR), *The DX Bulletin* (VP2ML).

World Radio and TV Handbook

The 1987 edition of the *World Radio and Television Handbook* is now available. The *WRTH* is a valuable reference guide for amateurs, SWL's and other radio enthusiasts to almost every known broadcast entity in the world.

The list price is \$19.95 plus shipping. The new edition has confirmed availability in the United States from the Century Print Shop, 6059 Essex St., Riverside, CA 92504; (714) 687-5910. — Westlink Report □

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Book Review

The Digital Novice

By Jim Grubbs, K9EI

Getting acquainted with digital modes in Amateur Radio is a frustrating experience. I started this the hard way when I got a computer for the first time. Then, while getting acquainted with the computer, also going into packet radio. That was a double whammy!

Even though I have been a ham for over 50 years (perhaps because of it), I found the experience frustrating to say the least. Others have felt this too, because I have heard of cases where amateurs quit before hardly getting started in the digital modes.

I suppose the double whammy would be a triple whammy if you add the situation of being a Novice amateur operator. But do not despair! Help is on the way. At least one knowledgeable amateur out there understands our plight and has done something about it.

Jim Grubbs, K9EI, has written *The Digital Novice*. This book is not only for the new Novice who wants to try the digital modes (s)he is now authorized to use, but also for old-timers to help them through the "digital barrier."

Jim has the knack of explaining complicated terms in simple, easy-to-understand words. His writing style is informal and breezy — a pleasure to read. What a refreshing change from the users' manuals that come with computers and Terminal Node Controllers. There are even some light-hearted cartoons to help illustrate points in the text.

Reading and understanding this book will help you considerably in understanding those other manuals. There is even a glossary of digital terms to help.

If you're one of those amateurs who has resisted getting into digital modes because you (perhaps subconsciously) fear it's too complicated, this book is for you. I mean you, old-timer, as well as you, a Novice just getting into Amateur Radio. Jim even offers a certificate for reading his book and passing the open-book exam at the end.

Read this book first. It'll give you the confidence you need to tackle digital modes. We're having a ball with packet, AMTOR and RTTY — c'mon and join us.

The Digital Novice, by Jim Grubbs, K9EI: \$9.95 + \$2.50 P&H from QSKY Publishing, P.O. Box 3042, Springfield, IL 62708.—Norm Brooks, K6FO

Pass it on . . . WORLD RADIO

Personal computer DXing

Peter Onnigian, W6QEU

During the April DX Convention in Visalia, Bryan McCoy, N6VE, described various uses for a computer in the ham shack. Bryan said most microcomputers with MS-DIS and Lotus 1-2-3 programs can be used for logging, duping, DX record keeping, beam headings, and sun set-sun rise-gray line width determination.

Great Circle routes as well as short-path headings can also be found in this computer program. A programmed version of the DX EDGE is also available.

Shel Shallon, W6EL, explained his MINIPROP computer program, which is available for 16-bit PC/MS-DOS systems and 8-bit CP/M computer programs. An 80-column monochrome monitor is required. MINIPROP will run on the Commodore 128, but not the 64. MINIPROP is written in Pascal and its source code is not available for distribution.

But the MINIPROP package includes the 34 pages of on-disk documentation, and an atlas of latitudes and longitudes of over 350 DX locations.

MINIPROP gives you beam headings, path length, sunrise and sunset times for the path terminii, and best of all — path signal levels on five frequencies of your choice.

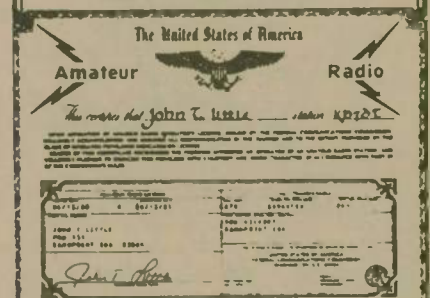
The program requires that you type in geographical coordinates of the DX country, date, sunspot number or solar flux.

Shel predicted that computers which can now be used to control transceivers placed miles away from the computer operator, will soon do an entire QSO (while you sit and listen!).

The predicted signal strengths for the five frequencies of choice are based on 100 watts, 1/2-wave dipoles at both ends of the circuit. Strength predictions use 1/2µV as an S3 signal in your receiver.

Program is user-supported. You should consider sending a contribution of \$25 to the author (Shel Shallon, W6EL, 11058 Queensland St., Los Angeles, CA 90034-3029) when ordering MINIPROP. □

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DX Forum

John Minke, N6JM, DX Editor

At the DX Forum held at the Visalia DX Convention, April 3-5, Eric Scace, K3NA, of Frederick, Maryland was invited to present his proposal on a revision to the DXCC.

Eric feels, as do many other DXers, that the present DXCC Rules 2 and 3 are ambiguous, and he has come up with an idea on defining the country criteria based on "The United Nations Convention on the Law of the Sea." With this in mind, one should be able to use an approach for determining what is and what is not a DXCC country that all could understand.

Eric detailed several examples and showed how to determine the boundaries based on the exclusive economic zone and the baseline. For baselines, he divided that subject further into what he referred to as normal baselines, reef baselines, straight baselines, river baselines and bay baselines.

The normal baseline is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal state. In the case of islands situated on atolls or of islands having fringing reefs, the seaward low-water line of the reef would be the baseline.

In the case where the coastal area is broken up with coastal islands and indented with minor bays, the baseline would be the points of islands and the land areas forming a series of straight baselines. If a river flows directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low-water line of its banks.

Eric gave us the "bottom line" where 291 (92%) of the present DXCC countries would remain unchanged. Such countries as Balearic Islands (EA6), Corsica (FC), Ogasawara (JD1), Fernando de Noronha (PY0), Crete (SV9), South Shetland Islands (VP8) and the Laccadive Islands (VU7) would all be deleted. On the other hand, such DX countries as Ceuta and Melilla (EA9) would be restructured into five — Ceuta, Melilla, Gomera Island, Alhucemas Islands, Chafarinas Island and Alboran Island (this works out to be six!). Out of the present 316 DXCC countries, 25 would be deleted, but 60 new DXCC countries would be created, including three that have been reinstated from the deleted list. That means a total of 351 DXCC countries.

Of course, if this proposal were to be adapted, a transition would be in order. A date would have to be established. In some instances, it would be necessary to work all the islands over again. An example of this is the creation of Tuamotu, Marquesas, Tubuai and Bass Islands,



Eric Scace, K3NA, presented a scholarly dissertation regarding the creation of new DX countries based on existing international law criteria.

from the deleted DXCC country of French Polynesia (FO8). As there have been several operations from these islands in the past, there would be no way

of knowing from which islands the operations had taken place.

Eric also made available copies of his proposal, which has been broken down into two papers: "An Overview of a Proposed Revision to DXCC Rules 2 and 3" and "Detailed Discussion — Proposed Revision to DXCC Rules 1, 2 and 3." The first paper consists of three sheets and the latter consists of 13 sheets. If you care for copies, write to Eric Scace, K3NA, at 10701 Five Forks Rd., Frederick, MD 21701. Be sure to include a large (9"×12") envelope with sufficient postage (probably about \$1.07). □

Fresh start for DXCC?

By now it should be common knowledge in the DX world that the ARRL Board of Directors, at its 1986 second meeting, directed the DX Advisory Committee (DXAC) to study the advisability of restructuring the DXCC.


The post-World War II DXCC has evolved to its present level over the past 40-odd years. During that period, there have been many changes in the philosophy of accreditation, verification, criteria and administration. Viewing the simpler manner that administration of yesteryears's DXCC was conducted in contrast with today's rigid interpretation of the rules, has long struck me as being a bit unfair to many DXers, who still are or will be, climbing the DXCC Awards ladder. This may be as good a time as any to consider giving the DXCC a new face.

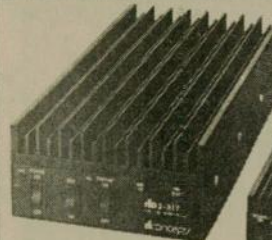

In conducting this study, the DXAC will consider all aspects of the DXCC including the number and types of awards, accreditation criteria, administration of the awards, operating ethics, country criteria and the countries list. The big question to be decided is whether the DXCC should continue unchanged, be restructured with a fresh start as was the case in 1945 or provide a transition mechanism to a new DXCC program, without loss of credits for one's present standing in the DXCC.

In pursuing this study, the DXAC will ensure that the high standards and prestige of the DXCC awards are not diminished by any recommended restructuring of the DXCC.

The DXAC's final report to the Board of Directors is presently scheduled for December 31, 1988. The DXAC needs your inputs on this matter. Send your comments to: ARRL, ATTN: DXAC, 225 Main St., Newington, CT 06111.

— John Parrott, W4FRU, DXAC Chairman







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	220 MHz		
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ALASKA

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

ARIZONA

Old Pueblo Radio Club
Meets: 2nd Wednesday/monthly — 7:30 p.m.
Location: Franklin Building
University of Arizona
N.E. corner of 6th St. & Park.

Tucson Repeater Association
P.O. Box 40371, Tucson, AZ 85717-0371
2nd Sat./monthly — 7:30 p.m., Pima Co.
Communications Bldg., 2145 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 1C34, Pine Grove, CA 95665, Pioneer Elementary
School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WYI Rptr. — 146.835, 146.235.
Net Tues. 7:30 p.m.

Associated Radio Amateurs of Long Beach, Inc. 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

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

Coachella Valley Amateur Radio Club (CVARC)
Columbia Savings and Loan Association
Highway 111 and Highway 74
Palm Desert, CA 92250
1st Monday/monthly 7:30 p.m.

Contra Costa Communications Club WD6EZC/R
PO. Box 661, San Pablo, CA 94806
Meets 2nd Sunday at 9:00 a.m.
Hickory Post Restaurant/Lucky Lanes
For info call Carl KA6OLK (415) 237-2621

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets: 2nd Friday/monthly — 8:00 p.m.
Wawoha Middle School: 4524 N.
Thorne: Fresno. W6TO/R 146.34/94

Gabilan Amateur Radio Club
South Valley J.H.S.
385 IOOF Ave. • Gilroy, CA 95020
Meets: 2nd Thursday/monthly — 7:30 p.m.
Talk-in 145.47-

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.

Kern River Valley Amateur Radio Club
P.O. Box 1902 • Lake Isabella, CA 93240. Meets 4th
Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake
Isabella WA6UYW Reprts. -146.085/146.685 224.22/Down
1.6 WB6ODZ Repr. -224.58 Down 1.6. Low-Level

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
PO. 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.

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 Building, Room A
Elkhorn and Don Julio, Sacramento, CA
For info: (916) 483-3293

Sacramento Amateur Radio Club, Inc.
Contact: Bob Lyman, K16FT, (916) 726-2694
Meets Sacramento Blood Bank
32nd St. & Stockton Blvd., Sacramento, CA
2nd Wednesday/monthly-7 p.m.

San Fernando Valley ARC Inc. (W6SD)
Meets 3rd Friday/monthly — 7:30 p.m. • Red Cross
Bldg. 14717 Sherman Way, Van Nuys, CA 91407. Exams
8 a.m. 1st Sat./monthly • Pre-registration 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 County Amateur Radio Assoc. W6UW
P.O. Box 6 • San Jose, CA 95103. W6UU 146.385 +
Meets: Santa Clara County Service Center
1555 Berger Dr. Building 2 Auditorium
2nd Monday monthly — 7:30 p.m.

Santa Clara Valley Repeater 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.

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 at 7:30 p.m. Net Thurs.
7:30 p.m Rptr. 145.43- Tues. 7:30 p.m. 28.543 MHz.

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. on Grape St. near Parkview Ave. in
Redding, CA. Net 146.64 Wed. at 8 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 Thur., 8:00 p.m., 52.28/88
FM Smpx Net Thur., 9:00 p.m., 50.300

Sonoma County Radio Amateurs, Inc.
P.O. Box 116 • Santa Rosa, CA 95402
Meets: 1st Wednesday/monthly 7:30 p.m.
Repeater frequency: 146.13/73
Contact person: Hank, W6DTV, 823-7885

Southern Calif. Amateur Transmitting Society (SCATS)
Vine Elementary School
1901 E. Vine St.
West Covina, CA 91790
1st Monday/monthly — 7:00 p.m. (coffee 6:30)

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 repeater

Tri-County Amateur Radio Association
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

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 Repeater 146.34/146.94

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)
Gibraltar Saving's Community Room
34880 Yucaipa Blvd., Yucaipa, CA 92399
Pres: Fred Schmidt KG6QN (714) 794-1244
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.

Platinum Coast Amateur Radio Society

1150 S. Hickory St., P.O. Box 1004
Melbourne, FL 32902-1004
Meets: 2nd Monday/monthly at Melbourne Red Cross
Talk-in on 146.25/85 or 146.01/61 rpt.

Sarasota Amateur Radio Ass'n, Inc.

Meets: 3rd Tues./monthly — 8 p.m. on the 6th floor (board room) 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, 7 p.m.
Herbert Hoover J.H.S.
Indianapolis, FL

HAWAII**Big Island Amateur Radio Club**

P.O. Box 1938 • Hilo, HI 96721-1938
Meets: 2nd Tuesday/monthly - 7:30 p.m.
Helco Auditorium, 1200 Kilauea, Hilo
Call in: 146.88(-) or 146.76(-)

ILLINOIS**Bolingbrook Amateur Radio Society**

P.O. Box 495
Naperville, IL 60566-0495
(312) 420-0342 • Call in 147.93/33
3rd Monday/monthly — 7:30 p.m.

Chicago Suburban Radio Association (CSRA)

P.O. Box 88, Lyons, IL 60534
Meets 2nd Wed./monthly — 8 p.m. Community Rm.
Clyde Federal Savings & Loan Association
7222 W. Cermak Rd. • North Riverside, IL

Dupage Amateur Radio Club W9DUP

Mid-America Savings and Loan
55th & Holmes (55th St. near RT 83)
Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.
Club repeater 145.250 — 600 KHZ

Fox River Radio League

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

North Shore Radio Club

Karger Rec. Center — 1850 Green Bay • Highland Park, IL
2nd Monday/monthly — 7:30 p.m.
For info call (312) 945-0356
WB9FRM Repeater 147.945-600, PL 1B

Six Meter Club of Chicago - K9ONA

Rptrs. 146.37/146.97 448.300/443.300
Info net - Tues. 9:00 p.m. 146.37/97
Annual Hamfest 2nd Sunday in June
Santa Fe Park, Willow Springs, IL.

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.

KENTUCKY**Kentuckiana Radio Club**

Bill Richmond, WD4CPO, 637-8443
Louisville Red Cross Bldg.
Louisville, KY
Meets: 4th Saturday/monthly — 7:30 p.m.

MICHIGAN**South Eastern Michigan A.R.A.**

Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.70/10
Grosse Pointe North High School
Building C, Cafeteria Commons
For info contact: AK8I (313) 372-1252

MISSOURI**St. Charles Amateur Radio Club, Inc. (SCARC)**

St. Peters Civic Center, St. Peters, MO
I-70 and Salt Lick Road
Meets: 4th Tuesday/monthly—7:30 p.m.
WB0HSI Repeater 07/67

Heart of America Radio Club

211 W. Armour
Kansas City, MO
Meets: 3rd Tuesday — 7:30 p.m.

NEVADA**Frontier Amateur Radio Society (FARS)**

Meets: 1st Friday at the Fly-N-Chef at 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

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 Association (SJRA)

Pennsauken Sr. Hi Sch. at Hylton Rd. & Remington
Ave., Pennsauken, NJ 08109. Jan.-Oct. 4th Wed./month-
ly-7:30 p.m. Nov.-Dec. 3rd Wed. due to Thanksgiving and
Christmas. Talk-in 145.290 rpt. Club call K2AA

NEW YORK**Communications Club of New Rochelle, NY, Inc.**

Harrison Street Firehouse
Bill McCarren, K2LV
(914) 738-0768
Meets: 1st Monday/monthly — 8 p.m.

Hall of Science Amateur Radio Club, Inc.

P.O. Box 131, Jamaica, NY 11415 — HOSARC — 2nd Tuesday/
monthly — Hall of Science Building, 47-01 111 St., Flushing
Meadow Park at 7:30 p.m. The tristates' only 3-band linked
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English thru Ham Radio at (516) 674-4072. 24 hrs.

Staten Island Amateur Radio Assn. (SIARA)

P.O. Box 495, Staten Island, NY 10314-0495
Meets 3rd Friday/monthly — 8:00 p.m.
Rm. B-201, College of Staten Island, Sunnyside
Club Repeater — W2CWW/R — 440.325 445.325

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

OHIO**Amateur Radio Fellowship, Inc. (ARF)**

N8HUN, Linda Delugach, Secretary
P.O. Box 2486 • Streetsboro, OH 44241
Meets: 1st Sat./monthly at Kent Wally Waffle
K8BPHO repeater 147.675/075

PENNSYLVANIA**Penn Wireless Assoc. Inc.**

Falls Twp. Municipal Bldg.
Trenton Road
Fallsington, PA 19054
4th Monday/monthly — 8:00 p.m.

