

Worldradio

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FCC seeks new repeater regulations

Steve Mendelsohn, WA2DHF
Bill Pasternak, WA6ITF

The FCC has released PR Docket 85-22 which deals with the "perceived need" for national standards in repeater coordination. The Commission seems to feel that problems arising from the unending growth in the number of repeaters must be solved. The Commission senses that individual amateur-to-amateur and repeater-to-repeater interference problems are growing, and solutions should be made into law and included in the FCC's Part 97 rules.

In an interview with Westlink, Raymond A. Kowalski, Chief of the FCC's Special Services Division, explained exactly what the Notice of Proposed Rule Making aims at making into law:

"... where an amateur station in repeater operation causes harmful interference to the repeater operation of another Amateur Radio station, the two stations are each equally and fully responsible for resolving the interference, unless one repeater is coordinated and the other is not. Where one repeater is coordinated and the other is not, the station with the non-coordinated repeater has primary responsibility to resolve the interference."

The NPRM asks such questions as if there should be some form of national "umbrella organization" of frequency coordinators, or possibly a single national frequency coordinator. The envisioned national "umbrella organization" might be like those serving other aspects of communications such as NABER (National Association of Business and Educational Radio) in the Land Mobile Service or the Society of Broadcast Engineers who coordinate in the broadcast industry. Such an organization would literally become a national resource by taking on such tasks as keeping a national repeater data base, promulgating standards of coordination, helping new coordinators understand the overall process by which repeater coordination is accomplished, and similar obligations.

Also asked in the NPRM is if new technological standards should be adopted, making such practices as limited deviation, CTCSS or other mandated tone access, ACSB or other narrow-band technologies mandatory for all repeaters. All this is aimed at establishing a definite base of frequency coordination, giving the very concept of frequency coordination a base and giving coordinators a body of law in Part 97.

As one method of accomplishing this end, effective on date of release of PR Docket 85-22, existing frequency coordinators and coordination councils serving 35 cities with population densities of 1,000,000 or more will be prohibited from issuing any new repeater sanctions during the term of the rule making action. (We will have a complete list of the affected cities at the end of this article.)

Note that this moratorium is specific in regard to it being solely directed at "repeater" operation and affects repeater op-

erational on all bands, not only 2 meters as previously rumored. Not affected are such entities as single frequency simplex autopatch systems, store-and-forward digital mailboxes, and other entities not governed by the Part 97 repeater rules, so many "big-city" coordinators will probably still have their hands full handling coordination of these entities.

Kowalski told *Westlink Report* that a repeater already holding coordination but not yet operational may come onto the air. Only new coordinations as of the issuance date of the NPRM are forbidden. The FCC says it will utilize the next edition of the ARRL Repeater Directory as its guide in determining those systems which were operational prior to the initiation of the ban.

If your system is not so listed, it might be wise to send in your listing now to avoid an embarrassing situation at some later date. The Commission has set 01 July 1985 as the deadline for filing comments on PR Docket 85-22, with 30 September 1985 as the deadline for reply comments. Kowalski told us that this longer-than-usual commentary time was established to allow amateurs to discuss the issues at hand on local, regional and national levels, so that a true exchange of ideas can be brought to the FCC on the matter.

A complete list of areas affected by the moratorium and an explanation of the two types of geographic areas involved follow:

Moratorium areas

Two types of geographic areas are included under the temporary moratorium on installation and operation of new repeater stations. They are the Consolidated Metropolitan Statistical Areas (CMSA's) and the Level A Metropolitan Statistical Areas (MSA's). Both lists are based upon data researched and released by the Federal Office of Management and Budget.

Affected CMSA's

Boston-Lawrence-Salem, MA-NH
Buffalo-Niagara Falls, NY
Chicago-Gary-Lake County, IL-IN-WI
Cincinnati-Hamilton, OH-KY-IN
Cleveland-Akron-Lorain, OH
Dallas-Ft. Worth, TX
Denver-Boulder, CO
Detroit-Ann Arbor, MI
Hartford-New Britain-Middletown, CT
Houston-Galveston-Brazoria, TX
Los Angeles-Anaheim-Riverside, CA
Miami-Ft. Lauderdale, FL
Milwaukee-Racine, WI
(please turn to page 47)

Thailand on the air

On 16 January, the Thai Minister of Communications released all the bands to amateurs. — *John Knight, W6YY*



Dr. Unal Akbal, TA1A, Turkey's first licensed radio amateur

Turkey's first amateur

An item of great interest to all DX'ers was recently received by *Worldradio*. Dr. Unal Akbal, TA1A (ex-TA1UA), received his license and call sign from the Ministry of Transport and Telecommunications on 30 January 1985. Dr. Akbal tells us he is the first licensed radio amateur of Turkey.

TA1A's operation schedule is as fol-

lows: 14.025 ± 10 kHz and 21.025 ± 10 kHz (CW) and 14.195 ± 10 kHz and 21.250 ± 10 kHz (SSB). He'll be on the air Saturdays and Sundays. No times were given.

Perhaps this is an indication that Amateur Radio is now becoming legal in Turkey.

Beware of bogus Yaesu 757 GX radios

Yaesu 757 GX radios, considerably different than those being advertised nationally, are showing up in the Midwest. A serial number check with Yaesu Headquarters in Paramount, California confirmed these radios are illegal. They are not made for export. Apparently, someone has imported the sets illegally and is passing them off on unsuspecting amateurs. Radios can be purchased cheaper in Japan, and stripped down models even cheaper.

The radios are identical in appearance externally but do not have the CW filter, won't work on the WARC bands, have no warranty and *will not* be serviced by Yaesu repair centers in the USA. The

manuals are also different than those with the "Made for sale in USA models". The shipping containers indicate the radios must be returned to Japan for servicing; however, this marking could be easily removed or covered.

The Yaesu Headquarters people estimated it would cost about \$150 to bring the illegal radios up to specifications. It is unknown how many of these radios have been brought into the country, but three showed up in the Dayton area during January. These were not purchased from legitimate Yaesu dealers.

So, know your dealer and beware of guys who may have a "real deal" for you. — *Robert McKay, N8ADA*

West Coast-Dayton excursion

This year, the first Hamvention Excursion will be available to amateurs on the West Coast.

The package deal includes round trip non-stop jet travel via Piedmont Airlines, three nights at the Daytonian Hilton Hotel, admission to the Dayton Hamvention and all ground transfers. The total price is in the \$650 to \$700 range and represents a real savings over non-package prices.

For more information: write DX travel,

Hamvention Special, Dept. WLR, 11811 W. Olympic Blvd., Los Angeles, CA 90064, or call: (213) 478-0525, and ask for Marna Pearson.

Bill Pasternak, WA6ITF, and Dave Bell, W6AQ, started action for this exceptional deal. Bill is editor of the *Westlink Report* and *Westlink Amateur Radio News*, and Dave was the 1984 Hamvention Amateur of the Year. — *Robert McKay, N8ADA*



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Worldradio (USPS 947000) is an international conversation. You are invited to take part. Our newspaper is written by its readers.

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 into this avocation.

Our readers are participants — an alliance of active radio amateurs who are concerned with reality, who use radio as a communications tool. We ask your cooperation in helping us develop the skill, quality and full potential of Amateur Radio.

We are positively-oriented. We print all the news of this great activity, and particularly desire an input of stories dealing with the dramatic, the per-

sonal and humanitarian uses of Amateur Radio.

Worldradio needs your help to reflect the invaluable service of Amateur Radio.

Through Worldradio you can make contact with other individuals who share your interests.

Worldradio is an independent newspaper. It is 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. If there is something useful, we wish to share it.

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Second-class postage paid at Sacramento, CA.

Discount fares to Dayton

Piedmont Airlines is giving 35 percent off their regular published coach fares for anyone coming to the Dayton Hamvention. The discount applies to flights from anywhere Piedmont operates, to Dayton and return. The discount is good for 25-30 April 1985.

Anyone intending to use the discount should contact Piedmont Convention Sales on the toll free number: 1-800-334-8644, and ask for the Dayton Hamvention Special. Local counter agents will not have the information needed. If you want to take advantage of the discount, act on this as soon as possible.

Fred Maia, W5YI, editor of the *W5YI Report*, initiated action on this special. Fred, working with Maurice Booth, WD4RGU, the Dallas Piedmont Customer Service Representative, convinced Piedmont Headquarters the special was a good idea.

In the last several years, Piedmont has expanded to most parts of the country with a very extensive flight schedule. The discount will provide a substantial savings for amateurs across the country. — Robert McKay, N8ADA

International 160-Meter Operators Gathering

Once again this year, 160-meter operators are invited to meet informally during the Dayton Hamvention, 26-27 April. The meeting place this year will be the same as 1984 — Suite 325 in Stouffer's Dayton Plaza Hotel. Hosts at the suite will be the members of the Southeastern DX Club.

Well-known 160-meter DX'ers from around the world have already advised that they will be on hand for this occasion, and informal presentations and slide shows have been promised.

For further information contact: Carl Henson, WB4ZNH, President, Southeastern DX Club, 8280 Chestnut Dr., Jonesboro, GA 30236; or Arch Doty, K8CFU, 160-Meter Host, SEDXC, 347 Jackson Rd., Fletcher, NC 28732.

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4th Annual ARRL Computer Networking Conference

Don Simon, NI6A

What many consider to be the most sophisticated, exciting and beneficial mode of Amateur Radio — packet radio — will be the focus of attention at the 4th Annual Computer Networking Conference sponsored jointly by the ARRL and the Pacific Packet Radio Association (northern California's pioneering packet radio group).

The conference will be held in conjunction with the 10th West Coast Computer Faire which runs from 30 March through 02 April at San Francisco's new Moscone Convention Center. The tremendous growth and interest in packet radio terminals, equipment networks and applications promises to make this conference one of the largest and best attended.

The networking conference and all the other activities of the Faire will be held inside the Moscone Center in downtown San Francisco. To attend you will need an entrance ticket to the Faire. All Faire visitors may attend the ARRL conference at no additional charge. This Faire, by the way, has been the premium Computer Faire in the entire nation for many years. The Faire hours for exhibits and sessions are 10:00 a.m. to 6:00 p.m. daily, 30 March through 02 April.

The ARRL Computer Networking Conference will be held all day Saturday, 30 March from 10:30 a.m. to 6:00 p.m. in room 232 in the East Wing of the Moscone Center near Third and Howard. The technical sessions are scheduled as follows:

30 March — 10:30 — Opening remarks and keynote-Paul Rinaldo, W4RI
10:45 — Pete's packet primer by Pete Eaton, WB9FLW
11:30 — Applications of packet radio — Papers
12:00 — Applications Panel Discussion, by Andy Cromarty, N6JLJ

12:30 — Lunch break; location to be announced

1:30 — Technical papers on packet radio and digital communications. Presentations from the proceedings, Part I.

3:15 — Technical papers on packet radio and digital communications. Presentations from the proceedings, Part II.

6:00 — End of technical sessions

8:00 — Conference dinner. Location and price to be announced.

A voice coordination frequency has been approved through the courtesy of the Telephone Pioneers Repeater Group, WD6FDT/R on 146.19/.79 (in/out) coupled to 443.1(out)/338.1(in). Local packet activity will be on 145.01, 03, 05, 09; 223.58 and 146.58 MHz.

All sessions are open to the public, and people with no previous knowledge of packet radio systems and procedures are welcome to sit-in and learn what they can about this new area of personal computer networking. On-site registration for all four days of the Faire is only \$20. On-site registration for one day is only \$12. A special pre-registration fee through special arrangements with the ARRL and the Faire of \$20 will purchase a four-day

ticket to the Faire and a complete set of the ARRL printed proceedings of the Computer Networking Conference.

For the special pre-registration price, checks must be received before 16 March, payable to H. Magnuski and mailed to him at 311 Stanford Ave., Menlo Park, CA 94025; phone (415) 854-1927. Any questions about the Computer Faire itself may be directed to Computer Faire, Inc. 611 Veterans Blvd., Redwood City, CA 94063; phone (415) 364-4294.

There are plenty of hotels/motels in the area, and San Francisco should have pleasant weather and suitable accommodations for all who are traveling from afar. A good opportunity to get the inside dope on the newest and most exciting happenings in radio digital communications and electronics!

Can you find our "April Fool's articles?"

CONTENTS

FEATURES

Amateur Radio call signs — 8
FCC seeks new repeater regulations — 1
Hams meeting in India — 17
HF band sub-allocations — 16
Ohm-Brew — 14
Reactions to PRB-1 — 3
Third order intermodulation distortion — 6
Turkey's first ham — 1
VE exams — 4
West Coast-Dayton excursion — 1

COLUMNS

Advertisers' Index — 55
Aerials — 46
AMSAT/OSCAR — 36
Awards — 25
CARI — 35
Contests — 50
DX World — 27
E-COMM — 14
FCC Highlights — 8
Hamfests — 50
Maritime Mobile — 38
MARS — 35
MART classifieds — 53
New Products — 49
Off the Air — 22
Old-Time Radio 48
Propagation — 32
Public Service — 13
QCWA — 40
QRP — 43
RTTY/AMTOR — 45
Silent Keys — 14
Special Events — 12
Station Appearance — 24
Subscription, Worldradio — 56
Teacher — 34
Traffic — 44
Who's Who in Amateur Radio — 26
With the HANDI-HAMS — 42

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Reactions to PRB-1

In re: PRB-1

The primary mission of the Civil Air Patrol is one of search and personnel rescue in downed aircraft. Speed and coordination are critical in these life-threatening missions. The Civil Air Patrol also works in direct liaison with local, state and federal government in providing assistance in disaster relief.

The Civil Air Patrol is directly involved in communication systems support for the United States Air Force and NORAD through heavy participation in the operation Night Tango exercises. Reliable communication is the backbone of the organization, and its ability to fulfill these missions are reliant upon the efficient installation and operation of communication equipment.

It has been brought to my attention that Civil Air Patrol members are having to deal with local zoning, building restrictions and ordinances. These restrictions unduly hamper them in the installation of radiating systems in the form of antennas which provide the necessary level of communications reliability. This is a must in life-endangering situations.

Communications are systematically carried out on over 20 frequencies. These allocated frequencies range from 2.3 MHz to include 149 MHz. Effective, reliable communication over this wide frequency range requires a multiplicity of antennas. The erection and radiating efficiency of these systems is being impeded by the restrictions of the very governments these systems are designed to support in a time of local or national emergency.

After careful review and consideration of all available material relating to PRB-1, the issuance of a declaratory ruling that would prohibit local municipalities and county or state agencies from placing restrictions on antenna systems, to be used by federally licensed and authorized radio transmitting stations, is in the best interest of all federal, state, county and municipal agencies.

In view of the facts to support PRB-1, it is imperative that the Federal Communications Commission rule favorably in behalf of PRB-1 and declare that such regulations, statutes and encumbrances currently in effect be set aside.

**William B. Cass, Brig. Gen., CAP
National Commander**

Secretary, FCC
1919 M Street, NW
Washington, D.C. 20554

In re: PRB-1

The purpose of this correspondence is to let the FCC know the feelings and opinions of approximately 1,000 members of the West Virginia Wing, Civil Air Patrol,

concerning the continuing efforts of local political entities to control antenna configuration, location, heights, etc.

