Worldradio
Year 17, Issue 10 April 1988 • $1

An Amateur Radio club that was recently formed at California State University, Sacramento, hit upon a great way to inform students about Amateur Radio. With the help of two Sacramento City RACES members, the club's members set up a demonstration on campus. Some of the participants were: (standing near tree) Amjad Obiedat, JY5BA; (sitting, left to right) Alex Rabinovich, KI6EZ; and Mark Tidwell, N6PNB, operating packet. Next to Amjad is *Worldradio's* Club Editor, Norm Brooks, K6FO.

Recruiting for Amateur Radio

Norm Brooks, K6FO
Photos by Armond Noble, N6WR

It was just like Field Day. The radio station was set up in the open, and the operators were actually working a pile-up! People stood around, wondering what was going on, while other people were trying to explain it to them. This was just the kind of "Field Day" we should have more often—operate in the busiest place you can find, so that the general public will learn what Amateur Radio is about.

This demonstration was the brainchild of a Jordanian student at California State University at Sacramento. Amjad Obiedat, JY5BA, has been attempting to get an Amateur Radio club started at the university, but people didn't know what he was trying to do. He and faculty advisor Bill Armes, WB6IZZ, decided to bring Amateur Radio to the student body, so that everyone could see it. They set up in the "Quad," a busy area between the Student Union and the library.

The idea was a hit! The reporters from *The Hornet*, the CSUS student paper, were there asking questions. And **Worldradio** was there, too.

Thanks to Jim Pearce, N6ESV, and John Hester, N6GKD, of the Sacramento City RACES, they were able to borrow enough equipment to be operational. They set up an HF station, a VHF station on packet, and had numerous VHF hand-helds on the North Hills Radio Club repeater K6IS/R. They also had the ARRL videotape *The New World of Amateur Radio* going on a monitor. There were cork-boards with newspaper clippings about the work of radio amateurs in disasters. There were world maps, showing the call sign prefixes. But the most attractive part of the operation was the HF rig, because they were using the call sign JY5BA/W6, and they were creating pile-ups!

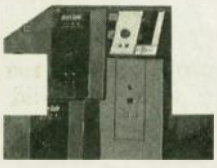
Mark Tidwell, N6PNB, ably demonstrated packet operation to the students as they came by, while Alex Rabinovich, KI6EZ, worked Japanese stations on CW, to the delight of a group of Japanese students. Mike Ruzylo, N6MUH, walked among the visitors, explaining things and handing out a two-page flyer telling what Amateur Radio is.

(please turn to page 6)

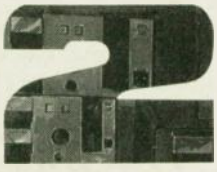
HENRY R.F. AMPLIFIERS

The Amateur World Knows Us Well

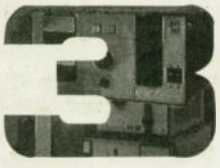
It's a fact, Henry amateur amplifiers are used and respected throughout the world ... and for some very good reasons



No other company offers such a broad selection of models. Sixteen different models with a choice of HF, VHF or UHF operation, power levels up to the legal limit (higher on certain export models).



Amplifiers that are built to last ... rugged components ... superb linearity ... years and years of top flight performance. A proven fact!



Value for the dollars invested. Dollar for dollar, Henry amplifiers have always been designed and built to provide maximum value.

No wonder the world knows us so well

Henry amplifiers are available from select dealers throughout the U.S. and are being exported to amateurs all over the world. In addition to our broad line of commercial FCC type accepted amplifiers we are providing special R.F. power generators for industrial, scientific and military uses. In the area of communications they go everywhere ... VHF, UHF, SSB, AM, FM, RTTY, packet, meteor burst, digital and marine shore stations. In addition to communications, Henry equipment is being used in plasma generation, sputtering and etching, thin film deposition, laser excitation, nuclear magnetic resonance (NMR), photo-emissions and mass spectrometry.

Need we say more?

If you have a requirement for high power RF, please call Ted Shannon or Ted Henry in our Los Angeles office.

Henry Radio — HENRY RADIO 61 YEARS OF SERVICE

2050 S. Bundy Dr., Los Angeles, CA 90025 (213) 820-1234
Butler, Missouri 64730 (816) 679-3127

TOLL FREE ORDER NUMBER: (800) 421-6631 For all states except California. Calif. residents please call collect on our regular numbers.

Telex: 67-3625 (Henradio) FAX (213) 826-7790

Radio Aid

As of December 20, 1987, Radio Aid has been created. The purposes of Radio Aid are:

1) The Amateur Radio community will achieve positive publicity without emergency conditions.

2) All interested Amateur Radio operators would get an opportunity to work a rare DX country. Our goal is to send at least 10 hams from the world-wide community to operate from Albania, Afghanistan, Laos and Viet-Nam.

3) All money contributed will be given to the children of the world through UNICEF.

We have approached several corporations, such as Yaesu USA, Kenwood USA, ICOM America and Advanced Electronic Applications. From these corporations, we have acquired more than sufficient numbers of transceivers, and computers with necessary peripherals.

Private donations have already exceeded $20,000. At the end of each expedition, all donated equipment will be sold, as well as promotional items such as T-shirts, belt buckles and videotapes.

Two of the best U.S. Amateur Radio operators have volunteered their time and talents to join us on this fund-raising expedition: Chip Margelli, K7JA, and Danny Eskanazi, K7SS.

A post office box for your tax-deductible contributions will be announced shortly. Temporarily, correspondence can be sent to: Jan Edward Bridge, KB2RV, 119 E. 84th St. #4D, New York, NY 10028. □

USSR/Canada expedition

For over three months, beginning March 1, skiers taking part in the USSR/Canada SKITREK Expedition will be traveling over the North Pole, to Cape Columbia on Ellesmere Island. During that time, daily radio communication will be maintained between the expedition and teams of Soviet and Canadian Amateur Radio operators at base stations in Severnaya Zemlya, Resolute Bay on Cornwallis Island, and Moscow, Dikson, Ottawa and Toronto.

Planning for the Amateur Radio communications network in support of this hazardous expedition was completed in mid-February. Plans were finalized in the Soviet Union by Canadian coordinator CRRL President Tom Atkins, VE3CDM/VE8UA; Barry Garratt, VE3CDX/VE8CDX; and Leonid Labutin, UA3CR.

The departure point for the skiers was Cape Artichesky on Severnaya Zemlya. Special call sign for the main Canadian base station at Resolute Bay is CI8C, which was expected to be in operation from February 24. QSL via Box 313, Don Mills, Ontario, M3C 2S7, CANADA.

The Amateur Radio equipment used, (first choice of the Canadian operating group), has been provided by ICOM, including HF and VHF base stations and amplifiers, and 2M handi-talkies for communication with the supply drop aircraft.

Using the facilities of SARSAT/COSPAS — the search and rescue satellites — and Amateur Radio satellite UoSAT 11, with its "talking computer" on board, it will be possible for the trekkers to hear their location read to them over the 2M hand-helds as UoSAT passes over them about every 100 minutes.

This is a privately funded expedition, and Canadians wishing to make a tax-deductible donation may do so by sending the contributions to: Cross Country Canada, c/o Ste. 300, The Carriageway, 55 Murray St., Ottawa, Ontario K1N 5M3. □

Radio in school

The ARRL Education Task Force (ETF) is interested in hearing from you if you have been successful in establishing an Amateur Radio club in an elementary, junior or senior high school.

The ETF wants to know what specific problems you may have run into, and what you did to resolve them. Specifically, any information you might be able to provide to assist others in establishing a new club would be helpful.

Please write your comments/suggestions to Task Force, c/o ARRL HQ, 225 Main St., Newington, CT 06111. □

CONTENTS

FEATURES

COLUMNS

Worldradio

April 1988
Vol. 17, No. 10

TM
Subscription Dept.
Worldradio
1779 Tribute Rd., Ste. L
Sacramento, CA 95815
1-800-365-SUBS

is published monthly by
Worldradio, Inc.
2120 28th Street
Sacramento, CA 95818
(916) 457-3655

STAFF

Publisher.....Armond Noble, N6WR
Editor.....Christine Wilson, KA6TAL
Assistant Editor.....Christine Toppenberg
Associate Editor.....Norm Brooks, K6FO
Consulting Editor.....Lou Ann Keogh, KB6HP
Advertising Director.....Helen Noble
Ass't Adv. Director.....Rosalie Hernandez
Graphics Director.....Dianne Dunning
Circulation Mgr.....Dorothy Campini

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

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

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

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

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

Subscription rates: $12.00 per year, $22.00 for two years, $31.00 for three years and $120.00 for life; $3.00 extra per year for surface mail delivery outside the U.S. Please remit international postal money order. IRCs will be accepted.

Second class postage paid at Sacramento, CA. **POSTMASTER:** Send address changes to **Worldradio, Inc.**, P.O. Box 189490, Sacramento, CA 95818.

PUBLISHER'S MICROPHONE

First off, due recognition to the latest to step through the doors to the exalted position of **Worldradio** Super-Booster (Lifetime Subscriber): Hector Luis Nieves, KP4LS, Carolina, Puerto Rico; Gary Powers, KB1KA, Pawtucket, Rhode Island; Leonard Miller, KXØK, Belle Plaine, Kansas; and Dan Chapman, Porterville, California.

Frank Pratt, AL7CA, Anchorage, Alaska, wrote about a project that we've long felt should be done. In his words: "I read with great interest your comments in the January issue regarding a 1″×¼″ call sign lapel pin. Well, I had such a pin made for myself by a local engraver — Mike Nauman, KL7DZE — over a year ago. I wear it even while on duty as a pharmacist with a local chain store.

"It never fails to catch the eye of visiting hams. Mike does not feel it would be economically feasible for him to produce such an item for sale nationwide because of high material and transportation costs up here, but we wanted you to know that it has been done and it works!"

Thanks for the word. Possibly that will inspire some firm to take on such an item. They'll get a FREE mention here when they do!!

This next letter gave us great satisfaction. Bob McDonald, KE6VB, Imperial Beach, California, said, "In 1982, it was a courtesy issue of **Worldradio** that encouraged me to be active again after a period of almost 20 years."

We're most pleased that such was the effect of **Worldradio**. Back in '71 when I started this publication, the ham mags were just pages after pages of schematics (of things that would go unbuilt) and no one was writing about all the great things that were being done with the gear. Yes, there are inspiring activities and people out there, and we're glad that other mags now have moved a little closer to the *news* of this great activity.

Bob told about moving up to Extra Class and said, "The one thing that has made **Worldradio** enjoyable to me has been that it does not speak for an organization or group, or provide services such as sponsoring contests or giving awards. The columns and articles reflect the opinions and philosophy of their writers, unbridled by a 'corporate view.' I hope you continue to be a source of information and entertainment and do not get directly involved, but continue to let the articles and columns speak for themselves."

Steve Eldridge, KØROD, Overland Park, Kansas, said he rated this magazine "a '10', well ahead of others." He also invited all to participate in the "Kadiddlehoppers," starting at 0800 local in the Central states on 7.2535 MHz, and in the West on 7.268 MHz, starting at 1700 local.

The group features ragchewing, mobile work, a place to meet for skeds and, of course, health and welfare messages. You can be issued your own ID number. The only non-amateur with one is Clem himself, Red Skelton.

Budd Drummond, WJ6Q, Redding, California said he likes the *QRP, MOBILE* and *AERIALS* columns. Thanks, Bulldog.

Speaking of QRP, if anyone has the bug you must-must-must get the *QRP Quarterly,* the journal of the QRP ARC International.

Knowing how much work it takes to put out a periodical, I can tell that these guys are really burning the midnight oil. Send your $12 to Bill Harding, K4AHK, 10923 Carters Oak Way, Burke, VA 22015.

Nope, I don't know him, wouldn't recognize him if he came in the door. Don't know any of the officers, etc. It is just a *GREAT* publication. (We only give plugs to people we don't know.)

Enjoyed the letter from Sam Taggart, W2IU, Absecon, New Jersey, who was licensed in 1923 and was sparking in 1921. Early radio nostalgia finds an eager audience here.

Clubs should have training programs to teach that if one must tune up, (not trusting the settings of yesterday), at least do it *off* the DX station frequency.

— Armond, N6WR

Yaesu's mini HTs. The smallest, smartest, toughest radios. Anywhere.

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

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

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

But perhaps best of all, each radio blends sophisticated, microprocessor-controlled performance with surprisingly simple operation. In fact, it takes only minutes to master all these features:

Ten memories that store frequency, offset and PL tone. Memory scan at 2 frequencies per second. Tx offset storage. Priority channel scan. Channel selection via tuning knob or up/down buttons. PL tone board (optional). PL display. Independent PL memory per channel. PL encode and decode. LCD power output and "S"-meter display. Battery-saver circuit. Push-button squelch override. Eight-key control pad. Keypad lock. High/low power switch.

The FT-23R comes with a 7.2-volt, 2.5-watt battery pack. The FT-73R with a 7.2-volt, 2-watt pack. And the FT-33R with a powerful 12-volt, 5-watt pack.

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

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

Check out the FT-23R Series at your Yaesu dealer today. Because although we can tell you about their incredible performance, toughness and small size, seeing is really believing.

YAESU

Yaesu USA 17210 Edwards Road, Cerritos, CA 90701 (213) 404-2700. Repair Service: (213) 404-4884. Parts: (213) 404-4847.

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

Alex Rabinovich, KI6EZ, worked Japan on CW.

Newspaper clippings pinned to cork-board advertised the various ways that radio amateurs have assisted the public.

Amjad Obiedat, JY5BA, was the moving force behind the February Amateur Radio exhibit at California State University, Sacramento.

Recruiting

(continued from page 1)

The club started three months ago and now has 16 members, licensed and unlicensed. Their immediate objectives are to license the unlicensed members and anyone else interested. Their biggest problem is space.

They'd like to have a place to set up a club station, but it's a slow process on a university campus. They have some prospects, but every other club on the campus wants space too. Right now, in addition to space, the club members are looking for equipment donations, old or new, VHF or HF.

"We don't want to be just another club on campus," Amjad explains. "We want to do things. We are going to stress emergency communications, and show everyone that we can do just that." Further, they hope to be a focal point for engineering students to get assistance with their electronic projects. Their long-range plans include swapmeets. They note that they could have the use of some of the parking lots in the summer months.

When you hear JY5BA/W6 on the air, you'll know it's coming from a live-wire college group in Sacramento.

Mike Ruzylo, N6MUH, at one of the rigs.

New Form 610

As of January 1, 1988, the FCC in Gettysburg, Pennsylvania has made available the new version of FCC Form 610, "Application for Amateur Radio station and/or Operator License."

The revised form, carrying an expiration date of December 31, 1989, differs from the previous Form 610 in that it is now useful for both of the FCC's volunteer examination programs.

The new form has the administering VE's report providing for the split of Element 3 into 3A for Technician and 3B for General Class tests, and the reverse side now provides for two Novice VE's.

The forms are available from FCC, ATTN: Larry Weikert, Chief-General Radio Branch, P.O. Box 1020, Gettysburg, PA 17326, or (717) 337-1212. Tnx FCC, W5YI.

— Westlink Report □

Correction

On page 29 of our March issue, we listed Flo Reitzel, KU7F, as Receiving Treasurer for Districts 8-0, KH6, KL7, VE and U.S. possessions. The person who holds that title is actually Evelyn Cavallo, KC7ET. Flo is the Receiving Treasurer for Districts 5-7. □

Old Callbooks needed

If you do not know what to do with your old *Callbooks* when you get a new set, here's a suggestion: Give them to a needy ham overseas who cannot afford to purchase a set of his own.

Bruce Butler, W6OSP, has a list of overseas amateurs who would be very grateful to have call directories that are less than 2 years old. If you are interested in helping in this worthwhile project, contact W6OSP at 3783 Young Ave., Napa, CA 94558 to get the call sign, name and address of a foreign amateur who can make good use of the *Callbooks* you no longer need. Tnx W6GO/K6HHD.

—Weslink Report □

PC interference?

Are you bothered by interference from personal computers? The FCC has a new document dated July 1987 (MP-4) entitled "FCC Methods of Measurement of Radio Emissions from Computing Devices." — *The Goldcoasters, Deerfield Beach, FL* □

International Telegraph Speed Contest

The Blackhawk Chapter of the Morse Telegraph Club has been considering an International Telegraph Speed contest. We would likely hold it in conjunction with our Annual Galesburg Railroad Days celebration, generally held the second weekend of June.

Our idea is to pattern the contest after criteria used in the 1915 era and awarding medals copied from the original Carnegie Medallion. The medals will probably be made of pewter or bronze.

The contest could apply to both sending and receiving. No bugs would be allowed. There could be two contests — one using International and the other American Morse. An entry fee to cover some of the costs would have to be charged — probably $15 to $25.

What the Blackhawk Club needs to know is what kind of interest there may be for such a contest. Also, we have limited manpower and financial resources. The contest would probably need a special committee under the arm of the international board of the Morse Telegraph Club and/or associated organizations. This would provide better continuity and a better base for financial resources.

The Galesburg site provides a fairly central location for both United States and Canadian members. Galesburg is served by Amtrak service on both the Burlington Northern and Santa Fe mainlines. There is also air and bus service. We can't think of anything that would be more visible to the public and gain the notice of the media than such an event.

Please send your correspondence to Jim Woods, RR #4 Box 22, Galesburg, IL 61401. □

PACSAT in '88?

A crash program is underway to build and launch an Amateur Radio packet statellite within the next two years! On November 8, the AMSAT Board of Directors learned from Vice President of Engineering Jan King, W3GEY, that it may be possible for AMSAT to develop and provide an amateur packet radio satellite much more quickly than previously thought. The board responded by authorizing an extraordinary program to take advantage of any one of several "target of opportunity" launches that may present themselves within the next 24 months.

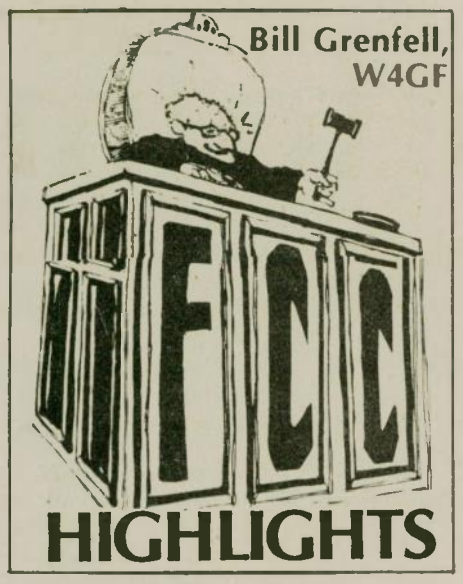
A packet radio satellite, generically called a PACSAT, has been an objective for nearly a half decade since AMSAT and TAPR developed the concept around the time the TAPR TNC was being developed five years ago. Since then the PACSAT concept has been exploited in military, scientific and commercial payloads.

An immediate need for support for this crash program is now evident. All packet enthusiasts will be welcome to use PACSAT when it is launched, but attainment of this very ambitious schedule hinges on sufficient financial suport up front. A special fund has been established to finance this important program. Write to AMSAT, P.O. Box 27, Washington, D.C. 20044 for more information. Tnx ANS and Vern Riportella, WA2LQQ.

—Westlink Report □

Next month . . .

Due to lack of space this month, we'll be printing the information we received from Dr. Samuel Milham, Jr. in our May issue. □



In General Docket 87-389, the FCC has proposed to allow unlicensed RF radiation throughout the 1.7-960 MHz spectrum and above, ranging from 30 to 500μV per meter. The ARRL will file comments opposing introduction of intentional radiation devices into the amateur bands. Comment is due by March 7, 1988. (*ARRL Letter,* 02/01/88; *Ham Radio,* 02/88)

•

A Report and Order on FCC's Docket 87-14, which proposes 220-222 MHz for land mobile services, is forecast to be released on March 31, 1988. (*W5YI,* 02/01/88)

•

A December '87 petition (RM-6169) asks FCC for 500 kHz from the 216-222 MHz band for TV and cable watchers to transmit, via hand-held transmitters: answers to surveys, orders for TV programs, for home shopping for merchandise, etc.

In its comments, the ARRL noted that the "... petition was based upon the faulty premise that the 220 band was 'under utilized' by amateurs ..." ARRL continued with: "Many alternatives exist to the rather incredible proposal to install relatively high-power" (50W) "radio transmitters in each residence, to be operated by non-technical persons, on frequencies subject to serious interference to and from other, authorized, over-the-air services on adjacent frequencies." (*W5YI,* 02/01/88; *ARRL Letter,* 02/01/88)

•

Two Southern California clubs have petitioned the FCC to expand the 52-54 MHz repeater sub-band to 51-54 MHz. Or 51.1-54 MHz. Among the reasons given in support of the requests are that the change would: make better use of the amateur 6M spectrum, reduce the possibility of TVI, alleviate 6M repeater congestion, provide greater flexibility for frequency coordinating groups, eliminate the need for non-standard repeater splits, etc. (*W5YI Report,* 01/01/88; *Westlink Report,* 01/08/88)

•

Multiple frequency coordinators can indeed exist in the same geographical areas and can coordinate the same frequencies according to Ray Kowalski, former Chief of FCC's Special Services Division. "While we did not anticipate that the local or regional amateur community would recognize two volunteer frequency coordinators with overlapping responsibilities in the same geographical area, it is not within our province to disturb such a choice." (*W5YI Report,* 01/15/88)

•

After nearly two decades with the FCC, Special Services Division Chief Ray Kowalski has left the Commission staff. He has joined a Washington law firm which specializes in cases dealing with communications law. (*ARRL Letter,* 12/31/87)

•

The new FCC Special Services Chief is Robert McNamara. Formerly Chief of the Division's Aviation and Marine Branch, McNamara will also be responsible for the other branches of the Division, including the Personal Radio Branch and its Amateur Radio Service.

•

At the end of 1987, the FCC was short two of the five members it is supposed to have. Three commissioners do, however constitute a quorum, so the FCC will continue to take action on issues under consideration. (*ARRL Letter,* 12/31/87)

•

Contrary to rumors, the 17M amateur band (18.068-18.168 MHz) is not yet open to U.S. amateurs. While the band is available to amateurs in many countries on a not-to-interfere basis, it will not become a worldwide exclusive amateur allocation until July 1989. (*ARRL Letter,* 01/15/88)

•

The FCC's Private Radio Bureau has been asked by the ARRL to allow a one-year extension of the present Special Temporary Authority (STA) for HF automatic packet operation. This extension would allow the continued operation of packet-radio automatic message forwarding through 1988 pending drafting and consideration of revised rules. (*ARRL Letter,* 01/15/88)

•

A petition for "instant" Novice operation has been denied by the FCC. The basis for the petition was that the interval between the exam and the license was so long that the recently

(please turn to page 22)

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 February 1, 1988.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	WE0N	KE0SS	N0IVM	KB0BTH
1	NO1Q	KC1HU	N1FLR	KA1RMW
2	WD2P	KE2EH	N2HWL	KB2FAC
3	NN3E	KD3GI	N3FZE	KA3SQK
4	AB4GB	KK4WS	N4RZU	KC4DEN
5	AA5EG	KG5HA	N5MAK	KB5FGX
6	AA6GR	KJ6CY	N6RIV	KB6VQG
7	WJ7O	KF7GY	N7KKJ	KB7DUO
8	WA8J	KE8PW	N8JCV	KB8DWJ
9	NW9Y	KE9IL	N9HED	KB9ABF
N. Mariana Is.	AH0E	AH0AD	KH0AJ	WH0AAH
Guam	KH2G	AH2BV	KH2DE	WH2ALK
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6IU	NH6OG	WH6BWD
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AF	WH8AAW
Wake Wilkes Peale		AH9AD	KH9AD	WH9AAH
Alaska		AL7JP	NL7MP	WL7BQK
Virgin Is.	KP2T	KP2BL	NP2CI	WP2AFU
Puerto Rico		KP4OO	WP4NF	WP4HTC

Subscription form

If you received this copy of Worldradio and you aren't yet a subscriber . . . this was your sample copy.

We sent it to you to acquaint you with our reporting on this great activity. Amateur Radio is exciting, challenging, stimulating, satisfying and very rewarding.

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

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

TO FACILITATE FASTER HANDLING OF YOUR SUBSCRIPTION, PLEASE USE THIS BLANK

(SOURCE) ☐☐☐☐ 4

(59 60)

Name _____

Call _____

Address _____

City _____

State _____ **Zip** _____

☐ NEW	☐ Renewal	☐ Gift
12 issues	($1 per issue)	$12.00
24 issues	(91¢ per issue • save $2)	$22.00
36 issues	(86¢ per issue • save $5)	$31.00
Lifetime	(Be a WR super booster)	$120.00

Overseas Readers! Prices quoted are U.S. funds. Please include $3.00 extra/year for surface mail delivery outside the U.S. Subscriptions may be paid in U.S. funds drawn on U.S. banks, by International Money Order, VISA or MasterCard. Canadian Postal Money Orders (in U.S. funds) are also acceptable.

☐ Check enclosed ☐ MasterCard ☐ AmEx ☐ VISA

Card # _____ Exp. date _____

Signature _____

Please clip and mail to . . .

Worldradio™
1779 Tribute Road, Suite L
Sacramento, CA 95815

For Subscriptions (charge cards only)
TOLL FREE 1-800-365-SUBS 8 a.m. to 5 p.m. Pacific Time

Thank you!

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

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

SPECIAL EVENTS

Marietta's 200th

The Marietta ARC is offering a Bicentennial Commendation Certificate in conjunction with the celebration of the 200th birthday of Marietta, Ohio — the first permanent settlement in the Northwest Territory.

Contact any MARC member during the month of April, and send QSL and SASE to station worked for nice 8½″×11″ certificate. Look for us on 10 through 80, phone and CW. □

Odd Fellow Week

A special event Amateur Radio station using the call WA3EOP will be on the air April 18-24, to celebrate Maryland Odd Fellow Week. WA3EOP will be operated from Williamsport, Maryland in the Mother Jurisdiction of Odd Fellowship.

Members of the Odd Fellows Ham Club, radio amateurs worldwide and shortwave listeners are invited to listen for this special station on any of the following suggested frequencies (MHz): *Phone* — 3.870, 7.240, 14.265, 21.375 and 28.375. *CW*—7.120 MHz and FM at 147.09 MHz may be utilized.

A special commemorative certificate will be offered for an amateur contact (QSO) with a QSL card and an SASE. Accurate shortwave reception reports will be accepted in lieu of a two-way contact from non-ham operators.

Send details of the QSO and SASE to Page Pyne, WA3EOP, 109 S. Artizan St., Williamsport, MD 21795 for this special award. □

Historical crafts

The Olympia Radio Amateur Club will celebrate the anniversary of the United States Submarine Service by operating from the USS *Becuna*, a World War II submarine, and the USS *Olympia*, flagship of Admiral Dewey 1898.

Transmissions can be heard from 1300Z, April 23, until 2000Z, April 24. Frequencies: *CW* — 3.590, 3.725, 7.050, 7.125, 14.050, 21.090, 21.125, 28.150; *Phone* — 3.890, 7.240, 14.250, 21.360, 28.325, 28.600 (± 10 kHz). 2M operation: 144.225 (sideband) and 144.270 (FM).

The ORAC call is WA3BAT. A beautiful certificate has been prepared for contacts. Stateside mailings require business-size SASE. Foreign contacts please remit 1 IRC. Please use the address below. The address for WA3BAT in most Callbooks is incorrect.

For additional inquiries about the ships' histories or the club's operation and QSL information, please write to: Olympia RAC, P.O. Box 928, Philadelphia, PA 19105 USA. □

Railroad museum

The California State Railroad Museum in Sacramento, host of the Tourist Railway Association "Train 88" Convention, will operate WB6RVR/6 on April 30 and May 1. Operation will last from 1600Z to 2400Z each day, in commemoration of the fifth consecutive year of steam train operations at this site. *Suggested phone frequencies:* 7.260, 14.260 and 28.360.

For commemorative QSL, send your QSL and SASE to: California State Railroad Museum, ATTN: Steam Trains, 111 I (Eye) St., Sacramento, CA 95814. □

Diamond Jubilee

The Ohio and Michigan Sections of the ARRL invite you to take part in the Diamond Jubilee of Emergency Communications by Amateur Radio. The celebration of this 75th anniversary will be held from 1700 UTC, March 26 to 0500 UTC, March 27.