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

UTAH**Ogden Amateur Radio Club**

P.O. Box 3353
Ogden, Utah 84409
Meets: 3rd Wed./monthly—7:00 p.m.
at the Red Cross Bld., 20th & Washington

VIRGINIA**Southern Peninsula Amateur Radio Klub (SPARK)**

Meets: 1st and 3rd Tuesdays
Salvation Army Community Bldg. • Hampton, VA
Operates 146/13 147/73 Repeater
For info call 480-2346 or 851-5573

Virginia Beach Amateur Radio Club (VBARC)

Open Door Chapel
3177 Virginia Beach Blvd., Va. Beach, VA
Meets: First Thursday/monthly — 7:30 p.m.
For information (804) 497-1235

WASHINGTON**Mike & Key ARC K7LED**

Good Neighbor Center
305 So. 43rd Street
Renton, WA 98055
Meets monthly on 3rd Sat. - 10 a.m.

WEST VIRGINIA**Jackson County Amateur Radio Club, Inc.**

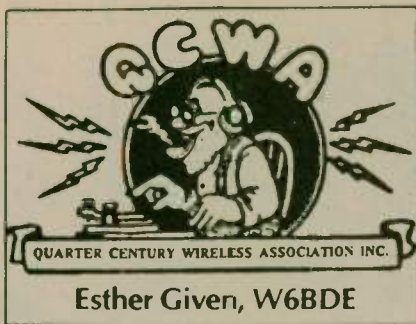
D. Geneal Bailey, NK8P, Sec.-Treas.
113 Winters Dr., Ripley, WV 25271
First National Bank of Ripley
Meets: 1st Thursday/monthly - 7:30 p.m.

The Kanawha Amateur Radio Club

P.O. Box 1694 • Charleston, WV 25326
Meets: 1st Friday/monthly-7 p.m.
South Charleston City Hall annex
Repeaters 6.82 and 6.88

For information on how to get your
club listed in "Visit Your Radio Club,"
plus receive many other benefits, write
to Jennifer Kinugawa, KB6TAA, Club Liaison,
Worldradio, 2120-28th Street,
Sacramento, CA 95818.





The Quarter Century Wireless Association will celebrate its 40th anniversary at its convention in San Diego, California on October 30-31 and November 1. The event will be held at the Grosvenor Inn, which is close to the intersection of Interstates 5 and 8.

QCWA Chapter 14 of San Diego is the host group with Thurman Beech, W6OOX, chairing an enthusiastic committee. Plans include friendly get-togethers on Friday, October 30, followed by a buffet breakfast, an open forum and an evening banquet on the 31st, at which time the organization will present several prestigious awards.

The convention will be preceded by a meeting of QCWA's Board of Directors. Registration forms appeared in both the spring and summer issues of *QCWA News* and should be mailed to QCWA Chapter 14, 599 Telegraph Canyon Rd., Ste. 141 Chula Vista, CA 92010-6436.

Further information can be obtained by contacting the above address. San Diego offers many spots of interest to the visitor and guarantees excellent weather.

QCWA salutes another 75-year amateur license holder — Jim Russell, W8BU — who was honored at the spring meeting of Cincinnati Chapter 1 on May 2. Jim took and passed the first license exam given in the 8th call district in 1912.

Following presentation of the QCWA Century Club Award, Jim delighted those present with a display of his antique spark transmitter, various interesting components of ancient receivers and great stories of early days in radio.

Those honoring W8BU and his YF (wife) at the QCWA presentation included officials and members of ARRL, Cleveland Wireless Club, Lake Erie Amateur Radio Association, Northern Ohio Amateur Radio Society, Westpark RadioOps and host QCWA Chapter 1.

QCWA's annual QSO party generat-

ed great interest and participation with 138 CW and 112 phone logs being submitted to the tellers who announce the following winners:

CW (in order of accomplishment)
Donald McClenon, N4IN, 1st place (plaque); Bill Branche, K9CLO; Art Devinney, W2RRY; Leland Smith, W5KL; Vern Holmes, W0LR. North American Winner is Russ Wilson, VE6VK, and European Hans Liebig, DL6NB.

Phone — Herb Gleed, W6FQ, 1st place (plaque); Bill Branche, K9CLO; Don McClenon, N4IN; Ralph Cabanillas, W6IL; and Harold Basco, KA6IXW.

North American winner — Dave Benton, VP2MDB; *Europe* — Hans Liebig, DL6NB. Volunteers from QCWA Chapter 107, Lakeland, Florida served admirably as log tellers for the 1987 QSO Party.

Pelican Chapter 128 of St. Petersburg, Florida held its May luncheon meeting maritime mobile aboard the paddle-wheel boat, *Bells of St. Petersburg*. This annual cruise of Tampa Bay attracts many QCWA members and adds a fun dimension of fellowship at chapter level.

Northern New Jersey Chapter 77 was treated to a special program when its vice president, Al Hefrick, K2BLA, presented a slide showing of pleasant experiences in Viet-Nam.

Thanks to his ham ticket, Al's duty running a MARS station and handling phone patches with the states gave him an opportunity to see a side of that country most GI's missed. His

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As of 1984 all ham radio license testing is handled by the amateur radio community itself. Teams of three Extra Class volunteer examiners (VE's) can now conduct all ham license upgrade examinations.

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(817) 461-6443

Let's get Amateur Radio growing again!

pictures and commentary included snorkeling expeditions at the beaches, beautiful countryside and gave American viewers a side of Viet-Nam seldom seen in this country.

The chapter also recently sponsored a field trip to Vernon Satellite Earth Station.

Atlanta Chapter 49 also presented a most interesting meeting program. Byron Lindsay, W4BIW's slides and recordings covered over 60 years of amateur and commercial radio history in Georgia. Included were pictures of famous folks in the news like Henry Ford and Rudolph Valentino, WSB employees who later reached national prominence such as Dick Van Dyke and Snooky Lanson, and pictures of hamfests from the '20s to the present.

Chapter 49 also sponsored the QCWA breakfast and activities at the ARRL Convention in Atlanta.

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Now you can wear and display your call, name and your club name on a high-quality T-shirt for only \$10.00. Your call, name and A.R.R.L. logo (if desired), printed on shirt front, with club name printed on shirt back. Shirts (sizes S, M, L, XL) are available in light blue, light yellow, beige (tan) or white. A.R.R.L. logo available in 2 1/4" x 5" or 1 1/4" x 3" in red. Lettering is available in two styles — Ivy Open or Sportswear — and the following colors: black, royal blue, maroon, brown, green, red, or orange. For individual orders please add \$1.50 per item for shipping and handling. Club orders (would prefer quantities of 10 or more) are shipped postpaid.

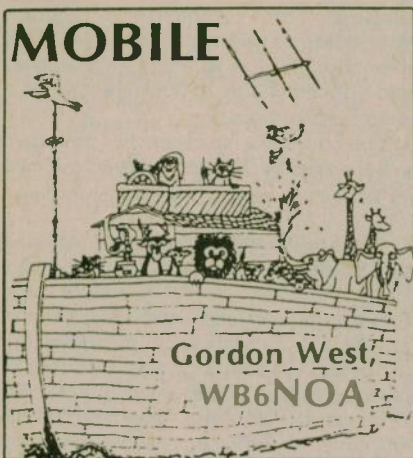
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1270 MHz - simply fascinating!

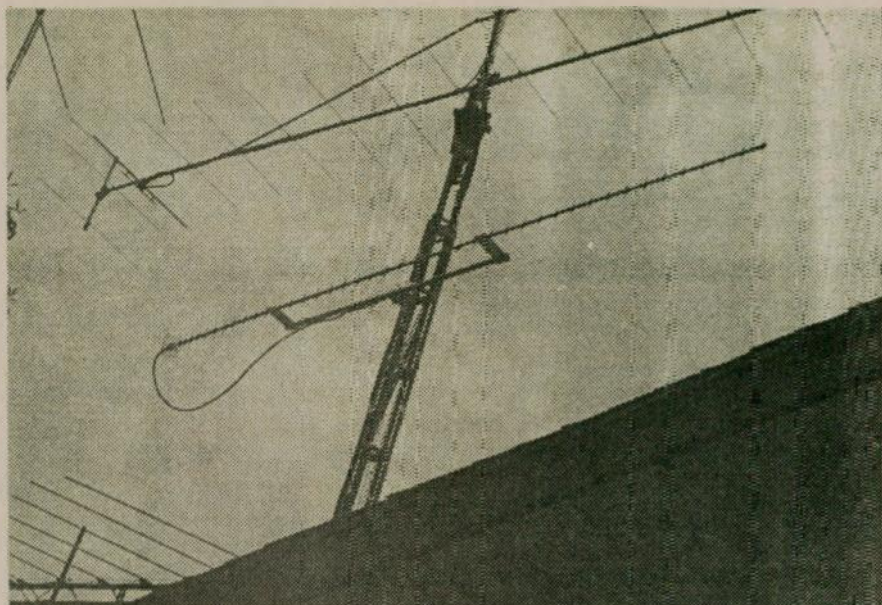
Welcome to the world of micro-waves, and take a look at the excitement on one of Amateur Radio's highest frequency bands - 1240 MHz to 1300 MHz.

If you thought this band was reserved solely for ultra-short, line-of-sight contacts, guess again! California hams regularly talk through summertime atmospheric tubes to Hawaii! Repeaters along the Texas Gulf Coast are often operated by mobile Floridians. Midwest tropospheric ducts create seasonal 1,000-mile contacts, and our friends in the Pacific Northwest find 1270 MHz signals bounce off of the aurora borealis with exceptional quality.

Thanks to ICOM who presently offers the widest selection of 1200 MHz hand-held, base, mobile and repeater transceivers, getting on 1200 MHz is as easy as dialing in the channel and pushing the mike button. I publicly congratulate ICOM for seeing the fantastic future of 1200 MHz, and making equipment available long before the announcement of the new Novice voice frequencies.

1240-1300 MHz. (See chart on next page.)

1240 - 1260 MHz. Technicians and higher may use this portion of the band for amateur fast-scan television, digital communications, and control



KLM beam antenna for 1200 MHz on bottom

links for repeaters on other bands.

1260 - 1270 MHz. Reserved exclusively for satellite uplinking, Technician Class and higher.

1270 - 1295 MHz. Novice country with access to 239 repeaters every 25 kHz plus plenty of room for FM simplex. Novice power output limited to a generous 5W - more than enough to work any repeater that can be heard.

1295 - 1300 MHz. Here is where world records are set. Technician Class and above weak signal single-sideband operation. With an ICOM IC-1271A, go to upper sideband and listen to hams bouncing signals off the moon as well as working long-haul tropospheric ducting up to 2,000 miles away.

The range at 1200 MHz

Line of sight plus plenty of bounces! Working through repeaters on mountain tops or on tall buildings, your reception is similar to 2M, 220 and 450. The usual ultimate range of a repeater at 1200 MHz is almost identical to that of repeaters on lower frequencies at the same location. Now the good part - *SUPER REFLECTIVITY!*

1200 MHz signals love big cities. The signals bounce around the buildings and get into just about any nook and cranny you could find. This includes elevators, the parking garage five stories down, the lunchroom with not a window in sight, and just about anywhere else 1200 MHz signals can creep in and bounce around. The super reflectivity of these signals makes 1200 MHz in a big city very desirable.

This is why cellular telephones are at 900 MHz - lots of bounces to fill into normally "dead" areas.

Now the bad news - 1200 MHz signals are dramatically attenuated by



Modern 1200 MHz mobile

foliage. While the signals will creep around a skyscraper, they could be completely sucked up by a pine tree. Keep this in mind when you're operating mobile out of town.

Tropo ducting

Light waves will bounce off of sharply defined temperature boundaries. We see this as a mirage when we look down at the road and see the blue sky above being reflected. Signals at 1200 MHz are commonly ducted by atmospheric inversion layers and signal propagation is dramatically enhanced to several hundred miles away. This ducting is most pronounced in the presence of a high pressure system and moist air overrides it from the south. The record is Hawaii on 1200 MHz from California, and I am happy to be part of this yearly event every August.

Power levels

Hand-helds run 1W, and this is fine for great range to repeaters. Mobiles may run up to 5 or 10W, and this is

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Today's most popular All Band G5RV types, fully assembled:
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---	---

SASE information. *Antennas West* by Jim Stevens, KK7C
 1971 N. 1300 E., Provo, UT 84604 (801) 374-1084

1240-1300 MHz

The following band plan was adopted by the ARRL Board of Directors meeting in January 1985.

Segment	Use
1240-1246	ATV #1
1246-1248	Narrow-bandwidth FM point-to-point links and digital, duplex with 1258-1260
1248-1262	Digital Communications
1252-1258	ATV #2
1258-1260	Narrow-bandwidth FM point-to-point links and digital, duplexed with 1246-1252
1260-1270	Satellite uplinks, reference WARC 1979
1260-1270	Wide-bandwidth experimental, simplex ATV
Novice band	
1270-1276	Repeater inputs, FM and linear, paired with 1282-1288, 239 pairs every 25 kHz, e.g. 1270.025, .050, .075, etc. 1271.0-1283.0 uncoordinated test pair

1276-1282
1282-1288
1288-1294
1294-1295
1294.5
1295-1297
1295.0-1295.8
1295.8-1296.0
1296.0-1296.05
1296.07-1296.08
1296.1
1296.4-1296.6
1296.6-1296.8
1296.8-1297.0
1297-1300

ATV #3

Repeater outputs, paired with 1270-1276
Wide bandwidth experimental, simplex ATV
Narrow bandwidth FM simplex services, 25-kHz channels
National FM simplex calling frequency
Narrow bandwidth weak-signal communications (no FM)
SSTV, FAX, ACSB, experimental
Reserved for EME, CW expansion
EME-exclusive
CW beacons
CW, SSB calling frequency
Crossband linear translator input
Crossband linear translator output
Experimental beacons (exclusive)
Digital Communications

more than adequate. Novice operators are limited to 5W, and most modern transceivers (all of the ICOM line) have provisions for power reduction to 5W.

Antennas

Several well-known antenna manufacturers are deeply involved in 1200 MHz mobile and base station arrays. Larsen produces a black mobile 1200 MHz antenna with dual curls in it for added collinear gain. This antenna works well only if you feed it with a special low loss cable kit. Conventional coaxial cable will not work well at 1200 MHz. Larsen also produces a base station antenna with about 9dB gain omnidirectionally.

KLM Electronics, manufacturers of the popular KT-34XA worldwide beam antenna, produces a wonderful long-boom beam for 1200 MHz that exhibits a whopping 18dB gain. It's completely assembled except for putting Tube A into Tube B. Just add coax, and you are on the air.

I found a pair of their beams ideal for my ICOM repeater base station. I wanted to cover only a westerly direction with capabilities of 45° off each side. I was worried that the beam might be too tight, but to my surprise, it gave me solid coverage to mobile and hand-held units 50° to each side of the aimed direction! If you want your signal to be beefed up in only one direction, choose the KLM long-boom beam.

An Anaheim, California company — NCG Inc. — also brings in Japanese 1200 MHz antennas named "Comet." They offer a 15dB gain, 8' base antenna; a 7dB gain mobile antenna; and a unique antenna that is dual band for both 1200 and 450 MHz. The hams in Japan were active on 1200 MHz long before we even knew the band was there, so these antennas have had a lot of field testing and will work out well.

Several other manufacturers are

bringing in antennas at 1200 MHz, and these too should be good performers because of their Japanese heritage. Even the wide-band discone antenna works relatively well for very local 1200 MHz range.

Coax and connectors

The antennas and rigs all use N-type connectors at this microwave region. This minimizes loss, but also may cause you to dig out your handbook on how to solder in connectors. If you absolutely refuse to learn new soldering techniques with the new connector, you can also use a regular coaxial cable adapter that takes a regular PL and gives you N-plug output. However, the PL may cost you 1.5dB loss.

When it comes to coax, the biggest is best. Just a few feet of RG58, RG8X, or even RG8U can lose more power than what your antenna system gains. For mobile applications, Larsen produces a mobile coax kit similar to what cellular telephones use, consisting of high-quality, low-loss, small coax with a teflon dielectric. You are

probably talking about 2 to 3dB loss in a 15' run. So far, I haven't found any mobile antenna that really kicks out a signal with *gain!* (Possibly due to high dB losses in the coax.)

For base applications, Belden makes a coax called "9913" that is very efficient at 1200 MHz. N-connectors work nicely with this coax. The center conductor is solid and held in place by a spiral dielectric and good old air. This keeps losses down, along with the shield and aluminum foil outer braid. Don't even think about using conventional RG8U or even RG213 for any 1200 MHz run. It simply is unacceptable at these microwave frequencies.

The best coax would be hard line, and except for the purist, this is tough stuff to work with. However, if you want the ultimate 1200 MHz signal, go hard line.

Getting on the air

The ARRL Repeater Directory lists a good number of repeaters on this band throughout the United States. For a more up-to-date list, check with your regional UHF repeater frequency coordinator, and ask for their local list. ICOM indicates it has sold its repeater systems into just about every major area of the United States, so repeater activity should be plentiful.

12 MHz or 20 MHz *split?* Here on the West Coast, our repeater split is minus 12 MHz. In other parts of the country, it's 20 MHz. No problem here with a new transceiver that offers programmable offset. You can even mix 12 and 20 MHz splits all in the memory, too. Again, ICOM offers the widest selection of equipment specifically designed to handle this regional split anomaly.