All the restrictions by local authorities appear to stem from looks and a source of local licensing revenue. Local authorities should never be allowed to exercise the control of any part of our National Emergency Communication system. During local and national emergencies, we all have to depend upon rapid and effective communication at the sites of concentrated population. Little good an antenna site would do out in the country if we have a calamity in a metropolis.

In short, we need both Civil Air Patrol and Amateur Communications where the people are located . . . These should not be separated.

In the state of West Virginia (Kanawha Valley), we have the largest concentration of chemical plants in the world. There is always the danger of a chemical disaster such as happened recently in Bhopal, India. In fact, Union Carbide Corporation has their largest plant here at Institute, West Virginia. The people are all concerned and are aware of a possible disaster.

Furthermore, the state of West Virginia has had numerous and severe tragedies in the mining industry. In all these considerations, the people — as well as local and national authorities — have depended upon the communications capability of both the Civil Air Patrol and the Amateur Radio Service to handle a large part of the total communications effort.

As the chief corporate official of the West Virginia Wing, Civil Air Patrol, and on behalf of our members, requests that the Commission (FCC) issue a Declaratory Ruling prohibiting local zoning and other local and state regulatory restrictions on federally licensed radio stations, except in cases where it is inconsistent with the proper safety of resident personnel.

**John P. Ratcliff
Colonel, CAP (WV Wing)
Commander** □

Communicators needed

You can serve your nation and your state while using your radio equipment. Out of the 50 states, 27 have a State Military Reserve which is a back-up to the National Guard.

The age requirements are quite different from the National Guard. Experienced and mature people are welcomed. There isn't any two-week summer camp. There isn't any pay, so you know the people in it are there because they want to be.

There is a great need for radio operators, and you will be warmly welcomed. Those who enjoyed their military time will find the same camaraderie in these units. Those who remember their military time as just one long string of polishing their belt buckles, their boots and the

floor will be pleased to learn that these are non-CS outfits. Those with no military service at all will find a place to use the phonetic alphabet. Mileage to and from meetings and any other expenses are tax-deductible.

For information on where your local unit meets, contact: (in California) Col. Camp, State Military Reserve, 2829 Watt Ave., Sacramento, CA 95821. In other states (we don't have the addresses — sorry), contact the State National Guard.

Any Worldradio readers having information on the units in their states, send it in and we'll print it.

It is expected that eventually all of the 50 states will have such reserve units. □

Articles wanted

In the past few months, many parts of the country were hit by extremely severe weather conditions.

What role did Amateur Radio play in your area? What went right and what went wrong? What steps is your group taking to prevent what went wrong? What had you done previously that ensured what went right?

Other groups can learn from your activities. Your article may keep others out of trouble. Share.

Send words and pictures to Worldradio, 2120-28th St., Sacramento, CA 95818. □

Dangerous precedent

**Steve Katz, WB2WIK
VHF/UHF Editor, CQ Magazine**

In a highly unusual move, Richard Whiten, WB2OTK/4, of Greenville, South Carolina, has received an order from the FCC office in Atlanta to cease all operations on 144 MHz forthwith, apparently in response to numerous TVI complaints from his neighbors, most of whom are receiving cable television service.

Rich was visited by an FCC official, Serge Loginow Jr., WA3OPR, who conducted some measurements on-site on 24 January 1985. No information was available on those measurements. Shortly thereafter, the cease and desist order was received from Angelo R. Ditty, FCC Engineer in Charge for the Atlanta office.

WB2OTK is a well-known VHF'er and runs the legal limit using an 8877 amplifier on 144 MHz. He claims that TVI occurs to his neighbors even when using very low power, and measurements made by ARRL Technical Coordinator Ed Grooms, NE4G, on 06 February, indicated that an ICOM 2AT running 150mW could interfere with one of his neighbors' TV sets. The problem appears to be one of the cable system operator (West-Pel Cable Company, South Carolina) being unable to provide a well-shielded signal to subscribers in WB2OTK's area. Rich was cited for violating FCC Part 97.73(d), "Interference with other radio stations".

This unusual action bypassed normal FCC procedures for such interference complaints, which often make provision for "quiet hours" to alleviate such problems when no other solution is available. WB2OTK intends to fight this action and has enlisted the support of the ARRL as well as legal counsel Chris Imlay. — Submitted by Peter Putman, KT2B □

Warning on Wawasee

Lewis Hegyi, N2BPO, wrote to share his experience with a company from which he purchased a monitor scope last December — Wawasee Electronics of Syracuse, Indiana.

After hooking it up to his transceiver and not being satisfied with the scope's performance, Hegyi returned the scope to the manufacturer, along with a letter of explanation and a request to be refunded with a credit to his MasterCard.

A week later, he received a letter from the company, stating that Hegyi's MasterCard had been credited with the purchase price, less a "standard restocking charge" of 15 percent, plus a 5 percent charge that was unexplained.

The law states that if a customer is dissatisfied with a product, the total amount of purchase must be refunded. □

THE CHAMP



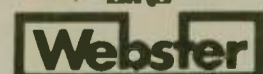
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VE exams

Arizona

The May exam date for Flagstaff, administered through Coconino County Amateur Radio Club, has been changed from Saturday, 04 May to Saturday, 25 May. The deadline for submission of 610 Forms and a check for \$4, payable to ARRL/VEC, is 30 days prior to date of exam. Mail to W. G. Schuchman, W7YS, 1400 N. Wakonda St., Flagstaff, AZ 86001. Only the first 25 applications will be accepted. □

Florida

The Florida Institute of Technology Amateur Radio Society (FITARS) and the South Brevard Amateur Radio Club (SBARC) will be conducting examinations for all classes of Amateur Radio license on the third Saturday of each month at 9:00 a.m.

Examinations are held in Room Q-11 in the Quadrangle Building, across from the Student Union Building and next to the FITARS club station (WB4ABK) — look for the triband beam and tower.

Walk-ins are permitted if space is available; preregistration is advised. For more information, contact Bill Newkirk, WB9IVR, at (305) 724-6183.

We are also looking for VEs who would like to participate in the exam sessions. We are affiliated with the ARRL/VEC and invite other groups that wish to observe our procedures to let us know, and we'll be happy to "show off".

We plan to be there every month to provide a regularity to the examination sessions that other groups haven't got. The VE system is not supposed to be an attendance booster for hamfests and the like, but to improve the opportunity to take examinations without an often inconvenient (and expensive) trip to an FCC field office or test site.

The FITARS/SBARC group is also planning classes for all Amateur Radio licenses that will tentatively start in late March.

To receive information on the classes, send your name, telephone number, which license you wish to study for (and what class you now hold, if any) to Amateur Radio Class, South Brevard ARC, P.O. Box 2205, Melbourne, FL 32902-2205. (We're using the SBARC post office box because of delays in the school's mail system.) — Bill Newkirk, WB9IVR □

Massachusetts

The Hampden County Radio Association will sponsor an ARRL Amateur Radio volunteer examination test session on Saturday, 18 May, at 9:00 a.m. at the Hampden-Wilbraham Regional High School, 621 Main Street, Wilbraham, Massachusetts.

Examination for all license grades will be offered.

Interested candidates should obtain an application, FCC Form 610, from the FCC or the ARRL. Submit the completed Form 610, a photocopy of your current FCC license, and a check for \$4 made out to "ARRL-VEC," to: Yorke Phillips, K1BXE, 235 Ames Rd., Hampden, MA 01036.

Completed applications can be accepted until the examination cut-off date — 18 April 1985. — Jeffrey Duquette, K1BE □

Ohio

The volunteer examiners of the Toledo Mobile Radio Association, Inc. — in cooperation with the ARRL — conduct examinations in Toledo, Ohio on the second Saturday of every month.

Send FCC Form 610 with check or money order for \$4 made out to ARRL/VEC. For complete information, contact Elmer Zieroff, KU8B, 2614 - 106th St., Toledo, OH 43611; phone (419) 729-5245.

What does the future hold for Amateur Radio?

ARRL Roanoke Division radio amateurs will have an opportunity to learn about and contribute to this question at the 1985 ARRL Roanoke Division League Planning Meeting, sponsored by the Raleigh and Cary, North Carolina, Radio Clubs, 11-12 May, at Ramada Inn South, Apex, North Carolina.

Among the ARRL folks present will be Gay Milius, W4UG, Roanoke Division Director; John Kanode, N4MM, Roanoke Division Vice Director; an ARRL Headquarters Representative, the four Section Managers and Section Emergency Coordinators of the division, as well as all the field appointees that can attend. Updates will be given on FCC, technical and legal matters as they affect Amateur Radio and the League. Gay and John will take the recommendations to the League for possible implementation.

The meeting will start at 1:00 p.m., Sat-

urday, 11 May and will last until about 5:30 p.m. An informal dinner will be held at 7:30 p.m. that evening. Meeting will resume at 9:00 a.m. Sunday, and finish at 12:00 noon, after written recommendations are presented.

Another topic to be covered will be the progress on implementation of the volunteer examination program now underway. All clubs are urged to send a representative, and all ARRL members, appointees and active amateurs are invited to attend.

There will be a \$14 pre-registration fee; \$16 at the door. The fee covers facilities, food breaks, Saturday night dinner, mailing and other administrative costs. Sponsors will handle registration and motel reservations. Checks should be made payable to RARS and sent to: LPM-85/Sherman Starnes, W4TZU, Rt. 1, Box 99, Franklinton, NC 27525. — Bruce Eggers, WA9NEW, LPM-85 Chairman □

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QSL Hall of Fame

Bill Wellborn, K4CLA

All amateurs must sooner or later become Silent Keys. Most families realize we have worked hard to get QSLs, and have spent time and money getting them. When that final QSO has been made, they find it necessary to disperse of radio equipment and supplies, including QSLs.

We know of many families who did not want to throw away those QSLs like regular paper trash, but there has never been an honorable way of discarding them until now.

The QSL Hall of Fame is designed to give the family of a Silent Key a way of allowing these QSLs to become a part of Amateur Radio history for many years to come. Also, all hams who wish to discard their QSLs prior to the final QSO may send them whenever they wish.

We ask only that the sender pay the shipping cost to get them to the QSL Hall of Fame as we receive no monetary support from any media.

We are filing all QSLs received in same sequence as recorded in the radio amateur Callbooks. Periodically, we will send copies of old or special-type QSLs for Worldradio to use as they see fit.

We look forward to receiving your QSLs and placing them in the QSL Hall of Fame. Please address all QSLs to: QSL Hall of Fame, K4CLA-Manager, 562 Oak Dr., Lexington, SC 29072-9059. □

New England Novice class

A Novice radio class — sponsored by the Hampden County Radio Association — began on Tuesday, 19 February, at the Agawam High School, Agawam, Massachusetts. These classes will run concurrently with the adult education series. Starting time is 7:00 p.m. and will run about 11 weeks. (Just in time for the next VE exam session on 18 May!)

The instructors we have signed up at this time are: KX1F; Ray Burk, WB1GLX; Paul Kress, WA1ZKT; John Balboni, AC1T; Jeff Duquette, K1BE; Vincent Falardeau, WA1GVV; Ray Weber, KA1JJM; Steve Nelson, WA1EYF; and Ken Grady, KA1KBN. Art Zavarella, W1KK is the resident "Academic Dean"!

The course will be using ARRL publications *Tune in The World* and *The Radio Amateur's License Manual*, 80th edition. Students will be able to purchase these through the course.

To sign up, contact Art Zavarella at 786-9115 or John Balboni, AC1T at 786-2438. More help is needed from amateurs, and all skills levels will be put to use. If you're interested in upgrading to General Class license, please phone and let us know.

Let's see a good turn-out of new Novices and future Generals! — Jeffrey Duquette, K1BE □

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Third order intermodulation distortion

Ken Farver, KB9I

Through the years, we have seen a lot of receivers tested for IMD. With today's phase lock loop radios we are seeing the noise from the loop interfering with our measurements. We never reach the point when the intermods really occur. When we test one radio at 20 kHz spacing and another at 100 kHz spacing, how can we compare these readings? 100 kHz is really meaningless, so let's throw away all of those results.

Now let's look at a new procedure. Instead of having our reference at the noise floor or MDS (3dB above the noise floor), let's come up to 1mV, about S1 on most receivers. Think back at how often you hear a signal below S1. Most of the time,

atmospheric noise will keep you above that.

Let's get on with the testing! What I will do first is measure our minimum discernible signal on 20 meters in the receiver's normal SSB bandwidth. Remember, a radio with 2.1 kHz bandwidth should have a better MDS than one with 2.7 kHz bandwidth, but I cannot control that.

I will have two generators of equal output, one at 1404 kHz and the other at 14060 kHz. I will have a hybrid combiner, step attenuator, and VTVM with a dB scale. I feed a signal of 1mV into the receiver and set the VTVM for 0dB at the audio output of the receiver with AGC off if possible.

Now I look at either 14020 or 14080

kHz for our intermods. I bring up the level of the generators by reducing attenuation until I see intermods equaling 1mV observed by the VTVM again reading "0".

I now have the level at which intermods equaled 1mV and can now calculate the third order intercept point. This intercept point is a figure that shows the maximum signal a receiver will be able to handle while keeping intermods "X" dB below.

I can also calculate the IMD Dynamic Range which is referenced to the MDS.

Changing the bandwidth will only change the dynamic range figure because the IM level and the intercept point will still be the same. Only the MDS would change.

Here is an example of how to obtain the figures:

MDS = -123dBm
IM level = -21dBm
Reference = -107dBm
IMD Dynamic Range = $\frac{2}{3}$ (Intercept - Noise Floor)

For the enclosed chart, remember which figures are better.

MDS more negative -136 better than -130
IM level more positive -22 better than -33
3rd order more positive +20 better than +1

Remember, this is just a sample of one radio of each brand, and differences may occur that I cannot be responsible for. All complaints to me directly, please! (Address: 2001 Northwood Ln., Woodstock, IL 60098)

Radio	20M MDS	IM Level	IMD DR	3rd Ord. Int.	
Collins	75S3	-133dBm	-36dBm	88.3dB	-0.5
	KWM380	-124	-20	98.3	+23.5
Drake	R4C ¹	-132	-26	97.6	+14.5
	TR7	-129	-27	94.6	+13.0
ICOM	740	-136/-130	-31/-26	96.0	+7/+14
	730	-136/-130	-31/-26	96.0	+7/+14
JRC NRD	515	-133	-31	93.3	+7.0
Kenwood	930	-132	-36	87.6	-0.5
	930	-132	-29	94.6	+10.0
	830	-136	-37	89.3	-2.0
	820	-133	-48	76.3	-18.5
	520	-133	-40	84.3	-6.5
	430 ²	-134	-41	84.0	-8.0
	130	-133	-43	81.3	-11.0
Signal One	1030	-128	-21	100.0	+22.0
Ten-Tec Corsair		-130/-120	-33/-22	92.0	+4/+19
Yaesu FT One		-128	-36	85.0	-0.5
	980	-133	-30	94.3	+8.5
	980	-133	-42	82.3	-9.5
	102	-134/-123	-33/-22	92/95.6	+4/+20.5
	901	-131	-40	83.0	-6.5
	101ZD	-134	-43	82.0	-11.0
	101E	-135	-57	68.6	-32.0
	757 GX	-130	-30	92.3	+8.5

Notes

1) Sherwood 5 kHz first IF filter installed

2) Filter blow-by occurred before intermods

All testing by KB9I; all complaints to me directly, please! Note two 930's and 980's, differences in alignment?