Frequencies: *Phone* — 1.950, 7.260, 14.250, 21.235 and 28.400 MHz; *CW* — 1.810, 3.710, 7.310, 14.050, 21.125 and 28.125. Michigan stations will operate up 5 kHz and Ohio stations will operate down 5 kHz. On 80M phone, both sections will operate on their section ARES frequencies. Michigan will operate on 3.932 MHz and Ohio will operate on 3.875 MHz. Listen for "CQ DIAMOND JUBILEE."

Send QSO information to Larry Solak, WD8MPV, SEC-Ohio or George Race, WB8BGY, SM/SEC-Michigan, for a beautiful, one-time-only certificate. There will also be a special endorsement for either working W8LT at Ohio State University, or W8UM at the University of Michigan.

This endorsement is also available by copying the simulation of the original exchange between W8LT and W8UM between 1700 and 1800 UTC on both Saturday and Sunday. This will be transmitted on CW using the center frequencies listed above on each band, beginning with 160M, and moving up. *(continued on next page)*

SAVE THE CONNECTOR FROM 9V BATTERIES FOR YOUR NEXT 9V PROJECT. —DAVID GUIMONT, WB6LLO; NSARC, SAN DIEGO, CA

The beginning

The year was 1913. The Model T Ford was new, the *Titanic* had recently sunk, and people were discovering the wonders of electricity, telephone and other modern devices, including a new curiosity called the wireless. That was a year which was to be a milestone marking the beginning of a long heritage of service.

It was March in the Midwest, and winter was giving way to spring. Water levels were up. The coming of spring had brought a large low-pressure area — a severe storm system that was to create millions of dollars worth of damage and kill hundreds of people.

The storm — marked by gale force winds, large hail and extreme electrical disturbances — descended on Kansas and Nebraska, spawning tornadoes. Destruction included telegraph wires down, towns destroyed, looting and death. Flooding devastated communications and electrical service.

The storm moved into Ohio. Boats were being used to rescue people from rooftops and trees. National Guard troops were called out to stop looting and to aid in rescue operations.

At the wireless station on the Ohio State University Campus in Columbus, Ohio, operators received an SOS "SOS Hilltop . . . wants boats. Supplies will last until about tomorrow . . . send supplies . . . try to get us water and gas . . . SOS." Another message read, "Worst flood in the history of the city . . . new B&D bridge swept away."

Communications were established between the station at Ohio State University and the station at the University of Michigan, 8XA. Messages were sent out. A direct link was established with Cleveland.

As with any disaster of this magnitude, it will never be known just how many amateur stations and operators actually participated. The calls and names are lost to history.
—Larry Solak, WD8MPV □

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.

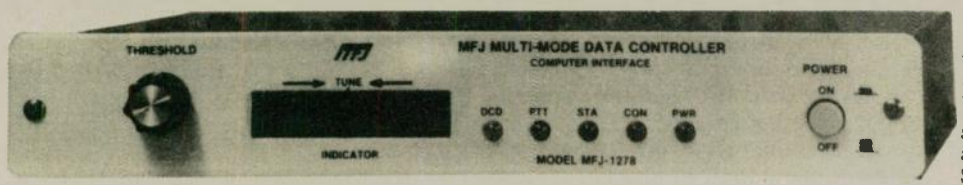
Our address is **Worldradio**, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams".

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

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

Date	City	Contact	Notes
Alaska			
Apr 2	Fairbanks	AL7IF (907) 474-0842	w/i
Apr 2	Juneau	KL7KD (907) 789-0292	w/i
Apr 6	Anchorage	KL7HFQ (907) 243-2221	w/i
Apr 20	Eagle River	KL7HFQ (907) 243-2221	w/i
California			
Mar 26	Hawthorne	(213) 540-EXAM	call first
Mar 28	Montclair	(714) 983-1272	
Mar 31	Long Beach	(213) 434-8278	call first
Apr 2	Burbank	W6JEP (818) 848-9340	w/i OK
Apr 2	San Diego	(619) 465-EXAM	p/r by 3/23
Apr 9	Camarillo	N6SR (805) 484-4461	
Apr 9	Downey	K6OWA (213) 869-6683	
Apr 9	Los Altos Hills	KG6XF (408) 255-9000	
Apr 9	San Marcos	(619) 465-EXAM	p/r by 3/30
Apr 10	Chico	W6YKU (916) 342-1180	p/r pref
Apr 10	Pleasant Hill	WX6A (408) 255-9000	w/i only
Apr 16	Chula Vista	(619) 465-EXAM	p/r by 4/6
Apr 16	Monterey	KX6D (408) 624-2564	w/i OK
Apr 16	Tehachapi	W6KQI (805) 822-6128	
Apr 17	Sunnyvale	W6NLG (408) 255-9000	w/i only
Apr 20	Eureka	KB6FIW (707) 442-9245	w/i OK
Apr 21	Fountain Valley	N6ISY (714) 775-6095	p/r; some w/i
Apr 23	El Cajon/Escondido	(619) 465-EXAM	p/r by 4:13
Colorado			
Mar 28	Boulder	N0BWS (303) 530-1872	
Apr 9	Denver	W0IJR (303) 366-9689	p/r pref
May 7	Pueblo	WB0YES (303) 948-2291	30-day p/r
Delaware			
Mar 26	Wilmington	AWARE, 3208 Concord Pike	w/i OK
Apr 23			
Florida			
Apr 16	Melbourne	WB9IVR (305) 724-6183	w/i OK
Georgia			
Apr 2	Atlanta	N4ODI (404) 927-6296	
		WA4ZJJ (404) 461-8542	w/i
Apr 3	Atlanta	WB2YAD (404) 962-9582	w/i
Apr 9	Atlanta	KI4RD (404) 469-6430	w/i
Apr 16			
Apr 24	Atlanta	WA4ABY (404) 875-9450	w/i
Illinois			
Apr 6	Granite City	N9MX (618) 344-8164	w/i OK
Apr 9	Leonore	Don Selbrede (815) 223-2848	
Apr 9	Oak Forest	NF9N (312) 448-9432	w/i OK
Apr 16	Loves Park	Gene Melton (815) 874-6867	
Apr 16	Morton	Denny Chestney (309) 662-1230	
Apr 21	Chicago	W9WBY (312) 929-6550	
Indiana			
Mar 26	Columbus	KI9R (812) 372-5006	10-day p/r
Apr 2	Indianapolis	Louise Clark (317) 241-1272	
Apr 2	Muncie	Peggie Coulter (317) 288-0481	
Apr 2	South Bend	NI9Y (219) 255-4455	w/i OK
Apr 9	Hammond	Mike Kasrich (219) 962-5512	
Apr 10	Terre Haute	K9EBK (812) 466-2122	
Apr 16	Highland	Charlie Sufana (219) 923-8308	
Iowa			
Apr 8	Sioux City	K0TFT (712) 239-3053	30-day p/r; some w/i
Kansas			
Apr 9	Olathe	NK0B (913) 764-6347	p/r pref
Apr 29	Kansas City	KC0M (913) 262-0631	p/r pref
Apr 29	Topeka	NA0F (913) 828-3317	p/r pref
Maryland			
Mar 20	Baltimore	N3RMX (301) 578-8527	
Mar 31	Takoma Park	W3QR (301) 564-0178	
		KZ3Z (301) 434-0934	w/i
Apr 2	College Park	NF3I (301) 963-4008	w/i
Apr 21	Towsen	Ron Derencz (301) 765-2843	w/i
Apr 24	Hagerstown	KC3TT (301) 824-3519	2-day p/r
Michigan			
Apr 2	Ironwood	KT9I (715) 561-2802	p/r pref
Missouri			
Apr 7	St. Charles	NF0Q (314) 946-0948	w/i OK
Apr 15	Independence	K0IXC (816) 373-8976	p/r pref
Apr 16	St. Louis	N0IS (314) 892-4434	w/i OK
Montana			
Apr 18	Billings	N7ATT (406) 656-5776	w/i OK
New Jersey			
Apr 9	Cranford	N2XJ (201) 635-7686	w/i OK
Apr 21	Bellmawr	WA2VQG (609) 546-7710	w/i OK
New York			
Apr 9	Rensselaer	K2QF (518) 462-2821	p/r
Ohio			
Apr 9	Wickliffe	KO8O (216) 256-0320	25-day p/r
Oregon			
Apr 2	Portland	Randy (503) 649-5066	w/i only
Apr 21	North Bend	WA7PHI (503) 756-6846	30-day p/r
Pennsylvania			
Apr 2	Erie	W3CG (814) 665-9124	w/i OK
Apr 7	Levittown	K3TX (215) 946-1040	
		KY3J (215) 295-5787	w/i OK
Apr 16	McKeesport	KQ3W (412) 466-5204	30-day p/r
South Carolina			
Apr 10	Charleston	AA4IX (803) 873-9645	w/i
Apr 16	Columbia	N4WR (803) 345-3373	w/i OK
Tennessee			
Apr 9	Memphis	WD4LFD (901) 386-4375	2-day p/r
Texas			
Apr 9	Midland	KT5G (915) 694-9450	w/i OK
Apr 9	San Antonio	NS5I (512) 681-0702	w/i
Apr 11	Brady	WD5H (915) 597-2561	7-day p/r
Utah			
Apr 20	Salem	KF0Q (801) 423-2506	
Virginia			
Apr 9	Williamsburg	WJ4X (808) 253-2811	p/r pref
May 7	Middletown	NC4B (703) 869-5241	30-day p/r; some w/i
Wisconsin			
Apr 16	Fox Point	KB9G (414) 351-5311	w/i OK

MFJ multi-mode data controller



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

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

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

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

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

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

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

Packet

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

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

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

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

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

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

Baudot RTTY

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

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

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

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

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

ASCII

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

CW

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

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

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

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

An AFSK CW mode lets you ID in CW.

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

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

Weather FAX

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

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

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

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

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

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

Slow Scan TV

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

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

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

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

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

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

Contest Memory Keyer

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

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

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

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

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

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

More Features

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

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

Get yours today and join the fun crowd!

FOR YOUR NEAREST DEALER
or to order call toll free
800-647-1800

One Year Unconditional Guarantee

MFJ

MFJ ENTERPRISES, INC.
Box 494, Miss. State, MS 39762
601-323-5869 **Telex:** 53-4590 MFJSTKV

MFJ . . . making quality affordable

The invisible antenna

It forever amazes me to read the griping by the hams who are not allowed to put up antennas. The bad guy is either the landlord or an unfriendly homeowners' association.

Well, my friends, let me tell you how I have outwitted both, all these years. I have never been off the air, yet I have been moved around by my company, and had to put up with some very "user-unfriendly" situations.

We're talking HF now. No rubber duckies on 40 or 80M. That's what I mean when I say I have never been off the air.

First, a review of basic antenna theory. Do you remember looking in your Antenna Handbook and seeing how a vertical antenna works? It's something like you see in *Figure 1.* A 1/4-wave vertical, fed against ground, radiates as though it were a dipole antenna with one side buried in the ground. As a matter of fact, they always show the other "imaginary" half as a dotted line straight into the ground, as I show you in *Figure 1.*

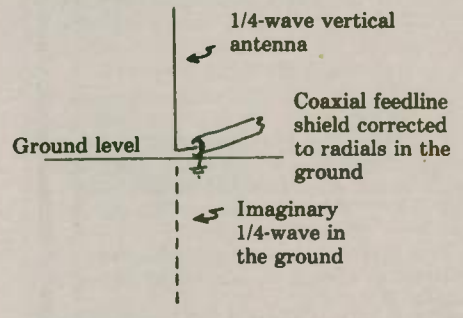


Figure 1

At one of the houses I rented, I discovered there was an old well casing in the ground. The well was unused because it was dry. I had the bright idea of connecting my coaxial cable shield to it, because I thought the casing was metal, and I expected to get a perfect ground. Well, it didn't work, because the well casing was made of some kind of plastic—a lousy conductor.

That landlord didn't mind my experimenting with antennas, and I put up a lot of different kinds. One of my experiments included dropping a weighted wire down into that dry well casing, and seeing if the vertical worked better having an honest-to-goodness wire down into the ground, instead of that dotted line. It worked, but no better than if I had put down a lot of radials.

One day, when I was taking a shower (I do my best thinking while in the shower. Other guys sing in the shower, but I think up new ideas there. But I digress . . .), I wondered what would happen if I turned that classic vertical antenna upside down, so that that dotted line "invisible" antenna was up in the air? I tried it, and *IT WORKED!*

See *Figure 2.* I lowered a 33′ (1/4-wave on 40M) wire down the well casing, and this time I connected it to the center conductor of the coaxial cable. The shield was connected to the radials as before.

I'm not going to lie to you and say that everybody thought I had connected up a new linear, but the fellows I worked regularly on a net never even

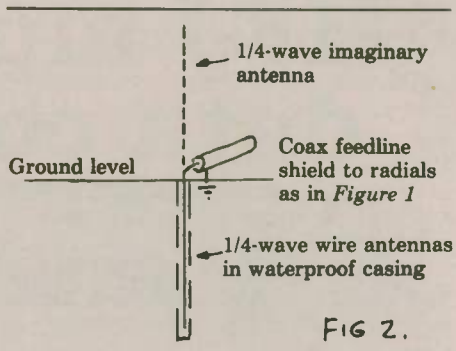


Figure 2

noticed the difference! And that was with an antenna with everything under the ground level! The only conclusion I can come to is that the dotted line "imaginary" antenna was now up in the air—and radiating!

On my next move, I bought a spiffy condo and had to sign my life away with a restrictive covenant in my deed. It didn't bother me a bit. I bought a heavy-duty electric drill and an earth auger with extensions that would let me drill a 2″ hole 33′ deep. I dropped my 1/4-wave antenna down there and hooked everything up as shown in *Figure 2.* Did it work? Nope!

When I brought my antenna wire back up, I found it all wet. Apparently I had dug a pretty good well. So, how was this different than the other one? The only answer was the water. So I bought 33 feet of 1″ PVC pipe, and carefully cemented the end closed and the splice joints watertight. I slipped this down my homemade well. It was difficult to get it to stay down, because it wanted to float out. I finally got it down the hole and fastened it to keep it from popping out of the ground. This time, when I put that 1/4-wave wire down there, it was dry—not shorted to ground. And I had the same results I had at the other place.

One thing I had always wondered about this discovery of mine. Could I patent it? I figured that if I could, I might be able to make a few bucks off it. A friend of mine who is one of those underemployed lawyers did some research for me. He discovered that the idea *had* been patented a long time ago, and that the patent will expire March 31, 1988. Wow, we're just in time. So all you antenna-less hams out there, feel free to start drilling those holes on April 1, 1988. Good luck. □

New packet book

Are you one of the many amateurs that have been wondering what all the fuss over packet radio is about? Perhaps you have been awaiting an easy-to-understand book that would answer all your questions. That publication is now here.

Now available from ARRL is the new packet book entitled *Your Gateway To Packet Radio*, by Stan Horzepa, WA1LOU, editor of *Gateway*. The 205-page publication contains 13 chapters and seven appendices.

Your Gateway To Packet Radio costs $10 plus $2.50 for shipping and handling from ARRL HQ, or your local Amateur Radio book dealer. — *ARRL Letter* □

AMSAT book coming

AMSAT's newly elected Vice President of Field Operations, Doug Loughmiller, KO5I, announced at the AMSAT-NA Symposium in Detroit that an *Area Coordinator's Handbook* is to be developed. This project is now underway, according to Ross Forbes, WB6GFJ, who is helping coordinate the project.

The purpose of the handbook is to provide all area coordinators with a good foundation of information to help them manage AMSAT activities within their local areas.

All area coordinators are urged to submit ideas for items to be included in the new handbook. Please send your thoughts to Ross Forbes, WB6GFJ, P.O. Box 1, Los Altos, CA 94023. Tnx ANS. — *Westlink Report* □

OH HARRY - - THE GENTLEMEN FROM THE ANTENNA ORDINANCE ENFORCEMENT COMMITTEE ARE HERE TO NEGOTIATE!

Riverside classes

The Riverside County ARA announces its spring series of Amateur Radio classes, to be held from March to May. The various classes are as follows:

Novice — March 8 to May 24, Tuesdays, 7-9 p.m.; Lee Brown, N6HGT (714/684-6720).

Tech/General — March 21 to May 23, Mondays, 7-9 p.m.; Arlo Myers, WA6UDR (714/686-7473).

Advanced — March 30 to May 25, Wednesdays, 7-9 p.m.; Bob Lippman, KJ6BW (714/781-6315).

Extra — March 24 to May 26, Thursdays, 7-9 p.m.; Joe Storto, WV6L (714/780-1149).

Code 5 wpm — March 25 to May 27, Fridays, 7-8 p.m.; Jerry Ver Duft, AD0A (714/351-8824).

Code 13 wpm — March 25 to May 27, Fridays, 8-9 p.m.; Horst Messmer, N6OHE (714/735-6297). □

New Product Review

KB1T 1988 calendar

Norm Brooks, K6FO

I promised to write a product review for John David, KB1T's Amateur Radio Calendar. But how can I write an unbiased review on something about which I'm definitely biased? At least, dear reader, you now know that this review is written by a slanted but enthusiastic reporter!

Last year I told you how you needed this calendar on your wall. I still say the same. I told you all of the good features and valuable information you will have at hand if you have this calendar. John has expanded the list, so there are more of them this year.

They include: All of the major contest times and dates — right in place on the calendar. He lists contest sponsors and information sources. There's a page of footnotes, expanding on information on the calendar. Moon phase, meteor shower and eclipse data are also on the calendar.

There's an ITU Zone map (75 zones) and a CQ DX Zone map (40 zones). A list of the 317 ARRL DXCC countries are related to the 75 ITU zones. Just to be different, *CQ Magazine* has 320 worldwide multipliers, and there is a table relating them to the 40 CQ DX zones.

More maps. One showing the Maidenhead Grid System for the United States, and another showing the ARRL Section and state boundaries in the U.S. FCC call areas.

If you're into contesting, there is a contest tally page, supply by VE3-BMV, which could be photocopied and used to keep track of your progress in just about any contest.

I saved the best till last. Each month there is a full-page photograph of some Amateur Radio activity. The March one is even sexy! But here's why I said I was prejudiced in favor of this calendar — I took the picture that John used for September.

The calendar sells for $9.95, including shipping and handling. Overseas price is $12. Prices go down to $8.90 (U.S.) and $11 (overseas) when ordering three or more. *SPECIAL BONUS:* After April 15, a clearance will be held: $3 off all prices listed above. □

At the 1987 International DX Convention in Visalia, California, Jim Robb, W6OUL (top photo, right), received the plaque for #1 "World" in the 1985 CQ Worldwide DX contest on behalf of the V3A contest team. Presenting the Anthony Susen, W3AOH Award to Robb is Bob Cox, K3EST. The same team is hoping to repeat as #1 worldwide again for their 1986 efforts, and also for the 1987 contest. *Bottom photo* shows the plaque.

Handheld DX with the DX Handy™

The idea of handheld DX seems far-fetched, but it's actually very simple. The DX Handy is a battery powered (six penlight AA drycells included) SSB/CW transceiver with two watts output. DX Handy can also use nicad rechargeable batteries, or be powered with 9 VDC.

Two variable crystal oscillators (VXOs), each with 50 KHz range, can be selected with a top panel switch. Crystals for 28.250 to 28.300 and 28.300 to 28.350 Mhz are included, and other crystal ranges for the 10 meter band are also available at a nominal cost.

CW operation can be by either the built-in push button or with an external key or keyer. External speaker and microphone jacks are also provided, and the telescoping antenna is included. The DX Handy also has a top panel S-meter/ output power meter and an effective noise blanker circuit. DX Handy is housed in an attractive gray metal case comparing in size to popular VHF FM handhelds.

Ten meters is coming back strong. With DX Handy all amateurs, novice to extra class, can enjoy the thrill of working handheld DX.

Specifications

General
- Frequency Coverage: Any two 50 KHz segments in the 28.0–29.0 MHz Amateur Band (28.25–28.30 and 28.30–28.35 MHz supplied)
- Frequency Control: VXO provides 50 KHz of continuous tuning with a single crystal
- Frequency Stability: Within ±500 Hz from a cold start
- Antenna: 50 Ohms Unbalanced, BNC connector
- Power Requirement: 8.4–9.0 VDC
  (Included): 6-AA Dry Cells (1.5 volt/cell) = 9.0 VDC
  (Optional): 7-AA NiCads (1.2 Volt/cell) = 8.4 VDC
- Current Drain: Receiving - Approx. 70 mA
  Transmitting - Approx. 620 mA
- Dimensions: (W) 66mm × (H) 39mm × (D) 142mm
- Weight: 710 Grams (1 lb. 9 oz.) with batteries and antenna

Transmitter
- Output Power: 2 Watts at 9.0 VDC
- Emission modes: A3J (USB) and A1 (CW)
- Spurious Emissions: More than 40 dB down

Receiver
- Sensitivity: less than 0.5 uV for 15 dB S/N
- Intermediate Frequency: 11.2735 MHz

Controls and Indicators
- On/Off Volume control Top mounted Potentiometer
- Receiver Incremental Tuning (RIT): Top mounted Potentiometer with center off detent position
- Frequency: Top mounted 50 KHz VXO
- Frequency Range: Top mounted 2-position switch
- Noise Blanker: Top mounted On/Off switch
- S/RF meter: Top mounted S/RF meter
- Built in CW key: Top mounted momentary switch
- External Speaker output: Top mounted 1/16" phone jack
- External Microphone input: Top mounted 1/8" phone jack
- Antenna Connector: Top mounted Female BNC
- Transmit Indicator: Top mounted Transmit LED
- Push-To-Talk: Side mounted momentary switch
- External Power: Bottom mounted 2.1 mm coaxial
- External key input: Bottom mounted 1/8" phone jack
- Mode Selector Switch: Bottom mounted 2-position switch
- Charge/External Power: Bottom mounted 2-position switch selecting 12 VDC external power function

AEA
Advanced Electronic Applications
P.O. Box C2160
Lynnwood, WA 98036-0918
(206) 775-7373

AEA Retail $379.95 **Amateur Net $319.95**

Specifications and prices subject to change without notice or obligation.

Maxcom replies

Regarding the section entitled "Comments on Maxcom," page 41 of the March '88 issue, I would like to say that as the manufacturer of Maxcom automatic antenna matchers, I was not told who was going to perform the testing of our two units when I submitted them to *73 Magazine*. Therefore, I enclosed a note in the box requesting that the reviewer call me before testing began. No one ever called me.

If Arliss N. Thompson had called me, not only would he have found me to be a delightful person, but he would have also learned that the Maxcom device does *not* work well with a resonant length of wire. The 128′ dipole is seen resonant in the 80M band, and the 70′ dipole is seen resonant in the low end of the 40M band. By lengthening both dipoles a few feet, better results would have been obtained.

Thompson also stated that an alternative antenna could be a Barker & Williamson wide-band folded dipole. I wonder how he might install one of those antennas on a sailboat, motorboat, airplane, motor vehicle or from a hotel window? Maxcom is used successfully in all of these configurations.

SONNY IRONS, President
Maxcom, Inc.
Ft. Lauderdale, Florida □

COCO software info

Quite a stir was raised on my recently published "rebuttal" letter (September 1987, page 26) about a previous **Worldradio** article on "Picking a computer" (October 1986, page 40), written by an amateur who was obviously biased in favor of the popular Commodore 64 Computer.

My rebuttal attack was not directed so much at the person who wrote the original article, but at the myth out there that more Amateur Radio software has been written for the C64 than any other computer. I strongly stated that Radio Shack's TRS80 Color Computer models (I, II and III), over the past six or seven years, have clearly dominated the Amateur Radio software market.

I received nearly 100 letters of support for my corrective statements from loyal COCO **Worldradio** readers. I even received about a dozen or so from C64 owners who admitted that, despite the original author's claims, they had found little in public domain Amateur Radio-type programs.

Just so a few don't think I am once again "tooting my own whistle," I forwarded a number of these letters to **Worldradio's** publisher—Armond Noble, N6WR—along with this article. All who wrote to me have been mailed lists and availability of hundreds of Amateur Radio programs for the COCO as promised. A legal-size SASE, brings **Worldradio** readers a prompt reply. Please write "COCO software information" clearly across the front of your envelopes.

MIKE STONE, WB0QCD
804 Jefferson Ave.
Lowden, IA 52255 □

Bakers say 'Thanks'

In re: "Congratulations, "February 1988, page 25

Scott Baker, WD6DLL, and his wife Margie, send their sincere thanks to all who sent congratulatory cards and letters for their 50th wedding anniversary.

RICHARD RANDALL, K6ARE
Livermore, California □

Reunion a success

I just wanted to follow up on my letter of last July (page 24). "Search for radio pals" was about my effort to locate ham friends from my hometown that I knew as a teenager, in order to set up an on-the-air reunion.

Many hams responded to your story and a "stray" in *QST*. Some were my "missing" friends; others offered their kind help in finding new calls and addresses in the Buckmaster list.

It took a few months, but I was able to locate 18 updated calls and addresses. I wanted to pursue the idea of a reunion, but with the people scattered from coast to coast, I wanted to limit the number of back-and-forth letters to a minimum.

I determined that the weekend of September 26-27 would be relatively light with regard to contest activity and selected Sunday, September 27 as the target day. I picked a time, frequency and mode that I hoped would accommodate most people. Thus, the default schedule was September 27, at 1700 UTC, on 14.283 USB.

I sent each one on the list a letter with the schedule information along with a copy of the names, calls and addresses of the group. In addition, I included a postpaid postcard where they could enter their call, telephone number and check off a square next to the statements: I will check in!; I cannot make it that day; I cannot participate.

Within weeks I had confirmations from 11 of the 18, and at least six who said they could make it. So, on September 27 at 1700 UTC, the "Great Laurelton Ham Radio Reunion" began.

All together there were seven check-ins. We did a round-robin format in which we tried to bring each other up to date on the ensuing 25 or more years. The session went on for well over an hour and we ended agreeing that we enjoyed ourselves and are looking forward to the next reunion. I hope next time that more of the 18 will be able to "attend."

Thanks for your help in our arranging what was certainly an unusual use of Amateur Radio.

ROB BROWNSTEIN, NS6V
Santa Cruz, California □

MARA-thon nets 303

Do you know of any other swapnet that may have had more than 300 check-ins in one evening? On November 1, the Courage Center HANDI-HAMS (W0ZSW) and the Metro Area Repeater Association (MARA) sponsored our 1987 Official MARA-thon Net.

Our net is on every Sunday night at 7 p.m. on 146.25/85, WD0HWT repeater. This repeater is the largest in the state of Minnesota; we have six receive sites and our transmitter is on top of the IDS Center. We have Westlink Report, general announcements, then buy, sell, trade and giveaway of Amateur Radio-related equipment.

On our MARA-thon night we went for nearly four hours and had 303 check-ins, and QSL's and SWL's from many who were just listening on scanners.

This is the second year we ran a MARA-thon Net; most nights the net runs 1-1½ hours. No prices are given on the air and all phone numbers are given with area codes because of the large area covered. Check-ins from Minnesota, Wisconsin and Iowa are very common.

Any information you may have on this would be very much appreciated.

AVERY M. FINN, K0HLA
P.O. Box 53
Hopkins, MN 55343 □

• • •

WHEN PURCHASING GOODS, SAY YOU SAW IT ADVERTISED IN **WORLDRADIO.**

Silent Keys

George Hickin, W4GH

George "Kel" Hickin, W4GH, died on the evening of February 13 after a long illness. He had been responsible for making **Worldradio** available on cassettes for the blind for 10 years.

Kel was born in Michigan, where he received a degree in chemical engineering in 1932. He worked for the Freeport Sulphur Company in 1933; with B.F. Goodrich in 1942, working on process design on synthetic rubber; was involved in process design and startup operation of a continuous Vitamin B-2 plant in New Jersey for Merck and Company in 1945; and with American Cyanamid. His original work includes a patent on the "Rapid Particle Size Analyzer," of which he was co-inventor. He retired from Freeport Sulphur in 1975.

Kel began in Amateur Radio in 1945 as W2OUT. In 1952 he held the call K5OAG, W4GKR in 1964, and W4GH after moving to Macon, Georgia.

The May 1977 issue of **Worldradio** carried a notice that I was looking for assistance in duplicating and distributing **Worldradio** for the blind. One reply seemed to jump up at me, almost telling me this was the person I wanted. Kel began with a handful of blind amateurs, then several dozen, then through the hundred mark — always finding ways to keep up with the volume. Enough donations came in that we could buy a high-speed duplicator which he used as we neared 300 "customers."