Safety

I wouldn't stare for hours into any transmitting 1200 MHz antenna. However, I wouldn't lie awake at

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night worrying whether or not my latest hand-held contact will cause me to go completely blind. Just remember that microwave radiation at this range, especially that from a directional antenna, is something you need to take great care with.

Have fun

You'll find the FM audio reception sparkling at 1200 MHz. Man-made ignition noise is non-existent. Because of its short wavelength, mobile flutter at driving speeds is so fast that it's almost unobjectionable. If you are noisy into a repeater, move the hand-held just a couple of inches, and chances are you will be sparkling clear. Same thing with your base and mobile antennas to a distant repeater — just a few feet will make a big difference.

Life at 1270 MHz is great. The operators up there are friendly — especially those on the repeaters open for all Novices to join in. Novice phone patching is legal. Equipment is plentiful. Antennas are small and simple. Why aren't you on 1200 MHz?

Write ICOM for their full line brochure and see what's out there. □

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The NBS Special

The very first of my columns featured a simple 2-element quad antenna for 2M. Many letters were received from readers who built this antenna, indicating the good results achieved with the unit. This month, a simple Yagi design VHF antenna is featured. The antenna can be made from wood doweling and coat hangers and will give a good account of itself. The dimensions of the elements are taken from the ARRL Handbook for the so-called National Bureau of Standards design beam antennas. Further information on this excellent design can be obtained from consulting current ARRL Handbooks.

Figure 1 illustrates the basic design and construction technique. A 1/2"-

diameter wood dowel will work well for the boom. Cut the dowel to the approximate length; allow a few extra inches on each end for the element-mounting holes.

Next, find yourself a bunch of coat hangers or #12 or #16 gauge solid wire and straighten it out. This can easily be accomplished by squeezing the wire in a vise. Note that the directors and reflectors are all of the "parasitic" variety. That is, they are continuous and may be cut to their proper length at this time. Now the driven element can be made.

As we will feed the driven element with a coax cable, the element needs to be separated in the center in order for the coax to be attached. A gamma match could be used; however, in the interest of simplicity, we will cut the element in the center!

Next cut a piece of pine or other suitable piece of wood to the dimensions shown in Figure 1. Secure the driven element halves to this piece of wood using tie wraps or cable wraps. If you don't have any wraps, they are available at Radio Shack or other local hardware stores. At this point, the coax may be attached. I simply soldered mine to the elements. If you do use steel coat hangers, a lot of soldering heat will be required and you will have to sand or scrape the steel clean for a good solder connection. A little solder flux will aid in this operation.

Now that all of the elements are made up, we may mount them to the boom. For the parasitic reflectors and directors, simply drill a tight-fitting hole into the boom and slide the element into it. A little epoxy may be used if necessary to secure the element tightly. For the driven element, drill holes in the rectangular wood block and also one through the boom where the element should go. Secure the block and element assembly to the boom with machine screws and nuts. That's it.

A good coat of varnish should be ap-

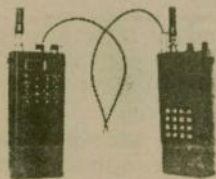
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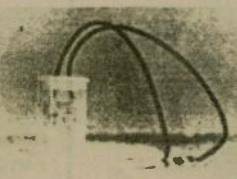
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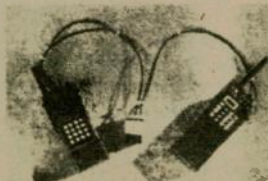
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plied to the wood parts of the antenna if it is intended to keep the device exposed to the elements. After varnishing the assembly, connect the antenna to a transmitter with an SWR bridge in line. Temporarily mount the antenna several wavelengths, if possible, off the ground and tune the transmitter to the center of the amateur band it was designed for.

Excite the antenna and measure the SWR. It should be under 2:1 or thereabouts. If it isn't, it may be necessary to add to or subtract from the length of the driven element. This can be done by soldering or snipping short lengths of wire/rod to the driven element. Better to add an inch or two before cutting any off!

A little experimentation might be

necessary to optimize the design. However, even with a 2:1 SWR, the antenna will give a good account of itself. The antenna may next be mounted either in a vertical configuration or a horizontal position, depending on the mode of operation selected.

Again, further information on the NBS design is available in the ARRL Handbook for those who wish to add more reflectors or directors to the basic design. That's it for this month.

Figure 1 — Simple VHF beam

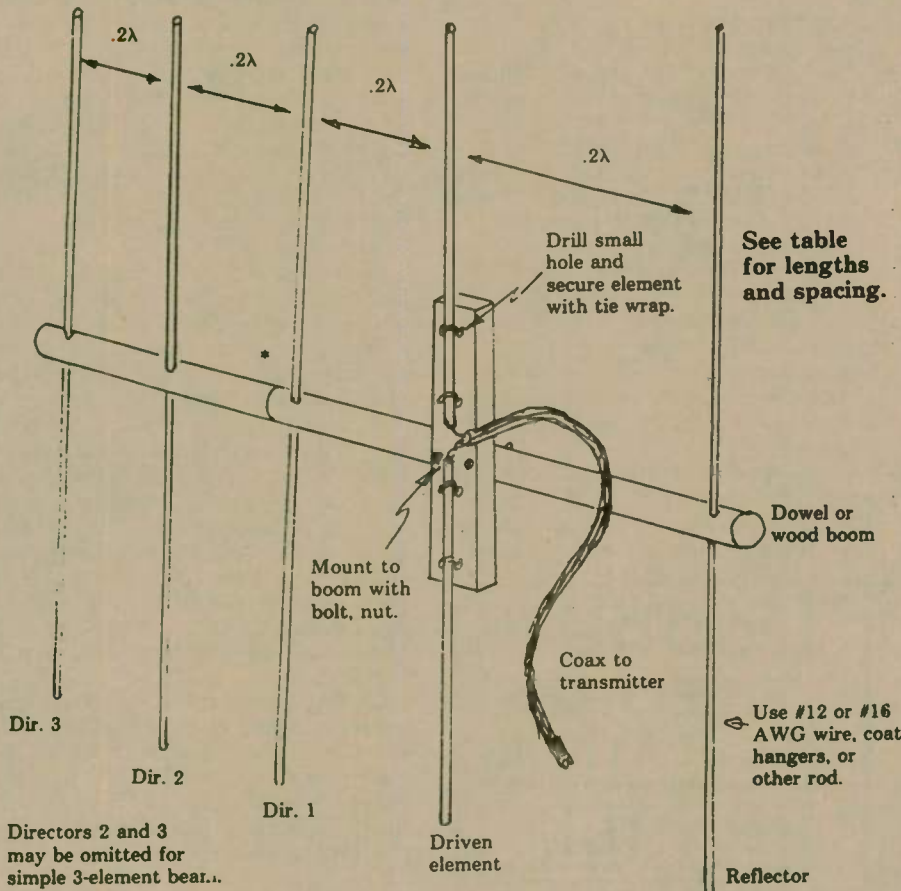


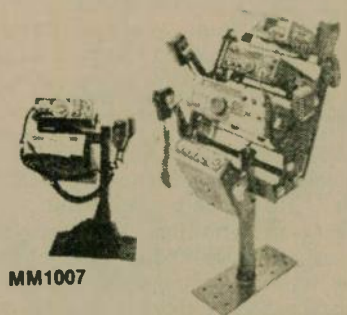
Table 1 NBS beam dimensions

	144 MHz	220 MHz	430 MHz
.2λ	16 3/8"	10 3/4"	5 1/2"
Ref.	3' 4"	2' 2 1/16"	1' 1 3/16"
Drvn	3' 2 3/16"	2' 1"	1' 23/32"
Dir. 1	3' 3/8"	1' 11 13/16"	11 13/16"
Dir. 2	3' 11/16"	1' 11 13/16"	11 3/8"
Dir. 3	3' 3/8"	1' 11 13/16"	11 3/8"

—Taken from 1985 ARRL Handbook

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Part I

This column starts a three-part series of articles on the proper planning of a quality QRP station. Having lived the nomadic lifestyle for the past 20 years, I am somewhat of an expert on setting up a radio shack. It seems that every shack has room for improvement. The information presented in this series is based upon sound ideas that have come from experience. Anyone could use this information to construct or improve their radio shack, be it a ham station, SWL/DXing station or scanner monitoring post. Remember, the planning you put into your shack will always be time and effort well spent.

The object of this planning phase is to formulate a logical, progressive plan that will provide you with an acceptable end result, namely a shack/antenna farm/radio system that will enable you to enjoy successful QRP operation. We will look at each part of the station (shack, radios, antennas, etc.) and how it affects the total system. It is our goal to improve the various sub-systems to an acceptable level (which somehow always equates to money) so your QRP goals can be realized.

QRP operation, because of self-imposed power restrictions, can be a very frustrating endeavor. Many amateurs who use standard power levels (100-200W) fail to comprehend the necessary changes in attitude and operating practices prior to going QRP. In addition, if the shack and associated antennas/RF sub-systems are not running at peak efficiency, enthusiasm quickly wanes and another radio amateur quits the QRP ranks. If proper planning of the entire radio shack is done, operating becomes a pleasure instead of drudgery. This

holds true for any area within the radio hobby.

One of the first areas to address is a list of the short- and long-term goals you intend to accomplish. The word here is "realistic." What do you want to do: DX, contest, net operation, or experiment and ragchew? Is QRP going to be your only pursuit or just a diversion from day-to-day QRO operation? QRP and QRO can peacefully co-exist within the same shack!

Important questions

Questions you should ask are: Is the present layout of the shack conducive to comfortable operation for extended periods (critical for QRP contesting)? Is there adequate light available? Are the antennas correctly erected to give both local and DX coverage? When was the last time the coax was replaced? Can more antennas be erected to upgrade current capabilities? Will my gear operate at QRP output levels (5W or less)? Can they be modified to produce QRP output, or do I need to spend money on a QRP transceiver?

Get the picture? Ask yourself some hard questions and be honest with the answers.

Once you enter the low-power arena, rules of engagement (ROE) change dramatically! The brute force advantage, once available when working at

the 100W level, is no longer there. Area coverage by ground wave is drastically reduced with the reduction of RF power. Hence, the antenna system will have to be re-evaluated to ensure that both local and DX coverage can be realized.

If you want to work DX, are your present antennas DX oriented (i.e., low angle for radiation, directive, etc.)? If you presently work DX using medium- to high-power output, chances are you can work DX at QRP power levels without much change in the antenna farm. However, if you only check into the local traffic net on 40M with your trusty dipole, you have some heavy-duty planning ahead before serious QRP DX operation can be enjoyed. Ground systems will have to be enhanced. Operating tactics changed and mental attitude adjusted.

Since recreational space is at a premium in most homes, the location of the average shack is determined on a "space available" basis. The shack should be large enough for you and the gear and afford comfortable surroundings, free from kid noise, TV drivel, hair dryers and general non-amateur QRM. Do not try to exclude the family by shutting yourself away in a dark hole of a ham shack. This is the quickest way to alienate your spouse and children. Conversely, when 300 of your closest friends drop by for a small get-together, it is nice to be able to close the shack area off and keep it out of sight.

Ground floor shack locations are superior to second and third floor locations. Problems associated with providing good RF and DC grounds are easier to overcome on the ground floor. Feedline access tends to be less of a problem, also.

Grounds

Speaking of grounds, this is probably the most overlooked and least understood sub-system of the shack. Grounds are very important for safety reasons. There are two basic types of grounds: RF and DC. A good DC ground offers protection to the operator by insuring that, in the event of equipment malfunction, lethal voltages are conducted to ground via the ground cables on the equipment, not the operator! RF grounds provide a counterpoise or RF reflective surface which increases antenna efficiency.

A good DC ground may or may not offer a good ground at RF and vice versa. Some second/third floor shacks using long ground cables are effectively insulated above DC ground. Ground rules for good grounds (pun intended): keep all DC ground cables as short as

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possible. Terminate them in several ground rods, pounded or washed into the soil near the shack. This provides much more surface area and lowers the overall ohmic resistance of the DC ground.

Do not rely on cold water pipes, radiator pipes or ground pins in AC outlets to provide a good DC ground. Proper grounding, cabling, ground rod placement, soil treatment, etc. are discussed in detail in the ARRL Antenna Handbook and the Radio Amateur's Handbook (also by the ARRL). Remember, these are general guidelines. If you are exiled to the basement or the third floor, do not despair; you can still put out a potent QRP signal if you do your homework and plan ahead.

Creature comfort is paramount. No one likes operating for long hours in cramped quarters, without ample room to be comfortable. Therefore, take a hard look at the present (or proposed) operating position. The August 1983 *Mechanics Illustrated* had a very good article on a computer desk/work area design that could easily be adapted to the radio shack. Having the most used gear in the proper relationship to the operating console makes for less fatiguing operation.

A good rule of thumb is to arrange the gear so that the most used pieces of equipment are easy to access. You should not have to reach out or around other equipment. A foot switch for voice operation (especially during con-

tests) is almost mandatory. If you use a computer keyboard for CW or RTTY, be sure it is readily available for use without straining to reach it. Locate the video display far enough away from the rig to avoid RFI but close enough to read. Get smart on RFI suppression techniques. Use shielded audio cable and lots of ferrite cores to eliminate RFI from computer gear. Have plenty of AC outlets available. Use fused, surge-protected power strips to provide extra AC outlets for low-power equipment.

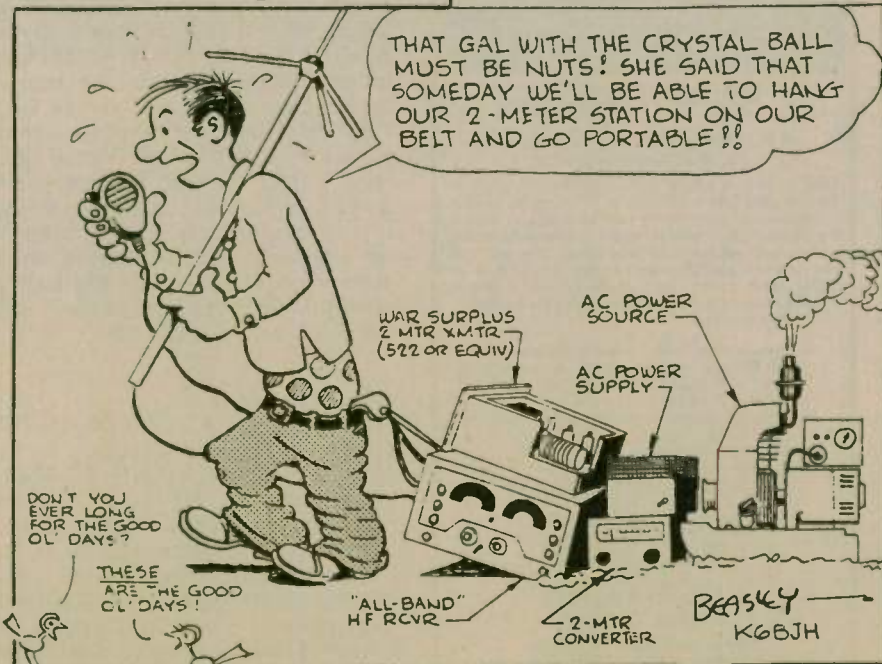
Lighting is very critical in planning a shack. If windows are not available in the shack to allow sunshine to enter, then proper ultraviolet-balanced incandescent or fluorescent lighting needs to be added. Unless the proper balance of ultraviolet is included in the lighting, productivity will suffer. Productivity, in this case, means fatigue, irritability and low QRP contest scores!!

The upcoming articles in this series will deal with antenna systems, equipment purchases and modifications — and some good reading, which should be at the heart of every QRP library. If anyone wants to write me directly, please include an SASE if you expect a reply. Until next time, 73's es gud DX. Rich Arland, K7YHA, 2042C Flyer Dr., Langley AFB, VA 23665.

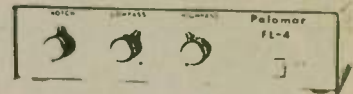
Portions of this column are reprinted courtesy of *Monitoring Times Magazine*. □

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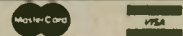
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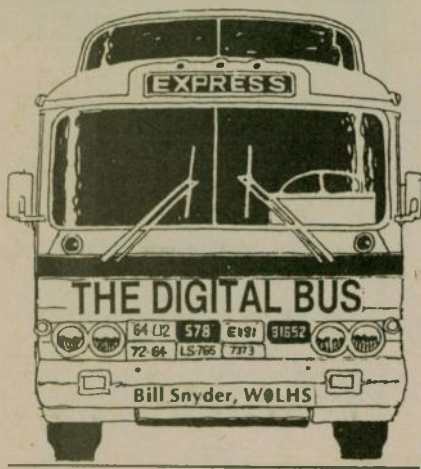
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Now that my part of the world is served via the packet network, I would like to try an experiment in which you all can participate. Please send me a message via the VHF packet link nearest you. Please indicate the date/time you started it on its way, and address it to W0LHS at VE4AFO. VE4AFO (Bill Bowman), in Winnipeg, is the 14.109 MHz PBBS that auto-forwards to me daily. I'll report on the findings in an early issue. Should be fun.

In my 54 years of hamming I have belonged to several radio clubs, and for the most part, they have been a great adjunct to my hobby. But occasionally I become bewildered by happenings that take place when a bunch of hams get together at a club meeting. A recent incident at our club is a prime example.