For those of you who are concerned about phase noise occurring, look at this table of recent receivers!

Level in dBm required to raise the noise floor by 3dB for "X" kHz away from the generator.

kHz	Yaesu FT-102	Kenwood TS-930S	Kenwood TS-430S	ICOM 740	Mil Spec 1030	Yaesu FT-980
3	-42	-56	-70	-66	-50	-74 dBm
5	-37	-49	-64	-60	-47	-72
10	-29	-42	-56	-55	-39	-62
15	-25	-37	-51	-37	-33	-55
20	-25	-35	-47	-43	-42	-50
25	-21	-31	-47	-33	-27	-47
30	-20	-30	-47	-39	-26	-44
40	-18	-25	-36	-28	-23	-40
50	-17	-22	-36	-35	-21	-38
75	-16	-18	-30	-22	-18	-31
100	-14	-16	-26	-43	-16	-26
200	-14	-12	-20	-32	-10	-17



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It really happened

Harold "Deadeye" Morgan, K0JTP

I have often been told over the air that I had a "boat anchor" or some other equipment I should get rid of in most any way I could. Some of them wanted to tie me to the rope attached to the anchor. I couldn't go for that, but I did take a shotgun to some of my gear to cure a problem. It worked, too.

My first quad at the lake worked fine until one time I found it would not rotate

past a certain point. About a year after it was put up, a tree close by had grown enough so one branch was catching on one of the wires of the 20-meter quad. This was only when the wind was in a certain direction and the quad pointed a certain way. So I went up on the roof of my QTH with my trusty shotgun, and I shot that branch that was offending me.

I cured my problem, and I did it with one shot!

— North Iowa ARC, Mason City, IA

New From Butternut® HF2V DX The 80 & 40 Meter Bands

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It could happen to you

Ed Scallon, KA1JSN

There I was, 650 miles from home in the north woods of New York state. It was 22 May, the time was 0001 UTC. It was dark and I had just pulled onto a dirt road to set up camp.

First I took out my gas lantern. Can't pump it. It needs oil on the pump gasket. No oil. What to do. I had to think for a minute. Yes, take the dip stick out of the wagon. There was plenty of oil on it to fix the lantern. Sure enough, it worked. Now I had light.

I started pulling things out of the wagon to set up camp. Tent poles, stakes, rope for the tent, sleeping bag. Yep, you're right — no tent! So I slept in the wagon — not too bad.

It was early, so I thought I would put up my mini-quad next to the wagon. So, to the rack on top of the wagon, took down the quad, put it together, got it up about 20 feet next to the wagon. FB. I'd run a long line the next day, I said to myself.

I took out my folding table. Set it up. Took my portable generator, started it up — running fine. Took out my old Swan 500, put it on the table, went to take out the power supply. No power supply. No problem. Took out my tool box, took out my soldering iron, plugged it into the generator to heat up. Rewired the plug for DC operation, hooked it up to battery. Good!

Now I wanted to eat. Took out the portable gas stove and lighted it. Took out pan and made bacon and eggs. Went to back seat of wagon to get water from water bag. No water. Had made a hole in the water bag with tent poles.

No problem. Went to cooler, took out some ice, melted it, made coffee. All this time, I had the rig on to warm up. I said to myself I had better start the wagon to keep battery charged. Started wagon. Wagon was in gear. Wagon jumped forward; rig, table, stove, lantern fell on the ground. Woods on fire. Had to put out fire. Got trenching tool. Put sand on the fire. Undid rig from battery, picked up table, put everything back on table. Lantern still working fine.

Got into wagon, backed it up and ran over mini-quad. Got sleeping bag, put it on front seat, put out lantern, went to sleep. Left everything for the next day.

Next day — got up, looked out of wagon window — not in bad shape. Quad not hurt too bad. Got out of wagon, went into woods, did what had to be done, started looking for water. Got lost, somehow. Rangers found me four days later. Took me to my wagon. I packed up and went home.

Sorry to say, no contacts made. Would like to do it again sometime — if I can get some other hams to go with me. □

happy to report that at highway speeds with cruise control and all other computer functions in operation, there is *no RFI* when I use my 25 watt 2-meter rig. The Owner's Handbook for the car states that *radio transmitters which are not FCC-approved* may cause the cruise control and other computer features to malfunction.

So, it seems that at least one American auto manufacturer is aware of the problem and has done something about it. Manufacturer's name given on request.

— Tamiami ARC, Venice, FL □

Traveling? Try this

These countries have arrangements to grant reciprocal operating permits to visiting alien amateurs: Argentina, Australia, Austria, the Bahamas, Barbados, Belgium, Belize, Bolivia, Botswana, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Dominican Republic, Ecuador, El Salvador, Fiji, Finland, France, Federal Republic of Germany, Greece, Grenada, Guatemala, Guyana, Haiti, Honduras, Iceland, India, Indonesia, Republic of Ireland, Israel, Italy, Jamaica, Jordan, Kiribati, Kuwait, Liberia, Luxem-

bourg, Monaco, Netherlands, Netherlands Antilles, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Portugal, St. Lucia, Seychelles, Sierra Leone, Solomon Islands, Spain, Suriname, Sweden, Switzerland, Trinidad and Tobago, Tuvalu, United Kingdom, Uruguay, Venezuela and Yugoslavia.

U.S. Amateur Radio licensees who wish to apply for a reciprocal operating permit should write to the radio licensing authorities in the government of the country to be visited. The regulations of that country apply.

— Davenport RAC, IA □



Presenting two small cases for a lot of mobile power.

You won't find a 45-watt, 2-meter FM mobile rig that's built smaller than the Yaesu FT-270RH.

Nor will you find a dual-band FM mobile that offers the crossband full-duplex capability found in the 25-watt Yaesu FT-2700RH.

It shouldn't be surprising. We've been coming up with a lot of innovative concepts lately.

The FT-270RH measures just 2 x 6 x 7 inches. Conveniently fitting its high-power punch into many small spaces of your car. Places where other 45-watt mobiles just won't fit.

The FT-2700RH is small too. Smaller than other dual-banders. But with one big difference: a "DUP" button. Push it, and you're operating full duplex, 2 meters on one VFO, 440 MHz on the other. Each at 25 watts. So you can simultaneously

transmit and receive in true telephone style.

Once installed, you'll find the FT-270RH and the FT-2700RH equally simple to operate. Just turn the rig on, dial up a frequency, select offset or duplex split, and you're on the air.

Each rig gives you 10 memories for storing your favorite frequencies. Dual VFO capability. A clean, uncluttered LCD display for easy readout. Push-button jumps through the band in 1 MHz steps. Band scanning with programmable upper and lower limits. And priority channel operation.

You don't even have to take your eyes off the road to determine your operating frequency and memory channel. An optional voice synthesizer announces them both at the push of a button on the microphone. The FT-2700RH announces both your

2-meter and 440 MHz operating frequencies.

Also, tone encode and encode/decode capability is programmable from the front panel, using an optional plug-in board.

So when you need a lot of power in a compact mobile radio, discover Yaesu's FT-270RH and FT-2700RH. There's nothing else like them on the road.

YAESU

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(213) 633-4007

Yaesu Cincinnati Service Center
9070 Gold Park Drive, Hamilton, OH 45011
(513) 874-3100

Prices and specifications subject to change without notice.



Automobile RFI

RFI in autos, caused by amateur transmitters, has been written about in several amateur publications in the last two or three years, as newer model autos have computer systems for fuel injection, ignition, etc. The prize solution to the problem, as suggested by a Japanese auto maker, was to shield the transmitter's antenna.

At least one American company has come up with a better solution. Early in June I got a new American-made car. I am

Contact Worldradio for hamfest prizes.



The third edition of ARRL's *The FCC Rule Book* is now available. This \$3 publication of the League is well worth having, for any amateur at all concerned with adherence to the Rules. In addition to inclusion of most of the rule changes prior to December 1984, it includes many answers to questions about the meaning and effect of the rules.

The FCC has announced that a special lifetime General Radiotelephone Operator License certificate will be available for anyone holding a First Class, Second Class or General Radiotelephone Operator License issued or renewed between 01 January 1979 and 14 June 1984. The Commission will eventually discontinue issuing diploma-form General Radiotelephone Licenses and replace them with a card-form lifetime license.

A license issued before 01 January 1979 may be renewed (in card-form only) within five years of the expiration date via FCC Form 756 sent to a Commission Field Office. Licenses initially issued or renewed after 06/14/84 were already issued as a lifetime certificate. Requests for lifetime certificates must be directed to the same FCC Field Office which issued the last license, whether it was new or a renewal. Name, birth date and license number must be the same as that which is on the license. Write "Lifetime License" above the Field Office address. If it has an endorsement, include a copy of the present license.

If delivery of the certificate unfolded is desired, include a 9 1/2" x 12" SASE (first class). Otherwise, at least a 4 1/8" x 9 1/2" SASE with first-class postage should be included.

Technician certification examinations will be given by the National Association of Business and Educational Radio, Inc., on 23 March 1985. NABER is one of the groups that stepped in to fill the void left when the FCC decided to stop issuing radiotelephone licenses. The March 23rd exams will be given at 70 locations nationwide. Others will also be given in Tarpon Springs, Florida on 05 April; and in Las

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P.O. Box 19164, Washington, D.C. 20036.

The comment period on the ARRL's petition in the PRB-1 Matter of Request for Declaratory Ruling to preempt state and local regulation of Amateur Radio transmitters and antennas ended 25 January 1985.

In its own comment, the League wrote: "The ARRL again respectfully requests that the Commission issue at the earliest possible date a declaratory ruling which states the Commission's intent to preempt all local ordinances which provably preclude or significantly inhibit effective, reliable Amateur Radio communications, and which are not necessary to carrying out a clearly articulated and affirmatively expressed compelling governmental interest related to the health and safety of the community."

As I reported in last month's 'Highlights,' Senator Goldwater, K7UGA, introduced a resolution, SR-35, which among other things "... would urge the FCC to protect Amateur Radio licensees against unreasonably restrictive land use and other state and local regulation which would render the communications from such stations impossible or unreliable.

"Specifically ... by affirming that states and local regulatory authority must be exercised so as to avoid prohibiting or frustrating the transmission or reception of signals by federally-licensed Amateur Radio stations." (Congressional Record, 03 January 1985)

Questions on the amateur examinations which use mode designators will be changed, on the next scheduled revision of the examination element concerned, to agree with the new WARC-79 designators, reports ARRL's Perry Williams, W1UED. For example, in 1985, 01 April for Extra Class, 01 July for Novice Class, and 01 October for General Class. An exact time for the Advanced exam change was not available from the FCC at the time W1UED wrote his report. However, FCC advised me the new Advanced ques-

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Volunteer examiner statistics for December 1984*

Region	VEC	Sessions	Locations	Pass	Elements administered	Pass rate	
1	ARRL-1	6	6	61	114	53.5%	
2	Metroplex	6	4	119	206	57.8	
	ARRL-2	5	5	65	126	51.6	
	W5YI-2	1	1	5	5	100.0	
3	Laurel	4	4	61	116	52.6	
	ARRL-3	1	1	23	53	43.4	
	Mountain	1	1	5	14	35.7	
4	C. Alabama	15	14	130	294	44.2	
	W. Carolina	5	5	67	170	39.4	
	Mid-South-4	1	1	15	42	37.7	
	W5YI-4	2	2	13	26	50.0	
	ARRL-4	1	1	12	24	50.0	
	Char	2	2	12	23	52.2	
	TRIAD	1	1	5	16	31.3	
5	ARRL-5	5	5	63	129	48.8	
	Dallas	1	1	30	65	46.2	
	W5YI-5	5	5	15	25	60.0	
6	SANDARC	6	4	40	56	71.4	
	W5YI-6	2	2	84	111	75.7	
	GLAARG	4	4	32	66	48.5	
	ARRL-6	2	2	31	48	64.6	
7	ARRL-7	6	6	72	159	45.3	
	BEARS	3	3	15	40	37.5	
	W5YI-7	1	1	3	7	42.9	
8	DARA	6	6	77	155	49.7	
	ARRL-8	4	4	25	66	37.9	
9	DeVry	12	12	119	185	64.3	
	ARRL-9	5	5	43	146	29.5	
	W5YI-9	1	1	5	7	71.4	
10	ARRL-0	4	4	24	65	36.9	
	PHD	1	1	16	38	42.1	
	W5YI-0	1	1	10	17	58.8	
11	Anchorage	4	3	32	75	42.7	
12	ARRL-12	1	1	14	15	93.3	
13	Honolulu	4	1	14	25	56.0	
	Koolau	1	1	6	12	50.0	
		36	130	121	1363	2741	49.7%

*Based upon when applications received in Gettysburg.

tions might be available in February or early March.

The FCC advises that its order of 11/08/84, deleting 2310-2390 MHz from the 2300-2450 MHz amateur band, should be corrected to show A2B emission in the remaining 2300-2310 and 2390-2450 MHz bands, instead of A3B.

The FCC's editorial amendment of Part 97, effective 12/06/84, included an addition to Appendix 2 which quotes Resolution No. 641 of the 1979 World Administrative Radio Conference regarding the 7000-7100 kHz band. It resolves "that the broadcasting service shall be prohib-

ited from the band 7000-7100 kHz and that the broadcasting stations operating on frequencies in this band shall cease such operation."! The Order amended "Frequencies available" Section 97.185(b)(6) to extend the 50-watt power limit use of the 420-450 MHz band to amateur operation within 124 miles from Warner Robbins Air Force Base, Georgia and within 124 miles from Goodfellow Air Force Base, Texas.

In his presentation of his S-66 bill concerning willful and malicious interference to the Senate on 03 January 1985, Senator Barry Goldwater wrote: (please turn to page 10)

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of 01 February 1985.

For more information about call sign assignment in the Amateur Radio Service, see Section 97.51 of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325.