The *IMRA News* profiled him, saying, "[In retirement] he began to reach out to others. For 40 years he had enjoyed Amateur Radio ever since he got his first ticket back in Akron so he could help with Civil Defense. He now turned his attention toward making life more pleasant for amateurs who were blind."

Kel himself said, "This volunteer work for the blind has brought me joy in my retirement, as well as some unsought surprises. In 1981, I was awarded 'Amateur of the Year' by the Georgia SSB Association. The work keeps me happy in my retirement and is spiritually of benefit."

He continued to work on the **Worldradio** project long after a series of strokes had left him unable to communicate. His step-daughter wrote to me and said, "Keller was so dedicated to this project. A note dated 1982 is attached to the inside of his work cabinet door. It instructs on the disposition of the equipment and materials for the project and states emphatically, 'The work must go on.' "

The family requests donations in his memory be made to the **Worldradio** cassette project, in care of Tom Carten, Box 1602-L, King's College, Wilkes-Barre, PA 18711. — *Tom Carten, K1PZU* □

George "Kel" Hickin, W4GH

Lou Tommasini, WB6JQA

Lou Tommasini, WB6JQA, passed away on November 17, 1987. "There went one of the grand old men of Amateur Radio" was one of the comments I heard later on 2M.

Lou was born in Greenfield, California on September 10, 1900. His father was Swiss-Italian, and Lou loved to invoke his Ticinese heritage: "You can tell a Swiss a mile away, but up close you can't tell him nothing."

One of his early capers, frequently recalled, was burning down a barn (accidentally, we have to assume). With his inventive mind and hands, he preceded the mobile living quarters by many years — he built a bicycle trailer that he could haul into the fields so he could sleep between checking the irrigation water in the rows (honest! — I've seen a picture of it).

The home ranch is now appropriately the world-renowned Jekel Vineyards; one day we enjoyed their tasting and then proceeded to have a rather extended and hilarious tasting of our own in the park.

Lou remained in the Greenfield area all his life. His only travels were some motorcycle tours and his military service in WWII. Some of his most

(please turn to page 22)

P.C. ELECTRONICS 2522 S. PAXSON LN. ARCADIA CA 91006 (818) 447-4565
TOM W6ORG MARYANN WB6YSS Compuserve 72405,1207

ELECTRONICS

SEE US AT DAYTON

$269*

AMATEUR TELEVISION

SPRING INTO ATV SALE

NOW YOU CAN GET INTO THIS EXCITING MODE WITH OUR ALL IN ONE BOX TC70-1 70CM ATV TRANSCEIVER AT THE 1988 SPRING SALE REDUCED PRICE FROM $299 TO ONLY $269 DELIVERED

TC70-1 FEATURES:

* Sensitive UHF GaAsfet tuneable downconverter for receiving
* Two frequency 1 watt p.e.p. transmitter. 1 crystal included
* Crystal locked 4.5 mHz broadcast standard sound subcarrier
* 10 pin VHS color camera and RCA phono jack video inputs
* PTL (push to look) T/R switching
* Transmit video monitor outputs to camera and phono jack
* Small attractive shielded cabinet - 7 x 7 x 2.5"
* Requires 13.8vdc @ 500 ma. + color camera current

Just plug in your camera or VCR composite video and audio, 70cm antenna, 12 to 14 vdc, and you are ready to transmit live action color or black and white pictures and sound to other amateurs. Sensitive downconverter tunes whole 420-450 mHz band down to channel 3. Specify 439.25, 434.0, or 426.25 mHz transmit frequency. Extra transmit crystal add $15.

*Transmitting equipment sold only to licensed radio amateurs verified in the Callbook for legal purposes. If newly licensed or upgraded, send copy of license. Receiving downconverters available to all starting at $39 (TVC-2).

WHAT ELSE DOES IT TAKE TO GET ON ATV?

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.

DX with TC70-1s and KLM 440-27 antennas line of sight and snow free is about 22 miles, 7 miles with the 440-6 normally used for portable uses like parades, races, search & rescue, damage accessment, etc. For greater DX or punching thru obstacles: 15 watt p.e.p. Mirage D15N or 50 watt p.e.p. D24N or D1010N-ATV.

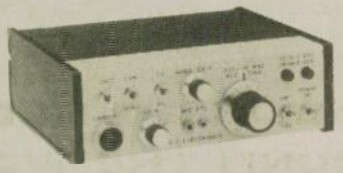
The TC70-1 has full bandwidth for color, sound, like broadcast. You can show the shack, home video tapes,computer programs,repeat SSTV, weather radar, or even Space Shuttle video if you have a home satellite receiver. See the *ARRL Handbook* chapt. 20 & 7 for more info & *Repeater Directory* for local ATV repeaters.

PURCHASE AN AMP *WITH* THE TC70-1 & SAVE!
50 WATT WITH D24N-ATV....$469
All prices include UPS surface shipping in cont. USA

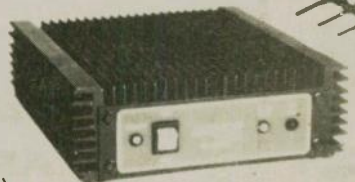
COMPLETE ATV STATION

YOUR TV SET

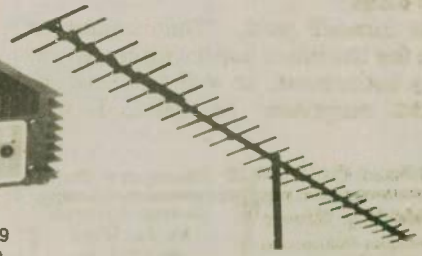
YOUR HOME TV CAMERA



TC70-1...$269 (until June 1)
ATV Transceiver



Mirage D15N.....$119
(optional) 15 watts RF out.
Mirage D24N.....$219
(optional) 50 watts RF out.



KLM 440-27 14dbd $107
KLM 440-10X 11dbd $65
KLM 440-6X 8.9dbd $51

HAMS! CALL (818) 447-4565 NOW OR WRITE FOR YOUR SPRING SALE CATALOG OF ATV PRODUCTS

Silent Keys *(from page 20)*

delightful recollections were of the traveling still that he and his close friend hauled from place to place during Prohibition to produce custom-made moonshine. He worked in trucking and then as a mechanic for Basic Vegetable Products in King City until retirement.

He was still a private pilot in his spare time. He loved to tell about the time he flipped an aircraft on the ground with a cousin aboard. When he could no longer pass the pilot's eye-

Lou Tommasini, WB5JQA

sight test at age 67, he searched around for other pursuits and landed on Amateur Radio.

His story is that he went to San Francisco five times to take the test and was finally passed because they were tired of seeing him. He was originally active on HF and was a member of the Western Public Service System. When repeaters proliferated, he got on 2M.

He was a Charter Life member of the Williams Hill Amateur Radio Relay Society, the Fremont Peak Repeater Association and the Monterey County ARES/RACES. During the Marble Cone Fire in 1977, we put a repeater in his living room so we could communicate from King City into the depths of the Arroyo Seco fire camp.

Outwardly, Lou may have seemed diffident and shy, but in person he was a warm, hospitable gentleman with an outrageous sense of humor always tempered by his innate old school courtesy and grace. He was a "pot stirrer" — almost anything went to liven up a conversation or a QSO. He called me "torbellino" which he defined as one who creates turbulence. I really think it was a case of it takes one to know one.

He had a very inquiring mind coupled with mechanical inventiveness. He built his own metal lathe and then proceeded to use that lathe to build a model working steam engine from scratch, complete with whistle.

Lou is survived by his wife, Margaret, KA6EVC. All who knew him miss him. I shall miss our encounters: "C'mon in Paa-squal-ee and you and the Missus have a glass of Ruby Red." And we always had two or three. — *Ed Gribi, WB6IZF* □

Hans Brand, N6OAG

Hans Brand, N6OAG — of Willits, California — passed away December 1, 1987, at the age of 86.

A native of Switzerland (born May 7, 1901), was a self-employed ornamental iron worker for 40 years, and a veteran of the Swiss armed forces. He is survived by his wife of 56 years — Carmen, WR6C; son John, K6WG; and two grandchildren. — *Carmen Brand, WR6C* □

FCC Highlights

(continued from page 8)

acquired skills of the Novice are diminished. The FCC concluded its reasons for denial with: "On balance, it appears that the application processing period is not unreasonable." (The processing time has been reduced to a normal of about three weeks for Novice licenses.) (*ARRL Letter*, 02/01/88)

•

The FCC Los Angeles office has moved to: 18000 Studebaker Rd., Rm. 660, Cerritos, CA 90701. Phone (213) 426-4451. (*ARRL Letter*, 12/31/87)

•

A new Extra Class exam question pool has been completed and released as of March 1, 1988, but will not be used until November 1, 1988. "Fifty questions were deleted from FCC PR1035D, 38 new questions have been written, and many have been reworded. The new question pool will not be revised again for three years except to correct typographical errors and provide FCC rule updates." (*ARRL Letter*, 01/15/88)

•

A few good volunteers are still being sought for the Amateur Auxiliary to the FCC's Field Operations Bureau. Some of the purposes of the Auxiliary are: Extending the concepts of self-regulation and self-administration of the Amateur Radio Service; Enabling the Field Operations Bureau of the FCC to efficiently and effectively utilize its manpower and resources.

For further information, contact Luck Hurder at ARRL HQ, 225 Main St., Hartford, CT 06111; (203) 666-1541. (*ARRL Letter*, 01/15/88)

•

The FCC allows an exception to the two-year grace period for application for renewal of an expired amateur license. While page 2 of Form 610 specifies a two-year period, in actual practice "... FCC allows a five-year grace period—at least until the last of the old five-year-term ham tickets expire in January of 1989. While the operator license can be reinstated if it has been expired less than five years, you lose your previous call sign after two years." (*W5YI Report*, 02/01/88)

•

Amateur license testing teams which need more than 200 Form 610's can obtain them at: FCC Services and Supply Branch, Rm. B-10, 1919 M St. NW, Washington, D.C. 20554. (*W5YI Report*, 02/01/88)

•

END-OF-MONTH LICENSE TOTALS

November	1987	December
43,608	Extra	43,902
98,383	Advanced	98,610
114,396	General	114,398
92,618	Technician	93,466
82,296	Novice	83,013
431,301	Totals	433,389

DAYTON Hamvention®

April 29, 30, May 1, 1988

Early Reservation Information

- **Giant 3 day flea market • Exhibits**
- **License exams • Free bus service**
- **CW proficiency test • Door prizes**

Flea market tickets and grand banquet tickets are limited. Place your reservations early, please.

Flea Market Tickets
A maximum of 3 spaces per person (non-transferable). Tickets (valid all 3 days) will be sold IN ADVANCE ONLY. No spaces sold at gate. Vendors MUST order registration ticket when ordering flea market spaces.

Special Awards
Nominations are requested for "Radio Amateur of the Year", "Special Achievement" and "Technical Achievement" awards. Contact; Hamvention Awards Chairman, Box 964, Dayton, OH 45401.

License Exams
Novice thru Extra exams scheduled Saturday and Sunday by appointment only. Send FCC form 610 (Aug. 1985 or later) - with requested elements indicated at top of form, copy of present license and check for $4.35 (payable to ARRL/VEC) to: Exam Registration, 8830 Windbluff Point, Dayton, OH 45458

Hamvention Video
VHS video presentation about the HAMVENTION is available for loan. Contact Dick Miller, 2853 La Cresta, Beavercreek, OH 45324

1988 Deadlines
Award Nominations: March 15
Lodging: April 2
License Exams: March 26
Advance Registration and banquet:
USA - April 4 Canada - March 31
Flea Market Space:
Orders will not be processed **before** January 1

Information
General Information: (513) 433-7720
or, Box 2205, Dayton, OH 45401
Flea Market Information: (513) 898-8871
Lodging Information: (513) 223-2612
(No Reservations By Phone)

Lodging
Reservations received after Housing Bureau room blocks are filled will be returned along with a list of hotel/motels located in the surrounding areas of Dayton. The reservation will then become the responsibility of the individual.

HAMVENTION is sponsored by the Dayton Amateur Radio Association Inc.

(PLEASE SEPARATE)

Lodging Reservation Form

Dayton Hamvention - April 29, 30, May 1, 1988
Reservation Deadline - April 2, 1988

Name _____

Address _____

City _____ State ____ Zip _____

Phone _____

Arrival Date _____
[ ] Before 6 pm [ ] After 6 pm

Departure Date _____

Rooms: [ ] Single [ ] Double (1 bed, 2 persons)
[ ] Double Double (2 beds, 2 persons)

Deposit required - Room deposit must be paid directly to the hotel or motel by date shown on the confirmation form sent to you. Use canceled check for confirmation.

Mail to - Lodging, Dayton Hamvention, 1880 Kettering Tower, Dayton, OH 45423-1880

Advance Registration Form

Dayton Hamvention 1988
Reservation Deadline - USA-April 4, Canada-March 31

Name _____

Address _____

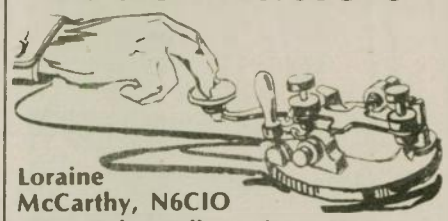
City _____ State _____ Zip _____

	How Many		
Admission (valid all 3 days)	_____	@ $8.00*	$_____
Grand Banquet	_____	@ $16.00**	$_____
Women's Luncheon (Saturday)	_____	@ $6.75	$_____
(Sunday)	_____	@ $6.75	$_____
Flea Market (Max. 3 spaces)	_____	$23/1 space $50/2 adjacent $150/3 adjacent	$_____
Admission ticket must be ordered with flea market tickets		**Total**	$_____

* $10.00 at door ** $18.00 at door, if available

Make checks payable and mail S.A.S.E. to - Dayton Hamvention, Box 2205, Dayton, OH 45401

Code Matters



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

This month, let's take a look at some recent and frequently-asked questions that I receive from students.

The most common question lately has been: "My test is in two weeks — I'm close to 13 wpm, but how can I improve more rapidly?"

The best way to do this, in addition to your regular daily practice schedule, is to simulate the exam conditions as closely as possible when you practice. First, copy a five-minute QSO and then do not listen to the answers at that time. Make yourself some 10-question tests (two or three versions) and make copies. Each time you copy a QSO, give yourself a simple test. Are you scoring a consistent 70% or better? Always see if you can find all the "bits of information" that could be potential answers. When you have completed this work, reverse roles and grade your test as if you were the examiner. This attention to the detail in your work will improve your test readiness.

Another frequent question is: "I copy random code at 15 wpm almost perfectly, but when I copy 13 text I only get 20-30%. Why?" This is a fairly common situation. When copying random, we know it's random, and therefore do not try to anticipate or read words during the copying process. When the student knows he is going to be copying text, there is a natural process to try to "read" while copying.

The technique is to be able to copy the code letter by letter. Practice the mental exercise of telling yourself before each practice session the following: *I will copy letter by letter and if I miss a letter I will write the next letter I hear and keep going.* By saying this before each practice session, it helps you to focus. This, plus the sample test procedure described earlier, will help to remedy this problem as we practice.

One other question asked by students is in reference to the Extra code exam: How hard is it, how long does it take to prepare, and is it harder or easier than the General preparation?

On an average, it takes the student who copies 13 wpm well about eight weeks to prepare for the Extra code exam with about 45 minutes a day of practice. Of course, this varies from person to person.

Once a person has decided to go for the Extra and made the commitment, it is usually easier than the General preparation for two reasons. First, the student has already developed good skills and practice habits to pass the General exam, and he can use these in his preparation for the Extra. Secondly, the student does not usually feel the same pressure to pass the Extra as the General because he already has the worldwide voice frequencies. So, if you were successful on the General and would like to be an Extra — go ahead and give it a try!

Let's look at one other student question this month. One student wrote: "I have difficulty finding the answers even though my copy is fairly good. I do miss some letters, and my spacing is not always correct."

The thing to remember here is to look for "key words." First find the word or words that tell what the sentence is about. Then look for the answer. Key words are those such as receiver, watts of power, temperature, occupation, class of license, antenna, age, etc. Remember also to draw vertical lines between words, and this will help correct spacing errors.

If you have any questions you would like to ask about your code exam preparation, please write to me.

Here at Radio School we have sample exam tapes at 5, 13 and 20 wpm. Also available are random tapes for 5-7, 13-15 and 20-22 wpm. If you have an IBM or compatible computer, I carry a disc called Morse Tutor which will provide you with code practice up to 100 wpm!

Single code tapes are $9.95 plus $1 P&H and the disc is $20 plus $2 P&H. These items can be ordered directly from me: Loraine McCarthy, N6CIO, Code Programs Manager, 315½ Ruby, Balboa Island, CA 92662. □

AWARDS

FAR scholarships

The Foundation for Amateur Radio, Inc., a non-profit organization with headquarters in Washington, D.C., plans to award 28 scholarships for the academic year 1988-89 to assist licensed radio amateurs.

The foundation, composed of 50 local area Amateur Radio clubs, fully funds six of these scholarships with the income from grants and its annual hamfest. It administers — without cost to the donors — seven scholarships for the Quarter Century Wireless Association, two each for the Dade (Florida) Radio Club, the Baltimore (Maryland) ARC, the Department of State ARC, the Amateur Radio News Service, the 10-10 International Net, the Radio Club of America and one each for the Richard G. Chichester Memorial, the Young Ladies' Radio League, the Columbia (Maryland) ARC, the Frederick (Maryland) ARC and the Vienna (Virginia) Wireless Society.

Licensed radio amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled or have been accepted for enrollment at an accredited university, college or technical school. Some of the scholarships require the holding of at least an FCC *General* Class license or equivalent.

The awards range from $500 to $2,000, with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs.

Additional information and application forms can be requested by letter or QSL card, postmarked prior to May 31, 1988 from: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740.

The Foundation for Amateur Radio, incorporated in the District of Columbia, qualifies as a non-profit organization under Section 501(c)(3) of the Internal Revenue Code of 1954. It is devoted exclusively to promoting the interests of Amateur Radio and those scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service. □

Repeated failures

Larry Goosby, AA4JI

If you find that one semiconductor fails repeatedly, it could be that it was of marginal design for the application it's in. It may be operating too close to, or even above, its designed voltage, current or ambient operating temperature.

A simple fix in a situation such as this is to replace the problem device with one that has higher voltage or current and *ambient* temperature specifications. Or in the case of excessive heat, you might think of increasing the size of the heatsink or install a heatsink where there is none. — *North Florida ARS, Jacksonville* □

K2SE named 'Elmer-of-the-Year'

Edwin G. Solov, K2SE, a recent Silent Key, was named "Elmer-of-the-Year" in Northern New Jersey by the NNJ Chapter of QCWA at its annual dinner meeting on October 23. The presentation of plaques was made to Joan, his widow, and Bruce, KB2EGP, his son who is following in his father's footsteps in Amateur Radio.

Ed Solov was not only an outstanding "Elmer" who had taught radio courses at Wayne Valley High School's adult education program and to members of the Boy Scout Explorer Post in Wayne, but a dedicated leader in the public service aspects of Amateur Radio. Ed was an "Elmer" because he followed through and saw that his graduates got on the air. He lent new hams equipment, helped put up antennas and answered the thousand-and-one questions asked by newcomers to this hobby.

K2SE served as ARES Emergency Coordinator for Passaic County, New Jersey for 11 years. He was chairman and a founder of the Ramapo Valley Emergency Net (RAVEN), a net which provides an emergency intercom network for towns in the flood-prone areas of northern New Jersey. Ed was also a traffic handler and involved in public service activities ranging from local 'thons for charitable groups to serving as medical NCS for the New York City marathon.

The Northern New Jersey Chapter, QCWA, which established its "Elmer" Award in 1982, presents two plaques annually. One is a rotating plaque engraved with the names of each year's winner; the other is a permanent memento of having been so honored. — *Carl A. Felt, Jr., N2XJ* □

QUARTER CENTURY WIRELESS ASSOCIATION INC.

Esther Given, W6BDE

QCWA Marin-Sonoma Chapter 161 is currently celebrating its first birthday and is to be congratulated on its organization and active membership. This picture taken when their charter was presented shows left to right: Director Leo Bodian, K6BAQ; Director George Klein, WR6D; Vice President Len Spencer, WA6CBQ; President Hugh Turner, W6SCV (mayor of Novato); Scribe Lola Humphries, N6GLI; Secretary/Treasurer Bill Humphries, W6ZUB.

Not too long ago in the transportation industry, radio was an entertainment novelty rather than a scientific boon to public safety.

Vince Quayle, W9BFU, recently had an article in *QCC News* that should interest both radio and train buffs. Entitled "Radios Aboard the Limiteds," it describes the fierce travel competition following WWI and how major railroad companies stressed speed and on-board luxury to attract passengers in the '20s and '30s. Bearing such memorable names as *20th Century Limited, Broadway Limited, Pioneer Limited* and *California Limited*, these rolling hotels offered many amenities, not the least of which were broadcast radios installed in parlor, observation and lounge cars.

Antennas were on the roof of each radio-equipped coach. Their range of reception — like the name of their carrier — was "limited," but the handsome cabinets and novel sounds coming from them were certainly impressive and added glamour to the train trip.

Over the past 70 years, train speeds have remained about the same, and tourists are still being enticed to see the country from an Amtrak window. Today's travelers can thank Amateur Radio for spawning pioneers whose vision made electronics such a vital factor in operating modern railway systems safely and efficiently.

•

The Quarter Century Wireless Association (QCWA) awarded its first scholarship 10 years ago. The scholarship program had been initiated the previous year at the QCWA National Convention in Seattle and already had sufficient funding to make a $500 award.

Thanks to the tireless efforts of Director Leo Meyerson, W0GFQ, and the generosity of QCWA members and chapters, the scholarship program has grown to a self-sustaining perpetual fund for annual scholarship presentation. Last fall, 10 years down the line, the QCWA Board of Directors voted to award seven $700 scholarships in 1988 (almost 10 times the original gift). Five of these are from the general scholarship fund; one is a Silent Key memorial to Robert S. Cresap, W9LRI, contributed by his family; and the seventh, newly established to commence this year, is The Leo Meyerson Family Living Scholarship.

QCWA Scholarships are administered by the Foundation for Amateur Radio (FAR), an organization which processes, screens and administers scholarship awards for several Amateur Radio organizations at no cost to the donors. Applicants receive a special fringe benefit through FAR's handling of 28 scholarships because one application makes them eligible for any award FAR handles if the applicant qualifies for the varied requirements. Awards for 1988 range in value from $500 to $2,000.

QCWA scholarships are available to young amateurs with at least General Class licenses or equivalent, who are enrolled in or accepted for enrollment in an accredited college, university or technical school. One special requirement for a QCWA scholarship is that the applicant must be sponsored (recommended) by a QCWA member in good standing. There are no restrictions on courses of study or applicant's geographical location.

Qualified young people in or intending to enter fields of full-time study beyond high school level as outlined above, are urged to make early contact with: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740. Inquiries may be mailed now or in time to be received by May 31, 1988.

FAR will send complete information on the number and kinds of scholarships available in 1988, specific requirements or restrictions of various donors and application forms. FAR must receive completed applications by its deadline, June 30, 1988. Awards are usually announced in mid-August.

Young people in full-time pursuit of higher education are encouraged to become aware of these valuable awards, and QCWA members are urged to sponsor worthy and deserving young people for scholarship consideration.

•

After many years of not being

(please turn to page 28)

ALINCO ELECTRONICS INC.

20705 South Western Ave., Suite 104 Torrance, CA 90501 • (213)618-8616

Dual Bander

Tiny, Tough & Terrific

2m/70cm Dual Band
Mobile Transceiver

ALD-24T

140mm (W) x 50mm (H) x 164mm (D)
5½" (W) x 2" (H) x 6½" (D)
Smallest Dual Band
Transceiver Available

With ALINCO's advanced engineering and technology, the ALD-24T 2m/70cm Dual Band Mobile Transceiver is designed to be the ultimate in compact size with an impressive array of features, allowing maximum flexibility in installation and ease of operation.

- 140-149.995 Mhz/440-450 Mhz
- CAP and MARS compatible
- 25 Watt High - 5 Watt Low Power both bands
- 21 Memory Channels
- Dual VFOs
- Large LCD
- **CTCSS Encoder/Decoder: Standard**
- 16-Key Autopatch Microphone with Up/Down Buttons
- Programmable Band Scan
- Memory Scan and Memory Lockout
- Ultra Compact & Light Weight
- Simple to Operate
- Programmable Standard and Non-Standard Repeater Offset

* Many more features, see your Dealer!
Also available:
25WATT 2m, 45 WATT 2m
and 25 WATT 450 MHZ.

*ALL ALINCO Products carry a 2-year Factory Warranty.
See your favorite dealer, listed below, for full details.*

Alinco's products are available at these fine dealers:

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

Canadian Distributor:
Texpro Sales Inc.-Burlington, Ontario
416/332-5944

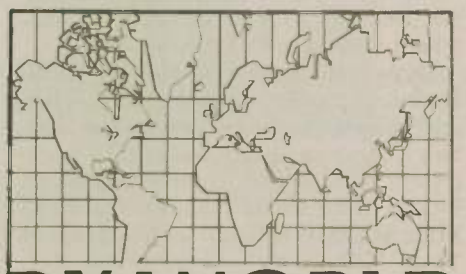
QCWA

(continued from page 26)

"aired," QCWA's club call W2MM will be heard in the spring QSO parties. W2MM is a memorial call originally held by Earl Thomas, a past president of QCWA 1965-1968. Herb Gleed, W6FQ, the organization's popular phone net control will be active on both the CW and SSB portions of the QSO Party using W2MM/6.

Special 40th anniversary QSL cards will be available to any member working W2MM/6. Participants wishing one of these QSL's should send their QSL card to: QCWA Activities Manager, Onie Woodward, W1ZEN, 14 Emmett St., Marlboro, MA 01752. When received, that QSL will be checked against W2MM/6 logs. If entries match, the special QSL card will be mailed to the applicant.

NOTE: This announcement comes late, so members who participated in the QCWA CW QSO Party February 13-14 are advised to check back on that month's log to see if they worked W2MM/6 and are eligible for the special QSL. The Phone QSO Party will begin 0001 UTC, Saturday, March 12, ending 2400 UTC, Sunday, March 13. □



DX WORLD

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

Activities Calendar

02-03 Apr PZK SP DX Contest (CW)
22-24 Apr SCDXC Visalia International DX Convention
23-24 Apr USKA Helvetia H-26 Contest

W-100-N

Applications have dropped off for **Worldradio's** Worked 100 Nations Award and only one was received this period.

327. DK4SY Adolf H. Keppler

The cost of this award is only $5, and one need not submit the QSL cards, although you must have the required cards in your possession. The award is not a repeat of DXCC and applies to nations only, (i.e., Hawaii, Alaska and Puerto Rico all count as United States, etc.).

***FLASH:* The pre-registration deadline for the Visalia DX Convention has been extended to March 31.**

Spratly Islands (1S)

Inside DX reports that Loren Peterson, K6EDV, states that the mid-March DXpedition to the Spratly Islands is a tentative one. The transportation is to be provided by the Philippine military. Calls for the operators on the team include DU9RG, DU1JMG, K6EDV, W6OSP and ZL1AMO. Also, several other Philippine amateurs are expected to attend. Credit for this DXpedition will go to the Philippine ARC.

The Philippines are just one of the countries that lay claim to this group of islands in the South China Sea. Viet-Nam and China also claim the islands. In the past, the trick was to land on an unoccupied island. If you remember, the last two DXpeditions were scary, including the death of a West German DXer.

This DXpedition should prove no problem as they will operate from an island occupied by the Philippine

government. Nothing has been said about the call. There is no official prefix for this DXCC country. The DX community adopted the unofficial prefix of 1S. Perhaps they could choose 1S9RG, as 1S1 and 1S6 have been used in the past.

Qatar (A71)

At the first of the year, A71BJ was busy near 14.176 MHz from 1500 UTC, but nothing has been reported on him since then. Let's hope he will drop by again soon.

Pakistan (AP2)

A few stations have been reported from this one with several reports for AP2SQ. Look for this one between 14.172 and 14.212 MHz after 1530 UTC. This station is also active on RTTY near 14.085 MHz. Look for him between 1330 and 1430 UTC.

Also from Pakistan, four other stations have been reported recently and all on 20M SSB:

AP2ASA	14.210	1430
AP2MQ	14.195	0230
AP2SA	14.173	1330
AP2ZA	14.211	1400

Depending on where you are located, try checking both short and long path to this one. The path here on the West Coast is the long path after 0200 UTC.