Unlike the urban areas of the nation, North Dakota and western Minnesota have a low-density ham population, so building a packet network took a long time. For two years there were only three of us on 2M. During that period I spent most of my time running a part-time bulletin board on 20, whereas the other two — brothers who

live 80 miles apart, did most of their packeteering on VHF.

Then things began to happen. Ten locals went packet on 145.01, a few with personal bulletin boards. The frequency became a lively place with beacons bleeping every few minutes (the every meaning the beacon command to the TNC). Some of the locals discovered the pseudo-graphics of the computer, and so the monitor screens filled with beacons complete with built-in brag tapes. One beacon proudly announced the owner as a "bonne vivant." I'm not sure, but I believe he used the wrong gender on the first word.

To begin with, the beacons seemed charming and colorful, but soon they became redundant and in the realm of QRM. The beacons plugged up most of the monitoring buffers and did little good for the order.

My WA7MBL bulletin board became full-time on 2M. Little by little, we developed a good network which tied our area into the national traffic network and the HF auto-forwarding group.

VE4AFO in Winnipeg was the keystone of the HF group. Tom Kutz, WA0LRE, in Grafton and Bill Ockert, WB0VHW, in Cathay, North Dakota became interconnected through digi-

peaters, and they in turn hooked up with the Canadian group of stations. I was still isolated from the network by miles of prairie. Then Elroy Lindaas, W0KZU, put in the key digipeater and we were all tied together.

Paul Linnell, WA0QBN, in Fargo, and Jon Linnell, KA0DTV, in Warren, Minnesota were two stations that also joined in the forwarding network. As a result of all these stations, auto-forwarding of ARRL traffic became possible. My BBS filled with AMSAT and ARRL bulletins. I received the DX bulletins almost before they were broadcast by W1AW.

We all did a little ragchewing, but nothing to worry about. However, in Winnipeg, with its high-density ham population, things were different. They had all kinds of it, along with beacons by the bucketful. Luckily we couldn't hear it 250 miles to the south. So the hams in VE4-land put out a bulletin to all stations requesting cutting down on beacons, QSYing to another frequency for chit-chat and then returning to 145.01 when done. It made sense to me, so I read the bulletin at our local ham meeting.

When I got to the part about chit-chat, one industrial-strength side-bander, a newcomer to packet said, "What do you mean move? We were on the frequency first."

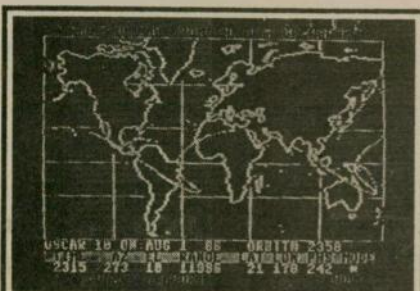
I laughingly answered him with, "You're about two years too late. 145.01 is the national calling frequency for packet." I guess I should have explained why everyone should be on the same frequency to make packet networks practicable, but I didn't.

So the next day the SSB'er, and a couple of others, moved to 145.03 and set up their own local area net. As a goodbye gesture they left a message on my BBS telling everyone they had moved the "chit-chat" to a new QRG.

I think that is the first message the author ever left on my board, but I hope it isn't the last, because packet needs everyone on the same frequency if a network is to be useful (or have a path between the two frequencies for auto-relay). It's the store-and-forward concept that makes packet radio worth its salt, not chit-chat.

Eavesdroppings

THE NEXT TIME I HOPE WE GET PROPER GATION ... MY WIFE IS ASKING ME TO HELP HER, HI HI HI HI ... LAST NIGHT WE HAD A FLAILSTORM — TOO BIG TO BE CALLED HAIL. ... I THINK WE HAVE NOT WORKED BEFORE. DO YOU NOT THINK SO? ... I WOULDN'T BE CAUGHT DEAD WITHOUT MY LINEAR ON ... HOW ABOUT THE



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... THE XYL IS A PRETTY NICE DISHWASHER WHICH IS IRONIC — SHE CAN'T COOK. ... THE KIDS IN MY BLOCK CALL ME 'OLD JULIUS GEEZER'. ... OUR SIX METER QSO WAS A MULTI-HOPALONG SPORADIC E TRIP.

... MY SHACK IS SEPARATE FROM THE HOUSE AT THE XYL'S REQUEST. ... PACKET IS ABOUT AS GOOD AS INDIAN SMOKE SIGNALS ON A WET, RAINY NIGHT. ... I DON'T KNOW IF YOU HAVE 20 OR 2000 WATTS, IT SEEMS TO BE WORKING. ... HOW CAN A COUNTRY THAT PRINTS SUCH PRETTY STAMPS BE SO HARD TO GET A QSL CARD FROM?... SOLID COPY EXCEPT THE NAME, REPORT AND QTH. ... HE'S GOT CAULIFLOWER EARS FROM WEARING EARPHONES TOO MANY YEARS. ... MY QSL IS PURE. ... I DESPERATELY NEED ZONE 40 FOR MY 5-BAND WAZ. ... THERE IS A POSSIBLE RTTY DXPELITION TO CHINA IN SEPTEMBER. ... HE CALLS HIS BOAT THE 'PHASE-LOCKED SLOOP'. ... I DABBLE IN RTTY AND BABBLE ON SSB.

Thanks to W7NSU, K6OZV, NG9Z, W7VFR, W0ML, W0PCI, KT1N, and those steam RTTY fans who didn't know I was watching. Send me a message via packet; let's see if the traffic net works. 73 and happy hunting de Bill Snyder, W0LHS. RTTY DITDIT! □

Packet and PACSAT

Hans Van De Groenendahl,
ZS6AKV
SA AMSAT President

Packet radio and a PACSAT-type satellite are currently being considered as a possible answer in solving communications problems in the farming industry of the small Kingdom of Lesotho (7P8). A Canadian radio amateur, 7P8DL (VE3NGH) now working in Lesotho on agricultural projects has already had discussions with Lesotho government officials.

It would, of course, be impractical for a small country like Lesotho to have its own satellite, but once PACSAT is a reality, Lesotho could well share the facilities with other Third-World countries. Lesotho is a small, very mountainous country where rural transport is by horseback and donkey cart.

George Hunt, 7P8DL, is currently setting up a satellite and HF station and will soon be demonstrating packet radio with the help of SA AMSAT members in ZS. The possibility of setting up an 80-meter packet link to show how effective packet radio is, is now under consideration and will most likely be operational after George returns from a visit to Canada in March.

— *Amateur Satellite Report* □



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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

One for the Guinness Book of World Records

Although this story is not specifically about an accomplishment on 10M, it is about a 10-10 member who accomplished something in Amateur Radio that has never been done before and may not be accomplished again for many years.

Ken Wosika, KB7QO, 10-10 #30032, and XYL Norma live in Las Vegas, Nevada. Ken spent many hours working 10M, collecting 10-10 numbers, 10-10 and other certificates from around the world. Like many others, 10M was a favorite band and collecting 10-10 numbers and certificates

kept him busy. That is, until one day in April 1981, when the 10M band was dead, Ken happened on the 20M County Hunters Net. He made his first county contact on April 30, 1981, and with little or no activity on 10M, soon became as active in county hunting as he had been on 10M collecting 10-10 numbers and certificates.

For those not familiar with county hunting, it is somewhat similar to collecting 10-10 numbers. The difference is that you collect "counties" of the United States rather than 10-10 numbers. There are a total of 3,076 counties in the 50 United States, and the object is to make a contact with a station in each of the 3,076 counties, confirm the contact by QSL card from the station contacted, and submit all of the paperwork to *CQ Magazine*, sponsor of the County Hunters Award.

One difference between collecting counties and collecting 10-10 numbers is that counties can be collected on any amateur frequency band and 10-10 numbers can be collected only on 10M. Well, Ken was making county contacts at a rather rapid rate, and on May 19, 1982, just one year and some 20 days later, Ken had accomplished the big task of "working them all" and received his certificate #384 for con-

firing a contact in all 3,076 U.S. counties.

Being an active RV'er, Ken had been operating mobile, so while driving around on RV trips, Ken began putting out counties as a mobile operator, and collecting counties as a mobile. With 10M still "sleeping," Ken was looking for some other challenge and hit upon the idea of going mobile and putting out all of the counties in the United States.



Ken Wosika, KB7QO, 10-10 #30032, at the wheel of his motor home.

Now trips were being planned to mobile into counties that were hard to obtain — those in rural areas, counties that had no "ham population," those that were off the beaten path. These are called rare counties. This was no small task, considering many counties are without good roads and, in the case of Alaska and Hawaii, not too easy to get to.

Next to Hawaii, to celebrate his and Norma's 41st anniversary. With his radio under his arm and a suitcase full of antennas, mounts and cables, the Wosikas were off to Hawaii on August 21, 1983.

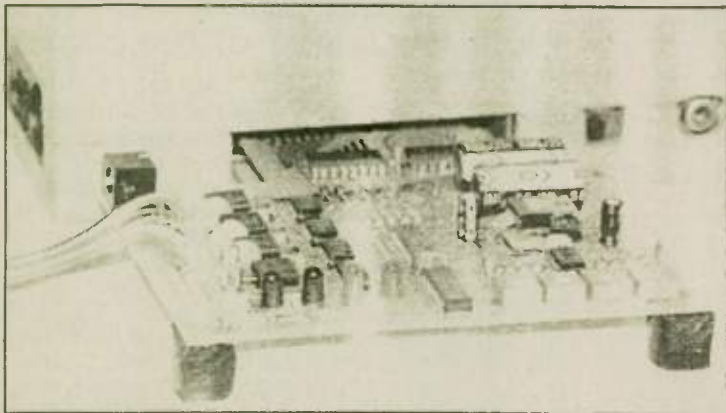
Although there are only five counties in Hawaii, four of the five are on the main islands of Hawaii, Maui, Oahu and Kauai. Kalawao County is a relatively small area on the island of Molokai. Access to Kalawao is by a road that Ken calls a pack-mule trail, and while there, heavy rains made things even more difficult. Ken says that Kalawao was by far the most difficult county to get into of any of the counties in the United States.

Although Hawaii was a challenge, Alaska required some detail planning even though there are only four counties. One problem was the distance of travel from one county to the next. It also required a special permit from the governor's office to drive the Dalton highway to Prudhoe Bay. The Dalton highway is the only highway you can drive into the Second District (Alaska counties are called districts and are numbered First, Second, Third and Fourth). It took Ken and Norma 21

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days and 5,216 miles to cover the four counties in Alaska.

The urge to operate from all of the 3,076 counties became stronger after getting the "tough" ones, Hawaii and Alaska, out of the way. In 1985, for example, Ken and Norma were on the road 201 days, traveling to 49 states that year. Leaving early in February 1986, Ken and Norma spent a month finishing off the rest of the counties in Texas to complete the 254 Texas counties including the temporary county of Armadillo, which was created just for the celebration of the Texas sesquicentennial. Operating from Armadillo County gave Ken the opportunity of transmitting from 3,077 counties, not the official total of 3,076.

In 1986, Ken and Norma decided that this was the year to reach their goal of operating mobile from all of the counties of the United States. They picked Polk County, Iowa as their last county and on November 25, 1986, at 1930 UTC, with TV coverage and all, Ken made the long-awaited transmission from Polk County, Iowa. It was number 3,077!

**Over 1,100 new members
have received their 10-10
numbers during the last
three months.**

For those interested in statistics, or if you are interested in trying to follow Ken and Norma's path, here is what it took to accomplish this fantastic task: 3,077 counties, travel by car over 150,000 miles (not including air travel miles to Hawaii or ship travel miles in Alaska); six amateurs worked KB7QO in all 50 states; 17 worked Ken in 1,000 or more counties; six worked Ken in 1,500 or more counties, and their son, George, KC0MB, worked Ken in more than 2,200 counties. One station, WD5QLD, worked Ken in every county in 13 different states. A grand total of 106,113 contacts were made, including both SSB and CW modes of operation.

All of this brings us to the conclusion that there is something in Amateur Radio for everyone. Ken says he and Norma are back on the road again and now that 10 is opening, we can look for him on 10M on occasion when band conditions warrant, giving out a county and his 10-10 #30032.

Mobile operation on 28.336 MHz

With the 10M band opening up on an almost regular basis, and with phone operation now authorized from 28.300-28.500 MHz, it seems logical that 10M needs a mobile monitoring

and calling frequency. The frequency of 28.336 MHz has been suggested as the frequency that mobiles and fixed stations should monitor and could be used as a calling frequency for mobile operation. Many of the 20M mobile county hunters are using this frequency as an alternate to their normal net frequency of 14.336 MHz.

With many Novices and Technicians now going mobile, 28.336 seems a logical choice as a 10M mobile frequency. I, for one, will be monitoring 28.336 while mobiling. Your comments will be appreciated.

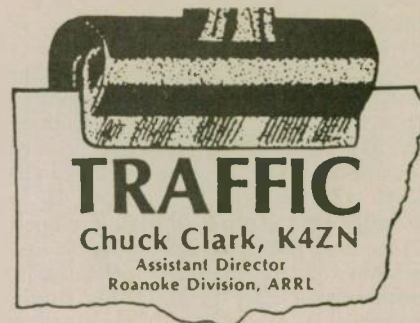
Briefly

New memberships have been keeping all of the district managers quite busy during the last three months. Over 1,100 new members have received their 10-10 numbers during that period. We welcome all of you new members to 10-10. I have personally worked numbers as high as 43543 — Don Danforth, AE6D, in Canoga Park, California, so there are many new numbers out there to collect.

If you are interested in receiving an information package about 10-10 along with a membership application, just send me a #10 business-size SASE (stamped, self-addressed envelope) with 22¢ postage. Additionally, a sample copy of the 10-10 *International News*, the official 10-10 magazine, is available for those of you sending a "green stamp" (\$1). You will receive both the information package and the 10-10 *International News*. My address is 18130 Bromley St., Tarzana, CA 91356-1701.

Please do not send me your log of ten 10-10 contacts and your check for \$5 (\$1 registration fee and \$4 for your first year dues) as I cannot issue you a 10-10 number. All 10-10 numbers are issued by the Call Sign Area Managers. A list of these managers is on the 10-10 application.

Best 73 es cu next month. ☐



Third-party traffic?

Bill Snyder, W0LHS, in his June Worldradio *THE DIGITAL BUS* column, told of a ham in Kansas who received a warning from the FCC for digipeating through a Florida station to another in Italy. He said the reason given was that digipeating to foreign stations can be a violation of third-party traffic regulations. Bill adds, correctly, that this is a grey area.

Indeed it is. While the definition of third-party traffic given in Section 97.3(v) of the regulations seems quite clear, "Amateur Radio communication by or under the supervision of the control operator at an Amateur Radio station to another Amateur Radio station on behalf of anyone other than the control operator," it has not been consistently applied. In effect, it means what the FCC wants it to mean in any given circumstance.

Bill did not say which office of the FCC issued the warning, and that is important. Occasionally monitoring stations or field offices issue warnings or citations which reflect the personal interpretation of the FCC staffer rather than the mind of the Commission. Nevertheless, if you do receive a citation (something more than a mere warning) — even if the FCC official issuing the order is mistaken — you must still acknowledge receipt within 10 days and give the name of the control operator involved. If the citation involves failure to meet technical stan-

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dards, you must say what you're going to do about it, as prescribed in 97.137.

If you think the staffer went too far and say so in your reply, it is possible that the FCC will agree and dismiss the case. But if you don't reply, you're in trouble no matter what the FCC thinks of its official's action. It is possible that more licenses have been suspended or revoked because licensees have failed to answer official correspondence than for any other single reason.

... service messages should be sent as a last resort. Often you can deliver the "undeliverable" message if you use a little ingenuity.

Some years ago, a U.S. amateur station in Greece, operating under a reciprocal operating agreement, used Amateur Radio to keep in touch with his mother in California — also an amateur. But when conditions were poor he had another amateur on the East Coast act as a relay station. Wondering whether that would violate the third-party regulations, he asked the FCC and was told it was OK as long as all persons involved were licensed amateurs.

Stations making lists for DX contacts could also be said to be handling third-party traffic, as could anyone who merely told a foreign station that someone was calling him. And when you get down to splitting hairs, it's OK to tell the DX station, "Say hello to your wife for me" but not, "My wife says hello."

As the FCC interprets the International Radio Regulations, third-party traffic is traffic *sent for* a third party, not traffic *addressed to* a third party. However, maybe other countries take a different view of this. Also, according to the FCC's definition, the Kansas station was not transmitting third-party traffic, the Florida station was. But of course, the Kansas operator could be cited as an accomplice, if this is indeed third-party traffic.

It all gets too complicated. If I were the FCC I'd do away with all that legal mess, and also the restriction on business communication too. As for third-party traffic, I'd act only if a foreign nation formally complained. After all, the rule was made to protect their government-owned systems, and if they don't object, why should we?

Regarding business communications, amateur bands are not reliable enough on a day-to-day basis, with changing propagation, interference problems and the need for licensed operators.

Formerly there was an opportunity

for abuse, when Technician examinations were given by a single amateur. Someone could have taken advantage of that to get the needed licenses fraudulently, and set up a business radio station in an amateur band. If enough people had done that they might have squeezed us out. But that would be hard to do now.