Radio District	Group A	Group B	Group C	Group D
	Am. Extra	Advanced	Tech/Gen	Novice
0	NJ0F	KD0UT	N0FXS	KA0TZU
1	KY1E	KB1RC	N1DIT	KA1MPE
2	NI2W	KD2LE	N2FIN	KA2WQH
3	KV3D	KC3QV	N3EFU	KA3NRH
4	AA4HM	KI4YW	N4LKL	KB4MVG
5	NU5B	KE5VO	N5HPS	KA5VJY
6	WE6L	KG6OL	N6LPD	KB6HRA
7	NM7C	KE7DI	N7GVM	KA7ULQ
8	NK8Q	KD8WN	N8GGQ	KA8VWM
9	ND9D	KD9NJ	N9EYY	KA9TBF
N. Mariana Is.	AH0D	AH0AC	KH0AG	WH0AAG
Guam	AH2V	AH2BB	KH2BU	WH2AFJ
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6W	AH6FX	NH6CY	WH6BCC
Kure Is.			KH7AA	
American Samoa	AH8B	AH8AB	KH8AD	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAB
Alaska		AL7GP	NL7FD	WL7BFP
Virgin Is.	KP2L	KP2AT	NP2BF	WP2AEI
Puerto Rico	WP4F	KP4II	NP4MN	WP4DXZ



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AND SEMINARS

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Ladies Luncheon	yes no
No Host Sunday Breakfast ...	yes no
QCWA Breakfast	yes no

CALLS

"The purpose of this bill is to clarify and strengthen present law that prohibits willful and malicious interference on the radio waves. Such activities would be absolutely prohibited and penalties for such behavior significantly increased in order to deter such harmful behavior.

"All too often, this type of interference can be heard on amateur, citizens band, marine and other frequencies. But that is not all.

"This type of interference increasingly is appearing on frequencies used by private land mobile services, public safety services such as police and fire departments, and government communications networks such as those of the Federal Aviation Administration and the Department of Defense.

"This legislation would enable the FCC to seek immediate judicial action to stop the interference, make such purposeful interference a criminal matter, and provide for significant penalties and even imprisonment in appropriate cases.

"If this still is inadequate, I am prepared to introduce even tougher legislation to authorize forfeiture of the equipment used to cause interference and to require disqualification of those convicted from being licensees in the future."

Senate Resolution 35, submitted by Senator Goldwater on 03 January, resolves that the FCC should affirm that state and local regulatory authority must be exercised so that it does not discriminate unreasonably among Amateur Radio antennas and other types of home communications transmission and/or reception antennas . . . etc.

The FCC has issued new instructions to volunteer examiner coordinators which became effective 01 January 1985. The requirement of prior notification to FCC of the location and date of examination sessions has been eliminated. However, FCC continues to require the volunteer examiner to make a prior public announcement of an examination session including the place, the amount of the fee and how it is to be paid. (*W5YI Report*, 01/15/85)

In an order adopted 16 January 1985, the FCC modified Section 97.121 to make it clear that " . . . using another station's call sign when responding to a CQ or using one's own call sign for identification purposes when operating a station having lesser privileges." is within the intent of the rule. Amended Section 97.121 reads as follows:

"97.121 False signals.
 "(a) An Amateur Radio station must not transmit:
 "1) False or deceptive signals or com-

munications by radio; NOR
 "(2) For purposes of identifying the station, any call letter which has not been assigned to it. Notwithstanding the foregoing, when a station is operated within the privileges of the operator's class of license but which exceed those of the station licensee, station identification must be made by following the station call sign of the station being operated with the operator's primary station call sign in accordance with Section 97.84 (b).

"(b) In responding to a general call (CQ), an amateur station may transmit the call sign of the station initiating the call."

On 23 January 1985, the FCC adopted a Notice of Proposed Rule Making (NPRM), PR Docket No. 85-21, proposing to delete the current 30-day wait required before re-taking an examination after failure. If adopted as proposed, any wait after a failure would be up to the volunteer examiners, a minimum being the time it would take to get a different examination to give to the failed examinee.

Initial comments will be allowed through 07 March and reply comments on or before 22 March 1985.

The FCC has adopted a Notice of Proposed Rule Making (01/23/85), PR Docket 85-22, which invites amateurs to develop their own national repeater coordination system. The FCC would rely on them to resolve the growing number of repeater conflicts that seem to be developing again in the metropolitan areas. The FCC would like to strengthen the repeater coordinators around the country with its recognition and backing. The NPRM calls for a moratorium on new repeaters in the big cities until the matter can be resolved.

Proposed new rule 97.85 (h) reads: "Where an Amateur Radio station in repeater operation causes harmful interference to the repeater operation of another Amateur Radio station, the two stations are each equally and fully responsible for resolving the interference unless one repeater is coordinated (see *97.3(k)) and the other is not. Where one repeater is coordinated and the other is not the station with the non-coordinated repeater has primary responsibility to resolve the interference."

Proposed 97.3(k): "Coordinated repeater. A station in repeater operation for which the transmitting and receiving frequencies have been chosen by a licensee in accordance with the recommendation of a frequency coordinator."

A long initial comment period, until 01 July 1985, is provided, with reply comments until 30 September 1985.

Implementation of some WARC '79 mi-

crowave amateur frequency bands was the subject of an FCC NPRM, PR Docket 85-23, adopted 23 January 1985. Details and the comment periods were not available when this was written.

Effective 29 January 1985 an FCC order deleted the requirement that volunteer examiners must give a 30-day advanced notice of examination sessions to the Commission's Field Operations Bureau.

On 23 January 1985, the FCC adopted an order which dismissed a petition, filed by Gordon Girton, W6NLG, for a number of changes regarding volunteer examinations.

The FCC responded favorably to a petition by the Dayton (Ohio) examiner group asking the deletion of some of the data the exam volunteers had to put on Form 610. Their action (on 01/23/85) implementing the request simplifies the work of the volunteer examination coordinators.

The Quarter Century Wireless Association (QCWA) has petitioned the FCC to remove the above-220.5 MHz limit to allow for remote controlling other Amateur Radio stations (auxiliary operation) on any amateur frequency band. FCC rule

Section 97.3(1) defines auxiliary operation, and Section 97.61(d) specifies the current frequency limitations for such operation.

W5YI reports receiving a letter from Leland Smith Sr., W5KL, vice president of QCWA, that their Board of Directors has discussed the possibility of filing a petition with the FCC to lower the code speed requirements for General Class licenses to 10 wpm.

"The primary purpose of the petition, as Smith understands it, would be to permit Advanced Class licensees to give General Class examinations and relieve what is rumored to be a serious shortage of Volunteer Examiners with Extra Class licenses." (*W5YI Report*, 01/15/85).

During the last week of January, Harry Lewis, W7JWJ, petitioned FCC to amend the code speed requirements for each license class as follows: Novice, 5 wpm; Technician, 7 wpm; General, 13 wpm; Advanced, 15 wpm; Extra, 20 wpm. FCC's John Johnston advises that 10 years ago, in the Docket 20282 proceeding, the ARRL countered an FCC proposed license/privilege structure with the following: Novice and Technician, 5 wpm; General, 10 wpm; Advanced, 15 wpm; Extra, 20 wpm. (See *QST*, September, 1975, page 51.)

Last FCC exam


Three amateurs from Ely — Archie Robison, KA7RBM; Dewaine Hardin, W7JMN; and Odis Johnston, WB5VDV — drove to Denver (approximately 700 miles) to take upgrade exams before the FCC at its final examining session during the week of 05 November 1984.

The FCC team was one of the most courteous, helpful and cheerful groups of

federal employees I've come in contact with in a long time. (I worked for the federal government for 31 years.)

The team was testing approximately 800 applicants during that final week. They certainly created an atmosphere that made taking the exam a pleasure.

Oh yes, KA7RBM upgraded to Tech., W7JMN from General to Extra (at age 71), and WB5VDV from General to Advanced. — Odis Johnston, KE7CC



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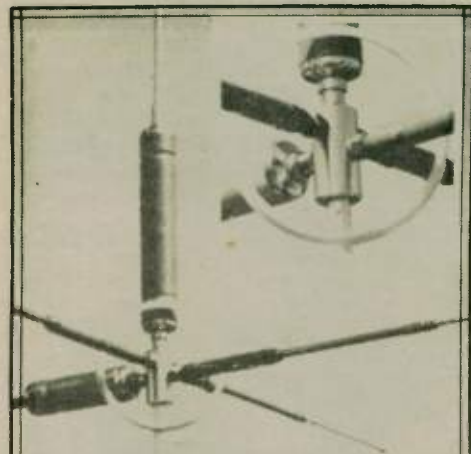
SPECIAL EVENTS

Hall of Science ARC

The Hall of Science Amateur Radio Club (HOSARC) will issue a commemorative certificate to anyone working a HOSARC station on 14 April, 1500-2100 UTC, in conjunction with HOSARC's 12th anniversary.

Stations using the call WB2JSM will operate CW in the first 25 kHz of the Novice bands of 40, 15 and 10 meters, and in the first 5 kHz of the 30-meter band. Stations using the call WB2ZZO will operate in the first 25 kHz of the General phone bands of 40, 20, 15 and 10 meters.

QSL with a large SASE (40 cents or 1 IRC) to: HOSARC, P.O. Box 131, Jamaica, NY 11415, or to HOSARC QSL Manager Arnold Schiffman, WB2YXB, 81-22 250th St., Bellrose, NY 11426. Hope to see you in the log! — *Bill Smith, N2AYY* □



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Victory celebration

To commemorate the 40th anniversary of the victory of the Soviet Union in the Second World War, Radiosport Federation of the USSR, the Central Radio Club and Radio magazine have introduced a new Amateur Radio award "POBEDA-40" (i.e., "Victory-40"). To obtain it, one has to contact Soviet war veterans and special memorial stations. War veterans sign their calls with . . . /R.

Other special memorial stations use call signs with the following prefixes:

EW — "hero-cities" (i.e., Leningrad, Moscow, Brest -E.K.)

EU — capitals of the USSR republics

EV — capitals of the autonomous republics of the USSR

EM — former centers of guerilla movement during the WWII

EO — cities awarded medals for their contributions toward the victory

Additionally, special station ER3A will operate from Moscow. Any QSO counts, any band or mode — including satellites, from 01 January till 09 May 1985. Duplicate contacts with the same station don't count.

Foreign amateurs must acquire 40 points. Any contact with a war veteran or memorial station for Europeans yields 1 pt.; Asia/Africa — 2 pts.; North/South America — 4 pts.; Australia/Oceania — 5 pts.

The award is free and will be given based on an extract from one's log, verified by a local (national) sport federation or a club or by two radio amateurs with calls. Applications must be sent to P.O. Box 88, Moscow no later than 01 January 1986. — *Translated by Edward Kritsky, KA2MXO*

(Remark de KA2MXO: Many Soviet operators are obviously unaware of the above criteria for foreign amateurs, thus incorrectly state that 40 QSOs (not points) are required for everybody, without regard for the station location.) □

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Hurry! Sale ends May 1, 1985.

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FOX TANGO FILTERS contain eight specially treated and aged discrete crystals, unlike ceramic or monolithic corner-cutting designs. An implant or transplant with a time-tested FT filter or cascading kit will give your rig new life. Our best advertisements are thousands of satisfied users — check out our claims over the air — you'll learn that FOX TANGO is best! Our filters cost less and are guaranteed longer — ONE YEAR — order with confidence. Why risk disappointment with some unknown or unproven brand?

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Submarine Day

The *USS Becuna*, a World War II submarine and the *USS Olympia*, the flagship of Admiral Dewey 1898, will be on the air to celebrate National Submarine Day the weekend of 13-14 April. Transmissions from the sub and the cruiser can be heard from 1300Z, Saturday to 2000Z, Sunday on the following frequencies, depending on conditions.

Frequencies: CW — 3590, 7050, 14050, 21090, 28150; Phone — 3890, 7240, 14285, 21360, 28600. All frequencies within 10 kHz. Two-meter operation is

Tri-County's 50th

Tri-County Radio Association will sponsor station W2LI, starting at 1900 EST, 26 April to 1900 EST, 27 April, in celebration of the 50th anniversary of

Old-Timers Day

The Volunteer Amateur Radio club of Dickson, Tennessee, will operate a special event station, NY4N, on Saturday, 04 May.

JOTA success

More than 250 Amateur Radio stations were successful in contacting K2BSA during the Boy Scouts of America's annual "Jamboree on the Air."

Commemorative QSL cards have been mailed to stations in the United States, Liberia, Jamaica, Canada and the Canary Islands from K2BSA, national headquarters station.

According to Dan Dansby, W5URI, and K2BSA trustee, contacts were made on 40, 20 and 15 meters.

During the annual JOTA competition, more than 30,000 children at 1,200 Amateur Radio stations were able to speak to each other via Amateur Radio. Twenty

planned, as well as Novice band.

A beautiful certificate has been prepared for the contacts. Stateside mailings are SASE — business-size envelope, please. Foreign contacts remit 1 IRC. Call sign to be used will be the operator that is on duty, as the club does not have a collective call sign.

Additional inquiries about the ship's history or its operations and QSL information available from: Olympia Radio Amateur Club, P.O. Box 928, Philadelphia, PA 19105 USA. — *Sam Dedonatis, WB2BWL* □

TCRA. Phone operation will be in the lower 25 kHz of the General Class bands on 10 through 80 meters.

Special QSL via SASE to Tri-County Radio Association, P.O. Box 412, Scotch Plains, NJ 07076. □

Operating times and frequencies will be: 1200-1400 UTC, 3980 kHz; 1400-1800 UTC, 14,275 kHz; and 1200-1800 UTC, 146,520, 145.11

QSL to P.O. Box 74, Burns, TN 37029 for commemorative certificate. □

Amateur Radio operators helped at K2BSA at the annual Longhorn Council Scout Fair as dozens of Cub, Boy and Explorer Scouts contacted fellow Scouts in other states.

JOTA, Dansby said, is not a competition to see how many stations can be contacted, "but it's designed to give the kids an opportunity to talk to kids in other parts of the United States. We had a lot of kids talking and just ragchewing," Dansby said.

When in the Fort Worth/Dallas area, Scouts and other Amateur Radio operators may use the K2BSA repeater at 145.37 MHz. The repeater has a distinctive 5 wpm identification. □

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PUBLIC SERVICE

Paramedic turns to Amateur Radio

On Monday night, 04 February, during a routine paramedic run, Mason Life Squad Paramedic Bob Reiff, WA8ULW, attempted to contact University Hospital to discuss treatment of the patient. He tried to use the radio equipment in the ambulance as usual, but due to poor radio conditions, he was unable to contact the doctor.

Since it was important to talk to the doctor, he pulled out his 2-meter Amateur Radio handi-talkie and, using the Mason Amateur Radio repeater (145.13-600), made a telephone call to the hospital. He was able to successfully talk to the doctor and thereby give proper treatment to the patient.

This telephone call was possible because the Mason Area Repeater Club has provided the repeater for use in Mason and the surrounding area. The repeater, located on the water tower at Snider and Western Row Roads, enables ham operators to contact each other and make telephone calls from all of Warren and Butler, large parts of Clermont and Hamilton, and smaller parts of surrounding countries.

It is available for emergency use in times when ordinary communications systems are out of service or overloaded. Over 50 licensed Amateur Radio operators are members of this group, which is available for help when needed.

There are, at present, 19 paramedics serving Deerfield Township and the surrounding area. At least two of them are on duty at all times. In addition, there are 63 other life squad members.