Liberia (EL)

Several stations in Liberia were reported during the month of January. 20 and 15M is the best bet for this one, although activity does show on the other bands such as that of EL2CU reported on 7.011 MHz around 2345 UTC.

On 21.260 MHz, EL2BA has been reported to be fairly active showing around 1900 UTC and workable from both the East and West Coasts. Also on this band, EL2CY has been found on 21.215 MHz around 1800 UTC with EL2FM further up at 21.226 MHz at 1845 UTC. *Inside DX* reports that EL8BS is workable on 21.231 MHz around 1900 UTC.

We have seen a report for an EL2RL and an EL7RL, both on 14.187 MHz around 2100 UTC on January 7. Probably the same station with one of the reports wrong, but which one?

If you are looking for a CW contact, try EL2MS, who has been worked near 14.025 MHz after 0001 UTC, or EL2/EL6D on 21.044 MHz at 1630 UTC.

Guinea-Bissau (J5)

The Italian DXpedition to Guinea-Bissau is now history. The team — whose calls included IT9AZS, IT9PHY, IT9JNT, IT9WDC and I2RLX — operated from all bands, both CW and SSB, using the call J50AS. They also made a mini-DXpedition to the Bijagos Islands where they signed J56AS.

Dave Heil, K8MN, at the American Embassy, has received the call J52US, and expects to be active for the next two years, including some RTTY activity. J52US has been reported at 14.020 MHz around 2230 UTC, 14.155 MHz at 1330 UTC and 21.270 MHz at 1745 UTC.

Western Sahara (SØ)

As this one is now another new country on the DXCC countries list, the activity has been represented by SØRASD and SØ1A. This country is La Republica Arabe Sabaraui Democratica (RASD); the SØRASD call was once part of Spanish Sahara and the deleted DXCC country of Rio de Oro.

Long Skip reports that SØRASD usually visits the various net frequencies on 20M between 1700 and 2100 UTC. The operator's name is Naama, who speaks no English. He has also been reported on 3.789 MHz working into the Maritime provinces.

Inside DX states that the recent lack of activity from either station was due to equipment failure, which should be repaired by now.

Tadzhik (UJ8)

Of the Soviet republics, Tadzhik probably is one of the hardest to work and confirm. During the month of January, at least four of these stations have been reported.

Down on 80M near 3.500 MHz, UJ8JX was active for a couple of days mid-January. Listen for this one around 0245 or later now, as his sunrise is later. On 40M, UJ8JKK was found in California near 7.009 MHz at 0200 UTC. For SSB contacts, try UJ8JCM near 14.204 MHz at 1300

UTC, or UJ8XA on 14.209 MHz at 1315 MHz.

Uganda (5X5)

On 20M SSB, 5X5GK has made the scene often. Check 14.183 MHz from 1900 UTC for this one. He has also been found elsewhere on the band, such as on 14.169 MHz at 2200 UTC and 14.180 MHz at 1900 UTC.

Rwanda (9X5)

Listen between 21.293 and 21.301 MHz for 9X5NH if you need Rwanda. *The Long Island DX Bulletin* reports that this one has shown as early as 1630 UTC.

DXCC notes

The DX Bulletin reports that the DX Advisory Committee voted 15 to 0 in favor of adding Western Sahara (SØ) as another new one to the DXCC countries list. The Awards Committee in Newington must now vote on the matter.

Don Search, W3AZD, at the Newington DXCC desk says that T5GG Somalia cards are acceptable, and documentation is not required for operating from this country.

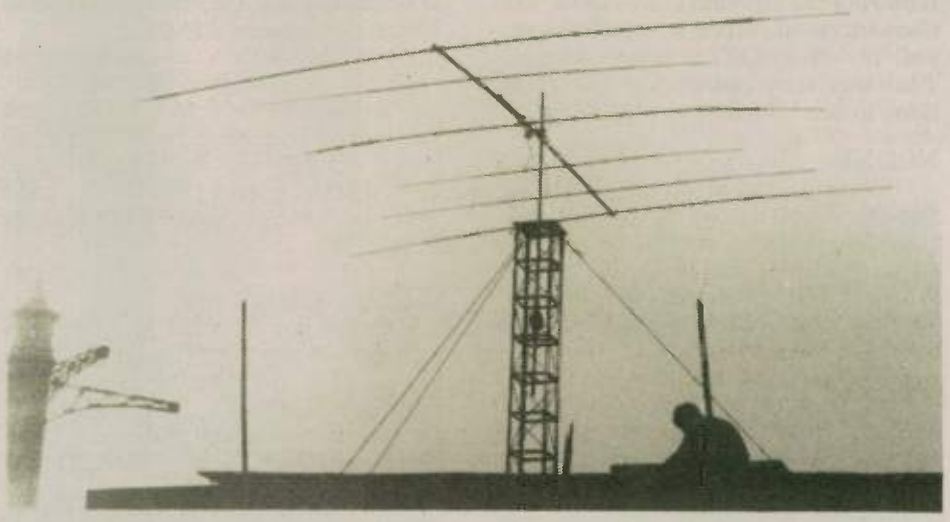
Rumor has it that there will be some changes to the DXCC awards program, including three new DXCC awards, according to *QRZ DX*. Single band DXCC endorsable awards for 80, 40 and 10M will be of interest to the DXer. All three will be retroactive back to 1945. We assume that Headquarters in Newington will be creating new job positions to take care of this additional work load.

VX6OCO

Active through the end of February was VX6OCO, the official station of the Calgary Olympics. A special award is available for working the station on two bands or two modes. To apply for the award, send log information and $3 to P.O. Box 592, Calgary, AB T2P 2J2, CANADA. You should send QSL cards to the same address.

We understand the award is also available for a single contact if the contact was made during the games.

Other Canadian stations have been using the special VX prefix to bring attention to the Olympics, with the exception of Newfoundland, Labrador and Yukon. Those stations substituted the prefixes CJ1, CJ2 and CH1 respectively.



Gu, the operator of BY4RN, sends in these two photos. The station setup in the bottom was taken at the end of December 1987 with chairs for four operators. Notice the old D-104 microphone. The top photo shows the tribander used at the BY4RN in Nanjing. The antenna appears to be an old TH5DXX, the same type we have, which we have been using for about 18 years.

Anniversaries

The International Amateur Radio Union announces the anniversaries of the following member societies:

RSGB	United Kingdom	1913
NRRL	Norway	Aug. 8, 1928
VERONA	Netherlands Antilles	Jan. 6, 1948
RCH	Haiti	Mar. 29, 1948
CRAS	El Salvador	Jun. 24, 1958
WSARC	Western Samoa	1968

Happy anniversary to the members of the above societies.

Dayton Hamvention

Although not a DX-related event, the annual Dayton Hamvention weekend has become a very popular get-together for many a deserving DXer. Many of the DX clubs, such as the Kansas City DX Club, sponsor hospitality suites at the Stouffers. Be sure to stop by and visit with them.

The Southwest Ohio DX Association will again host the DX dinner during the Hamvention weekend, on Friday evening, April 29. Dinner will be at 7 p.m. with cocktails beginning at 6:30 p.m. Held at the Stouffers Dayton Plaza Hotel, the Master of Ceremonies will be Jay Slough, K4ZLE.

The cost of the dinner is $20 per person and must be ordered in advance. Send an SASE along with your check or money order payable to SWODXA to Jay Slough, K4ZLE, 8183 Woodward Dr., West Chester, OH 45069.

This year's Hamvention is the week

following the annual International DX Convention in Visalia, which works well for those DXers from overseas. That way they can visit two conventions in one trip.

NCDXF

Recently elected to the Board of Directors for the Northern California DX Foundation are Theodore P. Algren, KA6W, and Bruce W. Butler, W6OSP. Ted is currently president of the Northern California DX Club, and Bruce is vice president of the Redwood Empire DX Association.

Also serving on the all-volunteer NCDXF Board of Directors are Bob Ferrero, W6RJ (President); Charles Epps, W6OAT (Vice-President); Eric Edberg, W6DU (Secretary); Ernest Zum Brunnen, WB6UOM (Treasurer); Hillar Raamat, N6HR; Stan Kaisel, K6UD; Louis Beaudet, K6TMB; Kip Edwards, W6SZN; and Dave Leeson, W6QHS.

In other NCDXF matters, they have committed $4,000 to assist with DXpedition to Kingman Reef and Palmyra Island, which is to take place the latter part of April. Also, $2,000 has been committed for the DXpedition to Baker and Howland Island by the Smiths, Jim (VK9NS) and Kirsti (VK9NL).

We can't help but comment on the commitment to the latter DXpedition as Jim Smith was rather critical with the NCDXF when they tried to raise money for the treasury after the big donation to the Peter I Islands DXpedition.

Those DXers desiring to help out with the NCDXF or join the organization may contact the foundation at P.O. Box 2368, Stanford, CA 94305.

INDEXA

On the East Coast we have the International DX Association whose goals are that of the NCDXF. Membership for this organization is $12 per year. Interested DXers may contact this organization at P.O. Box 241345, Charlotte, NC 28224.

Clubs

The Southeastern DX Club, headquartered in Atlanta, recently elected new officers for 1988, which includes Ken Byers, K4TEA, President; Dave Curran, WD4RCO, Vice President; Neil Foster, KC4MJ, Treasurer, and Sandra Jorgenson, KL7JAR, Secretary and Editor.

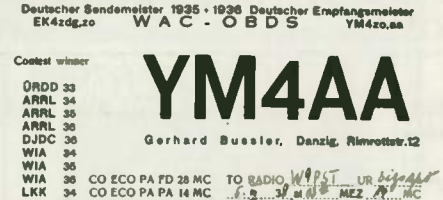
The SouthWest Ohio DX Association also elected their 1988 officers with Wynn Rollert, W6CDR, President; Steve Miller, WD8IXE, Vice President; Jay Slough, K4ZLE, Treasurer; and Frank Schwab, W8OK, Secretary.

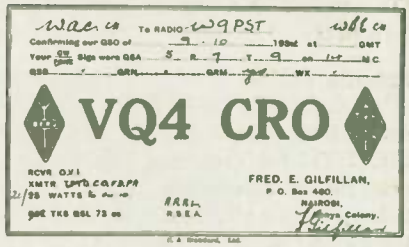
From the DX newsletters we also notice that DX clubs have elected Greg Potter, NM2L, president of the Salt City DX Association; Richard Barrett, KB0U, president of the Kansas City DX Club; and Edgar Brown, N6OU, president of the Southern California DX Club. Incidentally, the latter club is the host for this year's International DX Convention at Visalia in April.

Antique QSL Department

Here are a couple more oldies from the estate of Roy Weisbach, W9UX, submitted by Bob Truhlar, W9LNQ. Prior to World War II, the Danzig was a free city within the bounds of Poland. In 1938, Roy — then signing W9PST — worked YM4AA, operated by Gerhard Bussler, on 20M. As you

(please turn to page 34)





DX World

(continued from page 31)

can see, this DX station was really into winning contests. Today the area of the Danzig is Gdansk.

Four years earlier, Roy worked VQ4CRO of Nairobi, in Kenya Colony. In September or October of 1934, he made a CW contact on 20M with this station operated by Fred E. Gilfillan. The card is printed in blue with a light red zebra.

The whereabouts of either operator is not known. Perhaps they are Silent Keys, like Roy.

QSL help

Don Raduziner, W6BDD, offers his services as a QSL manager for DX stations. Interested parties may contact Don at 2268 N. Marter Ct., Simi Valley, CA 93065.

Having trouble obtaining QSL cards from those rare Soviet stations? Joe Arcure, the QSL manager for many DX stations, may be of some help. We have been told that Joe, although he is not a manager for the Soviet stations, can get those cards for you. We tried Joe's route for a couple of "UJ8" cards that failed to come through. Sure enough, after two months those cards arrived from Joe. If you decide to go via W3HNK, be sure to include a "green stamp" for each card as Joe has to send your card direct. (Remember, he is not the manager.)

QSL routes

AA2RB	—KA3OYY	FO0VU	—DJ3HJ
A35BV	—HB9CVX *(See Note 1)*	FT5ZB	—F6EYS
		H44VU	—DL1MCY
A92EM	—G3XHZ	HC5K	—KT1N
AH9AD	—KX6AZ	HD8G	—KT1N
AX5AQZ	—VK5AQZ	IQ9YXO	—IT9YXO
BT0LS	—BY1PK	IY4FGM	—I4IKW
BT0ZML	—BY1PK	J37ZY	—NS8G
C56/OZ3IG	—OZ3IG	J50AS	—IT9AZS
C56/OZ5QU	—OZ5QU	J52US	—WA8JOC
CE7ZK	—W4RXT	J56AS	—IT9AZS
CJ1QU	—VO1QU	K2SG/KP1	—N3GNR
CS2BOP	—CT2BOP	KC7RD/5N9	—WB2YWH
CT3EU	—G3PFS	KP2A	—N6CW
D68AM	—WB2OHD	KP4HL/KP5	—NG7X
DL1VU/KH2	—DL1VU	LX2KQ	—F6FNU
		N2EDF/KP1	—N4GNR
DL1VU/KH0	—DK5EX	NJ7D/KP5	—NG7X
DL1VU/KX6	—DL4YAH	OH0MB/OJ0	—N2AU
EL2AH	—OE3NH	OX3KM	—F6FNU
EL2X	—W3HNK	P40GD	—N2MM
FH5EF	—F6EZV	SV0FE	—K0TLM
FM5BH	—W3HNK	T5GG	—I2MQP
FO0AQ	—F6EYS	T22VU	—DJ9ZB
FO0JM	—K6FM	T30BC	—ZL2QW
FO0QK	—W6TM	TL8AM	—DL1EBP
TL8DN	—N2AU	ZK1XU	—W6JC
TZ6BG	—F6FNU	ZP5LOY	—LU8DPM
TZ6BKY	—EA5CTP	3D2BI	—HB9CVX *(See Note 1)*
V31DX	—N5DD		
V31HQ	—WS5O	3D2VU	—DB5UJ
V47NXX	—N8GCN	3D6AN	—WK4Y
VI88ACT	—VK1BUA	4U/VO1KS	—VO1BD
VK9AD	—G3HSR	5N0WRE	—K4JZQ *(See Note 2)*
VK9YA	—W5ODD		
VK9ZK	—G4UCB	5V7WD	—WB4LFM
VP2EY	—HB9SL	5W1FM	—ZL1CAD
VP2MDF	—N2EDF	5W1FT	—ZL1CAD
VP2MU	—KA9OXI	5X5GK	—DJ5RT
VP5CPU	—VE3CPU	5Z4FA	—JA6XZS
VP8BFM	—GM4ILS	6W6JX	—F6FNU
VP8BNW	—G3JKX	6W8AB	—DL1HH
VP8BPZ	—GW8VHI	8P9AF	—VE3LGC
VP8TPG	—G4RFV	8P9EK	—K4TKM *(See Note 3)*
VR6ID	—KB6ISL		
XE2KB	—XE2ABN	8P9EM	—G3VBL
XE0DX	—KD5GY	8P9GV	—G3LNS
XX9CT	—KA6V	9J2AL	—WD0HHM
ZK1CY	—W6KNH	9X5NH	—DJ6EA

A22EE	—Private Bag 38, Selebi-Phikwe, BOTSWANA
EL8BS	—Lamco, P.O. Box 69, Monrovia, LIBERIA
FR0EH	—P.O. Box 386, F-97410 Pierrefonds, FRANCE
TL8DW	—P.O. Box 35, Kembra, CENTRAL AFRICAN REPUBLIC
XU1SS	—Mr. Chou Hieng (P.S.), P.O. Box 17, Aranyaprathet Prachinbury 25120 THAILAND *(See Note 4)*
YN3ACZ	—P.O. Box 302, Managua, NICARAGUA
YN3CC	—P.O. Box 2971, Managua, NICARAGUA
Z21FB	—P.O. Box 1215, Harare, ZIMBABWE
ZD8CB	—P.O. Box 4608, Ascension Island, c/o Patrick AFB, FL 32925
5W1GT	—P.O. Box 3865, Apia, WESTERN SAMOA
5Z4PT	—P.O. Box 30197, Nairobi, KENYA
6T2MG	—P.O. Box 49, Khartoum, NORTH SUDAN
6W7OG	—P.O. Box 175A, Thies, SENEGAL

Notes

1. Use address for HB9CVX: Bernard Bienz, P.O. Box 88, CH-6000 Luzern 10, SWITZERLAND.
2. Contacts made on 75M by Tom (9Q5NW) should be sent via KC4NC.
3. Use 1988 Callbook address only.
4. Please omit call signs on the envelope. This is a new address for XU1SS.

Our appreciation this month goes to the following contributors: W0JS, K4ZLE, KL7JAR/4, N2EDF, W9LNQ, K8GXV, W6BDD, BY4RN, Northern California DX Foundation (W6OAT), International DX Association (W4WMQ), International Amateur Radio Union, Canadian Radio Relay League, The Carolina DX Association (K2SD), The Salt City DX Association (KB2G), Western Washington DX Club (K7ZR), Southern California DX Club (NK6A), Kansas City DX Club (AB0X), Greater Milwaukee DX Association (NK9G), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *The DX Bulletin* (VP2ML), *QRZ DX* (W5KNE), and *Long Skip* (VE3IPR).

Each month we try to select a group of countries that could be of interest, which is rather subjective to our own interests. We receive most of the DX newsletters, and we search through all of them for this column. It would be helpful if our readers would let us know what particular countries they might need. When I say need I mean that you use your own definition of the word need, as it can mean many things as far as DXers are concerned. □

Propagation

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

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

APRIL 1988

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(12)	15	19	(10)	16
12	(22)	13	16	19	18
14	28	16	15	24	28
16	31	14	(14)	24	33
18	29	(15)	(13)	23	37
20	24	24	31	21	40
22	20	30	38	(16)	39
24	(17)	33	40	(9)	28
2	15	33	40	15	23
4	18	30	39	15	19
6	(15)	21	28	12	17
8	(13)	17	23	(11)	15

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	15	(11)	19	(10)	14
10	25	10	16	19	16
12	34	15	17	24	23
14	38	12	(15)	26	30
16	38	(11)	(14)	26	35
18	29	(11)	(13)	24	38
20	24	20	31	22	40
22	20	24	38	17	32
24	17	26	40	10	26
2	15	23	38	9	21
4	20	15	28	12	18
6	17	13	23	11	16

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	16	(11)	19	(10)	15
9	23	10	16	18	15
11	32	15	17	23	22
13	37	13	(15)	26	30
15	38	(11)	(14)	26	34
17	37	(10)	(13)	25	38
19	26	18	25	23	39
21	22	23	35	20	39
23	18	25	40	12	29
1	16	22	38	10	23
3	17	14	27	9	20
5	18	12	23	11	17

Computers and Amateur Radio

Part I

So this is a computer

This is the first in a series of five articles that were originally run in SPARK GAP, published by the Wellesley (Massachusetts) ARS. The series will run in alternating issues. A glossary is listed at the end of this first installment.

Vern Valero, ND1Z

Imagine a graduate student who can perform complex calculations within a hundredth of a second. Consider an employee who welds autos on an assembly line for 24 hours a day without complaining. Or what about an accountant who can keep track of the exact number of cans of tomatoes in stock at a supermarket as they are purchased? These are a few of the tasks that computers are performing reliably at significant cost savings.

Amateur Radio has accepted computer technology in many ways. The most publicized and sophisticated computer application is packet radio, a communications mode in which computers talk among themselves to send data from source to target stations. Other applications include paperless RTTY systems, Morse code copying and sending machines, and even DX simulators. The latest transceivers are controlled by computer components that provide memories, scanning and other features never before possible.

A computer is a machine that performs a set of tasks for its owner. A bagging lawn mower performs two tasks: cutting and bagging. However, what sets the computer apart from many other machines is that it performs a list of tasks. You, the owner, compose the list, submit it to the computer and start the machine. The task list, known as the program, can be quite varied and long. By giving the computer a certain sequence and length of these task definitions, something useful can be performed. This is the art of computer programming.

Before you dispose of your bagging lawn mower in favor of a computer, consider that computers do only certain tasks very well. (Cutting the lawn is not one of them.) Computer manufacturers and science editors would like the public to believe that computers can do nearly everything, but not all applications are possible or cost effective with today's technology.

Computers can perform mathematical computations with tremendous accuracy and speed. Super-computers, such as the CRAY, are used by universities and research groups to simulate real-life situations, such as the detonation of a nuclear device. With a paper and pencil, it would probably take this author a few minutes to compute the statistical average of 10 numbers. A popular minicomputer, such as the Digital VAX 11-780, would perform this task in about 0.0001 second.

Process control is another area where computers excel. Some ski areas own a computerized snow-making system built by the Foxboro Company. Sensors feed information on the current temperature and humidity to the computer. It decides how much snow to make and what the water and air mixture ought to be. The computer turns on the valves and monitors the entire system. Since snow-making is such an expensive activity, it makes sense to do it right and at the best times.

Computers

No discussion of computer applications would be complete without mentioning data storage. Computers hold information about each taxpayer, customer, credit card holder, etc. Chances are that each reader has information about himself or herself in several computers worldwide.

The problem of sorting and storing large amounts of data mechanically was first addressed by Herman Hollerith in 1890. Under contract with the U.S. Census Bureau, he developed a machine that stored data on punched cards and placed them in some order. For over 20 years, the major airlines have used computers to store information about passengers, spare parts, weather and many other aspects of their business.

This author was allowed to play with United Airlines' Apollo reservation system. Besides booking passengers on flights (which is allowed only by agents), it is possible to determine if a flight is late and why, what meals will be served, and what connections would be required to fly to anywhere in the world. Apollo is more fun than an arcade game!

Not all computers can book flights to Moscow. There are four rather hazy classifications of computers these days. The supercomputers (such as the CRAY) are multi-million dollar machines that are built for fast computation and data manipulation. Besides the nuclear simulation example given above, supercomputers are used by Hollywood for computer-generated animation and video scenes.

The mainframes are in the million dollar range and are used by most large businesses for accounting, billing, and many other applications. The most famous of the mainframes is the IBM 360 and its cousins.

The minicomputers can perform most of the functions of the mainframes, but at reduced volume and speed. The cost ranges from tens to hundreds of thousands of dollars and can make good sense for a small or medium-sized company.

The microcomputers are used in Amateur Radio and other hobby applications. Their speed is much less than the minis, but they are generally personal or single-user machines. Microcomputer costs can range from a few hundred to a few thousand dollars.

All computers use digital circuits to perform their work. Data is represented internally as ones and zeroes. Rather than operating transistors as linear amplifiers, they are either saturated (current flowing), or cut-off (no current flowing). This makes the one and zero states. Combinations of these states, known as Boolean logic, provide the building blocks of computers. The reader is encouraged to refer to the Amateur Handbook for an excellent treatment of digital circuits.

Microcomputers and personal computers became feasible with the introduction of the microprocessor. A microprocessor is a single component that contains most of the functions necessary to build a computer. And several microprocessors can fit in the palm of your hand! In a sense, the microprocessor is the computer and the designer adds support components such as memory, a terminal and a keyboard.

John Von Neumann proposed the model upon which today's computers are built. Known as the Von Neumann Machine, it introduced the concept of the stored program (or list of instructions or tasks). The instructions and data are stored in a single area known as memory. The machine performs one instruction, and when that one is done, it goes to the next sequential instruction. If the memory and program were infinite, the computer would keep performing (executing) instructions forever — a sort of perpetual motion data machine.

Microcomputers and personal computers became feasible with the introduction of the microprocessor . . . the microprocessor is the computer and the designer adds support components such as memory, a terminal and a keyboard.

We wish to use a real-life computer, not a theoretical idea. Applying the Von Neuman model to today's technology, we see that a computer must contain three major sections: the instruction processor, the memory and the Input/Output.

The instruction processor performs all the instructions and the sequencing. Each computer performs a different finite set of instructions. Some instructions involve doing arithmetic, such as ADD or MULTIPLY. Others involve changing the order of instruction execution such as JUMP to the 100th instruction in memory. Others involve communications with the outside world, such as PRINT a character to the monitor screen.

The memory holds the set of instructions and data. Until recently memory was very expensive, but falling prices have allowed larger programs and more data storage. There are different types of memory. Some are very fast, some retain storage after power-down, and some detect and correct errors. But all memory functionally performs the same task of holding programs and data.

A computer would be quite useless if we could not communicate with it. The Input/Output (I/O) section allows data to be input from a device (such as a keyboard) or output to a device (such as a monitor screen). Furthermore, no

(please turn to page 39)

Visit Your Local RADIO CLUB

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

ALABAMA

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

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

ALASKA

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

ARIZONA

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

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

Tucson Repeater Assoc. 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 1094, Pine Grove, CA 95665. Pioneer Elementary School, Pioneer, CA. 1st Thurs/monthly 7:30 p.m. WA6WIY Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.

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

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

Contra Costa Communications Club WD6EZC/R. P.O. Box 661, San Pablo, CA 94806. Meets 2nd Sunday at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes. For info call 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. Manchester School, 2307 E. Dakota, Fresno, CA. W6TO/R 146.34/94.

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

Golden Empire Amateur Radio Society (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, Repeater 146.25/85. Meets at Esplanade House, 1528 Esplanade. Room 101, 3rd Friday/monthly, 8:00 p.m.

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

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

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

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

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

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

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

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

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

Sacramento Amateur Radio Club. Contact: Bob Lyman, KI6FT, (916) 726-2694. Meets Sacramento Blood Bank, 32nd St. & Stockton Blvd., Sacramento, CA. 2nd Wednesday/monthly, 7 p.m.

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

San Fernando Valley ARC, (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., Bldg. 2 Auditorium, 2nd Monday/monthly. 7:30 p.m.

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

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

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

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

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

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

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

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

Stockton-Delta Amateur Radio Club, Inc. U. of the Pacific, RM 122, Kensington & Mendocino. 2nd Wed/monthly, 7:30 p.m. Rptr. 147.165/765 Net Wed. 8:00 p.m.

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

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

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

Western Amateur Radio Assoc. Cerritos Park East, 166th St. and Carmenita Ave., Cerritos, CA. 1st Tuesday/monthly 7:00 p.m.-145.400.

Yucaipa Valley Amateur Radio Club (YVARC). Gibralter Saving's Community Room, 34880 Yucaipa Blvd., Yucaipa, CA 92399. Pres: 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 rptr.

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

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

HAWAII

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

ILLINOIS

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

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

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

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

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

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

INDIANA

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

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

MARYLAND

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

MICHIGAN

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

South Eastern Michigan A.R.C. Meets: 1st Friday/monthly, 7:30 p.m. Grosse Pointe North High School, Bldg. C, Cafeteria Commons. For info contact: AK8I (313) 372-1252. W8FWC Rptr. 146.740/146.140.

MISSOURI

St. Charles Amateur Radio Club (SCARC). St. Peters Civic Center, St. Peters, MO. I-70 and Salt Lick Road. Meets: 4th Tuesday/monthly, 7:30 p.m. WB0HSI Rptr. 07/67.

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

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

NEVADA

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

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

NEW HAMPSHIRE

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

NEW JERSEY

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

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

NEW YORK

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

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

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

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

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

NORTH CAROLINA

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

NORTH DAKOTA

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

OHIO

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

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

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

OREGON

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

PENNSYLVANIA

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

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 Bldg., 20th & Washington.

VIRGINIA

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

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 info (804) 497-1235.

WASHINGTON

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

WEST VIRGINIA

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

The Kanawha Amateur Radio Club. P.O. Box 1694, Charleston, WV 25326. Meets: 1st Friday/monthly, 7 p.m., South Charleston City Hall annex. Rptrs. 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 Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

Why the QSL card?

All through life we carefully preserve documents and valuable papers showing that in such and such a year, on such and such a day, some important event (to us) took place.

The QSL card which the radio amateur finds in his mailbox is his document of a worthwhile event and accomplishment. It is tangible proof of his accomplishment.

Without QSL cards there would not be any awards such as: DXCC, WAC, WAS, WAZ, 5BDXCC, WTW, DUF, WBE, WAP, etc. and your pride of accomplishment would not be recognized.

The amateur who works hard for his license sets up his rig (maybe even building it), spends possibly untold hours getting his antenna "just right," maybe even many hours trying for a certain contact (maybe *you*), certainly deserves a QSL for his efforts.

Not everyone likes QSL cards; some are not "interested." But those of us who take the trouble to send QSL cards certainly indicate that they *want your card*, and I am sure you must feel the same way about this as I do. To make the QSL chore a little easier, many stations send along IRC's or stamps of the country worked and a SASE.