On the other hand, maybe if the FCC acted only upon formal complaint, those cited would object to such uneven enforcement of the rules, and the foreign governments might

use such non-enforcement as a reason to oppose Amateur Radio at the next WARC. So maybe it's just as well I'm not the FCC!

To offer a practical conclusion, at present, digital communication in the Amateur Service is in such a state of flux that the rules really don't fit very well — a fact recognized by the FCC's top people themselves who are adopting a wait-and-see attitude before making any rules (*ARRL Letter*, 3/10/87; see also what John Johnston, W3BH, head of the FCC's Personal Radio Branch, said at the Dayton Hamvention, Worldradio, July 1987).

Go easy on anything that can be construed as international third-party traffic with any country with which we don't have a third-party agreement if you don't want to hear from the FCC. If you don't think working a foreign ham through a repeater is third-party traffic, do it, but be prepared to take the consequences.

Service messages

A message isn't completely handled until it is delivered to the addressee or until it has been determined that delivery is impossible and the sender is so informed and cancels the message. In the latter case, the station

unable to deliver the message sends a *service message* back to the originating station explaining why the message can't be delivered. Properly preparing a service message can often make the difference between success and failure in effecting delivery.

If the addressee is deceased, obviously there is nothing more that can be done. But much more frequently, particularly when propagation is poor as it has been in recent years, the trouble is that someone along the way has garbled the address — either copied it incorrectly or "corrected" it instead of passing it on as received.

When you find no listing in the phone book, or find the phone number given in the address is incorrect, or are told that Annie doesn't live here any more, include any details that may help the originating station correct the errors. Give the address or phone number as received so that the originator can correct it. Give any clues you have as to where Annie has gone. Above all, don't tell the originating station that *you are cancelling the message* ("QTA and file"): that's something only the originating station may do.

But service messages should be sent as a last resort. Often you can deliver the "undeliverable" message if you use a little ingenuity. Maybe it should be NC instead of SC; maybe the ZIP code or the area code in the phone number will indicate where the addressee is actually located. Maybe it should be John W. Hite instead of John White. True, you might want to send a service message too, while you scout out the other possibilities, but scout them out. It takes several days, usually, to straighten things out by service message, and you might be able to clear it sooner yourself.

If at all possible, don't give just the call of the originating station, or the call plus the place of origin, as the address of your service message. Look it up in the Callbook if you have one, or ask someone on the net who has one to look it up for you. Your service message could end up on a phone net where the originating station is unknown because its operator works CW only, or vice versa.

And send a service message, even if the original message came from an exhibit station in a shopping mall. While the best impression is made on the public when the message is delivered promptly and accurately, if this is impossible, people are also impressed favorably when we make the extra effort to get the message through despite obstacles. They recognize that we have the number one qualification of a good traffic handler — responsibility. □

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June Es roared in with a bang in New England — and many other parts of the world — two weeks early, I am told. Lefty Clement, K1TOL, reported to me on 6M that on June 7 he had worked EI6AS-Ireland, GW3WSU-Wales, GM4TXX-Scotland, and CT4KQ-Portugal during the morning hours, starting at 0615 local time. He also had several United Kingdom beacons and Russian TV signals in! He said the signals appeared to be coming at him on some type of backscatter mode, and were marginal. Lefty reports super conditions for the first weeks of June from his area.

Bob Mobile, WA1OUB, reports on the European Es openings during June 1987. (Times will be in UTC unless otherwise stated.) Bob says K1TOL and K1GPJ-Maine, first worked CT4KQ on June 5 at 2315. He says Serafim appears to be a very dedicated and skilled operator on both CW and SSB. He runs 10W output from grid square IN60BP! Who says low power won't cut it? Bob heard him also, and snagged him June 6 at 0009 first on CW and then on SSB with 5x5 signals. CT4KQ remained very copyable for the next two hours.

Others known to have worked Serafim are: K1JRW-Massachusetts, KA1PE-Maine, and W2PN-New Jersey. On June 7, it opened again between 1400 and 1500. The following QSO's took place: EI6AS to WA1OUB, K1TOL and Gene Sykes, W4OO, in Florida!; G4IJE to WA1OUB and K1TOL; GW3LDH to K1TOL (heard by WA1OUB); GM4TXX-heard by WA1OUB, K1TOL and KA1PE; G6NB-heard by K1TOL and WA1OUB; G18YDZ-worked by WA1OUB for a new country, heard by K1TOL and KA1PE. On June 8, Bob Mobile, WA1OUB, again

worked CT4KQ at 2317. He peaked 5x9+10dB on two-way SSB for about 30 minutes.

In all of the above openings, Bob said the clue to potential transatlantic Es propagation was very strong backscatter from locals when beamed to a common point over the Atlantic. The only beacon heard was GB3SIX (50.020) for about 10 minutes, on June 7 at 1337.

Since the above dates, several other good transatlantic openings have taken place. W9IP/W2 is said to have made 85 contacts direct on 6M and worked nine countries in the process during one of those openings. I have reports of European stations being worked as far west as the central United States.

During the ARRL VHF contest (which will probably go down as one of the best in many years), D.R.-GJ3YHU-Jersey, was heard and nearly worked here in San Antonio by

Japan ... has been experiencing one of their best Es seasons in many years.

Paul-ND2X/W5! Paul failed to get the last letter of his call sign and grid square to make it a complete contact. He said the competition was out of this world! D.R. probably thought Paul was on the East Coast!

Jan Hubach, OH1ZAA, reports: June 17 at 2109, he heard well-known 6M DXer Bob Billings, VE1YX, calling CQ and listening on both bands. A quick call on 10M (they don't have access to 6M yet) netted Jan a 28/50 MHz QSO, and for Bob, his first QSO with Finland with a 5x6 report. Then came QSO's with contacts with Steve Wilson, W2CAP/1 and Charles O'Neal, WA1EKV. In between he worked "Scotty" Scott, W5DZF/4, in Florida, who had loaned Jan the 6M gear for his ZF2KZ Cayman DXpedition in May.

Unknown to Jan, it would be the

last QSO they would ever have in this life, as Scotty passed away in his ham shack the following Monday of an apparent heart attack. We all lost a wonderful 6M operator in Scotty.

On June 19, Jan heard VE1YX 5x3 on 50.126 working a G pile-up at 1924 and K1TOL doing the same at 1941. At 2044, the OX3VHF beacon was peaking RST 429, peaking again at 2141 at 539, returning at 2207 at 579 and staying strong until 2232. Then LA2AB, a club station, appeared with an RST of 53A on .110 calling CQ. Jan's QTF was 320°. At 2258, GB3RMK — a special station — was observed 53A with auroral flutter from his normal heading of 260°.

On June 20, while checking for African beacons (none heard yet), Jan was surprised to hear the CT0WW beacon of CT1WW on 50.030, 569 at 1715 and was still 539 at 1830. Jan says that G1AWP made the first 50/28 MHz contact with the Aland Islands, while he was operating there as OH1ZAA/OF0, on June 6 at 1644.

Carlos Vervaeet, SWL NL-5736-R47 (SMIRK #4467A-SWL's can be members of SMIRK also) reports from the Netherlands. Please remember to respond to his QSL's confirming reception of your signals.

June 13, heard OX3VHF beacon-50.045, 19C3-1910 v/GM's in on 6M. 15th-1750, heard ZC4VHF/5B4 on 50.502 MHz. This station was put on the air by the Episkopi Radio Club on Mt. Olympus, Cyprus at 2000M, active on 6, 4 and 2M beaming to the United Kingdom through June and perhaps July.

June 16 — heard ZC4VHF/5B4 again. June 17, from 2208-2315, on 50 MHz; WA1OUB, KA1PE, W3XO, K1JRW, WA1EKV, W1JCI. Heard on 10M, VE1YX on the 28.885 coordination frequency calling for cross-band contacts at 2158.

On the 19th — at 1858-2028, W9IP/2, K1JRW, G4WIIQ (on Es backscatter), VE1YX, W2CAP/1, KA1BxB, K1NDF, EI9Q (Es BS),

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June 24 — 1705, heard ZB2VHF/5B4, and for the first time, CT0WW beacon on 50.030 — all copied on an old Eddystone 770 receiver! Carlos says this is the first time since 1981

... the Class B VHF licensees have recently been given the right to use 6M, which means there will be many more to work in the United Kingdom now.

that he has heard W and VE stations on 6M — and that was on F2, not Sporadic Es!

Our next report comes from Ray Cracknell, G2AHU, (ex-ZE2JV), now coordinator of the 50 MHz Reporting Club. He is one of the world's best-known VHF/UHF propagation experimenters. Ray excited us in years past with his experiments with TE on the Africa-to-Greece path!

He reports activity on June 16 to OF1ZAA, ZC4VHF/5B4, W6JKV/V2A (Antigua!), 4U1ITU, C30DAW in the bag, and missed an opening to Florida and a W8QRA?? — after midnight UT! Some night!

The final report on the European activity comes from Chairman Steve Richardson, G4JCC, the UK6N4 Meter Group. He reports that the Class B VHF licensees have recently been given the right to use 6M, which means there will be many more to work in the United Kingdom now. Also, they can now work from 50-52 MHz! They can now work portable status, but are still limited to 100W ERP SSB and 40W ERP CW. Steve provides a breakdown of which countries can now work 6M directly.

Thanks to the efforts of Alan Wright, GW3LDH, and his XYL Maureen, GW8ZCP, the editor of the group's FB newsletter (I had the privilege to meet all of them at their convention on my last trip to England and enjoyed it very much), there are now two stations on Malta authorized to work 6M. They are Paul Galea, 9H1BT (P.O. Box 31, Valetta, MALTA), a very keen and experienced VHFer with 2M moonbounce capability, and 9H1CG. They can operate with 10W from 50 to 52 MHz.

There will soon be a 9H1SIX beacon (being constructed by Paul, G4IJE) on 50.085 as soon as it is approved by Maltese authorities.

Steve further reports: LA has 25 permits issued. They include: LA1K, LA2AB, LA6PV, LA6QBA, LA9DL, LA6HL, (all direct), who expects to be on 6M as LA6HL/TF, July 16 -

August 6 and from August 6 - 10 as LA6HL/OX.

OZ — a strong Danish group working on getting licenses.

PA — working on getting their permits restored.

F — Contrary to what was previously reported, no French station is au-

thorized 6M yet. The translation I had was incorrect. They are working on getting permission. This also was confirmed by Serge Canivenc, F8SH.

EA — As in other countries, many are active crossband, while they work to get at least limited permission to work 6M.

CT — Only six have licenses. CT1WW (also has CT1ON near Lisbon), CT4FQ (who has caused such wonderful excitement in the United States recently!), CT1LN, have been worked in the United Kingdom so far.

DL — Many German stations are active crossband, but don't have any hope of getting permission to work 6M. One reason apparently is because U.S. military police forces are using 6M for communications, so I am told. If we could only get them to cease operations in the first 100 kHz of the band, the DL's could probably get permission to operate. Anyone have any contacts with the Pentagon in Washington, D.C.?

SM — SM6PU, SM0HP and an SM7 station are on 10/6M.

OH-OH5IY and OH1ZAA are active crossband.

OE-OE1XA has been crossbanding.

YO-YO2IS is crossbanding.

In this country, other than the European activity, we have experienced activity into the Caribbean area, working the DXpeditions that were in

place and the permanently located operators. Conditions from this QTH were not that good, though.

The other highlights have been the large amount of VE activity, from one end of the country to the other, the KH6 activity that made its way clear across the United States, and the KL7NO activity during the SMIRK Party Contest that gave many a new state/country, and for some — like Lisa Lowell, KA0NNO — 6M WAS.

Conditions during the ARRL VHF contest were wonderful, with activity three to four deep from the low end to 50.3! The SMIRK Party contest and FD did not fare so well, but from what I have been told, the SMIRK Party did well, depending on what part of the country you were in. Has anyone heard the KH3's on Johnston Island yet?

In case you think Es activity has been limited to just this part of the world, word from Japan comes that they also have been experiencing one of their best Es seasons in many years.

Yoshi Hayashi, JA1UT, reports on their Republic of China BV2A/B operation from Taiwan. From June 5 to 11, they worked 1,663 stations, working 1,010 on the 7th alone! They also worked four HL stations on that date. On the 8th they worked KG6DX (yes, he is back on 6M!) for the first BV-KG6 QSO ever on 6M!

HL9TM had the first BV-HL contact. The VS6SIX beacon is still on and was received on the 8th at 0326 UTC. Equipment used by the group on 6M was an IC-551 and HL86V and CL6DX antenna.

That is all for now. Keep the rig on at all times, and call often. On 6M you never, ever know who is going to answer your call! □

Better ground system

Scientists working on an Army Grounding Analysis project have shown that grounding with the standard 6' metal rod, or even several rods in parallel, is often unsafe and more often inadequate for good low-noise communications.

They have found that a better ground can be established by stapling a 100' length of standard 1/8" stranded steel wire to the earth every 4' with 6" pegs. A 3 lb. hammer (in lieu of the 10 lb. sledgehammer used with the ground rod) should be sufficient to drive in the pegs.

Tests at all sites in the country show the surface wire to be 32%-95% more efficient than the 6' grounding rod.

—CHARRO, San Antonio, TX □

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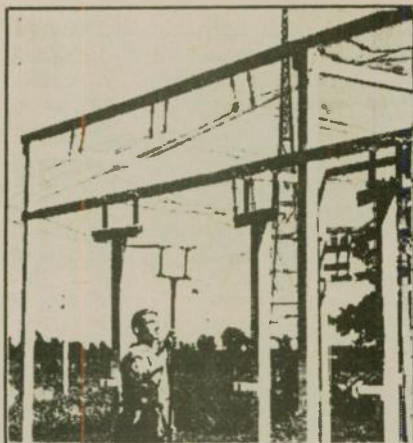
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AERIALS

Kurt N. Sterba

One subject that has been cussed and discussed is the vertical antenna. Some folks delight in mouthing the old saw that "Verticals radiate equally poor in all directions." If so, why are they the antenna system used for broadcast stations?

You can bet your bottom Susan B. Anthony dollar that if any industry as greedy as the broadcast industry could come up with a way to burn their call letters into one more jackrabbit another microvolt out, they would do it.

The difference is that your local 250W jukebox does it right and we, alas, do it wrong. Seems that Ned Novice reads an ad somewhere that says "no radials needed" and believes it. He is also a candidate for "Learn to be a Brain Surgeon in a Weekend School." But it's not his fault, really. He saw it in the big magazine.

As the song goes, "It Ain't Necessarily So," or to be more precise, ain't true at all. Last month we promised you the truth about verticals. Here it is, straight and cheap. A vertical without radials is a total *disaster*. And a vertical tied into a ground rod is almost worse because one's hopes were raised.

Baffling how one manufacturer tells Ned that if you roof-mount the vertical, one or two radials is all you need. Never could figure that one out, except maybe the manufacturer figured that after Ned spent all that money on the aluminum he'd have to dig into the milk money to afford a decent radial system.

The minimum is four. Nothing less. You may cringe trying to figure out how to put four 80M radials on your house. Well, you can run them out to the edge of the roof and then run them along the edge.

They don't have to be all straight,

dressed right and covered down. Our usual jumble of wires is good enough. Now, I'm not going to suggest you take a page from KRAZY radio's book and lay out 120 radials. But that's what they do and it works for them. (By the way, I once worked at the radio station described above, and we got an SWL card from Australia.)

The more radials you can get out, the better. The more radials you can get out the better. No, the word processor didn't have the hiccoughs. I thought if I said it twice, it might make an impression.

The extra radials don't even have to be resonant length. Just get as much metal under the antenna as possible. A very good trick is to get a square of chicken wire (as big as possible), lay it under the vertical and tie to that.

CAUTION: This is a good idea for big signal, but not so great if you have a curious cat that gets on your roof. If such animal is standing on ground screen with nose on vertical and you go key down you will have one unhappy kid on your hands yelling and screaming about how, "Daddy killed the kitty."

Any kind of wire — fence wire, guy wire — anything. Just get out as much as you can. If you run *non-insulated* wire, do not get the end near the rain gutter. Sparks may jump and set dry leaves on fire, burning down the house. (Keep pulling stuff like that and Gladys will never get her license!)

But if properly done, a vertical antenna will give a very good account of itself. Where does one stop before the cost of wire equals the cost of a chauffeured limousine which can take you to everyone you would care to talk to? Sixteen is a good place to stop. Unless, of course, this vertical is up on a 50' pole and you wish to dazzle the neighborhood with your Christmas light display.

How will the optimum vertical perform? Be aware — crazy things can happen! You may cry woefully, "I'm

5×9 in Tokyo but they can't hear me in San Diego."

You may be asking, "Which vertical should I buy?" There is the Hustler, a guy you want to stay away from in pool halls. There is a Hy-Gain. The only person I ever knew named Hy used to smoke smelly cigars behind the counter at the pool hall. There is the Butternut. Great antenna, funny name. What's this world coming to? Would Eitel and McCollough start a tube company today and call it Chocolate Chip Tube Company?