For more information about the Mason repeater, contact Tom Walker, (614) 398-1516 or Harold Jones, (614) 398-0303. For information on the Life Squad, contact Mike Clements, (614) 398-1563 or Jeff Elder (614) 398-2506. — Leonard Clift, KK8I

2M to the rescue

Walt Hunter, KB6CKT, just returned from an extended vacation where he had an opportunity to provide assistance to a fellow traveler. During his trip across Florida, he came upon a person who had gone into a diabetic shock. Walt got on 2 meters and raised a Miami repeater which called the Florida Highway Patrol and the medics.

As far as Walt knows, all came out well. — Victor Valley ARC, Victorville, CA

The deadline for news releases and special announcements is the 10th of the month, two months prior to issue date. Example: Deadline for the August issue, which is mailed in early July, is 10 June.

Chatsworth Parade

For the third consecutive year, a group of public service-minded amateurs assisted with communications at the Chatsworth Parade on 16 December.

This parade has become a popular annual event in the West San Fernando Valley. The Grand Marshal this year was Peter Vidmar, Olympic Gold Medalist. There were some 134 entries, including bands, floats and equestrian groups.

County leases van to radio club

Vern Skretvedt, KA0KWM

In 1980, several members of the Bemidji Amateur Radio Club decided the club should have a communications van.

The Bemidji Area Vocational School sold the unit shown in the picture, to the Beltrami County Civil Defense for \$1. The county leases it to the radio club for \$1 a year. The club gutted it and insulated it, paneled it and carpeted the interior with materials donated by the Bemidji merchants.

The County Civil Defense gave the club money to purchase two 80-10-meter rigs, two 2-meter rigs, a 200 amp 12-volt portable plant and a 3kW 110-volt plant on a trailer.

The Bell telephone company donated two phones. The club also has a police scanner. The County Civil Defense recently gave the club funds for a new 100 watt repeater, complete with autopatch.

The Bemidji Amateur Radio Club (BARC) now has 50 amateurs who are trained weather watchers, and who form several half-circles in a half moon south, west and north of our city. The first of these is 150 miles out, and they are pro-

gressively smaller till they reach the city. When the weather bureau calls one of the coordinators, they activate the emergency service group, which is then in touch with the weather bureau. Through radar, the storm is tracked across country. Anyone can monitor the frequency on a scanner and be prepared to take cover if the tornado is approaching their area.

BARC also provides communications for the dog races, ski races and other community affairs, lost hunters, hamfests and special events.

Seventeen Amateur operators, efficiently coordinated by Jim Fortney, K6IYK, of the Valley Emergency Radio Association, provided communications among various parade officials, checkpoints and the Los Angeles Police Department.

The parade was a success, thanks in large part to the following amateurs who gave up their Sunday to provide a public service: Jim Cass, AA6K; Constance Stevens, K1MZI; Jim Fortney, K6IYK; Richard Ulrich, K6KCY; Paul Moratto, KC5JK; Steve Godwin, KD6ZZ; Bill Stevens, W1WEX; Mel Roberts, W6OC; Arch McGregor, W6AGZ; Charles Im-sande, W6YLJ; Robert Bright, WA6AQQ; Ron Lisberg, WA6ONQ; Eugene Levy, WB6DBK; Doug Fajardo, WB6KNY; Richard Ravich, WD6FIE; and Judith (WD6FWZ) and Alvin (WD6FXG) Teeter. — Steve Godwin, KD6ZZ



The Bemidji Amateur Radio Club's communications van

Help for the blind

Max York

If they don't get help within 24 hours, they will be blind forever.

It is a situation Nashvillian Dean Sturgeon, WA4TTY, has been involved in twice every day since the middle of 1965. There are people in Tennessee who can see the beauty of their home state because Sturgeon and others take part in something called the Emergency Eye Network.

Sturgeon is a retired federal railroad engine inspector and an Amateur Radio operator.

"The eye network was started in December 1962 by Al Braley in Iowa City," Sturgeon said. "Al had a young patient with an eye injury, and he couldn't find the tissue he needed for a cornea transplant. He talked with other Amateur Radio people across the country to see if they could help solve this dilemma.

"They started off with seven cities. They met every day. I got my license in 1964 and started checking in on the network in the middle of 1965.

"I stay in touch with the Nashville Regional Eye Bank and Sight Service. If they have eyes available, they let me



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know. If they need tissue, they let me know.

"Now about 60 cities check in every day. They are doing the same thing in their cities.

"One day recently, there were 11 eyes available across the country. Every one of them was used, and every one helped save somebody's vision. There were eyes available in Dallas, Sacramento and Austin that day."

A part of the joy of participating is finding out that the eyes were used and the surgery was a success.

Since the eye network began operating, over 10,500 eyes have gotten to patients for sight-saving surgery.

"We usually find out the next day," Sturgeon said. "The success rate is something like 90 to 95 percent."

Of course, the men who operate the network make no medical decisions.

"If I hear of some tissue that sounds like what doctors at Vanderbilt have told the eye bank secretary they need, I simply tell the network man in the city with the tissue the eye bank there probably will be hearing from the secretary of the eye bank here."

For several years, Sturgeon was network control, which meant that twice a day he called the roll of cities and got the process going. He also has served as alternate network control. Sturgeon insists the honor was due more to a strong signal that could be heard over most of the country than to any other factor.

There is a young woman in Athens, Tennessee, who saw her husband for the first time because of a cornea found by Sturgeon through the network for Vanderbilt physicians. There is a young Murfreesboro girl who sees because of a cornea found the same way.

"I've never seen these or any of the others," Sturgeon said. "I don't really care to see them. Just knowing they can see is rewarding enough."

Time is important in delivering eyes for transplants. Most go by airlines.

"Al Powell, the secretary of the

eyebank here, has delivered some himself," Sturgeon said. "If there were one going to Louisville, for example, a relay of state troopers might get it there fastest.

"Anytime you have tissue available and there is someone who needs it, you have a dramatic situation. Just the other day, there was a 10-month-old baby in the Carolinas who needed corneas badly.

"At the same time, we heard of a boy in Cleveland who had committed suicide. His eyes had been donated. The next day, they told us the baby's sight had been saved. That's a pretty big thrill."

Some time ago, someone got the idea the voices on the network ought to be more than voices. So they decided to get together every year.

"We've had several meetings," Sturgeon said. "They are well attended.

"Several of the guys are blind. Augie from Topeka, Kansas, is one of them. I remember once we were out with him in a car. He was telling us what turns to make. We made a wrong turn. He corrected us. I remember him saying, 'Now it's right down the hill and on the left.' He was right.

Travis from Oklahoma City is blind. He put up his own tower. A lot of these guys do their own repairs, build their own outfits. Some require soldering so small you wouldn't believe they could do it.

"These are all guys who can't be helped by cornea transplants. They like to help those who can.

"I had known Arnie in Baltimore since I joined the network. Many years later, I found out he was head of the ophthalmology institute at Johns Hopkins. Some time ago, my 28-year-old daughter received a torn retina. I called Arnie. He said the best student ever to come out of there was right here in Nashville.

"She went to him, and her vision after the repair was better than it had been before the accident. This made us all happy."

— *The Tennessean, Nashville, TN; submitted by George Stone, WD4CYV* □



E-COMM

Worldradio would like to have a monthly column devoted to E-COMM (emergency communications).

It is important to share with your fellow amateurs, in other parts of the country, what you have learned. For example: send in the critiques that your club had done regarding past operations. What do you keep in your car, van or camper at all times, to be ready immediately in case something happens "right now"?

Tell others how you have related with government agencies. How have you accomplished your goals despite bureaucrats whose idea of a meeting is to plan the agenda for the next meeting and have five-year plans?

The subject of E-COMM is an inclusive and wide-ranging one. You might furnish a schematic of how you have an extra battery in your vehicle being charged by your electrical system.

What if your repeater fails? Do you have a plan that all go to simplex? On the transmit or receive frequency? Does 75 or 40 have a place in your plans? How much redundancy have you built in?

Does your Emergency Coordinator (EC) know you are available? Have you met your EC?

You can furnish answers here for others. You can ask questions about avenues of E-COMM that you have been wondering about. Someone else will have the answer for you.

If you and/or your group are prepared for the absolute worst-case scenario, anything less should be easily coped with.

Does working on public service events prepare one for E-COMM? How? Explain such from your own experiences.

Knowledge is power. To be forewarned is to be forearmed. Statements like a stitch in time saves nine certainly apply in this field. Then there was the military phrase, as regarded training and later, "more sweat, less blood."

E-COMM is serious business. Only those who are truly prepared will perform. □

•••••

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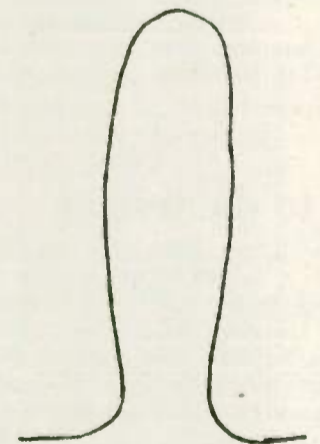
Frank Irwin

On Thursday, 03 January, J. Frank Irwin, W6ECB, became a Silent Key.

Frank was a very active amateur for over 50 years in California, Detroit, Chicago and Myrtle Beach, South Carolina. He was vice president of the Grand Strand Amateur Radio Club and custodian of the local repeater. He also served as technical consultant for the repeater operation. — *Joe Kretchmer, WA9WIG* □

Ohm-Brew

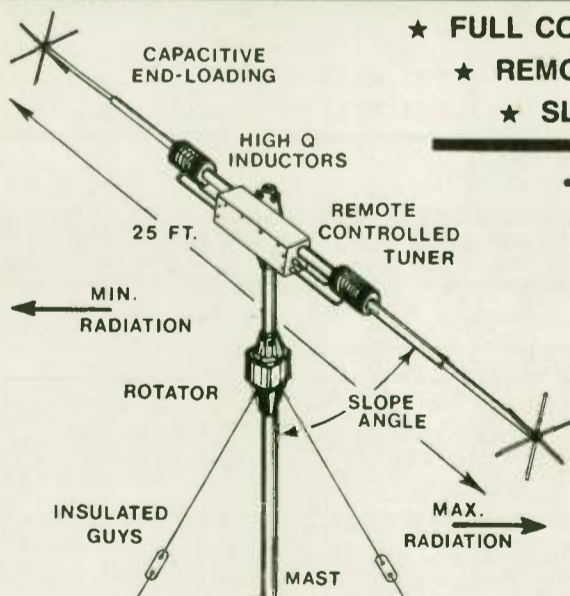
C. B. "Ben" Miller, KB6EP, of Chula Vista, California wins our April Ohm-Brew contest with this entry. For the answer, turn to page 48.



All "Ohm-Brew" entries should be neatly drawn on 3" x 5" cards, for easy handling. On the backs of the cards, print or type your name, address and call sign. Entries not used will not be acknowledged, due to the volume of entries received. □

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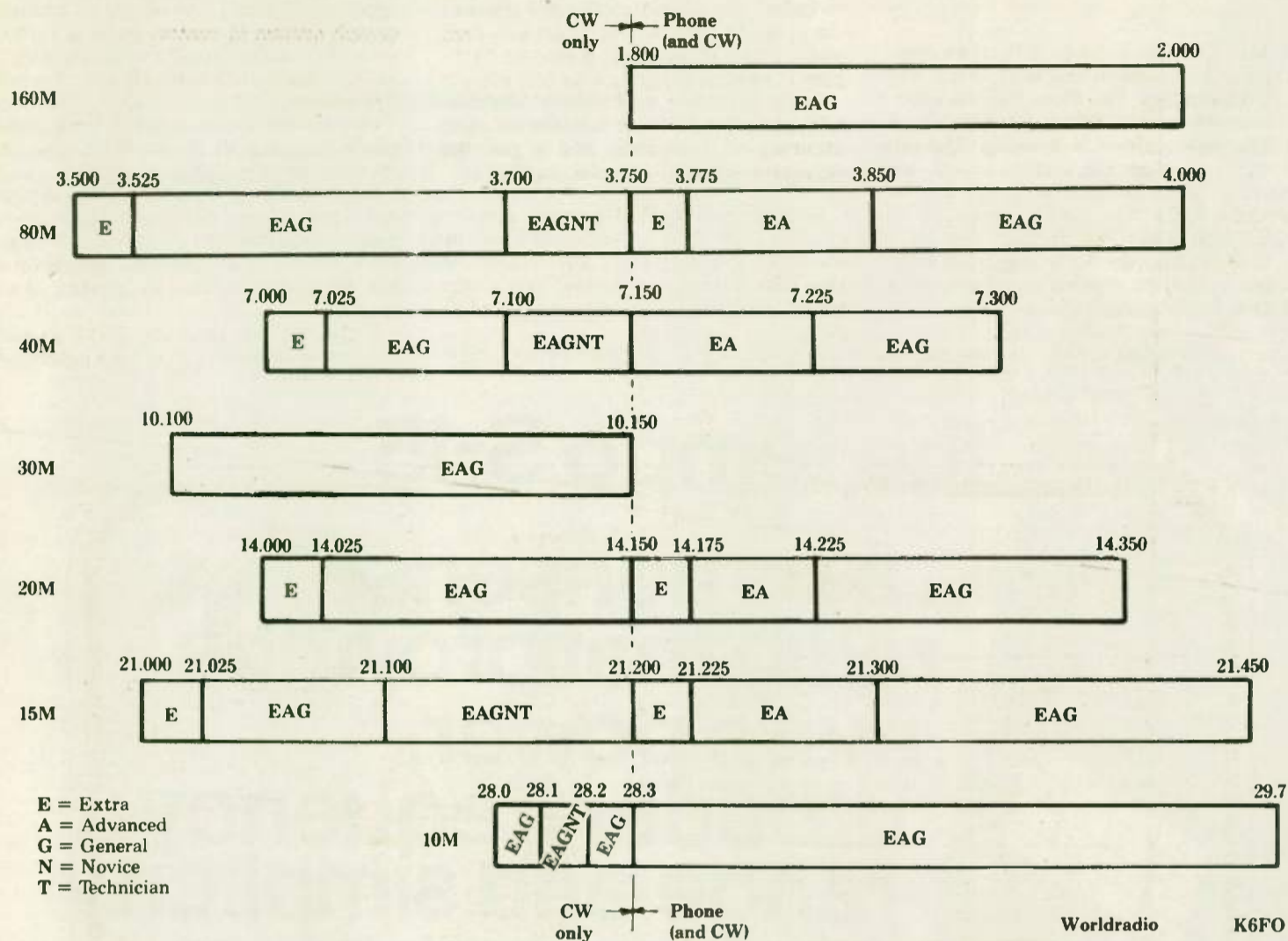
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HAWG's first Field Day

Ed Palagyi, KN4Y

The May meeting of the Ham City Amateur Wireless Group (HAWG) was called to order. The minutes of the previous meeting were read. Spanish interpreter Fleeo Cubano welcomed the visitors to the meeting. There is no such thing as old business so the chair opened the floor to new business.

Bilee Toothless suggested the club participate in the Field Day exercise 28-29 June. The outburst was so sudden that several QCWA members woke up. "What is that?" inquired a Novice, sipping from a jug of knowledge.