QSL's make me *happy*. Won't you help by sending me your card? Thank you, and I hope it makes you happy, too! — *Butler County ARA, PA* □

Computers

(continued from page 36)

matter how large or inexpensive memory becomes, there is never enough to store all the programs and data that interest us. So programs and data that are not currently in use are stored through I/O onto storage devices such as disks and tapes.

This is a basic overview of what computers are and how they are used. The next article of this series will explore how one programs, or gets the machine to perform some useful tasks.

• • •

Computer Glossary

This small glossary has been compiled for your reference in reading the series of *Spark Gap* articles on computers. It is by no means complete, but should help clarify some of the terminology.

Address: Each value in main memory has an address just as each house on a street does. Data is stored and recalled from specific numbered addresses.

Algorithm: A "plan of attack" in solving a problem with the use of a computer. For example, an algorithm for finding an average value would be: "Add all values and divide by the number of values."

Application: A use or specific purpose for using a computer. For example, Joe Ham has purchased a Commodore 64 to balance his checkbook and run RTTY. The applications are accounting and RTTY.

ASCII: American Standard Computer Information Interchange. A character code, or standard representation for displaying data. In the ASCII code, the letter "A" is represented in memory by the binary number 635.

Binary: The representation of data in memory as ones and zeroes using digital circuits. For example, in the binary system, the number 7 would be represented as 111 which really is $(1x2x2) + (1x2) + 1 = 7$.

Bit: A single cell in memory that can take on either a 1 or 0 value. Each fixed number of bits (usually 8) usually has its own unique address.

Boot: The process of putting a program into a computer that has just been powered up and getting that program started.

Byte: A fixed number of bits with a unique address. Most computers have an 8-bit byte.

Character: A fixed number of bits that have a value conforming to a standard code (such as ASCII). When the character code value is sent to an I/O device such as a monitor, a specific letter or number is printed on the screen. If the number 635 were output to the monitor, the letter "A" would be printed.

Compiler: A program that looks at the contents of a program file (a program that the user has written) and translates the high level statements into low level computer instructions for execution (running the program). The compiler produces machine level instructions, but does not insert memory addresses. The loader program has knowledge about the memory structure of the computer and inserts address values.

Constant: A memory location that contains a certain value. That value never changes during program execution.

Data structure: An organization of data that is of interest. For example, the membership list might be organized into a list of records, one for each member. Each record might contain name, call sign, address and telephone number.

Disk: A storage device that holds programs and data that are not currently in use. The bits are stored magnetically, and the computer accesses the desired data by moving the disk to the correct spot.

Execution: The act of running a program. (Nobody dies.)

File: A location on a disk for storing data. Each file has its own name and can be accessed by the user. The list of file names is known as a directory. Each file contains data of specific interest. For example, the file WAS might contain a list of states that have been worked, and the file DXCC might contain the list of countries worked.

Graphics: A special way of operating monitors such that pictures appear on the screen.

Hardware: The section of the computer that includes all circuitry and external I/O elements.

I/O (Input/Output): The means of sending data into the computer or receiving data from the computer and interpreting it.

Instruction (machine instruction): a single task that the computer can perform at its lowest level.

Interpreter: A program that looks at each statement of a program file, translates that statement, and executes it before going on to the next statement. Interpreters are very popular for home computers because they are quick to run and debug programs. However, programs executed by interpreters tend to run slowly.

Interrupt: A break in the normal execution of a program usually caused by an I/O device. The computer quickly performs some action (such as accepting a character from the keyboard) and then continues the program.

Language: The set of rules that determines how to write a program. The most popular language for home computers is BASIC.

Logic: The digital circuits that form computer building blocks.

Loader: A program that places memory addresses into the output file of the compiler. Generally, programs that have been processed by both the compiler and the loader are now ready to be executed.

Memory: The section of hardware in which data and programs are stored.

Networking: A means of tying together different computers in geographically distributed areas for exchanging data.

Object: The file that contains the list of instructions produced by a compiler program.

Packet: A networking scheme in which large streams of data are sent from one computer to another in bite-sized chunks.

Printer: A memory location that contains the address of some program section or data structure.

Procedure (subroutine): A modular section of a program that can be used at any time of program execution simply by requesting, or "calling" that section. For example, a procedure to add two values may be called several times in a program that computes averages.

Protocol: The set of rules that computers use in networking for exchanging data.

Computers

Queue: A data structure in which the data that was first received is acted upon first.

Runfile (image): the file that contains the list of instructions with the correct memory addresses produced by the loader program. A runfile can be placed into memory and run.

Simulation: The use of a computer to mimic a real life occurrence. For example, pilot trainees use a computer simulator to learn how to react to different aeronautical conditions.

Software: The section of the computer that includes programs and data.

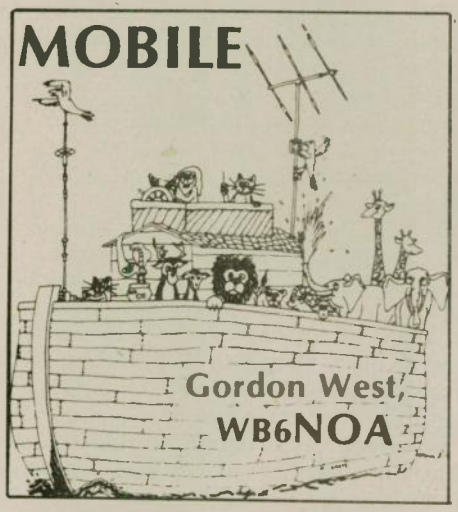
Stack: A data structure in which the data that was last received is first acted upon.

Structured programming: A programming technique in which flow of control follows certain rules to enable the program to be easily understood and modified.

Table: A list of values in memory.

Tape: An I/O device that stores programs and data on a reel of magnetic tape in a sequential manner.

Terminal: An I/O device that enables data to be printed on a TV-type screen and entered from a keyboard. □



How to use a manual tuner

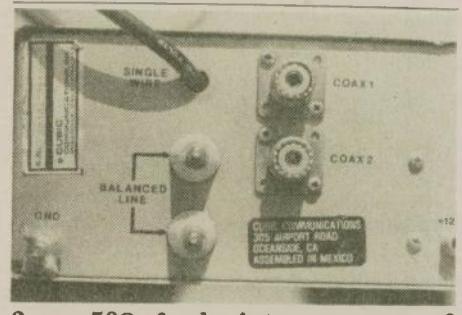
The high frequency manual antenna tuner is a great gadget for tuning up long wires, non-resonant dipoles, insulated backstays, non-resonant marine whips, or just about anything more than 20′ long that's up in the clear. When properly adjusted, the manual antenna tuner will extract 100W from your worldwide radio from 10 to 160M and jam it into a conducting surface to give you a good signal. Sometimes. Read on.

The manual tuner is simple to hook up—right? The box goes right beside the radio because there is no way of adjusting it and running the radio if it's beyond arm's length. You can put the tuner beside the radio, on the radio, under the radio, but it's got to be somewhere *near* the radio so you can twiddle it on transmit for minimum SWR and maximum forward power.

A coax jumper interconnects the tuner input to your transceiver's SO-239 output. Top-quality small coax, such as RG/8X, is fine for this purpose. Sure, you could run an RG/213 jumper between the two, but this big cable is so inflexible that the tuner is physically hard to position right at the radio. Run the small coax, and you will be fine. Just make sure it's good quality coax for your jumper.

Now for the output that goes to the antenna. You probably say hook a piece of plastic-coated wire on the single wire output, and away you go. Right? *WRONG!*

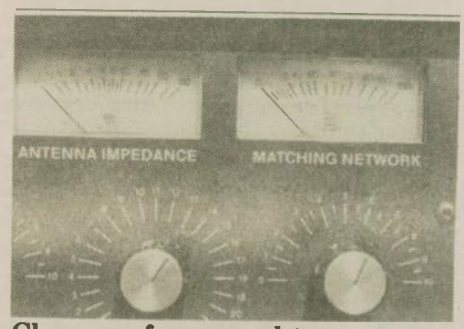
Don't run off the single wire antenna post. If you do, it puts 100W of RF into everything around your shack and gets almost nothing up to the tip end. Many new solid-state HF transceivers warble badly on transmit when RF is within a few inches of the transceiver. You could lose more than half your signal in the single wire run to get back to the insulated backstay, the whip, or whatever up on the roof. Don't run single wire to the porcelain antenna single wire output.



3 or 50Ω feedpoints on rear of tuner. Do not use *single wire* hookup!

Run top-quality RG/213 coax to the output SO-239 connector on the antenna tuner. This allows you to keep all those 100 watts inside the coax line as it exits your operating station and heads for your antenna system outside, somewhere in the clear. The coax keeps the RF from jumping off the line and getting into your other electronics. It keeps the set from warbling. It keeps your body from being fried with 100W of power inches away.

Now for the critical part—attaching your whatever-antenna to the end of



Close-up of a manual tuner

the coax. The center conductor of the coax obviously goes to the thing you want to tune up. This could be an insulated backstay aboard a sailboat, a non-resonant whip aboard a powerboat, or a hunk of wire running over a tree branch in a portable installation. It could even be a mobile CB whip antenna mounted on the back bumper of your RV or mobile. The hot part of the coax—center conductor—goes to whatever you want to transmit over.

The braid of this coax *must be grounded* for this to work. If you don't ground the braid, the whole length of coax will radiate, and you defeated its purpose.

In boats, ground the braid to the main ship's ground using copper foil or strap. For a sailboat insulated backstay, the braid goes to the bottom end of the stay that is joined to the hull, and foil grounds the hull's chain plate to the central ground system.

In portable installations in the field, the ground goes to an equal length counterpoise wire that turns this sytem into a non-resonant horizontal or vertical dipole. In your home, the braid could go to foil that connects to the aluminum rain gutter that runs around the eaves of your house. In a vehicle, the braid joins the steel or aluminum sides of your mobile.

Once everything is hooked up, first adjust the tuner for maximum noise on the desired band you wish to operate. Re-adjust the inductance wafer switch, and rotate the outside two capacitance knobs for maximum reception to a weak signal. Then check for a clear frequency, go to low power

Manual antenna tuners

AM, and start adjusting the tuner until its internal meter set on SWR indicates a null (dip). Now crank up the power, readjust for a deep null, and chances are you're getting all 100 watts into your new non-resonant antenna system.

Tuners are available from $50 to $200. They work great when you feed your antenna system with coax and keep the feedpoint well-grounded at the point the center conductor meets the load. □

Microwave leak detector

John Lucas, K3VCI

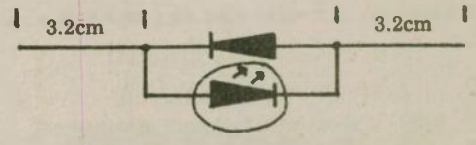
The detector can be built on a small piece of perfboard or even a small strip of cardboard in a few minutes time. As you can see from the diagram, each leg of the dipole must be close to 3.2 cm in length for it to be tuned to the operating frequency of the oven (2400 MHz).

Surprisingly enough, the lead lengths are just about that length. Thus, about all that is needed is to solder the LED across the diode. (Observe polarity.)

Once the detector is built, you will — of course — want to check it out. To perform this check, first place a cup of water in the oven and turn it on. Hold the detector in a way that the antenna will be in a horizontal plane and move it around over the door and especially around the handle area as this is the most likely place to find a leak. If a leak is present the LED will light.

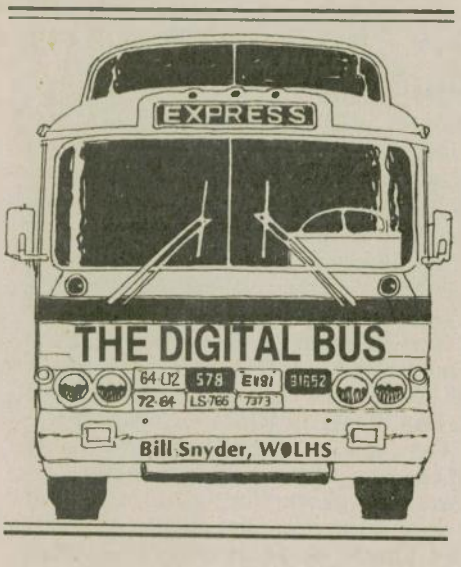
Parts needed are: 1 — Radio Shack No. 276-1124 microwave diode and 1 — Small LED.

Hint — This tester could be glued on the end of a ruler or some small stick, as your hand should be about 8 or 10 inches away from the tester unit so it will not be detuned by body capacity.



NOTE: This tester does not indicate the amount of leakage, but only that significant leakage exists. When tested side by side with a commercial detector, the LED of this detector would light only when dangerous levels of leakage were detected by the commercial unit.

This item was published in the *National Radio Institute Alumni News Letter*, June 1985 and originally published in *Modern Electronics Magazine.*



I would like to thank all the packeteers around the country who have helped me experiment with the packet radio traffic system that is now in operation. Together we have generated a pile of message traffic that has given the network something to do besides trade housekeeping-type communications.

It all started last summer when I asked readers to drop me a note via the packet system. The system, despite all the problems, worked reasonably well. I learned a lot of things that I would like to share with you.

First, let me comment on the style of the messages I received from a few of you. There must be a hangover from CW days when brevity was the keynote of a telegram, because some of the messages were written in "cablese," and the lines were squished together without paragraphing. Some were hard to read for this reason.

So, here is recommendation number one: space things out! When the computer calls for the message body, insert a line feed right away. This will put a little air in the message and separate it from the heading, which if it goes a long way across the country, will be quite long.

Next, paragraph your message like you would a letter. Blank lines make a very short packet and are cheap! Space out your message with blank lines between paragraphs, and above all, use carriage returns to keep the line length under control. I received a number of messages with split words on the end of the lines due to the computer wrap-around working. Put a carriage return/line feed at the end of the body of the message before you type control-z. This, too will separate the body from the packet housekeeping stuff.

I think it would be a good idea for everyone to insert their own carriage return/line feeds instead of letting the computer do it. If your computer will send both upper and lower case lettering, don't run the message in upper case only. Make each message look as business-like as possible. Don't make it look like an old-style telegram; show off the state of the packet art by cleaning up the typing format.

I'm convinced the ZIP code address system is the way to go. I might be wrong, but the messages I've received using ZIP codes seemed to bounce right through the system. I did get a couple of messages where the writers told me that the originating BBS would not take ZIP coded traffic.

ZIP coding simplifies the auto-forwarding files on a BBS and the Callbook has a ZIP code for every ham in the USA, so I would say it's the best system to use. Now all we need is for some author to write an article for the general Amateur Radio audience that will explain the ZIP code system.

When I first put the ZIP wild cards in my forwarding files, I wound up with messages ping-ponging back and forth between my BBS and a neighboring station owned by Tom Kutz, WA0LRE. I would get a radiogram from a California ZIP, and mine would turn it around and ping it back to Tom. Then his would pong it back to me on the next hour. And so it went throughout the night. I didn't have my software set to strip off the ZIP codes for our area, so we ping-ponged them back and forth ad infinitum. But you learn by mistakes, even at my age.

The next thing I learned from the experiment was that 2M propagation goes up and down with the barometric pressure. We have a number of 100-mile links in our North Dakota packet network and they are marginal at best. We are trying to find other hams to install net/ROM nodes in between, but for the moment we have to live with the long hops.

My path to the outside world is via VE4BBS in Winnipeg. My BBS, running Hank Oredson's W0RLI software V4.3, must relay through the W0KZU NET/ROM digi at Mayville, North Dakota to WA0LRE BBS in

Grafton, North Dakota. Each of these hops is about 60 miles long, and the link works just fine. No problem with propagation at all. It's a direct shot.

Tom's BBS then must relay my traffic to the VE4PKT node which, measured on an aeronautical chart, is 100 miles away. This is the crucial link in the chain. When it works, it works fine. But we've noticed that it varies somewhat with the barometric pressure. So, traffic piles up in Winnipeg and/or Grafton and then gets dumped in batches. There is nothing scientific about this observation, but Tom is now keeping track of pressure data to see if there is some correlation between the barometer and propagation.

There have been some negotiations to get a net/ROM node between Grafton and Winnipeg. This should make the link a full-time connection. According to our calculations, one place we have picked out — a TV tower — should really do the trick. Let's hope it comes to fruition. Then my in and outbound traffic will zip right through without days of delay built in by propagation mysteries.

However, at this writing, the system to the north has been down for six days, and I think that blows our theory about atmospheric pressure. We'll see.

I think the HF, closed-membership packet net, is doing a fine job with long-haul traffic, but I think there should be another layer of HF stations that would give part-time BBS stations easy access to the closed net. When you are isolated like we are here in North Dakota, the whole thing seems sort of silly when your traffic piles up with no outlet, and it's great when it flows in and out with no problem.

Eavesdroppings

I'M CURLED UP AROUND THE LINEAR AMPLIFIER TRYING TO KEEP WARM . . . OKAY ON YOUR ROUND PLANE ANTENNA, WHAT IS IT LIKE? . . . THE BAND HERE IS HALF WAY OPEN AND HALF WAY CLOSED . . . I DID MY SHIPBOARD RADIO OPERATING BACK IN THE DAYS WHEN WE HAD SPARK TRANSMITTERS OF THE QUENCHED GAP TYPE . . . WILL HOOK FOR YOU AGAIN, DEAR JOHN . . . DO YOU LEAF YOUR RIG ON JUST MONERTING? . . . MY KEEYBOARD HAS THEE KEEYBOARD BLUEES, IT GIVEES MEE TWO FOR ONEE EEVEERY TIMEE I HIT THEE LEETEER EE . . . WHEN I WAS A KID ONE CIGARETTE COMPANY USED TO ADVERTISE THAT THERE WAS "NOT A COUGH IN A CARLOAD." I'LL BET THEY WISHED THEY'D NEVER SAID THAT . . . I HAVE A GOOD SPELLING CHECKER HERE, AND SHE ALSO WORKS IN A BANK . . . I WAS A HAM BACK IN THE DAYS A CAPACITOR WAS CALLED A CONDENSER . . . NEW COUNTRIES ARE HARD TO COME BY WHEN YOU HAVE 315 CONFIRMED AND YOUR LINEAR IS IN FOR REPAIR . . . WHY IS IT EVERYTIME I NEED A CAPACITOR I HAVE TO BUY A PACKAGE OF FIVE AND THEN FIND THAT I ALREADY HAVE FOUR LEFT OVER FROM THE LAST TIME I BOUGHT A PACKAGE . . . I HAD TWO DISK CRASHES ON MY BULLETIN BOARD IN ONE DAY. THAT'S ENOUGH TO SEND YOU BACK TO CW . . .

Let me hear from you. I'm sure you have heard an eavesdrop or two that you could share with our readers. 73 from Bill Snyder, 1514 South St., Fargo, ND 58103. DIT DIT. □

RTTY hints

Ed Marriner, W6XM

Before investing in a RTTY set-up, it would be wise to duplicate a system you have seen in operation. Also, if you've had little computer experience, find someone you can ask for help.

Being a Novice computer buff myself, I made a lot of mistakes. I purchased a Commodore 64K, disk drive, monitor and a Gemini 10x printer. To get on the air RTTY, I bought the Microlog ART-1. At the time I did not realize the ART-1 was designed just for the Commodore printer. This is a slow serial-type printer and most of my friends have a parallel Gemini type, which is faster. Thus, I needed an interface to join my Commodore to the Gemini.

Again, I made a mistake and bought the Micro-World MW-302 interface and spent many days trying to make it print. Finally, I found out the MW-302 does not emulate the Commodore printer and I had to buy a MW-350.

For some reason, the information in the magazines never mentions these problems, assuming you know all about computers.

When I finally got things running, I was in for more surprises. I was puzzled as to why they kept saying to feed the signal into the microphone jack. I fed mine into the phone patch and plug on the back of my Kenwood 930S. When I turned on the computer, it turned my transceiver on at the same time in transmit mode. Since there is a constant tone coming from the computer all of the time, I almost blew my finals in the linear.

Another time I pressed the microphone button and the rig came on transmitting when the RTTY was not in operation due to the constant tone being emitted from the computer keyboard. This was all solved by first loading the ART-1 program and then turning the 930S on. Eventually, I put a double pole switch in the line breaking the line from the computer to the transceiver. After the program was loaded, I closed the switch.

(please turn to page 45)

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Keeping track of your 10-10 numbers

As I write this month's column, the Winter Phone QSO Party (or contest) was held during the past weekend. Not only were the band conditions very good, but the 10M band sounded like the old days with 28.3-28.5 so crowded that at times it was hard to find a clear spot to call "CQ 10-10 CONTEST." At least, these were the conditions in Southern California, and I hope they were the conditions at your QTH.

I was collecting numbers at the rate of one or more a minute on Sunday. This is the way 10M has been during the better parts of previous sunspot cycles. There were lots of high 10-10 numbers being exchanged, indicating the large number of new 10-10 members — many perhaps enjoying their first 10-10 QSO party.

All this brings to mind that collecting 10-10 numbers is easy, but keeping track of them is no small chore. If you are going to fully participate in 10-10, then keeping track of the numbers you work and going for Bars — one for each 100 new numbers — becomes another part of the fun of 10-10.

Without a computer, one of several methods are popular. Perhaps the easiest is simply marking out the number worked in the 10-10 Roster with a "highlight" pen. This is OK except that when you submit your list for each 100 Bar, you must list the 100 contacts with the 10-10 number in serial (ascending) order, the station call, handle and location.

Using the Roster mark-out method to keep track of the stations worked requires keeping another list of each new number worked until you reach 100 contacts. You must then relist your 100 contacts in serial order for submittal to the Bar Manager. Sounds like a lot of work? Well, it is, but getting those Bars is worth it!

How about a card file using a 3″×5″ index card? List on the card the 10-10 number in the upper left-hand corner and the station call in the upper right-hand corner. If you are ambitious, why not also list the handle, location and the date of the contact? Each time you work the same station you could add the date, and when you work the same station again, you could tell the operator "We last worked on February 8, 1988" or "We have worked twice before on . . . and on . . ."

Cards can be filed in those neat little filing cabinets available at most stationery stores. There are dividers that allow you to separate by 100's or 1,000's. This is the way I kept my 10-10 records before I got my first computer. It took a little time, but so does addressing QSL cards.

I have heard of some who keep their records in loose-leaf binders, using a page for each group of numbers. I am not sure just how this system works, so if you are using this method of record keeping, how about dropping me a line with a sample sheet and instructions, and I will cover it in a later column.

Now for those lucky enough to have a computer. I started out on a Radio Shack TRS-80 using their Profile III Plus data base program. It worked OK and kept track of my numbers without any problem once I mastered the program. Like all data base programs, it will arrange your 10-10 numbers in sequence, and let you print out the last 100 worked. That, in itself, is worth the time and effort to learn the program.

The one shortfall is that TRS-80 is slow in operating and the Profile III program is of 1982 vintage. By today's standards, both the TRS-80 and Profile III are outdated. There is one thing in their favor: both the TRS-80 and the program still work, and I have time to wait for the sorts to happen and the program to go through its gyrations. To resort and rearrange 1,000 10-10 numbers could take four or five minutes. By the way, I also use the TRS-80 to keep track of my counties, DXCC and 5-band WAS.

I have recently acquired an IBM clone with 20 Meg of hard disk and hope to convert all of my record keeping to the new computer using d-BASE III Plus soon. By comparison, the IBM clone will sort 1,000 records in a matter of seconds. There is still one problem that I have not solved and that is checking for dupes (checking to see if you have already worked a number before entering it into the data base file). If you have found a solution to this, drop me a line and maybe we could pass it along.

There must be other ways of tracking 10-10 numbers. If you have found another way, send me your system and we can expand on this for our new 10-10 members.

Meet Tim Spaulding, KA0YAA

Another young 10-10 member has come to our attention. He is Tim Spaulding, KA0YAA, 10-10 #42634. Tim is 8 years old and received his first license just three days after his 7th birthday. Tim is in the 3rd grade,

and his other interests include soccer, baseball, basketball and computer games. With all of these activities, how does Tim have time for Amateur Radio? By the way, Tim and sister Debe are studying for the Technician Class licenses.

Feedback

A number of nice letters received during the past month. One in particular had an interesting approach to requesting a 10-10 Information Package for information and an application for membership.

"Dear Chuck, I have recently fallen prey to the seductive spell of 10M! After 23 years of static crashes on 40 and howling pile-ups on 20, I have discovered where the truly intelligent radio amateur spends his (or her) time. But as I make new friends in this wonderland of propagation anomalies, I find myself often asked for my Ten-Ten number. Alas, I have none! However, I am led to believe (by the ARRL Operating Manual) that you can provide me with the required application and information.

"Please make my new-found happiness complete and rush them to me. I enclosed an SASE. Sincerely, Graig Risovi, WA5IBC (P.S. — You don't have to be a nut to write a letter like the one above, but I have personally found it helps!)"

Well, Graig, I enjoyed your letter and I am sure many of the readers will also enjoy your approach to getting into 10-10. My only two questions are: 1) Why did it take you 23 years to find out about 10M, and 2) Why did you have to resort to the ARRL Operating Manual to find out how to get information about 10-10 when there are so many 10-10'ers on the 10M band these days? Graig was sent the Information Pack, and by now he probably has his very own 10-10 number.

Finally

If you are like Graig Risovi, WA5IBC, and would like information about 10-10, a business-size (#10) SASE (stamped, self-addressed envelope) to me at 18130 Bromley St., Tarzana, CA 91356-1701 will get you all the information you need to become a 10-10 member. In addition, if you would like a copy of the latest *10-10 International News,* the official 10-10 magazine, a green stamp ($1) will get you both the application and the magazine. No SASE is required when sending a green stamp.

Best 73 and cu next month. □

RTTY hints

(continued from page 43)

You would assume my problems were over, but they were not! I found when I turned on my printer which supplies the power to my interface, spurious signals blanked out 20 and 15 meters. This signal every 10 kHz modulated the incoming RTTY signal and it could not be copied. The only solution was to leave the printer off when receiving and put the incoming signal into the storage buffer. I found I could play it back and print later.

Nothing I could do would stop the signals. The interface was wrapped in tin foil and grounded, the leads wrapped with, or in, toroids and line filters. The unit was moved across the room and coax antennas tried; still the noise came in.

I find RTTY very frustrating. I would warn RTTY buffs to cut back on output power since in transmit there is a tone on the air all of the time. Three of my friends have blown transistor drivers, including myself. □

The first bug

Jay Miller, KS2T

It was the summer of 1945. The U.S. Navy was rushing to finish Mark II, the first American large-scale digital computer.

"It was a hot summer with no air conditioning, so all the windows were open," wrote Navy Captain Grace Hopper in the *Annals of the History of Computing.* "Mark II stopped, and we were trying to get her going. We finally found the relay that had failed. Inside the relay — and these were large relays — was a moth that had been beaten to death by the relay. (Note: these were *MECHANICAL* relays!)

"We got a pair of tweezers. Very carefully we took the moth out of the relay, put it in the logbook and put scotch tape over it.

"Now, Commander Howard Aiken had a habit of coming into the room and saying, 'Are you making any numbers?' From then on, if we weren't making any numbers, we told him we were debugging the computer. To the best of my knowledge, that's where it started."

This logbook page with the first computer bug still taped to it is at the Naval Surface Weapons Center in Dahlgren, Virginia.

— Mt. Airy VHF Club □

New countries on 6M

The Dutch PTT has authorized 6M operation for PA0-3, PB0, and PE0's licensed to operate from 50-50.450 on a temporary basis, starting March 1, 1988. The permission granted is for CW only, 30W, for one year, to be renewed each year, and ends December 31, 1993.

The PTT advised the Dutch amateurs to use low-gain antennas in order to avoid radio-interference. The experiments are based on non-interference, to research the reflection of the E layer and Trans Equatorial Propagation (TEP).

Mike Barry, ZD8MB (G4MAB), Ascension Island, has gained permission to operate on 6M. He has been hearing the beacons of several South American countries on a regular basis. He has permission for 28 and 50 MHz beacons with output powers up to 50W. A 5-element F9FT Yagi donated by Randam Electronics in England will be the beacon antenna.

Mike Walters, G3JVL, is building the beacon. Dave Robinson, G4FRE, has designed both beacon keyer boards. The 6M beacon frequency is proposed to be 50.032.5 MHz. ZE8MB is presently active on 6M with 10W and a 2-element Yagi. If QSO'd, QSL to: Mike Barry, ZD8MB, c/o BBC ARS, Ascension Island, SOUTH ATLANTIC.