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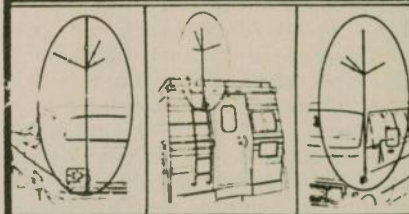
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U.S. Patents 4349825, 4460896

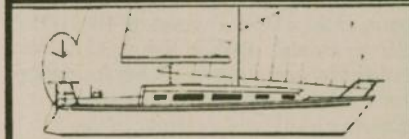
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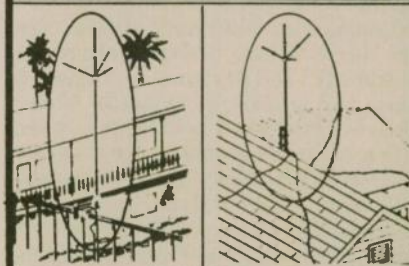
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take it on a DXpedition to the desert island of San Serife and you run out of food, you won't starve to death.

Next subject: shortened dipoles and the like. Rule of thumb . . . you can paint your Volkswagen "racing green" but that still won't turn it into a Ferrari. (That's Bob Ferrari; he runs a bunch of radio stores).

I was talking to a man who makes antennas. One of his customers bought one and put it in the attic, bending it every which way back on to itself, running next to the house wiring and all that. He pulled it out of the attic and shipped it back, saying it didn't work as well as the dipole he used to have about 40 feet up. This is a true story, so help me Sgt. Friday.

Bongo, Bongo. If all these hide-away antennas could work as well (or even close) to real antennas, there wouldn't be real antennas. We'd all run around with little sticks, bed-springs, garbage can lids, and the like.

MORAL OF THE STORY: If you go to the pet shop and buy a Chihuahua, it ain't going to get to ride in the back seat of the police car.

Guy I know runs a radio store. (Honest, some of my best friends run radio stores.) Guy tells me (his name is Guy) that Harry Ham comes in the store and says the neighborhood he's moved into is so ritzy, they don't allow antennas of any kind. Harry is looking for an 80M antenna that will really get out but that can't be seen. (Guy tells him about putting a tooth under his pillow.)

If anyone comes up with such antenna, please let me in on the deal for however much you want for 1% of the action. I don't care if you call it the Chewy Nougat antenna. Our follow-up product can be the anti-gravity machine.

There is also a Plak antenna. (I thought that was what you got if you didn't brush your teeth.) They are good for antennas, not wrapping around your yo-yo.

Old-timers should not laugh at Ned and Harry. A long time ago, the books all showed aeriels running from the house to a tree in the backyard. Some thought you could not get an aerial without a tree because it was the tree that radiated. Big funny! Now the U.S. Army says trees *can* radiate! They also say the volunteer army is successful. So much for radiating trees.

Where were we? Oh, yes — an exclusive neighborhood where antennas are not allowed. My 811-A bleeds for him. The area I live in? They invite amateurs to move in. The way this place looks, the antennas are an improvement!



National Championships

For the first time ever, the "little gun" has a chance to become a national champion! The National Championships have been designed to recognize the Contest Operator of the Year. Unlike other events, they single out the best contest operator in the USA, not just the station with the biggest hardware investment.

There will be a National Sideband Champion and a National CW Champion. The combination of these two contest scores will determine the Contest Operator of the Year.

Contestants, analyze your band plan. Do not take these events for granted. They are, without doubt, the most complex, stress-testing events on the bands today. If you understand the rules, you'll recognize "traps" layed in your path. Being lax could spell your doom. Should you work all bands? How do you maintain your QSO rate without sacrific-

ing your multiplier average? Should you be using that monobander? What happens if you switch to 10 or 160M for those 10 pt. QSO's? It's up to you, the operator, so do what's best for you!

Oh, by the way, *external amplifiers are prohibited.* Run barefoot (up to 200W maximum exciter output power) or your entry is disqualified.

Contest dates: *1st Annual National CW Championship Contest* — 0000-2400Z, September 5; *1st Annual National SSB Championship Contest* — 0000-2400Z, September 6.

Eligibility: Open to single operator stations within the 50 U.S. states only. A station must be capable of operating two or more bands; there are no single band categories. Eligible bands include 10, 15, 20, 40, 75/80 and 160M.

Miscellaneous rules: Stations may operate only 18 hours during the 24-hour contest. The same station may be worked once on each band. For stations submitting a contest entry, *external amplifiers are strictly prohibited.* Exciter output must not exceed 200W.

Mandatory band switching: This rule separates the men from the boys. Read it over several times. It is the toughest rule to interpret. Be sure you understand it! Violators must be disqualified and their entries processed as check logs.

Stations submitting an entry must operate only on a single band during the following time frames: 0000-0300Z, 0300-0600Z, 0600-0900Z, 0900-1200Z, 1200-1500Z, 1500-1800Z and 1800-2100Z. In other words, you must establish a band within a time frame and *cannot* move from that band until the next frame. *At no time from 0000-2100Z may you work the same band during two consecutive time frames.* At least one time frame must pass before the same band can be worked again.

From 2100-2400Z only, stations may switch to any band as often as they like.

Exchange: All stations must transmit RS/RST Report and their U.S. state.

QSO points: 10 QSO pts. per valid QSO on 10 or 160M; 5 QSO pts. per valid QSO on 15, 20, 40 or 75/80M.

Multiplier points: 1 multiplier pt. for each state worked on 15, 20, 40 or 75 80M; 2 multiplier pts. for each state worked on 10 or 160M.

Multiplier average: Multiplier average is determined by totaling all multiplier points and dividing them by the number of bands operated.

Antenna multiplier: 3 antenna multipliers for each band worked with a wire antenna design or vertical antenna. Antenna must be fed with a single feedline and not be in a phased configuration. Quads are not considered wire antennas! 2 antenna multipliers for each band worked with a duoband or tri-band or 4-band antenna fed with a single feedline and not in a phased configuration. 1 antenna multiplier for each band worked with an antenna not specified in either of the 3 pt. or 2 pt. categories.

NOTE: More than one antenna may be used on a band but *only one antenna may be used at a time.*

Final score: QSO pts. X Multiplier Average X Antenna Multiplier = Final Score.

Contest entry: Entries must include a separate log for each band worked, a summary sheet itemizing QSO's per band, QSO points per band, multipliers per band, anten-



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na multipliers per band, and total accumulated score. Entries must describe antenna used on each band and sign a declaration that the contest operation abided by the contest rules.

Entry deadline: Entries must be post-marked and forwarded to the contest office below no later than October 20, 1987. Forms are available from the contest committee. Send an SASE to: The National Championships, 2665 Busby Rd., Oak Harbor, WA 98277.

Disqualifications: Contestants not following the band switching requirements will be disqualified. So will stations falsely reporting antennas used or falsely reporting output power. Scores requiring more than a 3% scoring adjustment due to duplicate contacts or scoring errors will also be disqualified. Contest committee decisions are final!

Penalties: A penalty of 1 multiplier point, before averaging, will be assessed for each duplicate contact count on the same band and not discounted by the contestant on his/her entry.

Awards: A minimum of 250 QSO's must be worked to be eligible for awards. Awards will be issued to the operator with the most points in each call district and U.S. state. Plaques will be issued to the National SSB Champion and the National CW Champion. The coveted Contest Operator of the Year Trophy will be awarded to the operator who has the highest combined score for the two contests. □

A great gift for your overseas amateur friend is a Worldradio subscription.

Howdy Days

The Young Ladies Radio League (YLRL) is sponsoring its annual Howdy Days contest from 1400 UTC, Wednesday, September 9 to 0200 UTC, Friday, September 11. All licensed women operators throughout the world are invited to participate.

Procedure: Call "CQ YL"

Operation: All bands and modes of emission may be used. No crossband operation. A station may be worked and counted once on each band and mode for QSO points. Participants may operate only 24 of the 36 hours of the contest. *Operating breaks must be indicated in the log. The maximum power output that may be used at any time during the contest is 750W on CW and 1500W on SSB.*

Exchange: YLRL member or non-YLRL member. Entries in log must also show date, time, band, call of station worked, and operating breaks.

Scoring: Score 2 pts. for each YLRL member worked and 1 pt. for each non-YLRL member worked. *No multipliers.*

Logs: All logs must show if operator is YLRL member or non-YLRL member to be eligible for awards. *DO NOT* send carbon

copies of logs. Please print or type. Logs must be signed by the operator. No logs will be returned. Logs must show score and be received by *October 7, 1987.*

Send log to: Mary Lou Brown, NM7N, 504 Channel View Dr., Anacortes, WA 98221, USA. Please mark your return address clearly.

Duplicates: For each duplicate contact that is removed from the log by the vice president, a penalty of 3 additional and equal contacts will be exacted.

Awards: Top-scoring YLRL member will receive her choice of a YLRL pin, charm or stationery. Top-scoring non-YLRL member will receive a one-year membership in YLRL.

Suggested frequencies: CW—80M, 3.540-3.570; 40M, 7.040-7.070; 20M, 14.040-14.070; 15M, 21.120-21.150; 10M, 28.180-28.210. SSB—80M, 3.940-3.970; 40M, 7.240-7.270; 20M, 14.250-14.280; 15M, 21.380-21.410; 10M, 28.580-28.610 MHz.

NOTE: Since band allocations in other countries are often different than the USA, North American YL's should look for DX YL's in other parts of the bands, especially on 40 and 80M. □

Washington QSO Party

The Washington State QSO Party will last from 0100Z, September 12 to 0100Z, September 14, and is sponsored by the Boeing Employees' Amateur Radio Society (BEARS), K7NWS.

Rules: All bands and all modes may be used. CW QSO's in CW sub-bands only. Work stations once per band per mode. Work

Washington stations again as they change counties. Washington-to-Washington QSO's allowed. Exchange serial number, signal report and QTH: county for Washington stations; state (USA), province (Canada) or country for non-Washington stations.

Suggested frequencies: CW — 3.560, 7.060, 14.060, 21.060, 28.060; Phone — 3.925, 7.260,

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14.280, 21.380, 28.580; *Novice* — 3.725, 7.125, 21.150, 28.160.

Scoring: Count 2 pts. for Phone QSO, 3 pts. per CW QSO, and 5 pts. per mobile QSO. Washington stations multiply by total counties, states, provinces and countries. Non-Washington stations multiply by total Washington counties worked.

Awards: Certificates for top scorer in each state, province, country, and Washington county.

Mail log, summary and SASE (for results) by October 15 to BEARS, c/o David Long, N7FNG, 2117 No. 52nd St., Seattle, WA 98103. □

Fall Classic/Homebrew Radio Exchange

The 1987 Fall Classic and Homebrew Radio Exchange will be held from 2000 UTC, Sunday, September 27 to 0400 UTC, Monday, September 28. Our object is to restore, operate and enjoy older equipment and homebrew equipment of any vintage with like-minded hams. A Classic Radio is any equipment at least 10 years old — an advantage, but *NOT* required to operate in the Exchange. You can use anything, although new gear is a distinct scoring liability.

Exchange: Your name, RST, QTH, receiver and transmitter type (homebrew send final amp tube or transistor), and other interesting conversation.

Modes: CW and phone. The same station may be worked with different equipment combinations and on each band on each mode.

Call: CW — "CQ CX;" Phone — "CQ Classic Exchange." Non-participants may be worked for credit.

Suggested frequencies: CW — up to 60 kHz from low band edges; Phone — 3880, 7290, 14280, 21380, 28580; *Novice/Tech* — 3720, 7120, 21120, 28120, 28320.

Scoring: Multiply total QSO's (all bands) by total number of different receivers + transmitters + states/provinces/countries worked on each band and mode. Multiply that total by your Classic Multiplier: total years old of all receivers and transmitters used, 3 QSO's minimum per unit. If equipment is a transceiver, multiply age by 2. If equipment is homebrew, count it as a minimum of 25 years old unless its actual construction date, or the date of its construction article in the case of a "reproduction," is older.

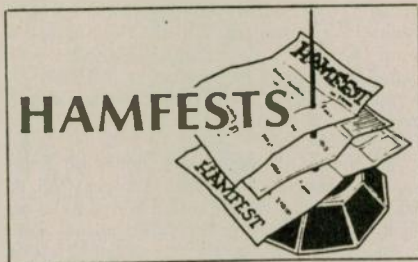
Certificates and appropriate memorabilia are awarded every now and then for the highest score, the longest DX, exotic equipment, best excuses and other unusual achievements. Send logs, comments, anecdotes, and pictures to Jim Hanlon, 5560 Linworth Rd., Worthington, OH 43085. Include SASE for newsletter. (1988 Classic/Homebrew Radio Exchange: January 24-25) □

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Arizona

The SCOTTSDALE ARC is proud to again host the annual ARRL Southwestern Division Convention at the Safari Hotel and Convention Center in Scottsdale, October 9-11. We are sure that many of you will recall attending the very successful 1981 convention, held at the same location.

The convention center has recently been completely redecorated, and an outstanding program is planned that will again ensure an excellent attendance. The program features a guided tour of Barry Goldwater's Hilltop Shack and a full calendar of technical sessions.

Also featured at the convention will be a ladies' luncheon, steak cookout with Barry Goldwater as featured speaker, exhibitors buffet (free, Friday evening), DX and QCWA breakfasts — and Scottsdale's incomparable weather!

Admission is \$8 in advance, \$10 at the door. Hotel reservations can be made with the Safari Hotel by calling (800) 824-4356.

Talk-in on 147.18 (+ 600) and 146.52.

For more information, contact Exhibits Committee Chairman C.W. Mulkin, W7KB, 6150 E. Harvard St., Scottsdale, AZ 85257; (602) 947-0296. □

California

The 6th ARRL Amateur Radio Networking Conference will be hosted by the TRW ARC and the Southern California Digital Communications Council. The conference will be held at the TRW Space and Technology facility located on Compton Boulevard (between Freeman Avenue and Aviation Boulevard), Redondo Beach, California on Saturday, August 29, from 9 a.m. to 6 p.m.

The actual site is the TRW cafeteria just south of the white high-rise TRW administration building. A separate dining room will be set up for demonstrations. Demonstrators will be allowed to enter the facility at 8 a.m. for set-up. A beginners' presentation will be given at 9 a.m.; the main conference will start at 10 a.m.

The TRW ARC swapmeet will be located about 1/4 mile from the main cafeteria. Personnel will be on hand for directions. The swapmeet starts at 7 a.m. and runs through the morning. There are no commercial food establishments within walking distance; numerous eateries are within a short drive. Consider bringing a box lunch.

The official hotel for this year's conference is the Torrance Marriott, 3635 Fashion Way, Torrance, CA 90503-4897. For reservations, phone (213) 316-3636. Say you're going to the Computer Networking Conference and receive the special rate of \$55 (per night/double occupancy).

If you wish to propose any special activities for this event, please feel free to contact Wal-

ly Linstruth, 133 E. De La Guerra #10, Santa Barbara, CA 93101; (805) 966-6424. □

SONOMA COUNTY RADIO AMATEURS, INC. will hold their 5th annual Amateur Radio flea market Saturday, September 19, from 8 a.m. to 2 p.m. at the Sebastopol Community Center, 390 Morris Street, Sebastopol, 5 miles west of Santa Rosa just off Hwy. 12. This is the largest ham flea market on the north coast.

Admission and parking are free. Tables are \$7 at the door or \$5 in advance. (Advance registration gets best indoor spaces.) Vendor set-up starts at 7 a.m. VEC exams, radio clinic, exhibits, refreshments, free door prizes, auction around noon.

Talk-in on 146.13/73.

For tickets and information, write: SCRA, Box 116, Santa Rosa, CA 95402. □

"PACIFICON '87", the ARRL Pacific Division Convention will be held October 2-4, at the Le Baron Hotel in San Jose, California.

The convention features technical talks, emergency forums, legal forums, and operating forums by highly qualified moderators and speakers. Emphasis is on ARES, club legal issues, training, RFI/TVI and interesting technical subjects. Contests for eyeball QSO's and CW copying. Wouff Hong.

The banquet will be on Saturday night and will feature the first West Coast showing of the movie, *New World of Amateur Radio*.

Talk-in on 442.425 (+ 4 MHz) and 146.385 (+ 600).

See "PACIFICON '87" ad in August or September *Worldradio*, or send SASE to: 481 Fenley Ave., San Jose, CA 95117, or call (408) 243-8349. □

Colorado

The BOULDER ARC will sponsor its annual fall BARCFEST Swap Meet on Sunday, September 27. It will be held at the National Guard Armory, 4750 North Broadway, Boulder, from 8 a.m. until 3 p.m. Follow the signs and look for the white smoke stacks.

A \$3 donation per individual, except children, is payable at the gate. There will be a \$3 charge for tables, first-come/first-serve. Please make commercial arrangements in advance. VE test session starts at 9:30 a.m. Food and refreshments available at the snack bar.

Talk-in on 146.10/70.

For additional VE session information only, contact Barbara McClune, N0BWS, 5338 Spotted Horse Trail, Boulder, CO 80301; (303) 530-1872. For additional BARCFEST 87 information, contact Dale Scott, KA0QPV, 304 E. Cleveland St., Lafayette, CO 80026; (303) 665-2364. □

Connecticut

The CANDLEWOOD AMATEUR RADIO ASSOCIATION (CARA), will hold its annual flea market at the Elks Club, 346 Main Street, Danbury, on Sunday, September 13 from 9 a.m. to 3 p.m. (dealers 8 a.m.). Admission \$3. Tables \$8. Tailgating \$5.

Talk-in on 147.72/12.