Bilee explained the purpose of Field Day was to practice for emergency communications in case an actual disaster should occur, such as a flood, tornado or hurricane. All stations operate on emergency power during the weekend and try to contact as many stations as possible. The club getting the most points is the winner — the way it should be, thought Sue.

Everyone agreed. The president appoints Bilee chairperson of the FD committee. Emoriee, who handles the refreshments during the break, reports the still is still not up to heat. So Bilee suggested the FD program be set up. The regular meeting was adjourned and the FD committee meeting called to order.

"We will be in Class A," announced Bilee. "Now we have to decide how many transmitters we will use, but first how many electric power generators can we obtain?" Everyone raised their hand. Seems like total faith in the Ham City Electrical & Stock Yard Authority. Great! Now how many members will donate the use of a barefoot rig? "What's that?" asked Mr. D. X. Chaser. "Just a stock rig, no boots," explained Bilee. Sue don't use no boots either.

Five hands were raised. Good! That will give us a station on each band and put us in Class 5-A. Bilee appointed band heads whose job will be to set up their station and obtain generators and loggers. Any type of antenna can be used but where possible, a directional antenna is recommended. Sue likes the inverted vee.

Bilee suggested the location be Knobby Rise, the highest hill in the area. Everyone, at one time or another, has parked there to watch the sunrise. Sue giggled! The crest of the hill is about the area of a 300-meter diameter circle — the maximum area allowed. "I'll operate the 300-meter band," said L. F. Dumwinsky. Bilee laughed at the joke; L. F. is serious. Sue likes all bands.

Bilee asked for volunteers to set up the Novice station. Perpetual Novice, Manual McStudy, raises his hand. All the new Novices signed up. Great said Bilee.

"Now we need a refreshment committee," said Bilee. "Anyone interested?" Cam Pullum, chief chicken plucker at Poultry Inc., raised his hand. Cam has a Ph.D. in catering from Botulism University. Pomona will supply the fruits. Sue likes corn-on-the-cob.

WX, the weatherman was asked to schedule a good weekend. WX laughed so hard his radar went into oscillations, but promised to do his best. Sue liked oscillation. John Hedd, president of Pretty Pottie Inc. would supply them with facilities. ERA had been approved by the Ham City Commissioners.

Emoriee announced brewing of the refreshments was complete. Bilee thanked all for cooperation in setting up the first Ham City Field Day. Bilee smiled, since no petroleum activities were used in Ham City . . . at least 100 points for sure. Meeting adjourned.

— *Balanced Modulator, No. Florida ARS*

Can you top this?

We are pleased to have Doug White, W9BVB, as a permanent resident to our radio community. He and his wife, Evelyn, came here about a year ago from northwest Wisconsin and live near Englewood in the Brook-to-Bay Mobile Home Park. It's been nice getting to know them at our weekly luncheons and at our TARC monthly meetings.

One thing for sure — they know about hams and hamming because six of their family members are hams. The other five are:

WB9NCT — Doug's daughter, Dottie, who became a Novice at age 11 and now holds an Advanced Class license.

WD9EAQ — Doug's granddaughter, Cathy, who is a radio announcer and has a

General Class license.

K9GB — Cathy's OM, Mel, with an Extra Class license.

WB9PRI — Doug's son, Don, who is a Technician.

WB9TVZ — Doug's sister, Dorothy, who Doug says is a "perpetual Novice, by choice".

Doug and Evelyn also have a great grandchild due to arrive in February and Evelyn says it will be a "Little Hamlet"!

How's this for an active family of hams? Even with two sons, two daughters, four grandsons and nine granddaughters, we can only boast of being a "two-ham family", namely "ET" and "ELQ"!

If any of you have an interesting or multiple ham family, let us know.

— *Tamiari ARC, Venice, FL*

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Hams meeting hams in India

Ed Pores, WA2ZBV
Anne Pores, WA2URP

Anne WB2URP and I arrived at the New Delhi (India) Airport on 03 November 1984, and found it to be almost deserted — most unusual. It seemed to exude a quiet fear, a pall of smoke hung over the city. It was the day after the funeral of Indira Ghandi.

Due to the rioting of the past days, taxis were scarce (no public transport was running), and tour guides were not available. There being no other way, Anne and I conducted our own tour of the Qutub Minar and Humayun's Tomb. The following day we obtained the services of a tour guide. My business dealings in Delhi allowed us to see more of the results of the rioting than would have been possible on an ordinary tour.

The personal highlight of Delhi was a supper at the house of Dr. and Mrs. D.N. Misra. Among other things, we discussed my study of ancient mathematics and the origin of Zero in particular. We enjoyed a delightful evening and a wonderful Indian meal.

Leaving New Delhi via India Air gave us a most interesting flight over the "top of the world." Mt. Everest is near, so we arrived at Katmandu in the kingdom of Nepal. Archeologist/educator Dr. R.J. Thapa, excavator of Lumbini (the birthplace of Buddha), set the stage for our seeing the temples of the area. Besides ancient monuments, Nepal has some of the most beautiful people in the world, and is also the home of the famous Gurkha warriors!

We visited with one of the only two amateurs of Nepal, Krishna Khatri, 9N1RN, the chief engineer of Radio Nepal, and also had the rare opportunity of visiting two Nepalese homes. We sampled Newari food in a very sparsely furnished home of the in-laws of Aileen (W2LHK) and Gerry (W2ZGA) Harrison's daughter.

While "shopping" I bought some Ayurvedic (ancient medicine) aphrodisiac, but I have not had the guts to try it! Nepalese music sounds like a cross between Chinese, Arabic and Israeli tunes and the dances were like the Russian Kazatskys. Their food is a mixture of Mongolian, Indian and Chinese cuisine. Incidentally, the nearest TV station to Katmandu is 165 miles away, and Krishna told us they get a useable signal, "on occasion."

Back into India, via Royal Nepal Air Lines to Varanasi, site of ancient Benares, and an early morning boat ride on the sacred river Ganges, past funeral pyres at the burning ghats. We spent a quiet hour at the Deer Park in Sarnath, where Siddhartha became Lord Buddha, the originator of the Buddhist religion.

On to Khajuraho and a meaningful lecture by N.R. Banerjee, director of the museum. This set the stage for photographing the most extensive site of Tantric erotic sex sculpture. Ed will be lecturing on this subject to his archeological society.

In Agra, 150 miles away from Khajuraho, stands the "Gem of India", the world renowned Taj Mahal. We were fortunate in viewing the "Taj" at full moon — words cannot describe the splendor of the edifice.

Again, thanks to Amateur Radio, we had dinner one evening with Dr. and Mrs. Chandra, and their sons, Dr. Mukesh, VU2MCC, and Dr. Mukul, VU2MCD — a family of devoted, medical practitioners. Band conditions precluded much DX'ing, but we could hear Thailand and south India. Incidentally, they use their own AC diesel generator for primary power!

Mrs. Chandra's delightful Indian cooking had some spices and foods Anne had fun identifying. Dr. Chandra, the elder, discussed ancient Indian math to round off a most enjoyable evening. Mukesh took us through the wildest chowk (bazaar) of India, in Agra, where the sights, sounds and smells made the shouk of Cairo look like Lord & Taylor.

Our next adventure was getting from Agra to Jaipur, 200 miles southwest of Delhi, in an antique Indian version of a car called an Ambassador. Enroute, thanks to our first aid kit, we were able to

fix our stalled motor by taping the HV lead back to the center of the ignition coil; otherwise it would have been a long night in India! We completed the 200 miles in about six hours, feasting on granola bars and a bottle of soda which we just "happened" to have along for emergencies.

Jaipur's ancient astronomical observatory has a sundial with a purported time accuracy of 2 seconds, and a gnomon (shadow pointer) of 30 meters in height!

We had the best Mulligatawny soup at the Rambagh Palace, the former house of the Maharaja of Jaipur. Later we learned this dish is not truly Indian, but something the British thought was a native dish.

Jaipur's only ham, Retired Lt. General

Umrao Singh, VU2US, known in his locality as "Uncle Sam", tried to contact Bombay for us but band conditions were poor again. Incidentally, the telephone and telegraph system of central India is rather unreliable, and we could not get messages out in less than three days. Never figured this one out.

The Amber Palace piqued Ed's engineer's curiosity to figure out a non-mechanical air conditioning system using Khas Khas Grass, a perforated drain pipe and a prevailing wind to help the ancient people cool off in 117 to 120-degree summers. We got to the palace, which is on a hill, riding on a howdah on the back of an elephant.

Dr. A.K. Das, director of the Jaipur City Palace Museum, gave me a good lead

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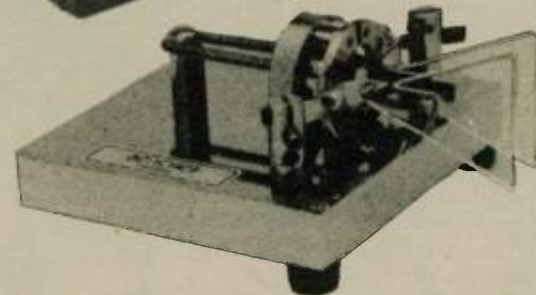
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on ancient Indian mathematics. He also explained the swastika art symbol and Rajasthani music. We later heard the sintur (strings) and harmonium (hand organ) and tabla (drums).

Near Aurangabad, we saw Hindu, Jain and Buddhist "living stone" sculptures carved out of volcanic rock. At Ellora, the largest temple was estimated to have had 220,000 tons of stone removed. At Ajunta, we hired a four-man palinquin to carry us to the top of the river gorge cave temple site.

Dr. T.V. Pathy at Marathwada University, now the authority on the caves, introduced us to three math professors and I obtained more information in my quest for the origin of "Zero."

Our last stop was back in Bombay — the frenetic, traffic-choked financial capital of India. We almost did not make it to Elephants Island, a site of temple caves, as the ferry had a minor fire and listed so badly that we refused to return via the same vessel, which lacked life rafts or so much as a horn to signal trouble!

The amateurs of India are proud that their new prime minister, Rajiv Gandhi, is VU2RG, and his wife, Sonya, is VU2SON. Of course, we were unable to contact the prime minister, but a definite highlight of Bombay was our visits to two different homes of Indian hams. Jimmy Mistry, VU2IJ, and his wife, Roshan, have a lovely penthouse-like apartment community (Rohin Bhathena, VU2II, Darayash and many others). Jimmy's shack had a TRS-80 Computer, HF and VHF gear, plus a view of the Arabian Sea.

Roshan is an excellent cook and we spent the evening feasting, talking Amateur Radio and the Zoroastrian religion of the Parsis of Syria and Persia. They use 145.5 MHz simplex; an HT will cover the whole city of Bombay.

After visiting the archeological museum in Bombay the next day, we went to the home of Vas (VU2RX) and Usha (VU2XYL) Bhatt, with Mehta VU2CA, and were joined by the Indian ham family of Davasakayam (VU2AID), Grace (VU2AIG) and daughter Julia (VU2AIJ) Dasan.

Vas VU2RX is the ICOM/Kenwood distributor for India. His shack has an IC-251A, IC-751, IC-2KL, IC-730 — all in a beautiful custom cabinet console that would put any ham shack to shame! Antennas too numerous to mention are mounted on the roof of his home. Anne and Usha really hit it off, and I'm sure they will be trading recipes.

Dasan and Vas and the group feted us at a hotel restaurant designed and operated by Vas and Usha's daughter. We sampled the haute cuisine while talking about the future of India. Dasan, one of India's freedom fighters who is very active in India's medical net, graciously took us to the airport. Enroute home, Dr. J.L. Khurana treated me to a five-hour lecture on the Sikh religion.

All in all, we combined business and pleasure viewing ancient history and meeting some of the most hospitable people in the world. There is no way we can convey the warmth and friendship we received from the Indian people. We can only hope that India can solve her present crisis, and her people can live in peace. □

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VK/ZL RTTY DX Contest results

Here are the final results of the VK/ZL RTTY DX contest, conducted by ANARTS (Australian National Amateur Radio Teleprinter Society), held in June 1984.

Single-operator section

Station	Points	Countries	Continents	VK/ZL	QSO	Total
VK5RY	3419	48	5	--	102	820,560
VK2RT	3573	41	5	--	97	732,465
UT5RP	1524	62	6	800	121	567,728
JR2CFD	1087	34	5	2700	47	187,490
VK2BQS	1303	30	4	--	49	156,360
YJ8TT	1254	25	4	800	41	126,200
VK2AJT	1190	22	4	--	35	104,720
VK7HV	794	20	5	--	30	79,400
K6WZ	799	23	4	1100	44	74,608
GW3EHN	413	23	4	200	45	38,196
WB4UBD	401	14	4	400	23	22,856
DK4EC	282	20	4	100	28	22,660
VE2QO	401	18	3	300	22	21,954
W0LHS	288	15	4	200	22	17,480
SP2UUU	113	16	2	100	23	3,716
VK2SG/4	41	3	2	--	4	246

Multi-operator stations

OK3KJF	572	32	6	400	47	110,224
OK3RJB	586	33	4	200	55	77,552
OK3KXJ	119	13	4	--	6	188

SWL section

OK2-21478	1028	27	4	200	116	111,224
NL-4483	366	28	5	200	33	51,240
DE1KWD	541	21	4	400	34	45,844
DE1GMH	95	12	2	100	17	2,330

Check logs were received from K4AGC and VK2EG. □

Berlenga Island

CT4NH, CT4UW, CT1AOZ, CT1BOH and another operator will activate Berlenga Island (IOTA - EU 40) with the call sign CT0BI, from 29 March to 02 April.

Operation will be on 160 to 10 meters, both SSB and CW. There will be a Multi-Multi operation during CQ WW WPX SSB Contest (30-31 March). Possible OSCAR operation. Transportation and other facilities by the Portuguese Navy.

QSL information for the whole DXpedition is available from João António da Silva Paulo, CT4UW, Circular Norte, 13D-1 Dt., 1800 Lisboa, PORTUGAL. □



Alice Hawley, NI2E

Oldest to pass Extra exam?

If President Reagan is the Great Communicator at the age of 73, what is Alice Hawley of Horseheads (New York) at the age of 76? Well, the Federal Communications Commission said Alice just might be the oldest person ever to earn the Extra Class radio license, the highest given to an Amateur Radio person.

"It's unusual because I'm 76 and usually people that old don't qualify," Alice said. "And Amateur Radio is basically a man's radio. I consider it quite an accomplishment."

Indeed, she passed the stiff test in Buffalo with 100 percent accuracy, surprising the FCC examiner. What's more, she's got her radio hooked up to her Commodore 64 computer. "I'm building up my computer skills."