Serge Canivenc, F8SH, reports that he is a member of a working group discussing the possibility of French activity on 6M. Several meetings have already been held. It is possible that French amateurs might be granted a 3-10W authorization along the lines of the original British authorization, based on non-interference. He hopes for good news on this subject shortly.

Dany Prevostat, F6CZB, Amsterdam Island in the southern part of the Indian Ocean, will operate as FT5ZB, with 28 and 50 MHz beacons. The signal transmitted is expected to be: QST FT5ZB TEST QSL/QRX on 28528 OR 21521. Reception reports can be forwarded to Serge Canivenc, F8SH, 6, Rue de Pont-Hele, 22700 Perros-Guirec, FRANCE.

Roger Corbin, ZF1RC, is on 6M from Grand Cayman Islands with a Swan 250, and a 5-element Yagi, provided through the efforts of Jan Hubach, OH1ZAA/ZF2KZ. Roger has partially completed the automatic beacon keyer and hopes to have it on soon. Roger can be QSL'd through P.O. Box 1549, Grand Cayman, Grand Cayman Island, CARIBBEAN.

Ted Collins, G4UPS, reports Bill Sawyer, 9J2WS, Zambia, is active on 6M receive only so far. TR8DX is also on 6 transmitting on .110 mainly evenings and weekends. Tom Milne, A4XZK, Oman, is working on a 6M transverter. He will start with crossband activity until he can get his TX going. 4X1FC, Israel, has promised to get active on 6 with a receiver to start crossband activity at first.

Ted would like to encourage others you know in countries not now active on 6M to start listening or working crossband, while they work with their authorities to gain permission to operate on 6M. Also, encourage any HF DXpeditions going out to take 6M gear with them.

... French amateurs might be granted a 3-10W authorization ... based on non-interference.

South African activities

Hal Lund, ZS6WB, reports one of the most active Es periods in recent South African history occurred over the weekend of December 12-13. Operators reported active during this period were ZS1ADC, LA, LI, LN, ZR1AAU, L, ZS2BE, DP, JC, OD, ZS4TX, ZR5AAO, AAX, AL, GE, JJ, ZS5AAK, AV, BN, LP, ZR6ADY, ZS6BCR, BMS, BTL, BZJ, CE, CEM, KO, LW, SS, WB and XL. The following Zs beacons are reported to be active now: 50.005 - ZS2IX - University of P.E. - JF25 - 25W/dipole antenna; 50.010 - ZS1STB - Stilbaai - JF05 - 25W/4-el to Pta.; 50.0225 - ZS6LW - near Rosslyn - KG44 - 50W/6-el to C.T.; 50.050 - ZS6DN* - near Pretoria - KG44; 50.055 - ZS6DN* - near Pretoria - KG44.

*ZS6DN beacons are beamed in different directions intermittently. ID is usually very weak, and only continuous carrier may be heard in South Africa.

SMIRK activities

SMIRK has undertaken an IGY Cycle 22 project to attempt to get as many new countries active on 6M as possible. Remember to get on 28.885 and coordinate your crossband activity and to report your activity to Pat Dyer, WA5IYX. Also remember to move off 28.885 to actually perform your crossband activity so as not to interfere with the activity on the reporting frequency.

SMIRK recently provided Jose Cespedes, YN3CC, with a Yaesu FT-620B and 5-element Yagi, with the help of one of its members. However, Jose has not yet been able to obtain permission to operate even though 6M

is an authorized band for this hemisphere. SMIRK just wrote the Chief Engineer of TELCOR requesting them to grant him permission to operate during non-TV hours, since there was some concern expressed by TELCOR regarding possible RFI problems. Managua Channel 2 does not come on the air until about 5 p.m. Hopefully, TELCOR will allow future 6M operation and Nicaragua will be able to join us in the pursuit of propagation and DX on 6M.

In addition, SMIRK has just arranged for the transfer of a Swan 250 provided by Joe Picior, WB4OSN, to Fred Simpson, VP8PTG, Falkland Islands! The equipment and a care box of spare tubes provided by Bud Weisberg, K2YOF, should be in England now. They will be hand-carried to the islands in the next couple of weeks by a friend.

Fred is a permanent resident of East Falkland Islands, and is looking forward to being active on 6M. SMIRK needs donated or loaned Yaesu FT-620B, Kenwood TS-600, Swan 250, or Heathkit SB-110 equipment to be sent out to operators in other parts of the world.

We have an excellent chance to get the Senegal in Western Africa active on 6M if we have the equipment. The same thing goes for several other African and Caribbean countries. Drop me a line or call me if you can help.

SMIRK has recently assisted Cliff Hubert, HP3XUH, in Panama, to replace his burned-out 6M rig by purchasing and shipping replacement equipment to him from funds he provided us. He is back on the air with a Yaesu FT-707, FTV-707 6M transverter and is awaiting receipt of a TE Systems 180W amplifier with GAasfet preamp we just shipped him.

The SMIRK 6M Equipment Hotline remains in effect. I just recently updated the list. It will be updated every two weeks from many different sources listing 6M equipment for sale. If you are looking for a particular piece of equipment, call me — but not collect!

1988 50 MHz SSB directories

Harry Schools, KA3B, is taking orders for his fabulous 1988 6M SSB Directory and Beacon List, and the 6M Repeater Directory.

The SSB/Beacon Directory is 40+ pages of information on active SSB stations listed according to state and grid square, up-to-date beacon list, QSL and grid information on 6M DX operators, 6M DX operators, 6M award info, VUCC info and application procedures, and much more. The Repeater Directory is 24 pages in length, and is the most accurate listing of 6M repeaters currently available.

Both publications are $8 each or $15 for both. Preferred payment is postal money order. Both publications will be mailed out to those ordering by late February or March. Harry's QTH: 1606 South Newkirk St., Philadelphia, PA 19145. You won't want to be without these!

FCC petitioned to move 6M repeater operation

Both the Southern California Repeater and Remote Base Association (SCRRBA), P.O. Box 5967, Pasadena, CA 91107, and the Southern California Six Meter Club (SCSMC), P.O. Box 448, Cypress, CA 90630, have petitioned the FCC to extend 6M repeater operation to 51 MHz and up. If you would like to comment on their proposals, first write to them for copies of their petitions, review them, and quickly make your comments to the FCC.

SMIRK will not oppose their petitions, as long as there is a genuine need for such a change, and as long as the 51-51.1 and 52-52.1 MHz DX windows are left open. SMIRK does oppose the efforts to establish FM simplex operation on 50.3, preferring to leave that area open for future SSB expansion. □

Maureen Pranghofer, KF0I

Another Radio Camp has come and gone, and if you have been a regular reader of this column you have noticed there are at least two articles a year devoted to this topic. The last article dealing with Radio Camp, if my memory serves me right, had to do with the experiences other than radio, which camp provides for our students. I would like to devote this column to the different ways we at HANDI-HAMS handle the teaching of persons having different types of disabilities.

Perhaps if you or your club are working with someone who has a disability, this might give you some insight as to how to work with them or test them. Below is a brief description of disabilities and any special thing one might want to keep in mind when working with such a population:

BLINDNESS: Of all the HANDI-HAM participants, about 75% of them are blind or legally blind. Blindness does not always mean that a person is totally blind — that is, not having light perception. There are some people, for example B.J. in my last class, who get around without the use of a cane or dog because they have side vision but are unable to read.

In working with a blind ham candidate, the main thing to remember is

that things must be in an auditory format. Because HANDI-HAMS has a variety of tapes from Novice to Extra Class prerecorded on cassette, this is perhaps why this disability is our main population, though we serve people with all types of limitations. Tests can be given orally, and the code can be copied by the blind individual verbally dictating letters or words to the examiner, who serves as reader or writer.

Blind persons are expected to know how to answer questions on FCC exams involving diagrams. This can be done by providing the blind individual with a raised lined diagram, verbal description, or hands-on experience if the diagram is one dealing with such things as components. In our classes at Radio Camp, for example, when we teach about antennas, we actually have models of the different type antennas which can be passed around so those who are visually impaired know what the structure that will receive signals actually looks like.

You will note when working with people who have never been sighted they may need more tactile references than persons who have previously had some vision.

DEAF: People who are deaf or have hearing limitation need to have a tactile means of learning the code. Though there have been experiments using flashing lights to teach code, we have found that at a speed of over 3-4 wpm, the lights simply blend together, making copying impossible. By use of a tactile pad, the person is able to feel the long and short vibrations of code.

MULTIPLE SCLEROSIS: This is a progressive degenerative disease involving the central nervous system. It seems that it affects each person in a different way. Limitation can range from mobility impairments to speech impairments to vision or hearing loss.

The one thing to keep in mind when working with an amateur candidate having M.S. is that because of its progressive nature, it is very common that the student may seem to go up and down in their remembrance of code or theory and ability to retain information. Because of this, it is often necessary to provide the student with much individual attention, encouragement and repeated code practice.

Careful evaluation of a person's limitation . . . will determine the type of program they need in order to obtain a license.

Often these persons do not do as well in a classroom setting as a person who is blind or has some other type of physical limitation.

STROKE: People who have had strokes are usually impaired either in mobility limitations to one side of the body or in limitation of speech or processing of words. Depending on the severity of the communications affected by this stroke, there will be large variances in this candidate's appropriateness for Amateur Radio.

While some people are limited to the point where they are no longer able to speak, they can still do wonderfully with code. Others, though they may speak just fine, have lost the ability to spell or to retain information well enough to learn Morse code. Careful evaluation as to a person's limitation, and assessments as to how the stroke has specifically affected them, will determine the type of program and work they need in order to obtain an Amateur Radio license.

For many of these people, computer programs or other means of learning which rely on more than one stimulus — i.e., both sight and hearing to learn the code — are beneficial.

CEREBRAL PALSY: This disease affects one's motor and coordination ability, and is more often a limitation people experience from birth rather than due to accident. Like M.S. and stroke, its variations range widely. Some individuals are totally nonverbal and confined to wheelchairs not being able to move either arms or legs, while others might simply have a slight limp while walking.

The only modification that these individuals will require is perhaps a means of getting on the air that does not require communication (i.e., packet or Morse code, if the person is nonverbal, and a means with which they can send). Otherwise the only modification that might be needed is someone to write for them while they test.

SPINAL CORD INJURY: For the person who has a spinal cord injury, depending on the location of the damage, there will generally be paralysis. Some people do not need any modifications at all other than an accessible place to take examinations, while others may need puff and sip equipment.

A puff and sip keyer enables a person who has no use of their hands to send Morse code. Receiving would have to be done by head copy, as it is for many other disabled populations. Unlike those with cerebral palsy, whose spasticity often prevents them from using puff and sip, this mode works well with quadriplegics.

If you have questions about working with any other types of disabilities or would like further information on the above, don't hesitate to contact us at HANDI-HAMS. We don't know all the answers, but perhaps by sharing ideas we can assist you in developing techniques which will overcome even the most severe limitations and open the world through Amateur Radio to another disabled person. □

It sounded like a good idea at the time. Honestly, it did. Tricia and the family had moved up to our new QTH in Shavertown, Pennsylvania, and I had returned to Langley AFB, Virginia to finish the last five weeks of my active duty time prior to my retirement from the USAF. During my last weeks in the Air Force, I desired to camp out and have a QRP holiday in my off-duty time. I had operated portable QRP with excellent results on previous camping trips in the area. After arriving at the park, I picked a site, had the tent set up and the W1FMR loop erected in a nearby tree in a matter of an hour. Then, "They" arrived!

"They," in this case, were my "fellow campers" in the adjacent campsites. It seems that my campsite was between two groups that had taken up permanent residence at the park. Emerging from my tent, I was greeted by four people who, in the coming 24 hours, were to lend new meaning to the phrase "trapped in the Twilight Zone." As I looked my fellow campers over, I noticed that they could all be closely related to the banjo player on the movie *Deliverance*.

Once this gruesome foursome found out about my Amateur Radio/SWL hobbies, I could not get rid of them. Johnny noted, "You got a lotta stuff and me and Fat Mary ain't got nuthin'." (Note to myself: Hide *all* radio equipment. With that thought racing around my mind, I made mental note not to be more than five steps away from my tent in case some of the gear grew legs and decided to walk away.)

Finally, as dinner time approached, my new-found friends drifted off to their respective campsites to fix the evening meal. I quickly ducked into the tent, fired up the Argonaut and tried my luck on 20M with the W1FMR loop.

Jim's loop works very well indeed. The basic design centers on 146 feet of #22 or #24 covered speaker wire. (Radio Shack has 100′ rolls of #22 speaker wire. Split it apart and presto . . . you have 200 feet of antenna wire!)

The loop configuration that Jim uses is a triangle. A nearby tree serves as the end support. The wire exits the shack window, travels to the top of the tree, down the trunk of the tree and then horizontally back to the shack window. (See *Figure 1*.) A grid-dip meter or an antenna noise bridge is used to trim the total length to about 142′.

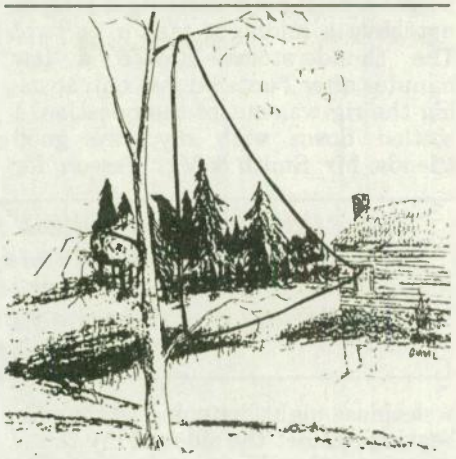


Figure 1 — **W1FMR Loop between house and tree. Total length is 146′, which is trimmed to resonance on 40M by grid dip oscillator or noise bridge.** ***(Illustration courtesy of QRP Quarterly)***

This length varies due to seasonal changes (sap movement in the tree), so a method of tuning the feedpoint was designed using a small section of PVC pipe. By sliding the pipe along the first foot or two of the antenna *outside* the shack, the antenna could be tuned for low SWR between summer and winter conditions. This tuning method makes the first foot or two of the antenna look like parallel tuned feedlines. By moving the 3″ section of PVC pipe further from the antenna tuner, you are electrically shortening the antenna (see *Figure 2*).

My loop was in the shape of an inverted delta. Having used this loop on other camping trips, I had packed along my trusty Ten-Tec AC-5 open wire tuner. W1FMR offers a balun; however, I was unable to reduce the SWR below 1:1.8 on any band using this balun. With the AC-5 tuner, I could tune the loop to a flat 1:1 SWR on all bands, even 80M!

The first couple of QSO's were with the Midwest on 20M. Since I wanted to really wring the antenna out, I used both CW and SSB modes on 40 and

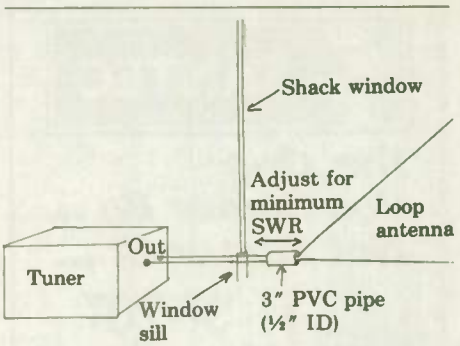


Figure 2 — **PVC tubing is moved back and forth for minimum SWR. Antenna exhibits 2dB gain over dipole!**

20M. I found that the loop performed very well compared to my faithful 40/20/15M dipole that was normally carried in my fly-away kit. 80M was a washout due to propagation at that particular time of day.

After about an hour, I was overcome with hunger pangs. Time for some din-din. Emerging from my tent, I found my campmates busily engaged in a card game at their picnic table. The two rainbow trout I had been hoarding for six months finally made it into the frying pan. My two golden brown lovelies and a salad completed my supper meal. Unfortunately, my picnic table had been previously moved from my campsite to Tommy's so, over I went to beg a seat.

I'm not a gambler. However, I was invited to join in a friendly game of poker around the old campfire. The attitude of several of my fellow campers was becoming bizarre. Since I didn't want to turn my back on these bozos for any length of time, I decided to play a few hands, let them all get tired and then run for my tent. Several times during our card game, people . . . weird people, would step out of the darkness to talk with Tommy or Carl. One of these dudes appeared out of no-

where and demanded I deal him in . . . no problem, dude.

I was really starting to get paranoid about the company I was keeping. Finally, I managed to break away from the Saturday Night Poker Club and make it to my tent. Overhearing some of the comments by my neighbors left me wondering if I might not have a midnight visitor or two! The thunderstorm started a few minutes after I entered my tent, so using the rig was out of the question. I settled down with my two good friends, Mr. Smith & Mr. Wesson, for a sleepless night, listening to the rain beating against the sides of my tent.

The next day, I was outta there. The park was kind enough to give me a refund on my campsite. Truthfully, I was never so glad to leave a place in my life. Although my brief stay at the park was an ordeal, I did manage quite a few QSO's with the W1FMR loop. I rate the antenna very high for practicality, ease of erection, and on-the-air performance. It definitely outperformed other antennas that I had used in the past when camping. Take the dimensions and give it a try.

Since I was staying with friends the rest of my time at Langley, I didn't do any more hamming but did log some outstanding SW DX with my FRG-8800 and a borrowed Sony AN-1 active antenna. If anyone out there wants to unload a Sony AN-1, QSO me ASAP.

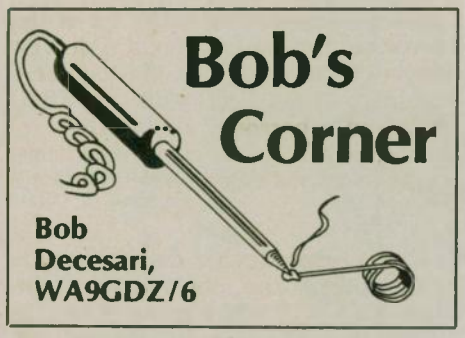
If you want further details on this antenna from Jim, don't forget to include an SASE and a green stamp to defray copying costs. Jim Fitton's address is: P.O. Box 58, Ward Hill, MA 01830.

. . . I did manage quite a few QSO's with the W1FMR loop. I rate the antenna very high for practicality, ease or erection, and on-the-air performance. It definitely outperformed other antennas I had used in the past when camping.

NEWS FLASH!! QRPer Mario Karcich, WB2CZB, will be part of a DX-pedition to Saba Island (PJ6) from July 7 to 14. Operation on all bands 80-6M. Mario will be soliciting QRP QSO's during his operating sessions. Here's a chance to snag a rare one, guys. Go get 'em! (PJ6 DXpedition info provided by Bud Weisberg, K2YOF.)

That's all for this month. Next couple of columns we will look at QRP, VHF style. Till then, 73 es Gud DX. Rich Arland, K7YHA, 9 Vine St., Shavertown, PA 18708. □

Share your knowledge with your fellow amateur and Worldradio reader.



Bob's Corner

Bob
Decesari,
WA9GDZ/6

The Chef's Special—a unique 5/8-wave vertical

Here is an antenna which many hams use, but few have ever built! It gives about 3dB of gain over a dipole and can be made with ordinary household objects. To prove this point, I made this one out of a tuna tin can, a coat hanger, and a piece of plastic rod found in the trash can!

Actually, I hope this article inspires others to try building something from literally nothing. It can be a lot of fun scrounging around for materials and useful parts. If nothing else, a "clean" version of this design might be made for the perfectionist. Additional information can be found on the 5/8-wave vertical design in the ARRL handbook. Now let's get down to some tuna fish so we can build this creation!

The heart of any 5/8-wave vertical antenna is the matching coil mounted at the base, required for impedance matching. Without it, the antenna will not properly couple the RF energy from the coax to the radiating portion.

Generally, the design of this section always makes building the antenna a little bit hard. In this experimental design, there are three basic sections; *Figure 1* illustrates the overall design.

The first section is the radiating or antenna portion. This can be made from a coat hanger, solid heavy gauge wire, or some other steel rod. Its length should be about 39″ to resonate in the 5/8-wave mode at 146 MHz. The next section is the coil form which also does double duty in supporting the radiating element. Some rigid, nonconductive material is necessary for the form. More on this later.

Finally, some type of base is required to hold the assembly together. I used an empty tuna can as it was a convenient size and could be soldered, too. A large metal plate could be used and would probably function as a pretty good groundplane. More on the groundplane later, also.

Figure 2 illustrates in some detail what will be necessary to integrate the antenna end with the base and the feedline. I used an acrylic rod—about 1/2″ in diameter and about 3″ long. On the antenna end, drill a hole about 1/4″ deep into the end of the coil form. This hole should be a tight fit for the rod which is to be used as the antenna. The rod and hole should not protrude into the coil winding area as this will electrically alter the coil. Drill a similar hole on the coil form end which is to mount to the can base.

As I use sheet metal screws for securing, this hole should be of proper diameter to allow the screw to bite the material. A 3/8″ sheet metal screw should work fine. Two similar sheet metal screws are used to allow for coil winding and interface to the feedline. These are centered on the coil axis and separated by about 2″ or 2½″. Again, proper diameter lead holes should be used for these screws.

Once the coil form is ready, wind about nine turns of bare wire—about 16 AWG or so—about the form. The windings should be evenly spaced. Obviously, the ends terminate under the two sheet metal screws. Next, a small Arco 30pF trim cap is soldered in line with the coax feed. The other end should be soldered to the coil about three turns up from the bottom. The coax braid is connected to the lower sheet metal screw as shown.

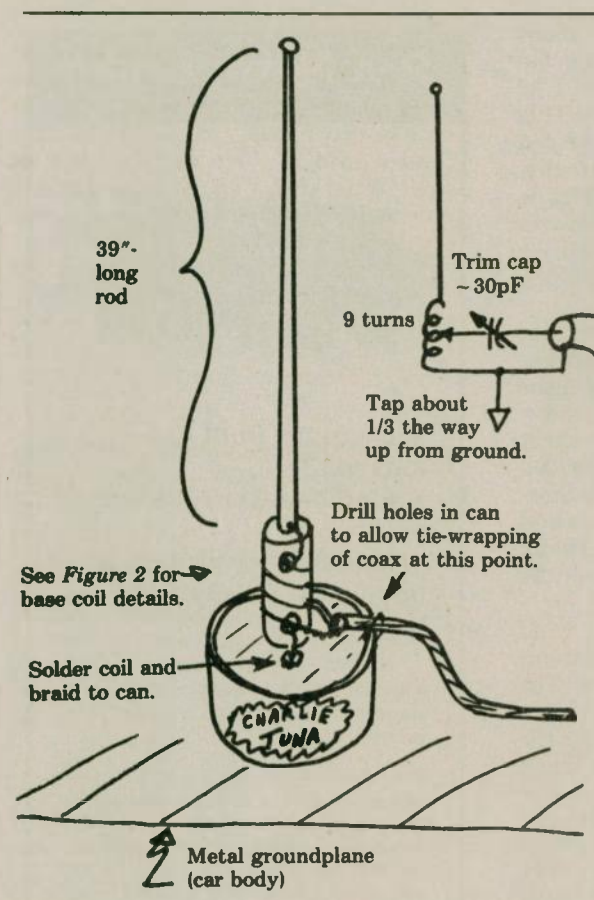


Figure 1 — "Culinary Delight" 5/8-wave 2M vertical

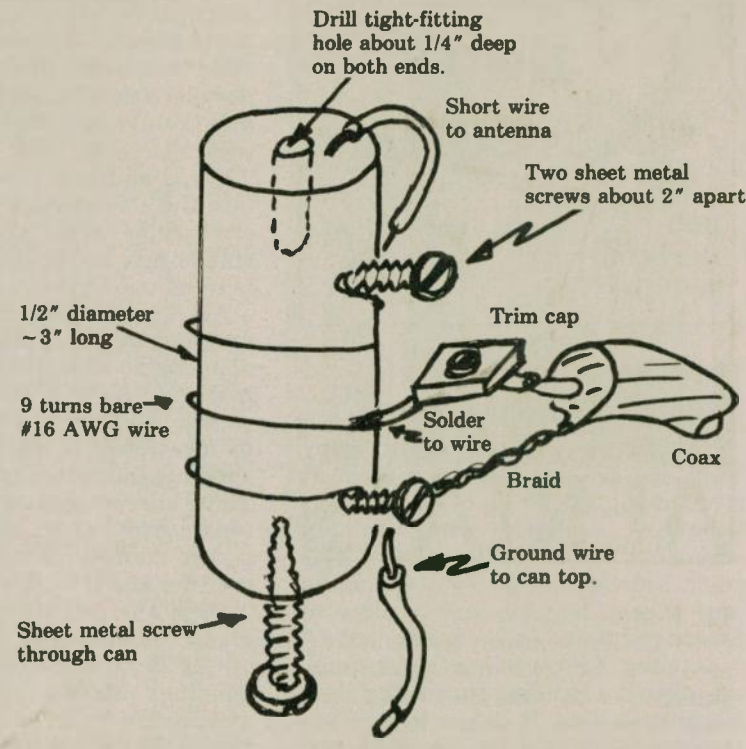


Figure 2 — Coil form details

Two short pieces of wire are next prepared. One connects the antenna to the coil at the hot end of the coil, and the other picks up the can top to the coax braid and ground. Keep these wires as short as possible as they contribute to the electrical length of the antenna. If you haven't done so already, assemble the can to the antenna coil and radiator. I also drilled a couple of small holes through the can lip to allow the coax to be tie-wrapped to the can. This provides sufficient mechanical strain relief so that the trim cap and coax doesn't move. (See *Figure 1* for this detail.)

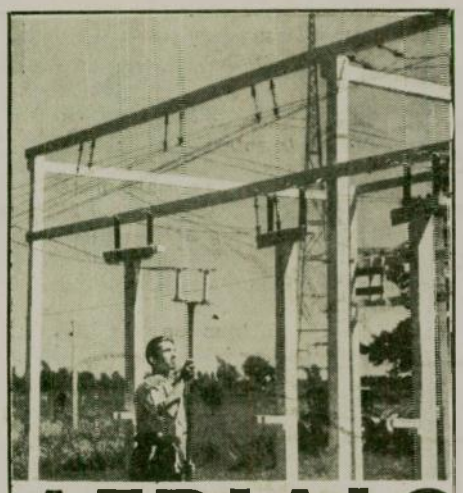
Now we are ready to test it. But first, a word about the groundplane. As all verticals, this one requires a sufficient groundplane for proper operation and a low SWR. The metal tuna can alone is not sufficient. However, if the tuna can base is placed on a car top or other large metallic surface, the antenna will function nicely.

Ideally, the ground end of the coil should be electrically connected to the groundplane. However, this is not necessarily required if there is sufficient capacitive coupling of the ground end of the antenna to the groundplane. The tuna tin will provide the necessary capacitance when placed on a large metallic plane.

With an SWR bridge in line, first adjust the trim cap for a minimum reading. Don't get discouraged if this can't be achieved. It will most likely be necessary to adjust the tap position as well, until the combination of shunt coil and series capacitance tune out the reactance presented by the antenna. Some experimentation will probably be necessary on the builder's part, so just plan on it from the start!

That is it. Pretty simple! For those who don't like tuna, sardine cans, oyster cans or even a small coffee can will work. Make the can big enough, and you won't have to worry about the groundplane!

(please turn to page 59)



AERIALS

Lil Paddle

dB's. They seem to be thrown around a lot with not much understanding as to what they really represent. Example: You are listening on headphones to a single frequency tone, and the conductor of the test tells you to indicate when you can detect it is louder. The volume is cranked up and you put up your hand. The level of increase that you finally detected it was louder, is — for most people — 1dB.

This illustrates that under almost laboratory conditions, a 1dB increase represents but a fine sliver of perceived difference. Under normal wireless conditions, a 1dB increase would never be noticed. Would it be noticed on an "S" meter? No!

What magical powers many attribute to the "S" meter on their receiver! If such a condition were true, it would require an instrument more expensive than the transceiver. "S" meters have no standard. And if one were calibrated for one band, it would change drastically for other bands. At one time it was bandied about that one "S" unit was a difference of 6dB. Some manufacturers claimed but 5. Six would have been a nice standard, since that would have made it a four time power increase from "S" unit to "S" unit.

For you see, a 3dB increase necessitates a double in power. Then to raise another 3dB, you would have to double your power again.

To illustrate (assuming all things are ideal), to raise one "S" unit on the other station's receiver you would have to go from 100 to 400W. Another example: If you were running 1,000W and decreased your power to 250W, you would drop 6dB or but one "S" unit. If you were running 500W and went down to 50W you'd drop 10dB or about an "S" unit and a half on our perfect "S" meter.