For table reservations, send check or money order to CARA, c/o Gene Marino, W11DH, 31 Valley View Rd., Newtown, CT 06470, or phone Gene at (203) 426-8852 for further info. □

Georgia

The AMATEUR RADIO CLUB OF AUGUSTA will hold its annual hamfest at Augusta's Lake Olmstead Park in the Julian Smith Casino.

Hours are 9 a.m. to 3:30 p.m. on Sunday, September 20. Tickets are \$2, available at the hamfest. On Saturday night, September 19, the club will sponsor a free hospitality suite in one of the area motels.

Talk-in on 146.34/94.

For more information, contact James Abercrombie, N4JA, P.O. Box 5943, Augusta, GA 30906. □

The LANIERLAND ARC's 14th annual hamfest will be at a new location this year — Georgia Mountain Center near Holiday Inn, in Gainesville, on September 27.

Hours will be 8:30 a.m. to 3 p.m. All VEC exams given at 9 a.m. Free tables for dealers reserving in advance. Free covered space in bone yard. Free admission.

Talk-in on 146.071/67.

For more info, contact Phil Loveless, KC4UC, 4949 Red Oak Dr., Gainesville, GA 30506; (404) 532-9160. □

The Rome Hamfest, sponsored by the COOSA VALLEY ARC, will be held on Sunday, October 4, at the Rome Civic Center on Highway GA 20 across from Shoney's.

Admission is free. Homemade bar-b-cue and Brunswick stew. Camper parking available, but no hookups. Tables \$6 inside; outside spaces \$3. Drawings, bingo, contests. Super prizes for the main drawing. Amateur exams by Central Alabama VEC begins at 8 p.m. sharp. Reservations requested, but walk-ins will be accepted. Something for the whole family.

Talk-in on 147.90/30.

Contact: Bobbie Carol Waller, KA4DXU, 24 Wellington Way, SE, Rome, GA 30161; (404) 235-5417. □

Illinois

The NORTHERN ILLINOIS DX ASSOCIATION once again invites all amateurs with an interest in DX to attend the 35th Annual W9DXCC DX Convention on Saturday, September 12. The location will again be at the Holiday Inn, 1250 Roosevelt Road, Glen Ellyn.

A DX-packed program is promised, along with a chance to rub elbows with the Big Guns and Little Pistols of the Midwest. Additional information and registration is available via Howie Huntington, K9KM, 65 South Burr Oak Dr., Lake Zurich, IL 60047.

The BOLINGBROOK ARS will be sponsoring its 3rd Annual Ham/Computerfest on Sunday, September 13, at Santa Fe Park, 91st and Wolf Road, Willow Springs.

Admission is \$2 in advance, \$3 at the gate. Reserved dealers' tables available. Food and drinks also available. Prizes. No overnight parking. Dealer set-up at 5 a.m. Gates open at 6 a.m.

Talk-in on 147.33/93 and 146.52.

For more info, contact Ed Weinstein, WD9AYR, 7511 Walnut Ave., Woodridge, IL 60517; (312) 985-0527.

Check your license expiration date.

"Radio Expo 87" Ham and Computer Fest, sponsored by the CHICAGO FM CLUB, will be held September 26-27, at the Lake County Fair Grounds, Routes 120 and 45 between Chicago and Milwaukee. One ticket good both days.

Free parking and camping. Outside flea market set-up free, inside tables \$7.50 per day. Advance tickets \$4, \$5 at the gate.

Talk-in on 146.16/76.

For tickets or information, send SASE to: Expo Tickets, P.O. Box 1532, Evanston, IL 60204. □

The SANGAMON VALLEY RADIO CLUB will hold its hamfest/computer swapmeet on September 27, at the Sangamon County Fairgrounds, New Berlin. Camping OK. Testing on grounds.

Talk-in on 146.28/88.

Contact SVRC, P.O. Box 8252, Springfield, IL 62791. □

Maine

The 1987 ARRL-sanctioned Windsor Hamfest will be held Saturday, September 12, at the Southern Kennebec Agricultural Society fairgrounds in Windsor. Sponsor is the AUGUSTA EMERGENCY AMATEUR RADIO UNIT.

This year's edition will feature a flea market (outdoor spaces free, indoor tables available), forums, commercial distributors, door prizes, light lunches and the traditional Saturday evening home-baked beans and casseroles. Gate donation is \$2. Overnight camping is \$3 for one night, \$5 for two nights.

Talk-in from W1TLC will be on the 146.22/82 repeater.

For further information, please contact Phil and Dot Young, W1JTH and W1TGY, 47 Longwood Ave., Augusta, ME 04330; (207) 622-1385. □

Michigan

The GRAND RAPIDS AMATEUR RADIO ASSOCIATION will host its annual Swap & Shop on September 19, at a new location this year — West Catholic High School, 1801 Bristol NW, in Grand Rapids. From US 131 just north of I-196, exit at Leonard Street. Go west to Bristol, turn north. West Catholic High School is located near the corner of Bristol and Richmond.

Gates open at 8 a.m., tickets \$3. Tables \$4 each. Vendors, please reserve tables. No trunk sales this year.

Talk-in on 86/26 and 224.64.

For table reservations or information, call Don Hazelswart, KA8BCI, at (616) 363-0649 or write P.O. Box 1248, Grand Rapids, MI 49501. □

The ADRIAN ARC will sponsor its 15th annual hamfest on September 20, 8 a.m. to 3 p.m., at the Lenawee Fair Grounds. Admis-

sion is \$2 in advance, \$3 at the gate. Tables are \$6 (full) and \$4 (half). Trunk sales \$2. Prizes.

Talk-in on 145.37-444.675, W8TQE/R.

For more information, contact Adrian ARC, P.O. Box 26, Adrian, MI 49221. □

Missouri

The OZARKS ARS will hold its 6th Annual Ozarks Club Congress and Swapfest, September 13, at the city park in Monett, located at the corner of Hwys. 60 and 37.

Tailgating begins at 9 a.m. Potluck dinner starts at 12:30 p.m. Special activities to be provided throughout the day. Free coffee and soft drinks provided by the club. Free admission.

Talk-in on 146.37/97.

For more information, contact Gary Meyers, KY0B, 1201 Madison, Aurora, MO 65605. □

New Jersey

The GLOUCESTER COUNTY ARC proudly presents Hamfest 87, to be held Sunday, August 30, at the Gloucester County 4-H Center, Route 77, Mullica Hill. This 9th annual hamfest coincides with the club's 28th anniversary.

Doors open from 8 a.m. to 4 p.m. Set-up starts at 7 a.m. Rain-or-shine tailgating and covered pavilion table spaces. Tickets are \$3.50 in advance, \$4 at the gate. Sellers' spaces \$4 each; with AC power \$4.50. Food and refreshments, special prizes, contests, door prizes and main prize drawings (attendance not required to win). Ladies' activities. YLRL and ladies' prizes, games, rides and children's activities.

VEC exams (Novice through Extra) at 10:30 a.m. Pre-registration suggested.

Talk-in on 147.78/18 and 146.52/52.

For information and advance tickets, write to GCARC, P.O. Box 370, Pitman, NJ 08071. Or call John Fisher, K2JF, (609) 589-2318 or Harry Spiece, NJ2B, (609) 728-7454. □

The SOUTH JERSEY RADIO ASSOCIATION, the oldest continuously operating radio club in the United States, will hold its 39th annual hamfest on Sunday, September 20, at the Pennsauken Senior High School, Route 73 and Remington Avenue, Pennsauken, from 8 a.m. to 2 p.m.

VE testing for all classes of license (registration at 9:30 a.m.). Refreshments in cafeteria. Tickets \$3 at the gate, \$2.50 in advance. Sellers \$5 per space and admission.

Talk-in on 145.290.

For more info or tickets, contact Fred Holler, W2EKB, 348 Bortons Mill Rd., Cherry Hill, NJ 08034; (609) 795-0577. □

New Mexico

The NORTHERN NEW MEXICO ARC will hold its 4th annual hamfest at Camp Stoney, 8 miles east of Santa Fe, September 26-27, 8 a.m. to 3 p.m.

Activities will include Amateur Radio forums, non-ham programs, tailgate flea market, dealer displays, and VEC exams (Saturday a.m.). Registration includes free weekend tailgating and lunch one day. Adults \$5, under 12 \$3. Registration with lunch both days — adults \$8, under 12 \$5.

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Fresno, California 93727

Talk-in on 146.22/82 and 146.52.

For more info, send SASE to Bob Norton, N5EPA, Rt. 3, Box 95-15, Santa Fe, NM 87505. □

New York

The LONG ISLAND MOBILE ARC ARRL Long Island Hamfair will be held Sunday, September 20, at the New York Institute of Technology, Route 25A/Northern Boulevard, Old Westbury.

Outdoor tailgating, no reservations needed. Seller's car space \$5; general admission \$3. Non-ham women and children free. Exit 39 North on Route 495, go north on Glen Cove Road 2 miles to 25A, turn right 1 mile to site. Refreshments available, with many awards to attendees. Open at 7:30 a.m. for sellers, 9 a.m. for buyers.

Talk-in on 146.25/85.

For further info, call Hank Wener, WB2ALW, (516) 484-4322 (nights). Next 'ests are February 14, May 15 and September 18, 1988. □

The ORANGE COUNTY ARC's 2nd Annual Hamfest and Computer Fair will be held Saturday, September 26, from 8 a.m. to 3 p.m., at John S. Burke Catholic High School, Fletcher Street (Exit 122A on Quickway), Goshen.

Admission is \$2; non-ham XYL's and kids under 12 free. Indoor tables \$5 each (one free admission per table); outdoor spaces \$3 each (one free admission per space). Doors open to vendors at 6:30 a.m. Prizes, Amateur Radio bargains, computers, FCC exams, free parking and great food.

Talk-in on 146.76.

For more information and reservations, contact Barbara Christopher, N2AWI, Box 447, RD 2, Wallkill, NY 12589; (914) 564-0688 or (914) 534-7967. □

Ohio

The FINDLAY RADIO CLUB is sponsoring the Findlay Hamfest on Sunday, September 13, at the Hancock County Fairgrounds in Findlay.

Doors open at 8 a.m. Admission is \$3 in advance (before September 1), \$4 after the 1st. Flea market spaces are \$4 each — no advance sales. Indoor tables (reserved) are \$6.

Talk-in on 147.75/15 and 449.15/4.15.

For tickets and table reservations, send check and SASE to: FRC Hamfest, P.O. Box 587, Findlay, OH 45839-0587. □

The TWENTY OVER NINE ARC announces its annual hamfest/computerfest, to be held Sunday, September 27, 9 a.m. to 4 p.m. The 'fest will be held at Joint Vocational School in Canfield.

Flea market is \$1 per space — two-space minimum. Tickets are \$2.50 in advance (send SASE), \$3 at the gate. Hourly prizes for YL's and OM's.

Mobile check-in until noon on 147.315+ and 145.270-. Check-in prize at 1:30 p.m.

For info, contact Paul Nemenz, N8HEX, 3014 Rush Blvd., Youngstown, OH 44507; (216) 782-5903. Or call Bill Wolfe, KA8TZX, (216) 549-3177. □

The CLEVELAND HAMFEST ASSOCIATION will hold its annual Hamfest and Computer Show on Sunday, September 27, at the Cuyahoga County Fairgrounds, Berea.

approximately 1 mile west of I-71 and Bagley Road Interchange, south 1/4 mile on Eastland Road. Local hotels.

Doors open from 8 a.m. to 4 p.m.; early set-up 6 a.m. VE exams will be administered at 9 a.m. — must have proper ID's, copy of license and \$4.35 check to ARRL/VEC. Technical forums and non-ham activities all day. Admission \$4 at gate or \$3.50 in advance. Tables \$10 inside, \$4 outside flea market. Banquet Saturday night.

Talk-in on 146.52.

For more information, write to CHA, P.O. Box 81252, Cleveland, OH 44181-0252. □

Pennsylvania

The "W3PIE" UNIONTOWN ARC, INC. will hold its 38th Annual Gabfest on Saturday, September 12. Free parking, free swap & shop set-up with registration, plenty of good food and prizes.

The club is located on the old Pittsburgh road just off Route 51 and the 119 bypass in Uniontown (about 40 miles south of Pittsburgh). Pre-registration is \$3 each or two for \$5.

Talk-in on 147.045/645 and 144.57/145.17.


For more info, contact John T. Cermak, WB3DOD, P.O. Box 433, Republic, PA 15475; (412) 246-2870 or (412) 246-9383. □

The BUTLER COUNTY AMATEUR RADIO ASSOCIATION will be celebrating its 10th anniversary with a hamfest, September 13, 9 a.m. to 4 p.m., at the Butler Farm Show Grounds on Route 68, 3 miles west of Butler.

Huge flea market for radio, computer and other electronic equipment. Buy, sell or trade. Boat show on the pond. Fly in at Roe Airport on site. Wheelchair accessible. Free parking. Admission \$1 (includes door prizes). Children under 12 free. Vendors' space \$5 each, per 8' table.

Mobile check-in till noon: W3UDX, 96/36; directions (W3WKD) 84/24. Mobile prize awarded.

For more information, contact John Varljen, K3HJH, 174 Oak Hills Hts., Butler, PA 16001; (412) 283-9403. □



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For further information, write:

Rev. Thomas Sable, S.J.
University of Scranton
Scranton, PA 18510

Virginia

The ARRL Virginia State Convention and 12th Annual Hamfest/Computer Fair — sponsored by the TIDEWATER RADIO CONVENTIONS — will be at Virginia Beach (Virginia) Pavilion on Saturday and Sunday, October 3-4.

This beautiful indoor, air-conditioned facility along with the well-presented show makes this one of the very finest events on the East Coast. Don't miss seeing all the latest equipment that will be presented by Alinco, ICOM, Kenwood and Yaesu. In addition, there will be a full complement of dealers for both Amateur Radio and computer equipment. Also featured will be a gigantic flea market, a complete two-day forum schedule and plenty of programs to entertain the XYL and children. This will still be a great time to spend some time at the nearby beach.

ARRL VEC license upgrade exams will be given Sunday at 9 a.m. No registration necessary, just bring your original present license and a check for \$4.35 payable to ARRL VEC. Show times are 9 a.m. to 5 p.m. Admission for both days is \$5 in advance or \$6 at the door. Advance ticket drawing plus many valuable door prizes are offered. Flea market tables are \$8 per day. Electricity \$10 extra for both days.

Talk-in on 146.97.

For information and tickets, call or write Manny Steiner, K4DOR, 3512 Olympia Lane, Virginia Beach, VA 23452; (804) 340-6105. □

Washington

The WALLA WALLA VALLEY ARC will hold its annual indoor hamfest on September 26-27, at the Oregon Community Building in Milton-Freewater. Doors open for all from 8 a.m. to 5 p.m. with a flea market and commercial exhibitors. Tables and admission are free!

There will be a hospitality get-together Friday night (25th) at Pioneer Park, with plenty of coffee, doughnuts and friendship. We will also have a potluck dinner Sunday afternoon. Exams will be given both days of the hamfest with walk-ins accepted, but be sure to bring a copy of your license along with your original.

Talk-in on 147.88-28 and 52 simplex.

For more information, contact Bernie Frazier, WA7CBX, 610 S. 1st Ave., Walla Walla, WA 99362; (509) 529-9879. □

West Virginia

The TRI-STATE AMATEUR RADIO ASSOCIATION will hold their annual hamfest at the Huntington Civic Center in Huntington, Saturday, October 3, from 9 a.m. to 4 p.m. Admission is \$4 and flea market tables are \$4. All activities are inside.

Talk-in 146.16/76.

For more information contact Paul Patton, NT8M, P.O. Box 652, Huntington, WV 25711. □

When submitting photos,
please **DO NOT** write on the
backs of them — they often stain
the fronts of other photos, making
them unusable.



NEW PRODUCTS

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

HF amplifier

Similar to its baby brother, the HL-1K/A, the new THL HF amplifier — HL-2K/A — is compact in size so that it can be incorporated easily into any ham shack.

The unit uses rugged 3-500Z transmitting tubes. The power supply is built in, using a quality transformer and high voltage full-wave bridge rectifier circuit.



The HL-2K/A is stable even under continuous key-down operation for an extended length of time. It has two large panel meters that will monitor plate current (IP) all of the time, and either EP, IG or PO. An "off" delay cooling fan system protects the tubes by cooling them for a timed period, after the power has been turned off.

The HL-2K/A suggested list price is \$1,695. For more information, contact Encomm, Inc., 1506 Capital, Plano, TX 75074. (214) 423-0024, or any Encomm, Inc. dealer. □

New Smallest HT™

We have made the Smallest HT™ even better! The new BT-Series gives you a plus — a built-in DIP switch programmable CTCSS encoder! Now you can access more "private line" machines with different PL tones!

The introduction of the new BT-Series does not mean that the original Smallest HT™ will be discontinued. Those who do not need the CTCSS encoder can choose the TH-21A-Series without the front panel programmable tone encoder.

The new BT-Series retains all the same features and uses the same accessories as the original Smallest HT™ and adds a valued feature in the same "pocket-portable package."