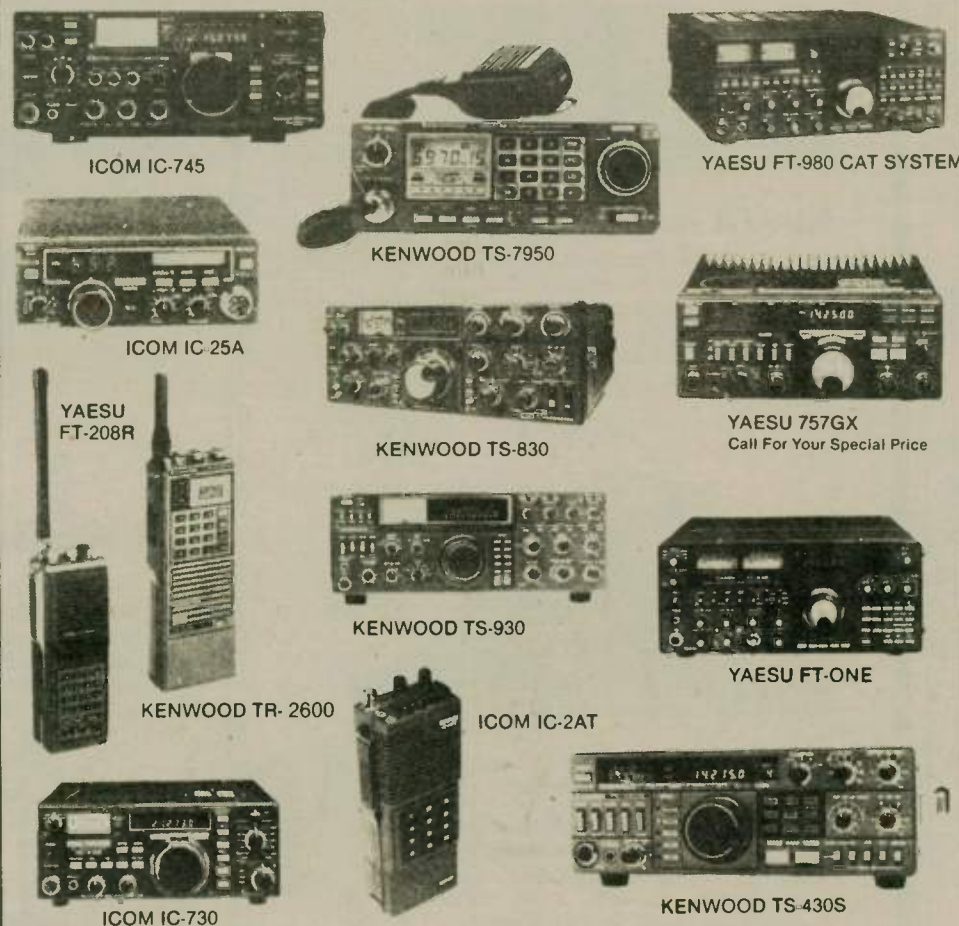
An Indiana native and retired secretary at the Hilliard Corporation, Alice has talked with people all over the world, including a man on a government ship in Australia that was tagging porpoises with sonic devices for defense purposes. She got into it six years ago when Merrill (Rocky) Morgan of Erin gave her a book on ham radios. The active septuagenarian is considering asking the FCC to officially research whether she is the oldest person to earn this license.

Alice studied with Lewis and Fay Schlick of Horseheads. Lewis gained his Extra Class license and Fay received her Advanced license.

— Star-Gazette, Elmira, NY □

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9-year-old ham

Novice to General in five months

Herb Rosenberg, KG6OK
(ex-N6KJL)

In an effort to encourage old-timers to upgrade their licenses, as well as to stimulate newcomers into Amateur Radio, I am writing to share with you my experiences with my son. I have been a licensed amateur since 1968, and both my 9-year-old son David and my 7-year-old daughter Sara have been exposed to Amateur Radio all their lives. My son, David, has always been an extremely bright and inquisitive child. However, he never seemed to show any kind of real interest in Amateur Radio until this past year.

Some kind of magic happened this past summer, and David expressed an interest to me in trying to obtain his Novice license. I immediately began to teach him the Morse code alphabet, and basic FCC rules and regulations. I also became aware that the Gordon West Radio School would be running a six-week Novice course just for kids, during the summer vacation.

By the time the first class rolled around, David had already learned to send and receive 13 letters of the alphabet, as well as having a fairly good understanding of most of the Novice study guide theory. There were approximately 20 other kids enrolled, ranging in ages 13 to 18. Although David was by far the youngest one enrolled, he certainly wasn't the slowest.

After five weeks of classes, Novice testing day was only a week away. Since kids are always motivated by extra incentives, I told David that if he would study extra hard that week, I would buy him his own HF transceiver. When David heard that, he spent the next several days translating everything he could get his hands and eyes on into Morse code. Books, license plates, street signs and television commercials all became study aides as he burned the notes of CW into his mind.

He was ready and so was I. A few days before the volunteer testing, we went down to Ham Radio Outlet in Anaheim, California and selected a Kenwood TS-430S, power supply, straight key, low-pass filter, speaker and related accessories. Like kids in a candy store, we spent all my money and bought the station for David.

Of course, the thought of having a backup rig for my Kenwood 830S with a general coverage receiver and fully solid-state rig for me to play with was not a factor. This was to be David's station!

We rushed home, set up another table in the ham shack, and began to assemble David's station. Several hours later, it was done. We were ready. Logbooks, pencils, stamps and envelopes for QSL cards, and a world atlas were all arranged neatly in anticipation of David passing his Novice.

On 25 July 1984, David passed his Novice license at 9 years of age. We were ecstatic. The next three weeks dragged on as we waited for the letter from the FCC. Finally, on 18 August, the letter arrived. KB6GFT was ready to go on the air.

We rushed up to the ham shack, fired up the rig and video recorder (to capture the historic moment forever on film), and David began to call CQ. CQ CQ CQ DE KB6GFT KB6GFT KB6GFT K.

What a fist this kid had! Using his straight key, he pounded out those letters with the rhythm of an old-timer. Then, off in the distance, someone was calling him back. That historic first contact was



David Rosenberg, KB6GFT, sitting at his new station

made with KA7QNZ, Springfield, Oregon. That was only the beginning.

Over the next few weeks, David was making contacts all over the country. It seems that working a 9-year-old is like working rare DX to some amateurs. David's code speed was steadily increasing, and he was having a ball working stations, sending and receiving QSL cards, and being a ham.

On 12-15 October, David and I went up to the ARRL Southwestern Convention in Santa Maria, California. To our total surprise, at the Sunday afternoon banquet, David was awarded a beautiful engraved wall plaque in recognition of his attendance as the youngest licensed amateur at the convention. What a thrill. During the three-hour drive back to Orange County, we talked about how neat being a ham was, and David said he wanted to get his General Class license.

That Monday, I enrolled him in a General Class course at one of the local colleges taught by Gordon West. During the next nine weeks, David studied and re-

viewed the 500 question-and-answer study guide, code tapes and on-the-air practice. Every once in a while he would even ask his Advanced Class OM a question that I couldn't answer. I would have to get my license manual, figure out the answer, and then explain to him. I think he understood some of that stuff better than I did.

David was breezing through the classes. Week after week I watched as he sat attentively in class with all those grown-ups. He was copying the code better than most, and was keeping right up with the theory. Boy, was I proud of him. Here I was, first licensed at the age of 18, after struggling with the code for two years, and then a Novice for almost a year

Idea for the deaf

If recent Amateur Radio research and availability of push-button synthesizers and talking devices have enabled the blind to enjoy participating in almost every aspect of two-way communications, has anything been done for the deaf who prefer sign language?

Is it possible that all that is needed is a modified commercial UHF antenna hooked up to an ATV converter, and a way to enable transmission of two-way sign language through a local video repeater?

Being legal, with a license to control the emissions "autopatch style", this could become an upcoming major breakthrough for the deaf, and for Amateur Radio as a

before I upgraded. Now, here was my 9-year-old son, a three-month ham, almost ready for his General — the same license I had for 13 years! Unbelievable!

Finally, on 17 December 1984, David took his volunteer examiner General Class code and theory test. I stood impatiently waiting outside the exam room, counting the minutes and waiting to hear the results. Although I knew he was ready, whether he passed or failed, I couldn't be prouder of him. At last the doors opened, and he came beaming out! He had passed his General Class license! At 9 years of age! After four months as a Novice!

Since then, David has been burning up the HF bands. What a fine operator he is. Talking on phone, he keeps getting calls from hams all over the country saying, "You are the youngest ham I have ever worked," and "Let me go get my kids — I would like for them to talk with you."

He has already worked 33 states and 14 countries. He QSL's 100 percent.

He is active on SSB, CW, 2-meter FM, and fast scan amateur television on 434 MHz. We both want to get on OSCAR, and as soon as he gets his typing speed up, I am sure he will be on RTTY and packet radio as well.

If this sounds like a proud father bragging about his junior operator, I guess it is. But hopefully in all this, there is a word of encouragement to all of us.

Amateur Radio is a great hobby. Part of the future of Amateur Radio depends on our ability to attract youngsters into this wonderfully exciting hobby.

So keep your eyes and ears open on the bands for David Rosenberg, KB6GFT, from Irvine, California. By the way, by the time you are reading this, David will already be working on upgrading to Advanced. □

public service.

This is an appeal to those of you who are interested in teaming up on making this (or a similar concept) a fulfilling and economical reality. Jot us a brief note right away with a long SASE, c/o John Ruckert, WB6ZPN, 953 So. Beacon Ave., Los Angeles, CA 90015. A replay and/or a no-charge newsletter is planned within 90 days. □

CARC Open House

The Chicago Amateur Radio Club (CARC) will be sponsoring an Open House on Wednesday, 03 April, from 7:00 to 10:00 p.m., at the Edgebrook Golf Course field house, 5900 North Central Avenue, Chicago (north of Elston Avenue, south of Devon Avenue).

For more information, call: (312) 545-3622. □

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VE3 'A Young Lady' still on the air

VE3AYL is a familiar call sign to many amateurs — especially those active in the realm of RTTY. VE3AYL — “A Young Lady” — is the call of Gwen Burnett, editor (since 1970) of the Canadian Amateur Radio Teletype Group's monthly bulletin, *RTTY News*.

“I now have a modern RTTY station operating at my home in Willowdale, Ontario,” said Gwen, “with Drake 7000-E Communications Terminal and video monitor with Heath scope for monitoring incoming signals.

“I have a Ten-Tec Triton 4 transceiver with Collins “S” line for back-up. My

antenna is a Thunderbird 4-element beam on a 75 ft. Delhi self-supporting tower and Bazooka antenna for 80 and 40 meters.

“I have been active on the RTTY bands since 1965, and the CW mode is also a favorite,” Gwen continued. “I was licensed in 1930, when very few Canadian YLs were interested in the hobby, and have had the call sign VE3AYL since then.”

Besides being a distinguished pioneer of the airwaves, honored wherever she goes, Gwen is an excellent musician. Every day she practices on both the

piano and the organ, not only for pleasure but because the exercises help keep her hands supple for sending Morse code. Another exercise that keeps her active and “out of that old rocking chair” is printing the *RTTY News* on an ancient hand press. She has to set type by hand, lock in the headings and laboriously crank each of the 3,000 pages through separately.

Next to traveling the world via the airwaves, Gwen's greatest interest is probably traveling the world in person. Everywhere she goes, she's among friends because she's a member of QCWA, CRRL, the Radio Society of Ontario, the Canadian Amateur Radio

Federation and the British Amateur Radio Teleprinter Group, to name only a few.

A close friend claims that by her own example, Gwen has induced close to 150 other women, in Ontario alone, to take up Amateur Radio.

The most thrilling moment that Amateur Radio has brought her occurred over 50 years ago. “It was just after I got my license and I heard my own name and call letters being used for the first time over the air,” recalls Gwen. “I was so proud and happy I could hardly breathe.”

— Information from article by William Stephenson, *The Toronto Star*, Ontario, CANADA

The remote ice dummy load

Scotty Musgrave, K8UCN

The remote ice dummy load is a device used seldomly in these parts. I think the reason is the acid rain we get upsets the calculations. It was first discovered by Gilbert Shortpoint, W5FUD, in Lomoni, Iowa. He found, on one occasion, that he could neither transmit or receive. Upon investigation he found his 40-meter dipole down; the coax had dropped right into his garbage can. The can had been left open and filled with water and after the coax had fallen into it, the garbage can had frozen over — thus the ICE DUMMY LOAD. The only real addition was the lid, for shielding. Some people think this was the first documented garbage transmission, but not really! It may have been where the well-known term “lid” came from. Those who used their ice dummy loads without the lids would cause QRM.

To increase efficiency, ol' Gil hooked one side of the feedline to the can and a conductor, as a coil, into the water (this, of course, was done in fair weather). This might be where the term TANK COIL first started.

It was just fine in the winter, but in the summer the water over-heated. Gil tried several solutions. He tried a mix of water,

grain, barley and hops. He tried a mix of corn and water. There is no record of how well these worked, but we do know that about this same time his shack became a very popular place to visit.

The next logical step was to put the downspouts into the can. When it rained, cool water continuously flowed through the can and bingo! — water cooling. The next problem was when it rained there was so much QRN, no one wanted to operate anyway.

About this time, Mrs. Shortpoint unknowingly solved the problem. She had purchased a lawn sprinkler and ol' Gilbert was smart enough to know that if you water the lawn, the grass grows. Grass growing means grass mowing. What ham in his right mind would want to cut the grass instead of operating? Gil figured if he put the sprinkler on the roof, the water would flow over the shingles into the gutters, down the downspouts and cool his dummy load. Good thinking! Now it was easy to tell when Gil was on the air because of the sprinkler going on the roof.

Here we come to the end of the research of the ice dummy load. Receiver technology improved and Gil's ice dummy load worked fine in the winter but in

the summer it caused some problems. It seems the water in the can conducted some signal to the downspouts. The downspouts conducted a signal to the gutter. The gutter conveyed it to the roof and the roof to the sprinkler. The sprinkler created sympathetic signals over most of the electromagnetic spectrum. So, the FCC canned ol' Gil — garbage canned him, to be exact!

If you want to continue the research of the ice dummy load, here is what you need: a two-gallon pail. Hook the shield of your coax to immerse a cooper wire eight inches into the pail. Insulate it with a

strip of plastic across the top and fix the center conductor to the wire. Fill the bucket with water. Add salt, about two tablespoons of it to start. As you add more salt, measure the resistance with an Ohm meter. Stop adding salt when you get to about 49 or 50 ohms. After freezing, the Ohm meter will read slightly higher. This will handle about 500 watts easily.

If you decide to start this research, just remember one thing — KEEP THE LID ON IT!!

— Salami Merchant, Silvercreek ARA, OH

She passed — the hard way

Remember when you took your first code test? Nerves, sweaty palms, etc. as you copied the message coming out of that code practice oscillator. Then with shaky fingers, taking the key and sending until the examiner was satisfied that you were competent.


Well, one of our young DARA members did it a little differently. Tina LeGore, 13 years old, the youngest daughter of Fran NSEHY and Ralph W8FPA was out at the Field Day site with the rest of the family watching the activities.

Earl Moreo, N6FXB, felt Tina was capable of passing her code test, so he contacted the Huber Heights Field Day group down the road a few miles, cleared

the van of spectators, and then conned Tina into taking over the key. With Earl acting as control operator, Tina completed a 15-minute QSO and passed her test with flying colors. The following week, she passed her theory test, winding up the whole affair in about 20 minutes.