To prove that "S" meters are not what they are cracked up to be, here is the proof. How many times have you heard amateurs on the bands checking their amplifier vs. transceiver alone? When going from 100W to 1,000W, the gain would be 10dB. Yet, you'll hear reports like, "You went from S-7 to 20 over 9." Or you may even hear, "You sound louder but there's no difference on the 'S' meter." And thus we demolish the myth of the "S" meter.

As far as mV per dollar goes, you'll do better putting the money into the antenna system before adding an amplifier. Not only does the antenna give you transmitted gain (without increasing the power bill), but it also increases the received signal the same amount. Plus, it gives great rejection off the back and even more off the ends, reducing the QRM on the frequency that you hear. And it helps others, as you are squirting the power in the given direction you wish rather than having it just spew all over.

As to the type of beam antenna to put up . . . if you are torn between a quad and a Yagi and someone tells you the Yagi is better, you know you are in the company of a buffoon.

There are certain mechanical superiorities of the Yagi under adverse weather conditions, but as far as just oomph per element or boom length, the quad is the winner.

To touch on something else. In order to make the received audio somewhat more pleasant, you may wish to obtain an external speaker of higher quality than comes in your rig. Try two of them separated a bit. It does make it much nicer than listening to a tinny speaker in a tinny box.

Now we go back to yesteryear for true creativity in antennas. I remember one cute lieutenant I used to see before he shipped out to the CBI theater. He wrote me from New Delhi,

Bangkok, Singapore, and then we just lost touch. He was from Fresno, California as I remember.

He told me that once they couldn't get through on a circuit. So what he did was drag some of that metallic matting used on airstrips over next to a metal building. There was now a 90° angle of mat and building. By putting up a dipole at the right place, he had created an HF corner reflector which worked out just fine and a good communications path was created.

Not only was he smart, but he was a handsome brute. I hope the years have treated him as kindly as they have me.

Then to the reprobates who have written in challenging what we've been saying in this column: You are full of soup!! After you read next month's column by my alternate, you will realize what twits you are.

To others: Your queries, comments and praise are welcomed.

(Obviously, Lil Paddle is an alias. Due to her work situation, it is necessary.)
— A GOLDEN OLDIE □

Kurt N. Sterba

During ARRL's Sweepstakes in November, my antenna was two shopping carts from the market.

Using a Budwig connector, I had the coax center conductor going to one cart and the shield side to the other cart in the usual dipole configuration. At no time did the power exceed 60W into the tuner.

This was not a gung-ho contest effort because I like to lean back and have a good cigar. Lil and I go out to breakfast on Sunday morning, I stop and read the newspaper, etc.

With the shopping carts I worked about half the sections, 34 to be exact, including four Canadian provinces. Every U.S. call area was worked and also a DX station over 5,000 miles away.

I'm on one coast and the other coast was worked on 40. Contacts were made on 75-40-20-15 and 10. Efficiency did suffer on 75. On 40 the tuner settings were very critical with the low SWR point being ultra-narrow.

Needless to say, this is not the way to contrast prominence but was done to prove a point. Contacts were made with California, Indiana and Michigan at 1752, 1753, 1754. Another string was WI, WI, STX, LA, MO, STX at 1849-50-51-52-53-54. Then IL, NTX, STX at 1857-58-59.

You never saw a dipole like this before!

There were another four contacts in five minutes. Yet another run was four contacts in four minutes, and another 4/4. And similar. Granted, not a Sweepstakes winning score, but remember . . . barefoot into two shopping carts! Just sitting in the back yard. No radials, no amplifier, but I did have the *tuner.* In this case, for the sake of the demonstration, an old Dentron.

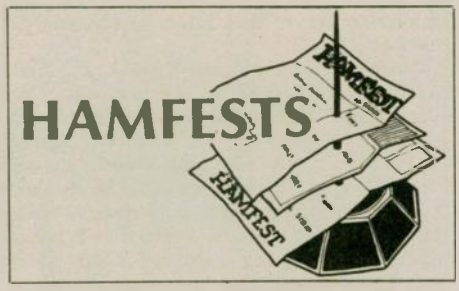
Yes, if you can get power into metal, it will radiate. It will then spray off the ionosphere.

A couple of Sweepstakes ago, I used a metal ladder for a radiator. Letters came in saying they didn't believe it. Let me give you total assurance it is all very true.

No, two shopping carts are not a "disguise" antenna, and it isn't written up in the SOE book. However, such should lead one to experiment with rain gutter antennas and the like.

I can sympathize with those with antenna restrictions (in my neighborhood, antennas make the place look better). One answer may be one that I've had very good results with, and that is wire just along the fence. Out the window with coax to the fence and then one wire to the left, one wire to the right.

Comments (but not from doubters) are always appreciated. □



California

Presenting the San Francisco Bay Area Peninsula's largest electronic flea market! Come to Parking Lot "B" at Foothill College, Los Altos Hills, on Saturdays, 8 a.m. to 2 p.m. Sellers pay $7 per vehicle (two spaces). Buyers free. Refreshments served. Novice through Extra exams given.

Dates for 1988 are: April 9 (amateurs' donation to Palo Alto Red Cross), May 14 (ELECTRONIC MUSEUM ARC), June 11 (SPECS USERS GROUP), July 9 (PERHAM FOUNDATION), August 13 (SOUTHERN PENINSULA EMERGENCY COMMUNICATION SYSTEM), and September 10 (FOOTHILLS ARS).

Talk-in anytime on 144.67/145.27 (SPECS repeater).

For more information, call (408) 255-9000. □

●

The SOUTHERN CALIFORNIA DX CLUB CONVENTION COMMITTEE — under the direction of Chairman Frank Cuevas, W6AOA — is pleased to announce the convening of the 1988 International DX Convention on April 22, 23 and 24 at the Holiday Inn, Visalia.

Amateurs from all parts of the world will be attending this year to discuss and exchange views on DXing. Guest speakers will include such notables as Martti Laine, OH2BH, with EA members of the DXpedition to the Western Sahara (SØRASD); and Lloyd and Iris Colvin, W6KG/W6QL, just returned from their Far East DXpedition.

The pre-registration prize will be a Kenwood TS-940S. The pre-registration deadline has been extended; all those planning to attend should submit their applications to Don Bostrom, N6IC (4447 Atoll Ave., Sherman Oaks, CA 91423), no later than the end of March. Any overseas amateurs planning to attend will be assured of pre-registration by

Aerials

informing Don of their intentions with a QSL card or letter.

Included in the planned agenda of DX and contest forums will be the popular "Code Copy Test." Unlike the "routine" code exam, this one includes all of the noise, jamming, drift, static, etc. normally associated with "rare" DX or CW contests. Also featured will be hourly prize drawings, a Saturday evening banquet, a Saturday women's luncheon (including shopping trips and tours) and a Sunday morning breakfast meeting.

For more information, call Frank, W6AOA, at Henry Radio, (213) 820-1234; or Don, N6IC, (213) 647-8928 work/(818) 784-2590 home. □

Massachusetts

The SOUTH SHORE ARC of Braintree will again hold its annual *indoor* flea market on Sunday, April 10, at the Viking Club, 410 Qunicy Avenue, Braintree, from 11 a.m. to 4 p.m.

There will be 8′ tables available for $10 each (which includes *one* free admission per table), only if paid for in advance before April 7, by sending the appropriate amount to Hal Jones, WB1ABM, 48 Saning Rd., N. Weymouth, MA 02191. Tables will cost $12 on the day of the sale. (No guarantee of table space unless paid for in advance.) Checks should be made payable to the South Shore ARC. Confirmation of check receipt will be sent. No cancellation refund after April 7.

The Viking Club will open to vendors at 9 a.m. Doors open to the public at 11 a.m. with an entrance fee of $1. Plenty of free parking. Refreshments available. We'll run, rain or shine! Don't be disappointed; first come, first served.

Talk-in on 146.07/.67 and 146.52.

Questions? Call (617) 335-5777 (Hal), evenings. □

Minnesota

The LAKE REGION ARC will sponsor a hamfest on April 16, from 8 a.m. to 3 p.m., at the Ottertail County Fairgrounds-Hockey Arena, Hwy. 59, South Fergus Falls. Doors will open for early set-ups on Friday at 4 p.m. Security provided overnight. There will be camping spots for Friday night only.

The club is featuring VE testing, Northwest packet meeting (led by Bill Snyder, W0LHS, Worldradio's *DIGITAL BUS* columnist), Army MARS state meeting, commercial dealers, flea market, concession stand and more.

Admission is $4; $3 in advance. Tables (6′) are $4 each. VE tests, Novice to Extra. Testing starts at 10 a.m. Send Form 610, copy of original license or all completion certificates, and a check ($4.55) payable to ARRL/VEC to Tom Shubitz, Box 157, Fergus Falls, MN 56537. Walk-ins; first-come, first served.

Talk-in on 146.640/.040.

For more information, call (218) 826-6274, or write to Keith McKay, N0FKF, Rt. 1, Box 46, Battle Lake, MN 56515. □

New Jersey

The WILLINGBORO AREA REPEATER GROUP announces its annual hamfest, to be held Sunday, April 24, 8 a.m. to 2 p.m., at the Stardust Ballroom, Rt. 130 and Haddonfield Road, Pennsauken.

There will be carpeted indoor and paved outdoor selling (power available inside), VE license exams, ample paved parking, food and prizes. Register for exams 9:45-10 a.m.; exams at 10:30 a.m., courtesy of BELLMAWR RACES.

Admission is $3 for adults, $2.50 in advance; XYL's and children under 16 free. Table spaces are $5 per 8′ table. Set-up from 6 a.m. Sellers *MUST* purchase admission ticket.

Talk-in on 146.925 and 146.52.

For information, write to Willingboro Area Repeater Group, P.O. Box 472, Willingboro, NJ 08046; or call Jack Engel, K2KLM, at (609) 877-5249 after 6 p.m. □

•

The CHERRYVILLE REPEATER ASSOCIATION will sponsor the annual Flemington Hamfest on Saturday, April 16, at Hunterdon Central High School Field House on Route 31.

Doors open at 8 a.m., with breakfast and lunch served on site. FCC exams will be given; send FCC Form 610, copy of current license and $4.55 (checks payable to ARRL/VEC) to Cherryville Repeater Assn. Box 308, Quakertown, NJ 08822.

Talk-in on 146.52, 147.975/.375, 147.615/.015, 222.52/224.12 and 449.85/444.85.

For table reservations and advance ticket sales, call (201) 788-4080, or write Marty Grozinski, NS2K, 6 Kirkbridge Rd., Flemington, NJ 08822. □

New Mexico

April 23-24 are the dates for the MESILLA VALLEY RADIO CLUB's 24th Annual Amateur Radio Extravaganza and Bean Feed. This year's event will be held at the Dona Ana Fairgrounds west of Las Cruces, off I-10 Exit 127.

Features include new and used ham gear, technical information, VE exams both days, RV parking ($5 per night), prizes and Sunday bean feed — tickets available at gate. Admission is $5 (includes both days); kids under 12 free. Food NOT included in admission!

Talk-in on 146.04/.64 and 146.16/.76, or Karl Hess, WF5A, (505) 646-5132/522-1172.

For more information, contact WF5A at 712 Stagecoach Dr., Las Cruces, NM 88001, or at phone numbers listed above. □

Ohio

The 10th Annual Lake County Hamfest will be held Sunday, March 27, at the Madison High School, Burns and Middle Ridge Roads, Madison. The event will run from 8 a.m. to 3 p.m., and is sponsored by the LAKE COUNTY AMATEUR RADIO ASSOCIATION.

The indoor hamfest will feature commercial exhibits, a flea market, FCC Amateur Radio examinations, special forums on Amateur Radio and computer topics, and food. An equipment test bench will be available.

Main door prizes include an ICOM IC-900 controller and 2M module, IC-2AT hand-held, and Coaxial Dynamics 81000A wattmeter. An auxiliary raffle includes a 25″ color TV set with stereo sound. The drawings are at 2 p.m. Admission is $4 at the door.

Talk-in on 147.21/81.

For information, call (216) 953-9784 until 9 p.m. Write: LCARA Hamfest, 7803 Skylineview Dr., Mentor, OH 44060. □

•

The DAYTON ARA proudly announces the 1988 Dayton HamVention, which will be held April 29-30 and May 1, at the Hara Arena, Dayton. This giant three-day flea market will feature exhibits, license exams, a CW proficiency test and door prizes. There will also be non-ham activities for XYL's and other family members.

Registration deadline is April 4 (U.S.) or March 31 (Canada). Admission is $8 (valid all three days in advance, $10 at door; grand banquet is $16 in advance; $18 at door; women's luncheon $6.75 each day (Saturday and Sunday). Flea market is $23/1 space, $50/2 adjacent, $150/3 adjacent (max.). Lodging deadline is April 2.

Novice through Extra exams are scheduled for Saturday and Sunday, by appointment only. Send FCC Form 610 (August 1985 or later) with requested elements indicated at top of form, copy of present license and check for $4.35 (payable to ARRL/VEC) to: Exam Registration, 8830 Windbluff Point, Dayton, OH 45458.

Special awards will be given for "Radio Amateur of the Year," "Special Achievement" and "Technical Achievement." A VHS video presentation about the HamVention is available for loan; contact Dick Miller, 2853 La Cresta, Beavercreek, OH 45324.

Talk-in on 146.34/.94.

For general information, call (513) 433-7720 or write to Box 2205, Dayton, OH 45401; for

flea market info, call (513) 898-8871; for lodging info, call (513) 223-2612. □

•

The Dayton-Cincinnati chapter of the Quarter Century Wireless Association (QCWA) announces the 1988 QCWA banquet Friday, April 29, the first evening of the Dayton Hamvention. Neil's Heritage House has an outstanding meal for us. COD bar is at 6:30, the banquet starts at 7:30 p.m. EST.

We are most fortunate to have Carole Perry, WB2MGP — recipient of "Ham of the Year" award at the 1987 Dayton Hamvention and an outstanding teacher — as our speaker.

Banquet tickets are $13 each. Come and join the fun. QCWA membership is not required to attend. For tickets or information, contact Bob Dingle, KA4LAU, 657 Dell Ridge Dr., Dayton, OH 45429; (513) 299-7114. □

•

The 19th Annual B•A•S•H will be held on Friday night of the Dayton Hamvention, April 29, at the Conference Center (Madison Room) of the Hara Arena and Conference Center, (the same location as the Hamvention), starting at 7 p.m. There is no admission charge, and free continuous entertainment. Hot dinner, sandwiches, snacks and beverages are available. Two exciting top awards, and many others.

Stay right at Hara when the Hamvention closes on Friday evening, meet your friends, and join us for an evening of fun and entertainment. Sponsored by the MIAMI VALLEY FM ASSOCIATION, P.O. Box 263, Dayton, OH 45401. □

Oklahoma

The FORT SILL ARC celebrates its 41st year with their 1988 swapfest, to be held April 16, 8 a.m. to 6 p.m., at the Comanche County Fairgrounds, in Lawton. Admission is $2 at the door; tailgate fee $3; tables $5. Preregistration needed only for tables. First come, first served.

Talk-in on 147.390 (+600).

For more information, contact Edwin Stinnett, AA5DS, 4624 NE Bell Ave., Lawton, OK 73507. □

South Carolina

The CHARLESTON ARS will be sponsoring the Charleston Hamfest on Sunday, April 10, at Elks Recreation Site, Cosgrove Avenue South (Hwy. 7), just off I-26. Gates open from 7 a.m. to 5 p.m.

Large flea market/tailgating space at no charge. Tables available for $5 each, while supply lasts. Limited number of inside vendor spaces also available for $10 each. Bingo for YL's, XYL's and harmonics. Refreshments, prizes and free parking.

Hospitality room for participants will be open from 7:30 p.m. to 11 p.m., April 9, at the North Charleston Exchange Club (Helm Avenue off Rivers Avenue). Volunteer exams at 11 a.m. in Trident Technical College Building, 100-7000 Rivers Avenue, North Charleston. Bring original and a copy of present license, or applicable certificate and picture ID, and $4 check payable to VEC WCARS. Walk-ins OK.

Talk-in on 146.76/16 and 147.27/87.

For more information, call Jenny Myers, (803) 747-2324, or Carol Pennington, (803) 766-4939. For exam info, call Werner Dolder, AA4IX, at (803) 873-9645. □

•

The BLUE RIDGE ARS proudly sponsors the 49th Annual Greenville Hamfest and Electronic Flea Market at the American Legion Fairgrounds in Greenville, April 30 and May 1.

Featured will be VE exams (walk-in), 25,000 sq. ft. indoor dealer displays, indoor/outdoor electronic and computer flea market, food, concessions, free parking, camping and prizes. Early dealer/flea market set-ups with advance registration. Hours: 8 a.m. to 5 p.m. on the 30th, 8 a.m. to 3 p.m. on the 1st. Admission is $4 in advance, $5 at the gate.

Talk-in on 146.01/.61 and 146.22/.82.

For advance tickets or more information, please send SASE to: BRARS, P.O. Box 6751, Greenville, SC 29606. □

Tennessee

The MAURY ARC will sponsor its 2nd annual indoor hamfest from 8 a.m. to 4 p.m., Sunday, April 17, at Maury County Park Baker Building in Columbia.

Admission is $2; children 12 and under admitted free with an adult. Acres of free parking. Over 12,000 sq. ft. inside flea market. Tables (8') $8 each. Food and drink available.

Talk-in on 147.72/.12.

To reserve tables or for more information, contact: George Russell, WB4JCR. P.O. Box 832, Columbia, TN 38402; (615) 388-0577. □

Washington

The 11th Annual INLAND EMPIRE HAMFEST will be held Saturday, April 9, 8 a.m. to 5 p.m., at Red Cross Bingo Hall, West 708 Boone, Spokane.

Admission is $2. Tables (4'×8') are $8 in advance, $10 after April 7. Forums, commercial and non-commercial displays, prizes and VE exams (1:30 p.m.). Deadline for exam applications is March 12; walk-ins on space available basis. Mail 610's and a check for $4.55, payable to ARRL/VEC.

Talk-in on 145.43, 146.88, 147.24 and 146.52 simplex.

For reservations/information, contact Hamfest 88, c/o Ed Ferrel, W7EQU, 318 E. Courtland Ave., Spokane, WA 99207. □

Wisconsin

The MADISON AREA REPEATER ASSOCIATION, Inc. is pleased to announce its 16th Annual Madison Swapfest, to be held Sunday, April 10, at the Dane County Exposition Center Forum Building in Madison.

Doors will open at 7:30 a.m. for flea market sellers and at 8 a.m. for the general public. Special arrangements for early set-up at 3 a.m. are available for commercial exhibitors and purchasers of six or more flea market tables.

Over 20,000 sq. ft. of space for commercial exhibitors and the flea market will be available, as well as plenty of space for parking in the adjacent paved lot. Hotel accommodations are available within walking distance of the swapfest. Refreshments provided.

Admission is $2.75 per person in advance, $3 at the door. Children 12 and under admitted free. Flea market tables $7 each in advance and $8 at the door, plus admission. *Be sure to reserve early as tables were sold out last year.* Deadline for mail orders of admission tickets and table reservations is April 3, 1988.

Talk-in on WB9AER/R, 146.16/.76.

For admission tickets, table reservations or information on commercial exhibit space, write to MARA, P.O. Box 3403, Madison, WI 53704; or call (608) 274-5153 day or night for information. Leave message. □

DX YL to NA YL Contest

The 1988 DX YL to North American YL Contest, sponsored by the Young Ladies Radio League, will be held during two weekends in April. The CW portion lasts from 1400 UTC, Wednesday, April 6 to 0200 UTC, Friday, April 8. The phone portion lasts from 1400 UTC, Wednesday, April 13 to 0200 UTC, Friday, April 15. All licensed women operators throughout the world are invited to participate.

Procedure: DX YL's call "CQ North American YL" and N.A. YL's call "CQ DX YL."

Operation: All bands may be used. No crossband operation. Net contacts, repeater contacts and contacts with OM's do not count. Stations may be worked and counted once on each band and mode. Participants may work only 24 hours of the 36 hours in each contest. Operating breaks must be indicated in the log.

Exchange: Station worked, QSO number, RS or RST, state/province/country.

Scoring: A) Phone and CW will be scored as separate contests. Submit separate logs for each contest. B) DX YL's, including Hawaii and Alaska, may contact all the North American continent which includes the 48 contiguous states and Canadian provinces. C) Contestants on the North American continent (including the 48 contiguous states and Canadian provinces) may contact DX YL stations including Hawaii and Alaska. D) A station may be counted once on each band for credit and 1 pt. is earned for each station worked once on each band. E) Multiply the number of *different* QSO's by the number of states/provinces/countries worked. A multiplier is counted only once in the contest. F) Contestants running 150W or less on CW and 300W PEP or less on SSB, at all times, may multiply the results of E by 1.25 (low-power multiplier).

Suggested frequencies: *CW—(80M)* 3.540-3.570; *(40M)* 7.040-7.070; *(20M)* 14.040-14.070; *(15M)* 21.180-21.210; *(10M)* 28.180-28.210. *SSB—(80M)* 3.940-3.970; *(40M)* 7.240-7.270; *(20M)* 14.250-14.280; *(15M)* 21.380-21.410; *(10M)* 28.380-28.410 MHz.

NOTE: Since band allocations in other countries are often different than the USA, North American YL's should look for DX YL's in other parts of the bands, especially on 40 and 80M.

Logs: All logs must show your state/province/country to qualify for awards. For each QSO, logs must show the station worked, QSO number given and received, RS(T) given and received, country/state/province of station worked, time, band and date. Logs must also state the power output used and the operating breaks taken. If you have 200 or more QSO's, submit a separate log for each band and submit a "dupe" sheet. Do not send carbon copies of logs. Please print or type.

Logs must be signed by the operator and no logs will be returned. Remember to file separate logs for each contest. Logs must show claimed score and be postmarked by May 2, 1988 and received no later than May 25, 1988, or they will be disqualified. Mail logs to: Vice President YLRL, Carol Shrader, 4744 Thoroughgood Dr., Virginia Beach, VA 23455, USA.

Duplicates: For each duplicate contact that is removed from the log by the vice president, a penalty of 3 additional and equal contacts will be exacted.

Awards: Cup to 1st place DX phone; cup to 1st place N.A. phone; cup to 1st place DX CW; cup to 1st place N.A. CW. Plaque to highest combined CW and phone N.A. score. Plaque to highest combined CW and phone DX score. The 2nd and 3rd place DX and N.A. winners in each contest will receive certificates. □

QRP ARCI Spring QSO Party — CW

The QRP ARCI Spring QSO Party — CW will be held from 1200Z, Saturday, April 9 to 2400Z, Sunday, April 10 (24 hours max.).

Exchange: *Member* — RST, state/province/country, ARCI number; *Non-member* — RST, state/province/country, power out

Points: *Member* — 5 pts.; *Non-member (different continent)* — 4 pts.; *Non-member* — 2 pts.

Multipliers: S/P/C total all bands. The same station may be worked on more than one band for points and S/P/C credit.

Bonus points: (homebrew equipment used in the QSO party): + 200 for each band HB transmitter used, + 300 for each band HB receiver used, + 500 for each band HB transceiver used. (Maximum of 500/band on which QSO made.)

Power supply multiplier: × 1 — commercial power; × 1.5 — battery; × 2 — solar/natural, or battery-charged only by solar or natural power.

Power multiplier × 0 — over 5W (check log); × 2 — 4-5W; × 4 — 3-4W; × 6 — 2-3W; × 8 — 1-2W; × 10 — less than 1W.

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

Include a description of equipment, antenna(s) and power supply used with each entry.

Call: CQ QRP, CQ QRP, CQ QRP DE K5VOL, K5VOL, QRP TEST K.

Score: Points × S/P/C × power multiplier × power supply multiplier + bonus.

Entries: Entry may be all-band or single-band. Compete against own class of entry. Certificates to the top 10 scores overall, and to the top score in each band for single-band competitors. Certificates will be issued to the top score in each S/P/C and class in which two or more entries are received, and the score is at least 40% of the average of the top 10. A maximum of 24 hours operation is allowed in the 36-hour QSO party period.

Entry includes a copy of the logs and a separate summary sheet. All entries must be postmarked 30 days following the end of the contest. Late entries will be counted as check logs. Members indicate their membership number on all logs. Members and non-members indicate their input or output power for each band. The highest output power level used will determine the power multiplier. Output power is considered as half of the input power.

A summary sheet and sample log sheets are available from the contest manager for an SASE with 1 unit of postage. Include an SASE with 1 unit of postage in the entry for a copy of the contest results. Results will be published in the next issue of the *QRP ARCI Quarterly*.

All entries are to be sent to: Red Reynolds, K5VOL, QRP ARCI Contest Manager, 835 Surryse Rd., Lake Zurich, IL 60047, USA. □

Connecticut Party

The Connecticut QSO Party, sponsored by the Candlewood ARA, will last from 2000Z, April 9 until 0200Z, April 11, with a rest period from 0500Z to 1200Z.

Modes: Phone and CW.

Operation: Work stations once per band and mode. CW QSO's in CW bands only. Work portables and mobiles again as they change county. No repeater QSO's.

Exchange: Serial number, signal report and QTH (county for CT stations; state/province/country for others)

Suggested frequencies: *Phone* — 1.860, 3.927, 7.280, 14.280, 21.370, 28.370, 50.110, 144.200, 146.55 MHz; *CW* — 40 kHz up from lower band edges; *Novice* — 25 kHz up from low end.

Scoring: Count 1 pt. per phone contact, 1.5 pts. per CW contact, 3 pts. per OSCAR contact. Club station W1QI counts 5 pts. per band/mode. CT stations multiply QSO points by states worked (DX only one multiplier); others multiply by CT counties worked.

Awards: Certificate to highest scorer in each state and WACC Certificate for working all CT counties.

Logs: Mail logs by May 11, 1988 to CARA, P.O. Box 143, Bethel, CT 06801. □

Georgia QSO Party

The Dixie DXers Contest Club is sponsoring the 1988 edition of the Georgia QSO Party, from 2000 UTC, Saturday, April 16 to 2400 UTC, Sunday, April 17. This activity is intended to make all of the 159 Georgia counties available to North American and DX radio amateurs. Special encouragement will be given to mobile operators and to Novice/Technician Class operators.

Classes: Single operator, mobile (or portable), and fixed stations, CW and phone.

Exchange: RST and state for non-Georgia stations; RST and country for DX stations; RST and county for Georgia stations.

Scoring: 1 pt. for each phone QSO; 2 pts. for each CW QSO; 5 points for each Novice or Technician QSO. Each Georgia county (159 max.) for non-Georgia stations; each state or VE province (62 max.) plus each DX country (10 max.) for Georgia stations. Same station may be worked once on each band.

Final score: Total QSO pts. from all bands × the sum of all the multipliers. Score reduction for each duplicate QSO.

Frequencies: *CW* — 1.810, 3.550, 7.040, 14.050, 21.040, 28.050 MHz; *Phone* — 1.860, 3.830, 7.230, 14.280, 21.340, 28.450 and 28.550 MHz.

Awards: Certificates in each of the above classes to the highest score in each state, Georgia county, and to the highest scoring DX station in each continent.

Mail your entry by June 1, 1988 to: Al Roloff, N4UZ, Rt. 1, Box 204, Bremen, GA 30110, USA. □

Rat's Nest/Crooked Stick VIII

The Issaquah ARC will be sponsoring Rat's Nest and Crooked Stick VIII — an antenna experimenter's contest sprint — from 2300Z, April 23 to 0400Z, April 24.

Rat's Nest and Crooked Stick antenna: a homebrew wire antenna, in any configuration, as long as it includes a crooked stick support

Frequencies and mode: 40M band on CW (7075-7150 kHz) and SSB (7225-7300 kHz)

Transmitter power: Maximum 250W DC input

Exchange: Name, location (QTH), Type of antenna, IARC member (Y or N)

Scoring: *CW contacts* — 5 pts. each; *SSB contacts* — 3 pts. each. To encourage "Elmering" and the participation of everyone interested in Amateur Radio, note the following bonus points you can have for every contact you make with an apprentice!

Contacts made *with* an apprentice, add 2 pts. each. Contacts made *by* an apprentice, add 5 pts. each. NOTE: An apprentice is an unlicensed individual, a Novice, or a Tech needing assistance getting on the air. Multiplier for each new state, province or country: ×2.