For more information, contact Tri-Compton Communications, P.O. Box 7065, Compton, CA 90224; (213) 639-9000. □

Dual band VHF antenna tuners

MFJ Enterprises, Inc. is introducing two new dual band VHF antenna tuners that cover both the 144 MHz and the new Novice 220 MHz bands. They both handle 300W PEP and match a wide range of impedances for coax-fed antennas. Both are built into rugged all-aluminum cabinets and are painted eggshell white with a black top.

The MFJ-921 has a built-in SWR/wattmeter, measures 9" x 2" x 3" and retails for \$69.95. The MFJ-920 measures a compact 4½" x 2" x 3" and retails for \$49.95.

Both the MFJ-921 and the MFJ-920 come with a one-year unconditional warranty. If either is ordered directly from MFJ Enterprises, Inc., it can be returned within 30 days for a full refund (less shipping and handling) if



not satisfied.

For additional information, contact MFJ Enterprises, Inc. at P.O. Box 494, Mississippi State, MS 39762; (800) 647-1800, (601) 323-5869 or Telex 53-4590 MFJ STKV. □

Cassette beginner course for the blind

Gordon West Radio School introduces a code and Novice voice-class theory course specifically for the visually impaired beginner. Two stereo, long-play audio cassettes train the visually impaired to pass the Novice entry-level code examination. These two cassettes contain all of the instructions necessary to prepare for the Novice code test. All required numbers, letters, punctuation marks and procedural signals are included on these two tapes. There is also a sample Novice Class CW exam to prepare the applicant.

The new 302 Novice voice-class test questions are also covered in detail on the two additional theory cassette tapes. Every question is discussed with easy-to-remember comments about the questions plus a thorough understanding of the correct answer. The incorrect answers are also reviewed so the applicant better understands what the 30-question Novice examination will be like.

The theory tapes also contain instructions for the two volunteer examiners that will administer the Novice Class code and written

examination. Gordon West points out how to give a test to the handicapped. Also included is the FCC Form 610 for both examiners and the applicant to fill out.



Gordon West has also prepared cassette theory courses for the following upgrades: Technician — Element 3A, General — Element 3B, Advanced — Element 4A, Extra — Element 4B.

Each theory course is \$19.95. The combination code and theory beginner's course is also \$19.95. For more information, contact: Gordon West Radio School, 2414 College Dr., Costa Mesa, CA 92626; (714) 549-5000. □

Broad-range duplexer

The new CF-412 duplexer has a very broad frequency range: 1.3-450 MHz on the low input and 900-1400 MHz on the high-frequency side. The CF-412 gives the dual-band operator the same freedom that the VHF/UHF operator enjoys.

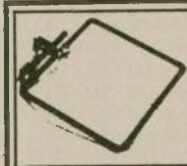
With the coming introduction of dual-band 450 MHz/1260 MHz transceivers and the established Amateur TV, use of a single antenna with excellent gain will enhance total performance. Maximum power is 70 watts with isolation more than 39dB.

Available through independent dealers and NCG Company, 1275 N. Grove St., Anaheim, CA 92806; (714) 630-4541. □

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Mobile transceiver

ICOM introduces the first fiber optic multi-band (six bands) mobile transceiver available, the IC-900. This deluxe all-mode mobile transceiver allows you to operate six bands ranging from 10M to 1.2 GHz with one controller.

The IC-900 includes an ultra-compact

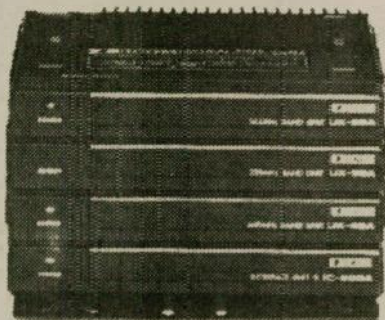


remote controller for remote mounting, an Interface A unit, Interface B unit, SP-8 speaker, HM-14 up/down DTMF microphone, fiber optic and controller cables.

Measuring only 2"H x 5.7"W x 1"D, the remote controller can be installed on your car's dash or sun visor with the supplied velcro. The easy to operate mobile also comes equipped with a super large LCD for easy viewing.

The IC-900 allows the operator to listen on two bands simultaneously or transmit on one band while receiving on another band (true full duplex crossband operation). All subaudible tones are built-in and the actual subaudible frequency is displayed. Ten memories are available for each band, with capability of individual PL tone and offset programming.

Band unit	Power output	Frequency
UX-19A	10W/1W	28-30 MHz
UX-29A	25W/5W	138-174 MHz Rx. 140-1-150 MHz Tx 138-174 MHz Rx. 140-1-150 MHz Tx
UX-29H	45W/5W	216-236 MHz Rx. 220-225 MHz Tx
UX-39A	25W/5W	440-450 MHz 50-54 MHz
UX-49A	25W/5W	1240-1300 MHz
UX-59A	10W/1W	
UX-129A	10W/1W	



Two scanning systems are available: programmable band scan and memory scan. Fiber optic technology enables a 3/16" cable to transport all data between Interface A (installed near driver's seat) and Interface B (installed in trunk or rear of vehicle). Fiber optic cable also eliminates RF feedback.

The IC-900 is now available. Suggested list price is \$589. The UX-29A 2M 25W band unit is also available now at a suggested list price of \$295. The IC-900 is the most advanced, versatile, compact and easy-to-use mobile available.

For more information, contact ICOM America, Inc., P.O. Box C-90029, Bellevue, WA 98009-9029; (206) 454-8155.

New Yagi antennas

John Beaman, vice president of Larsen Electronics, has announced a new series of Yagi directional antennas.

The YA5 series (YA5-806 and YA5-900) operates in the 806-860 MHz and 900-960 MHz ranges. The YA5-806 has been designed for cellular and trucking applications as well as commercial and industrial two-way uses. The YA5-900 qualifies for various security applications and can be used in a recently opened Amateur band.

Both antennas feature all-weather construction which includes coax termination inside the Yagi, away from wind and rain, plus a black weather-resistant coating which comes as a standard feature.

Other features include user interface via N-male connections to the N-female cable-mounted connector supplied with the antenna kit. The mounting hardware supplied will fit any pipe from 1/4" to 2 1/2" diameter.

Specifications

Gain 10dBd; horizontal beamwidth 45°; vertical beamwidth 55° (estimated); mounting hardware double welded heavy-duty U bolts; finish is black; interface is N-male; and maximum power 300 watts.

For more information, contact Larsen Electronics, P.O. Box 1799, Vancouver, WA 98668; (206) 573-2722.

When we are flat on our back we can always look up and check the antenna.

Scanning monitor receiver

ACE Communications, Inc. has introduced the model AR-2002, a professional grade scanning monitor receiver which covers 25-550 MHz and 800-1,300 MHz continuously.



The AR-2002 utilizes latest microprocessor and circuit technology to offer a multitude of features. These features are including a 20-channel memory scan, priority scan, band search, multi-mode reception, conventional dial tuning, selectable frequency increments, bar graph signal strength indicator and many more.

The AR-2002 incorporates commercial-type receiver technology such as 750 MHz receiver IF, high-level double balanced mixer, low-noise wide-band RF amplifier, high stable VCO unit, etc., to obtain higher performance.

The user price for the AR-2002 is \$499. For further details, contact ACE Communications, Inc., 22511 Aspan Street, Lake Forest (El Toro), CA 92630-6321; (714) 581-4900.

VISIT YOUR LOCAL RADIO STORE

ARIZONA

Ham Radio Outlet
1702 W. Camelback
Phoenix, AZ 85015
(602) 242-3515

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(818) 845-9203

Ham Radio Outlet
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Anaheim CA 92801

Ham Radio Outlet
999 Howard Avenue
Burlingame CA 94010

Ham Radio Outlet
2210 Livingston St.
Oakland, CA 94606

Ham Radio Outlet
5375 Kearny Villa Road
San Diego CA 92123

Ham Radio Outlet
6265 Sepulveda Blvd
Van Nuys CA 91401

Henry Radio
2050 S. Bundy Dr.
Los Angeles CA 90025
(213) 625-1234

The Radio Place
2964 Freepoint Blvd.
Sacramento CA 95818
(916) 441-7388

Shaver Radio, Inc.
1775A S. Winchester Blvd.
Campbell, CA 95008
(408) 370-6665

GEORGIA

Ham Radio Outlet
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Atlanta, GA 30340
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Littleton, MA 01460
(617) 486-3400 or 486-3040

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H.R. Electronics
722 24 Evanston Ave
Muskegon, MI 49442
(616) 722-2246

MISSOURI

Henry Radio
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Butler, MO 64730

NEW JERSEY

Abaris Systems
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Lyndhurst, N.J. 07071
(201) 938-0015

OHIO

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1280 Aida Drive
Reynoldsburg (Columbus), OH 43066
(614) 866-4267

TEXAS

Mission Communications
11903 A. e' Clodine Suite 500
Houston, TX 77082
(713) 879-7764

Texas Comm Center
4120-A Directors Row
Houston, TX 77092
1-800-227-8011

Computer rotor control interface

The most often requested new feature for OSCAR enthusiasts is the automatic control of the antenna pointing via a personal computer. While the Kenpro KR-5400A provides the electro-mechanical interface to the rotor motors, the actual hardware interface to the computer is provided by the KR-010. The KR-010 consists of Analog to Digital converters for both the elevation and azimuth channels and also provides the drive signal for driving the motors in the desired direction. An internal microcomputer provides the RS-232 serial capability at 9600 baud without handshaking.

The KR-010 attaches to the serial port of the computer and operates with the tracking software written by W3IWI and W0SL for

AMSAT. This tracking software is available from the AMSAT software exchange only. Kenpro and Encomm provide the software needed to point the antenna from data entered into a basic program in real time. Tracking software is not available from Encomm, Inc. or Kenpro Industries, Ltd. Subroutines of the automatic tracking program which apply to the KR-010/KR-5400A combination and information on how to install them in the W0SL package is supplied with the KR-010

Suggested retail price is \$269.95. Contact Encomm, Inc., 1506 Capital, Plano, TX 75074; (214) 423-0024, or your Encomm dealer for further information. □

New MFJ catalog

MFJ Enterprises, Inc., the company that sells more Amateur Radio accessories than anyone else in the world, brings you their latest 24-page Amateur Radio Catalog that has over 100 products. It's free! Simply call or write for your copy.

In it you'll find the most reliable and affordable antenna tuners, filters, keyers, packet radio controllers, computer interfaces, dummy loads, antenna switches, speaker, wattmeters, noise bridge, antenna bridge, antenna current probe, tuning indicators, antennas,

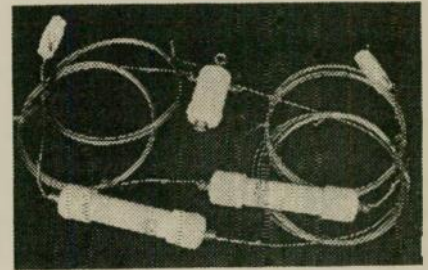
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Spi-Ro antennas

Spi-Ro Manufacturing offers a complete line of multi-band trap antennas, both dipole and vertical "sloper" types. Covering all Amateur Radio bands 160-10M.

The ultimate in trap design: lightweight, sealed and weatherproof, featuring no-rust solid brass terminals that require no soldering or jumper wires.



The antennas handle full power, and work multiple bands with a single antenna, with automatic band-switching. For all transmitters, transceivers; fed with 50-55Ω coax. Units have the standard SO-239 receptacle. They come factory-assembled or in easy-to-assemble kit form. Prices start at only \$38.95 postpaid in United States. Catalog available showing models.

Contact: Spi-Ro Manufacturing, Inc., P.O. Box 1538, Hendersonville, NC 28793. □

Legal Forum

(continued from page 6)

own good. You don't appear looking like *this* (gesture to crowd) before a board that has the power in many instances to put you off the air.

Here's what we prepared for Aurora's proposed ordinance:

THE LETTER

- 1) It explains Amateur Radio
 - There are over 400,000 amateurs in the United States, approximately 600,000 in the rest of the world.
 - Licensed by FCC
 - Follows Part 97 Rules
 - Public Service
 - Phone patches for military personnel overseas
 - In forefront in technical development
 - Uses state-of-the-art modes
 - It's a technical hobby, not merely playing with radio.

- 2) Explain the bands we're authorized to operate on

- 3) Ability to communicate is directly controlled by height and length of antennas. (Ask them to step outside and look up, and they will see they have allowed their own police and fire departments to have antennas that are higher, for local communications, than they would allow us to have to communicate internationally.) Explain HF, VHF, UHF, line of sight.

- 4) Explain PRB-1. Explain what's wrong with the draft ordinance, quoting PRB-1.

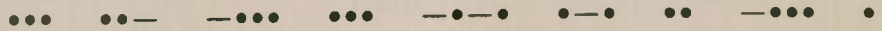
ATTACHMENTS

- 1) Attach a copy of PRB-1 to the letter, with paragraphs 25 and 26 highlighted.
- 2) Attach a copy of the 1960 PR Bulletin of the FCC which says what Amateur Radio is.
- 3) If you have a very active radio club in town, include material demonstrating their communications capability, and some of the public service they have done.
- 4) Include public relations material on things like the Mexico City earthquake, etc.

- 5) Include copies of consent decrees of lawsuits "won" by amateurs.

- 6) I like to attach copies of other ordinances from surrounding municipalities. The primary reason is to show there *are* some reasonable ordinances out there. I especially like to point out that in the city of Chicago, there *IS* NO restriction on amateur antenna height!

These are examples of what you can do if you are prepared. You don't always need a lawyer. But without putting together the material and making a reasonable presentation, you or your club or radio group put yourselves at the mercy of the municipality. □



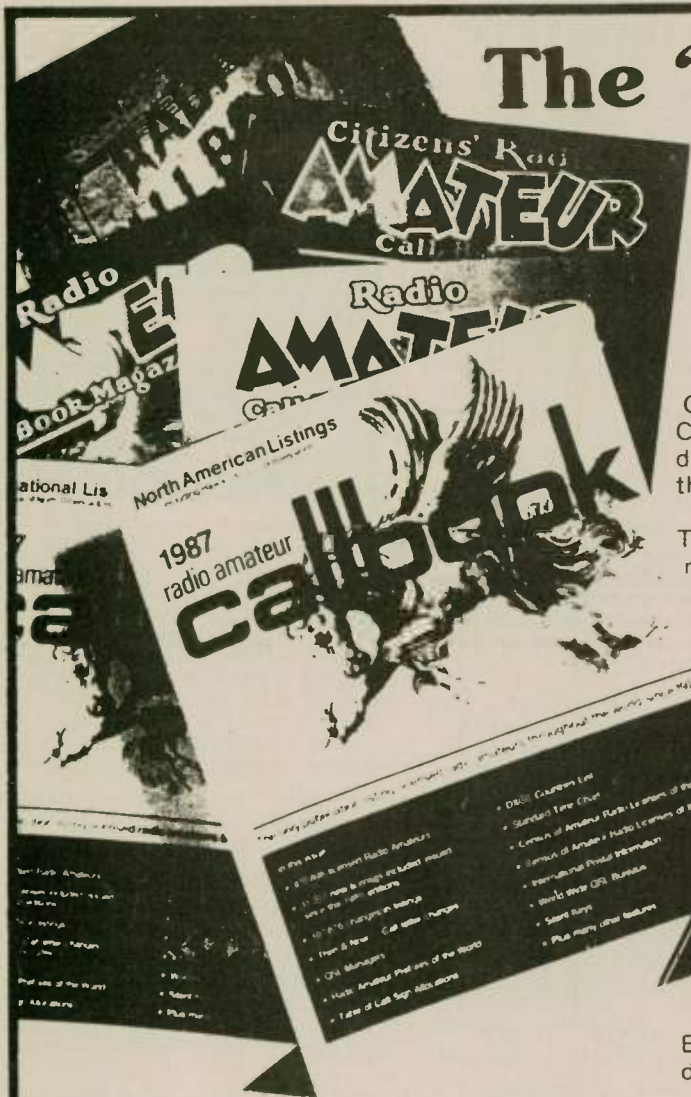
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Continuing a great 66 year tradition, there are 3 new Callbooks for 1987. The North American Callbook, the International Callbook, and the Callbook Supplement bring you accurate up-to-date QSL information on over 900,000 amateurs throughout the world.

The 1987 North American Callbook lists the calls, names, and address information for licensed amateurs in all countries from Canada to Panama including the Caribbean islands, Bermuda, and Greenland plus Hawaii and the U.S. possessions.

The 1987 International Callbook lists the amateurs in countries outside North America. Coverage includes South America, Europe, Africa, Asia, and the Pacific area.

The 1987 Callbook Supplement is a new idea in Callbook updates. It lists the activity in both the North American and International Callbooks. Published June 1, 1987, the Supplement includes all the new licenses, address changes and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! See your dealer or order directly from the publisher.

- Over 900,000 current amateur listings in all countries of the world
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- Standard Time Charts
- International Postal Information
- World-wide QSL Bureaus
- Table of Amateur Prefix Allocations
- Prefixes of the World
- Plus many other features.

Publication: Callbooks - December 1, 1986
 Supplement - June 1, 1987

	Including shipment to U.S.A. points	Illinois residents, incl. tax & shipping	Including shipment to foreign countries
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<input type="checkbox"/> SPECIAL OFFER: Order both 1987 Callbooks at the same time for shipment to one address.	53.00	56.25	58.00

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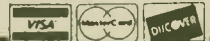


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