Awards: A) Highest score by a Novice/Tech; B) Highest score with Rat's Nest and Crooked Stick antenna; C) Highest score CW; and D) Highest score SSB.

Rat Catcher Certificate: A personalized "Rat Catcher" certificate will be awarded to everyone making contact with three or more members of the Issaquah ARC.

Contest entries: Send a summary sheet listing with your call, name, address, license class, description of antenna and equipment used, copy of your log with points per mode, bonus points and total points, to: Martha Stedman, N7IVX, Contest Chairman, 15423 SE 7th Place, Bellevue, WA 98008. □

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Upgrade reward

Gordon West's Radio School has a new incentive to upgrade using their course materials. Their students who successfully pass any upgrade examination, or pass their Novice entry-level exam, will receive equipment discount coupons worth between $20 and $25 each. ICOM, Yaesu and Kenwood are participating with Radio School in this program in this exclusive "radio rebate."

If you have passed your upgrade examination, or Novice examination, within 120 days using Radio School training materials, then you may write Radio School and receive your radio rebate rewards.

You will also receive a handsome FCC license holder, a certificate of course completion, a certificate for a free Amateur Radio magazine, plus several other coupons that may be redeemed for Amateur Radio material.

"Equipment manufacturers and the entire Amateur Radio industry are taking part in this exciting 'upgrade' and 'get your license' incentive program. It gives the new Novice impetus to buy some gear at a discount, using the rebates, and going on the air immediately. It also rewards our many licensed students that have studied hard and achieved that next higher level of licensure," comments Gordon West, WB6NOA, well-known writer and instructor.

Radio School students who have successfully passed their Novice or upgrade should write today for their free radio and equipment rebate certificates — Gordon West Radio School, 2414 College Dr., Costa Mesa, CA 92626; (714) 549-5000. □

New Morse journal

Since 1983, two Dutch radio amateurs — Rinus Hellemons, PA0BFN, and Dick Kraayveld, PA3ALM — have published a quarterly journal, *Morsum Magnificat*, for Morse enthusiasts.

Contributions have been written by amateur and professional Morse telegraphers, young and old, from around the world, but as the journal appears in Dutch, its circulation has been very limited.

In 1985, an experimental "one-off" English version was published to test the ground for a wider audience. Now, British writer Tony Smith, G4FAI, has joined the editorial team

as English language editor, and a new English version of *Morsum Magnificat* will be available shortly.

The intention is to bring together the worldwide story of Morse as it really was, as its participants experienced it, from the earliest days to the present time. *Morsum Magnificat* will publish material about Morse, ancient and modern, not normally found to any extent in popular magazines today, and will include history, illustrations, anecdotes, and adventures in both wire and wireless telegraphy.

USA subscription for a year (four issues) is $10 postpaid, from M. Hellemons, PA0BFN, Holleweg 187, 4623 XD Bergen op Zoom, HOLLAND. Bank notes will be appreciated, owing to difficulties and high charges in clearing foreign checks.

Further information, if required, is available from Tony Smith, G4FAI, 1 Tash Place, London NI1 1PA, ENGLAND, on receipt of IRC (2 for airmail). □

The W1TQS DX Locator

HAMRAD Press has announced the publication of a directory of DX station operating information — *The W1TQS DX Locator.*

The W1TQS DX Locator is a monthly compilation of data contained in major DX newsletters, magazines, club bulletins, logs and other sources relating to the operating times and frequencies of DX stations heard and worked during the current month.

Over 2,500 reports of DX station activity are separately listed by time, frequency and call, providing a rapid reference of potential DX contacts available during any time of day, and on any band from 160 to 10M. Bar and pie chart graphics also characterize DX station operating habits by band and time period, to highlight optimum operating conditions.

The W1TQS DX Locator is intended to be a supplement to (and not a replacement for) the many fine DX newsletters currently available, by gathering operating data from a number of U.S. and foreign sources and providing the user with one supplemental monthly directory of consolidated DX time/frequency data. It will thus increase the chances of being in the "right spot" at the "right time."

A subscription to *The W1TQS DX Locator* is available by writing to HAMRAD Press, P.O. Box 2458, Springfield, VA 22152. $35 per year, first class mail.

Bob's Corner

(continued from page 52)

Correction . . .

Last month's column on the simple Windom antenna should have illustrated the braid side of the coax and the ground side of the antenna tuner going to a good earth ground. This is essential for proper operation of the Windom antenna. I hope this omission didn't upset too many people! □

It ain't braggin' if you really done it. — *Dizzy Dean*

The "Flying Horse" sets the standards!

Continuing a great 67 year tradition, we bring you three new Callbooks for 1988. The North American Callbook, the International Callbook, and the Callbook Supplement bring you accurate up-to-date QSL information on over 950,000 amateurs throughout the world.

The 1988 North American Callbook lists the calls, names, and address information for 478,000 licensed radio amateurs in all countries of North America, from Canada to Panama including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The 1988 International Callbook lists 481,000 amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1988 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1988, this Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1988 Callbooks will be published December 1, 1987. See your dealer or order now directly from the publisher.

- Over 950,000 current amateur listings in all countries of the world • Telegraph Codes
- Then & Now call changes • Silent Keys • Census of Amateur Licenses in all countries
- 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, 1987
Supplement - June 1, 1988

	Including shipment to U.S.A. points	Illinois residents, incl. tax & shipping	Including shipment to foreign countries
☐ Single 1988 North American Callbook	$28.00	$29.60	$30.00
☐ Single 1988 International Callbook	30.00	31.75	32.00
☐ Single 1988 Callbook Supplement	13.00	13.65	14.00
☐ SPECIAL OFFER: Order both 1988 Callbooks at the same time for shipment to one address.	55.00	58.35	60.00

Name _____ Amount enclosed _____

Address _____

_____

radio amateur **callbook**

Dept W
925 Sherwood Dr., Box 247,
Lake Bluff, IL 60044, USA

Tel: (31.) 234-6600

VISA MasterCard

FCC UPGRADE sample exams and study guides on Commodore 64 disks. Technician or General $12.95 each, Advanced or Extra $14.95, postpaid. DR. G. SCHILLING, AI6I, 37251 Sage Road, Hemet, CA 92343.

WHEN YOU'RE ON THE AIR — you want to sound good! When you send your QSL you want to look good! Let us help you look good! Send SASE for brochure and samples. RUSPRINT, Rt. 1, Box 363WR, Spring Hill, KS 66083.

"REAL RADIOS GLOW IN THE DARK" . . . Our specialty is service on Collins, Drake, and Swan tube-type equipment. Service also provided on Hallicrafters, Hammarlund, National, Johnson, RME and other domestic amateur radio products from the 40's, 50's, and 60's. We accept clean used gear for consignment sales. Paints in stock for your Collins S-Line, KWM-2, and accessories. Can you remember the sound of an ARC-5 transmitter? Why not dig yours out of the attic and put it on the air?! CLASSIC RADIO, 340 West Seventh Street, Eureka, CA 95501. 707/444-3911, K6VHP.

WIRE FOR DIPOLES, SLOPERS, LOOPS: New #14, multistranded copper, non-stretch, flexible. Best available. Low cost, $.105/ft. (delivered) to 3700 ft. continuous, 275 ft increments. Minimum 275 ft: $29.00, includes UPS shipping/USA. DAVIS, PO Box 230, Carlisle, MA 01741. 617/369-1738.

STAINLESS STEEL SCREWS, bolts, turnbuckles, U-bolts, eye bolts. Small quantities. Free catalog. ELWICK, Dept. 678-S, 230 Woods Lane, Somerdale, NJ 08083.

CB-TO-10 METER CONVERSIONS — we specialize in CB radio modifications, plans and hardware. Frequency and FM conversions, tune up procedures, kits, books, repairs and accessories covering over 2000 CB radios. 48-page booklet tells how. Great for experimenting Novices and Technicians, and enjoy the new 10-meter voice privilege with your old CB radio. Make payment of $12.95 to G. Wyatt and send to LORD/WYATT COMMUNICATIONS, P.O. Box 030128WRM, Brooklyn, NY 11203-0001.

SUBSCRIBE TO THE *DXers Magazine*. Gus Browning, W4BPD, editor. Only $15.00 per year. *The DXers Magazine,* Drawer DX, Cordova, SC 29039.

MOVING?

Call 1-800-365-SUBS 8 a.m.-5 p.m. Pacific Time, and give our subscription house the change of address. Please have your label handy when you call, and give them your subscriber number from the top of the label. Remember, we need instructions for any change by about the 20th of any month for the issue dated two months later. Example: We'd need notification by Oct. 20 to get your December **Worldradio** to you at your new address, because we mail the December issue in early November.

MARCO: Medical Amateur Radio Council, Ltd. operates daily and Sunday nets. Medically oriented amateurs (physicians, dentists, veterinarians, nurses, physio-therapists, lab technicians, etc.) invited to join. Presently over 550 members. For information, write MARCO, Box 73's, Acme, PA 15610.

WANTED: Hallicrafters receivers and accessories. Any condition. JIM MARTIN, 27W060 Cypress Lane, Winfield, IL 60190.

GAIL'S QSL'S: $6.00 first 100, $4.00 thereafter. Stamp for sample. KAØYZT, 1150W Muenz, Wright City, MO 63390.

EDITING A CLUB PAPER: Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write FRAN NORRICK, WB9WPS, 4306 N. 23rd St., Waco TX 76708-1107

TRANSMITTING TUBES WANTED FOR MUSEUM — Help preserve old amateur and commercial tubes for future and old time hams to see and admire. YE OLDE TRANSMITTING TUBE MUSEUM, K6DIA, P.O. Box 97, Crescent City, CA 95531.

CHASSIS & CABINET KITS, SASE, K3IWK, 5120 Harmony Grove Rd. Dover, PA 17315.

AMATEUR RADIO REPAIR — experienced licensed, reasonable. ROBERT HALL ELECTRONICS, W6BSH, P.O. Box 8363, San Francisco, CA 94128. 408/729-8200.

RTTY PROGRAM FOR APPLE MACINTOSH Baudot or ASCII, all usual speeds, customizable menus, canned messages, split screen and more. Use with simple TU or Packet modem. $39.95 ppd., send SASE for free info. SUMMIT CONCEPTS, Suite 102-190, 1840 41st Ave., Capitola, CA 95010.

ATTENTION 6 METER OPERATORS: 1988 North American SSB/Beacon Activity List and 1988 North American 6-Meter Repeater Directory now available. $8.00 apiece or $15.00 for both. Postal money orders preferred. Write to: HARRY SCHOOLS KA3B, 1606 South Newkirk Street, Philadelphia, PA 19145.

3 FREE ISSUES! Sign up for a year to THE SPEC-COM JOURNAL (10 issues) and get 3 back issues (of your choice) absolutely "FREE"! SPEC-COM is the USATVS Journal and has been serving SPECIALIZED COMMUNICATION RADIO AMATEURS now for 19 years. We offer in-depth coverage of ATV, SSTV, FAX, RTTY, PACKET, satellites, TVRO, EME, LASERS microwave and personal computers. We specialize in Commodore & TRS80C color computer software for ham radio! Sample issues just $2.00 ppd. U.S.A. $20.00/Canada & Mexico $25.00 per year. Foreign surface and Air-Mail R-U-S-H delivery available at higher prices. Special Master Article Index issues add $3.00. SPEC-COM COMMUNICATIONS GROUP, P.O. Box H, Lowden, IA 52255 (MasterCard & VISA accepted).

Be first to know precisely when and where to work all the choice DX. Bi-weekly LI DX BULLETIN has: Hot DX news — time and frequency of each goodie — QSL info — propagation forecast — and more . . . Send business size SASE for free sample or $16.00 for 1-year domestic subscription to:

LONG ISLAND DX BULLETIN
PO Box 173, Huntington, NY 11743

AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 50 clubs in the greater Washington, D.C. area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-1452.

PERSONALIZED HOURLY HF SKYWAVE PREDICTIONS from your city or town: Skycom 1.0 floppy disk for Apple Macintosh or IBM PC and compatible personal computers. Includes complete mathematical description of theory ($45.00). DX window floppy disk circular projection world radio map centered on your QTH shows sunrise-sunset gray line for any time of interest. Includes feature which displays any of 400 prefixes on world map instantly. For all Apple Macintosh machines ($60.00). Precise beam headings from your city or town to over 400 worldwide locations. High resolution printout ($5.00). SASE for more info: ATTN. DX; ENGINEERING SYSTEMS INC., P.O. Box 939, Vienna, VA 22180. Ph 703/255-6600.

70,000 VACUUM TUBES: SASE. TYGER ELECTRONICS, Box 750, Clinton, MD 20735. 301/248-7302.

POST CARD QSL KIT — Converts post cards, photos to QSLs! Stamp brings circular. K-K LABELS, P.O. Box 412, Troy, NY 12181-0412.

CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC, each Saturday, Sunday, Monday and Thursday on 7060 kHz, starting 2000Z. Each Tuesday and Friday on 14060 kHz, starting 2000Z. Speeds range from 20 to 60 wpm.

NO IMPORT DUTY — Ten-Tec Corsair II $1290. Argosy II — $626. Century 22 — $371. Also other accessories. Mosley Pro 57-10/20m — $460. Pro67 10/40m — $559. Others. Organs & Electronics, P.O. Box 117, Lockport, IL 60441. Phone 815-838-1580.

WRITTEN EXAMS SUPEREASY. Memory aids from psychologist/engineer cut studytime 50%. Novice, Tech, Gen: $5 each. Advanced, extra: $10 each. Moneyback guarantee. BAHR, 2549-F3 Temple, Palmbay, FL 32905.

TEN-TEC 509 ARGONAUT and matching 405 amplifier, $300.00. All factory tuned. I ship. N6QCQ. DAVE, 619/582-6464.

ANTENNA PARTS CATALOG, low costs: Dipole/radial wire, insulators, center feeds, coax, connectors, relays, phasers, plus more. $1, SASE, DAVIS RF, P.O. Box 230, Carlisle, MA 01741, 617/369-1738.

EIMAC 3-500Z's

New

• Very limited quantity •

$95 EACH CASH, MO, COD

Add $3.75 per tube shipping/handling

I pay cash or trade for all types of transmitting or special purpose tubes.

MIKE FORMAN
1472 MacArthur Blvd.
Oakland, CA 94602
(415) 530-8840

More MART

SWAN 700-CX with VOX, VFO counter, SWR meter, mike, phone patch. Like new, seldom used. $550, offer. LOUIS SAEN, 107W Jonquil, McAllen, TX 78501. 512/686-6192.

EXPERT REPAIR on all types of ham gear by WA6SRX, TIMBERLINE ELECTRONICS, P.O. Box 2064, 25440 Wrightwood Drive, Idyllwild, CA 92349, 714/659-4018.

ALL ABOUT METERS. A learn-by-doing history of the development of electrical meters; build seven simple meters using common hardware. $7.95 each, ppd USA. ALLABOUT BOOKS, Dept. W, Box 14155, Fremont, CA 94539.

VACUUM TUBE STORAGE BOXES: White. Four sizes. SASE. TYGER ELECTRONICS, Box 750, Clinton, MD 20735. 301/248-7302.

QSL SAMPLES — 25¢. SAMCARDS, 48 Monte Carlo Dr., Pittsburgh, PA 15239.

KIBV DX AWARDS DIRECTORY. Complete rules for over 680 certificates, 170 pages. $14.00 postpaid. TED MELINOSKY, 525 Foster Street, South Windsor, CT 06074-2937.

WANTED: EQUIPMENT AND RELATED ITEMS. The Radio Club of Junior High School 22 NYC, Inc. is a non-profit organization, granted 501(c)(3) status by the IRS, incorporated under the laws of the State of New York with the goal of using the theme of Ham Radio to further and enhance the education of young people. Your property donation would be greatly appreciated and acknowledged with a receipt for your tax deductible contribution. Please contact WB2JKJ using the callbook or telephone (516) 674-4072 24 hours, seven days a week. Thank you!

WANTED: MILITARY RADIOS and related equipment in good condition. BC375, ARC-2, TBY etc. KA1GON, 501 Mystic Valley Pkwy, Medford, MA 02155.

EXPLORE THE WORLD OF HAM RADIO on VHS tape $19.95 + $3.00 shipping. L.B. VIDEO PRODUCTIONS, 2509 52 Ave. Dr. W., Bradenton, FL 34207.

MAJOR BRAND HAM EQUIPMENT—Butternut, Hustler, Larsen, MFJ, Mobile-Mark and much more. For information call KEY COMMUNICATIONS ETC. INC. Berwyn, IL 312/795-1314.

HAM LAB PROJECT. Want several pieces HP G-382A variable attenuator. Will consider any repairable condition. K6GOX, P.O. Box 10, O'Neals, CA 93645, (209) 868-3548 collect.

QSLs. QUALITY AND FAST SERVICE FOR 28 YEARS. Include call for free decal. Samples 50¢. RAY, K7HLR, Box 331, Clearfield, UT 84015.

SOLID BRASS BELT BUCKLES. Name or call, One line - name or call — $12.00. Two lines, name and call — $14.00. Add $1.00 postage. S.SLONIM/W, 320 Rose St., Massapequa Park, NY 11762.

HOMEBREW PROJECTS LISTS, SASE. WB2EUF, Box 708, East Hampton, NY 11937.

CUSTOMIZED ON-THE-AIR CALLSIGN DISPLAY — Lights up automatically by sensing RF from your transmitter. Wireless, nothing to "hook up" to your rig. Delay keeps display on until transmission is over. Translucent red lettering with black background front panel housed in an attractive light grey case — looks great! Customized display with your callsign: $33.95 (CA add 6.5%) plus $2.50 shipping. *Satisfaction guaranteed!* SASE for info. THE SIGNALCRAFT COMPANY, 1555 14th St., Santa Monica, CA 90404.

WEST COAST SWAP SHEETS: Low, low, low, prices. Free add with subscription. We're getting bigger. SASE: WD6AFC, 4076 No. Hammel, Fresno, CA 93727.

ROSS' $$$$ NEW SPECIALS: Kenwood TS-440S/WAT—$1009.90, TM-751A—$???.90, TM-221A—$354.90, TS-140—$764.90, TM-2530A—$379.90, TR-851A—$604.90, AEA PK-64HFM—$169.90, ICOM IC-38A—$349.90, IC-04AT—$374.50, IC-290H—$496.90, IC-781A—$5939.90, Micro 2AT—$274.90, Yaesu FT-73RTT—$275.90, FT-726R—$789.90. All L.T.O. Phone or send SASE for pricing on popular items. Over 8772 ham-related items in stock for immediate shipment. Mention ad. Prices cash, F.O.B. Preston. We close at 2:00 Saturdays & Mondays. ROSS DISTRIBUTING COMPANY, 78 South State, Preston. ID 83263. 208/852-0830 P.O. Box 234.

WANTED: RCA 44 microphone. Write: K. LEONHARD, 270 San Benancio Rd., Salinas, CA 93908.

GROUND RADIAL WIRE FOR VERTICALS OR SLOPERS: Improves performance, new #16 bare solid copper, 1000 feet, $33. Includes shipping USA: DAVIS, P.O. Box 230, Carlisle, MA 01741, 617/369-1738.

THE 19TH ANNUAL B*A*S*H will be held on Friday night of the Hamvention, April 29, 1988 at the Conference Center (Madison Room) of the Hara Arena and Conference Center, (the same location as the Hamvention), starting at 7:00 p.m. There is no admission charge, and free continuous entertainment. Hot dinner, sandwiches, snacks and beverages are available. Two exciting top awards and many others. Stay right at Hara when the Hamvention closes on Friday evening and meet your friends and join us for an evening of fun and entertainment. Sponsored by the MIAMI VALLEY F.M. ASSOCIATION, P.O. Box 263, Dayton OH 45401.

ROSS' $$$$ USED APRIL SPECIALS: Kenwood TS-820S/WCWFL—$549.90, AT-200—$119.90, AT-130—$119.90, MC-85—$94.50, Yaesu DC-200—$59.40, FP-707—$109.90, FC-901—$169.90, FT-221—$229.90, FR-101SD—$349.90, Swan 102BX—$459.90. Phone or send SASE for used items list. Over 8,777 new ham items in stock. Mention ad. Prices cash, FOB Preston. We close at 2:00 Saturdays & Mondays. ROSS DISTRIBUTING COMPANY, 78 South State, Preston, ID 83263. 208/852-0830. P.O. Box 234.

WANTED: Johnson Courier, WB6TMY 707/527-8124.

SELL: ICOM 245 two-meter FM SSB CW digital transceiver with IC-RM2 computerized remote control, ITT touchtone phone, mike and manuals, $275. Yaesu 101B transceiver with fan, CW filter, mike and manual, $275. Both in excellent condition. Shipping extra. RAY WARNER, W7JU, 2200 Kingston Ln., Riviera, AZ 86442. Phone 602/758-2274.

SELL: AEA PK-64A/HFM packet—$225, ICOM IC-271A 2m xcvr—$589, Hallicrafters SX-115 RX—$300, Spectrum Communications 2m TX/RX circuit boards—$65 each and others inquire. FLOYD, K5LA (915-751-6204) 5637 Prince Edward, El Paso, TX 79924.

101+ CODE/THEORY EXAM PASSING TIPS. $1 + SASE. BAHR, 2549-F3 Temple, Palmbay, FL 32905.

ADVERTISER'S INDEX

JENNINGS UCS-300-7. 5KV vacuum variable capacitor — $135, RJ1A/HC-1 vacuum relay — $75, RJ2C — $140. Cardwell 2100pF-3KV variable capacitor — $45. Eimac 8877 — $550, SK-2210/SK-2216 socket/chimney — $90/set, 3CX1200A7 — $385, 4CX3000A — $675, 4CX5000A — $975. (All new) A. EMERALD, 8956 Swallow, Fountain Valley, CA 92708, 714/962-5940.

RTTY JOURNAL—Now in our 36th year. Read about RTTY, AMTOR, packet, MSO's, RTTY contesting, RTTY DX and much more. Year's subscription to RTTY Journal, $10.00—foreign slightly higher. Order from: RTTY JOURNAL, 9085 La Casita Ave., Fountain Valley, CA 92708.

HAM WANT ADS: Free advertising, Free copy, wide distribution, bi-monthly. Send your ad or request copy, free limited time. BROOKS, 222 Cedar Ave., Arlington, MA 02174.

12 VOLT 60 AMP POWER/MATE POWER SUPPLY. Fully enclosed with built in fan. These are new industrial surplus. Tested and guaranteed. $124.95 plus $7.50 shipping. "AA" nicad batteries. 500Mah rapid charge. New, $1.25 each. QUEST ELECTRONICS, 938 Bannock, Denver, CA 80204. 303/623-7700.

DE K3UKW: Don't be confused about buying used equipment! We offer assistance and products to fit your budget. Used gear is our business since 1970. Send for a used equipment list — #10 SASE required. Ask a friend about us; we buy, sell, trade & consign used ham gear. Large inventory most times. Drop a note or call: 215/271-8898, TONY MUSERO, 1609 So. Iseminger Street, Philadelphia, PA 19148.

VHF UHF SHF: Large SASE, WEST COAST VHFer, P.O. Box 685, Holbrook, AZ 86025.

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call area. Award suitable to frame and proven achievements added on request. Send $2 (USA) or $3 (DX) to cover certificate cost. W6LS, 2814 Empire Ave., Burbank, CA 91504.

THE DX BULLETIN provides you with comprehensive, up-to-date DX information and much more. SASE or call for samples. Box 50S, Fulton, CA 95439. 707/523-1001.

FOR SALE: TRANSMATCH IN S-LINE CABINET: Roller inductor split capacitors, National veriers, 1Kw capability, only $65.00, excellent. 1Kw M.C. Jones power & SWR meter @ $25.00 with coupler. Layfayette Communications receiver, 80 to 10 meters @ $40.00. H.V. oil filter capacitors, Eldico, 100 F. 100-watt exciter, clean, SSB AM CW @ $150.00. Inquire on others. LEVY, W5QJT, 2833 Junction Hwy #15, Kerrville, TX 78028. Tel 512-367-4741.

HAMS FOR CHRIST — Reach other hams with a Gospel Tract sure to please. CLYDE STANFIELD, WA6HEG, P.O.B. 2063, Upland, CA 91785.

ALL ABOUT CRYSTAL SETS. Theory and construction of crystal set radios. $7.95 each, ppd USA. ALLABOUT BOOKS, Dept. W, Box 14155, Fremont, CA 94539.

SUPERFAST MORSE CODE SUPEREASY. Subliminal cassette. $10. Learn Morse Code in 1 hour. Amazing new supereasy technique. $10. Both $17. Moneyback guarantee. Free catalog: SASE. BAHR, 2549-F3 Temple, Palmbay, FL 32905.

R-390A RECEIVER: $115, electronically complete, reparable (Government-removed meters, operation unaffected). R-390A parts: Info SASE. Professional/military quality TS-352 voltohm/multimeter, AC-DC, with leads, manual: $12.50. Mint military-spec pull-out 12AT7, 6BA6, 6AG5, 6AL5: $10/six. CPRC-26 Infantry Manpack Radio, 6 meter FM, receiver-transmitter sections, cabinet, antenna, crystal, handset: $22.50 complete, $42.50/pair. H-251 Military Communications Headphones: $7.50. Add $4.50/piece shipping ($9 maximum), except R-390A shipped collect. BAYTRONICS, Box 591, Sandusky, OH 44870.

CODE PRACTICE, daily except Sunday, 5 thru 44 wpm at 10:30 a.m. MST on 7090 and at 5:30 p.m. MST and 8:00 p.m. MST on 3698.

CLASSIFIED ADS FOR JOBS WANTED OR POSITIONS OFFERED will be run free of charge in Worldradio's MART.

ELECTRONICS LAB TECHNICIAN — For development, construction, and test audio/video communications prototype equipment. Must be familiar with industrial and military parts sources and construction practice. Capable of supervising assistants. Plant located in New York City, close to public transportation and airports. Opportunity to advance into company management with equity position. Phone HARRY SUSSMAN K2MWQ, 718/651-4103 or write to TELECTRO SYSTEMS CORP. 96-18 43rd Avenue, Corona, NY 11368.

ICOM

IC-735 HF Transceiver

'MOST RELIABLE HF'

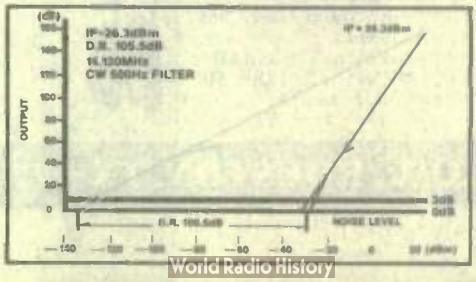
"Of all the possible radios, I chose the ICOM IC-735 for my CQWW QRP world record attempt."

Danny Eskenazi, K7SS, World High QRP Score
-1987 CQWW SSB (PJ2FR)*
-1986 CQWPX SSB (K7SS/WH6)
-1986 ARRL DX PHONE & CW (K7SS/KH6)

ICOM's IC-735 is the world's most popular HF transceiver. With the highest performance, smallest size, and best customer satisfaction of any HF transceiver, the IC-735 is the winner's choice for fixed, portable, or mobile operations.

- **Field Proven 100W Transmitter** with 100% duty cycle. Proudly backed with ICOM's full one-year warranty.
- **105dB Dynamic Range Receiver** includes passband tuning, IF notch, adjustable noise blanker, and semi or full CW QSK.
- **Conveniently Designed.** Measures only 3.7"H by 9.5"W by 9"D.

- **Optional AH-2 Automatic Tuning Mobile Antenna System** covers 3.5MHz-30MHz and tracks with the IC-735's tuned frequencies.
- **All HF Amateur Bands and Modes** plus general coverage reception from 100KHz-30MHz.



- **12 Tunable Memories** operate and reprogram like 12 separate VFO's. Supreme flexibility!

Additional Options: SM-10 graphic equalized mic. PS-55 AC power supply, AT-150 automatic antenna tuner for base operation.

ICOM's IC-735... a proven winner for reliable worldwide HF communications. See it today at your local ICOM dealer.

ICOM

First in Communications

ICOM America, Inc.,
2380 116th Avenue N.E., Bellevue, WA 98004
Customer Service Hotline (206) 454-7619
3150 Premier Drive, Suite 126, Irving, TX 75063
1777 Phoenix Parkway, Suite 201, Atlanta, GA 30349
ICOM CANADA, A Division of ICOM America, Inc.,
3071 - #5 Road, Unit 9, Richmond, B.C. V6X 2T4