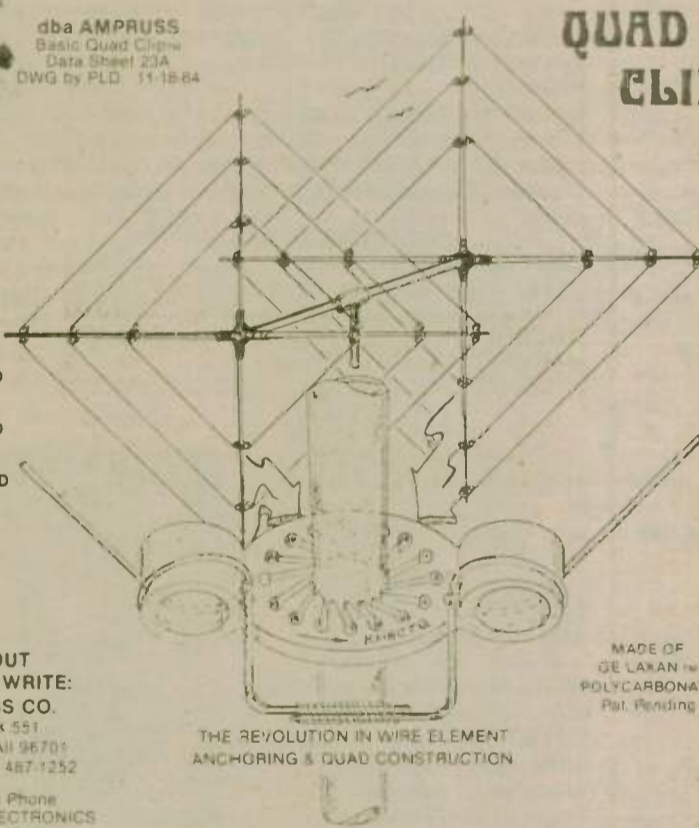
Tina has aspirations to become a veterinarian, and believe it or not, her call came through KA8VET. Congratulations, Tina, on a fine job. Incidentally, Ralph has now completed his task. All members of his family are now licensed. Fran is NSEHY and Cindy, the oldest daughter, is N8FJH.

— Dayton ARA, OH



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Leave Novice bands to Novices

In the 'Off the Air' column in *Worldradio* for March 1985, there was a very in-

R-X Noise Bridge



- Learn the truth about your antenna.
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- Adjust it to your operating frequency quickly and easily.

If there is one place in your station where you cannot risk uncertain results it is in your antenna

The Palomar Engineers R-X Noise Bridge tells you if your antenna is resonant or not and, if it is not, whether it is too long or too short. All this in one measurement reading. And it works just as well with ham-band-only receivers as with general coverage equipment because it gives perfect null readings even when the antenna is not resonant. It gives resistance and reactance readings on dipoles, inverted Vees, quads, beams, multiband trap dipoles and verticals. No station is complete without this up-to-date instrument.

Why work in the dark? Your SWR meter or your resistance noise bridge tells only half the story. Get the instrument that really works, the Palomar Engineers R-X Noise Bridge. Use it to check your antennas from 1 to 100 MHz. And use it in your shack to adjust resonant frequencies of both series and parallel tuned circuits. Works better than a dip meter and costs a lot less.

The price is \$59.95 in the U.S. and Canada. Add \$4.00 shipping/handling. California residents add sales tax.



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Palomar Engineers

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teresting letter. This letter was written by Ed Scallon, KA1JSN, and was about giving the Novices a chance.

I agree with what Ed Scallon wrote in his letter. If we work the Novice bands, we should send slower. After all, the Novice has very little choice of what frequencies to use compared to those who have the General ticket or higher. The General Class or higher can use frequencies which the Novice can't use, so why not give the Novice a chance? If we want to send CW faster, we can use the frequencies which the Novice can only listen to but not transmit on.

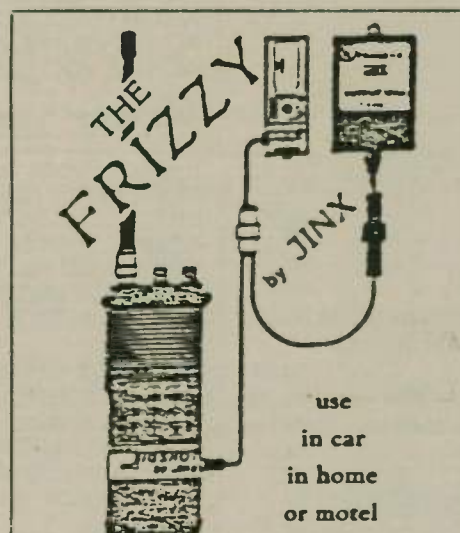
Anyone who can copy 13 wpm should get a General or Advanced ticket.

I sent out a CQ to a definite location, and guess what I heard in return to my CQ? Three stations came in at the same time. The code was quite fast from all three stations, and the QRM was so bad, created by too many signals at the same time, that none of them were legible. I didn't hear a signal at all from the location to which I sent the CQ because of this QRM.

Would it not be more polite to let the first station answering a CQ make the contact? Then if the signal from the first station is not legible enough to copy, the second station could answer the CQ.

MELVIN FRESE, KA5TFB
Amarillo, Texas

If a foreign amateur visits your area, do a picture story for *Worldradio*



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11645 SE Morrison St.
Portland, OR 97216
(503) 252-0535

WANTED: Repeater club information

Our Amateur Radio club (Sevier County ARC) is interested in making a 2-meter repeater out of an ICOM 22A transceiver. Any information at all will help us greatly.

Our club members are also interested in being of community service and getting involved in emergency and civic service. Any information to help get organized and involved in that area will also be very valuable. We currently have a small group of 15 members.

KIRK RASMUSSEN, KD7YE
45 South 2nd West
Salina, UT 84654

WANTED: general coverage receiver

I am looking for a good used (hopefully less money than new, of course) general coverage receiver - say 3-30 MHz or so. I have a 1950 circa Zenith shortwave receiver, all original, in excellent shape. I would like to trade the Zenith for or on a receiver.

Send information to:
CHARLES MILLIGAN
2115 Country Club Road
Crawfordsville, IN 47933

NEEDED: Info on adapting TS-520SE

I am writing on the behalf of the Colorado State University Amateur Radio Club, W0QEY. About two years ago, the club purchased used a TS-520SE. The radio has performed very well, meeting weekly schedules and enduring the rigors of club usage.

Last semester, however, the club elected Kevin Utter, N7GES, as our vice president. Kevin is extremely active in the club and provides excellent leadership, including calling the weekly 2-meter net.

The University does not allow antennae on the dormitories, thus he may not bring his home station with him. I am therefore asking for your ideas about adapting the TS-520SE so that a blind amateur may use it.

Kevin does have a device called an "Opticon" which will read certain kinds of printing, including LEDs and some LCDs.

Please, any ideas or modifications that will allow a blind amateur to use the TS-520SE would be greatly appreciated.

WALTER PETERSON, WB0QBL
President, CSU ARC
201 E. Elizabeth
Ft. Collins, CO 80524

Tip from ham who 'learned the hard way'

Thank you for printing the good advice from Ed Proctor, KD4W, in his article, "Don't learn the hard way," on page 44 of *Worldradio*, January 1985.

Today, with the high price of towers, more amateurs are using heavy-duty TV antenna masts for vertical antennas, to support the end of a dipole or long-wire, and even to support a light-weight beam antenna. So perhaps my somewhat rare experience may prevent someone from hurting or possibly killing himself or a neighbor. It has nothing to do with the most documented problems like an antenna touching a high-voltage line, or a person falling off a roof. Here's my story:

I was erecting a five-section heavy-duty 50-foot TV mast on my garage roof. The mast was to be used for supporting one end of a 40-meter dipole antenna. I had already erected a similar 50-foot mast on top of a hill near the back corner of my yard. Its bottom section sat on concrete, and it was securely strapped to a 4" x 4" fence post. It was back-guyed at the 40- and 50-foot levels.

The new mast was hauled up on the roof. All the guy wires had been cut to length, broken up every 10 feet with "egg" insulators and attached to the guy rings. A halyard was run through a pulley at the top, and the top was capped to keep out rain.

The nested mast was set in place in a half-inch-deep socket drilled in the middle of a wooden base - the type used for mounting TV masts on peaked roofs. The garage has a peaked roof. The guys from the bottom section were tied to hooks at the four corners of the roof. After using a level to ensure the mast was vertical, I climbed up an 8-foot ladder next to the mast and started extending the mast.

The top section came out easily, and its bottom was bolted to the top of the next section (second section). Then the second section was pulled up out of the "nest" and pushed up until its bottom could be bolted to the top of the third section. And so on until it came time to pull the fourth section out of the bottom section.

It was a very calm Sunday morning with zero wind blowing, so all the top guy wires were hanging straight down from each joint, approximately every nine feet of mast. I had previously extended the complete mast on the ground and had painted black arrowheads with 18-inch tails at the bottom of each section. Thus, I could tell when each section was almost fully extended and when to start looking for the bolt holes. Quarter-inch bolts were used at each joint to hold the sections extended. One more section to go and I'd be home free!

I slowly pulled up on the fourth section until the tail of the black arrow just started to show. The top sections started to whip a little due to vibration at the base - me pulling up the pipe. The whipping caused the fourth section to bind slightly in the bottom section. Well, I gave a big heave upward on the fourth section, and the bottom section came up too - right out of the wooden base! Because the top was really whipping now, when the bottom section came down, it missed the socket in the wooden base, hit the edge of the base, bounced off and slid down the roof.

I couldn't stop it or hold on to it, so I came down the ladder without touching the steps, jumped out of the way and watched the entire mast fall over. The top of the mast hit the peak of my neighbor's roof (luckily they were at church), and the mast bounced up and down a few times. When it stopped bouncing, it closely resembled the letter "C". The top three sections of the mast were bent beyond repair.

I considered myself extremely lucky just having to buy a new mast. I hate to think of what terrible accident could have happened if the mast had hit someone, perhaps a small child who would have surely suffered a broken skull and possibly death.

The following Sunday, I prepared another 50-foot mast as before, and hauled it up on the roof. This time, everything went as smooth as silk because I made one ma-

job preparation improvement before extending the mast.

Using quarter-inch line, I tied the top of the ladder to the guy ring at the top of the bottom section. I actually tied it about 1 inch short, so when I stood on the ladder, the rope stretched slightly and my weight placed a downward pressure on the bottom section. Now it couldn't come out of the socket in the wooden base no matter how hard I pulled up on any section. I was essentially standing on the bottom section of the mast.

Need I say more?
HAROLD ESTOK, W6JIP
San Diego, California

responsibility which is spelled out in the language of the federal statute enabling the Amateur Radio Service to exist.

I emphatically point out that nowhere in the federal laws concerning Amateur Radio is the word "hobby" used: and we are all licensed in the Amateur Radio Service!

You and I have both heard, many times, "I don't belong to an ARES group nor a RACES group, and I don't do the public service bit, but if there is a real emergency, you can count on me."

I have worked emergency and disaster circuits with untrained and undisciplined

operators; some do a very creditable job, but by far and away, the majority add to the problem rather than assist in the solution, in my opinion.

I sincerely hope that every Amateur Radio operator will shoulder his moral responsibility and learn at least a little bit about the real meaning of the public service provided by the *Amateur Radio Service*.

Vy 73, Bruce and keep up the good work.

DWAYNE ESKRIDGE, W6LKE
SEC, East Bay Section
Walnut Creek, California

Callbook Giveaway

Bill Wellborn, K4CLA

We are pleased to announce that Jesus Caballero Jr., NN5Q, was selected to receive a free 1985 Radio Amateur Callbook — U.S. Edition. We have received an acknowledgment from him.

We look forward to the many who will be participating in our 1986 Callbook Giveaway. No purchases are ever necessary. Only an official valid entry is your QSL.

Look for details later in *Worldradio* exclusively.

Amateur Radio is NOT just a hobby

Bruce Woodward, N9UMH
Indianapolis, Indiana

Dear Bruce:

I read, with great interest, your fine article on the public service aspects of Amateur Radio in the January issue of *Worldradio*. Congratulations on a well-thought-out and well-presented summary of the disaster communications activities of the Amateur Radio groups.

Like you, I feel there is an important place for every licensed amateur in the big picture of public service, whether it be on VHF, UHF, or on the high frequencies where many of the "old-timers" feel more comfortable.

Many OTs, with more time in Amateur Radio than my 50-plus years as a ham, do not own nor operate on the FM bands and are not particularly inclined to go out and spend a large chunk of their retirement money for equipment that only talks to the "horizon" or needs another chunk of greenbacks to work longer distances through the satellite modes. Nevertheless, they would like to participate in the disaster communications arena when possible.

I point out that there are numerous places where the FM frequencies just don't "cut the mustard" while mobile or portable HF gear gets the message through.

I also like to point out that, as we have here in northern California, many areas have permanently installed VHF/UHF rigs and antennae installed and that perhaps they would like to get a feel of another facet of Amateur Radio by participating in the drills, SETs and actual emergency/disaster communications, as an operator of such stations on a regular basis.

There really is a place for every operator to use the particular skill they have developed over the years either in Amateur Radio or in civilian life.

I guess the real reason I am preparing this note is to point out another area of real agreement in your reactions and mine — that reaction that occurs when I, to quote your letter, "... hear the statement 'Amateur Radio is, after all, just a hobby.'" The statement, I am afraid, is probably true in many cases, but I strongly feel Amateur Radio should NEVER be grouped with such as the hobby of photography, stamp collecting, etc.

While I realize not all amateurs devote as much time to public service as some do, and many are very interested in the hobby of "DX'ing" or "Contesting" or whatever other hobbies exist within the Amateur Radio ranks, we must all remember that when we earned the right to operate an Amateur Radio station and accepted our licenses, we also accepted a certain re-

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For special motel rates and reservations write to Hamvention Housing, 1980 Kettering Tower, Dayton, OH 45423-1980. **NO RESERVATIONS WILL BE ACCEPTED BY TELEPHONE.**

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All elements to be administered. Advanced registration only. **DEADLINE TO REGISTER: March 27, 1985.**

- \$4.00 check or money order made payable to ARRL/VEC
- Completed 610 form with copy of license
- Indicate preferred sitting time: Sat. 9 a.m., Sat. 1 p.m., Sun. 9 a.m.

Mail registration to: FCC Exams, 203 Bellewood St.
Dayton, OH 45406

All other inquiries write Box 44, Dayton, OH 45401 or phone (513) 433-7720.

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starts Jan. 1, 1985.



STATION APPEARANCE

Allen Johnson, N6AKO, of Granada Hills, California, is our April winner. Here he describes how he solved the problem of unsightly wires at his station.

Over the years that I have been involved in Amateur Radio, I have often planned to build a console with a front panel complete with cutouts for mounting the components flush with the panel. However, I would get an idea to build something or change a piece of equipment, and there would go my front panel plan.

"A front panel, for the most part, serves to hide all the wiring that connects the components together and to the power source. The problem is: how to hide all that wiring without installing a solid-front panel.

"This is what I came up with, and it has worked out very well.

"I installed a panel across the back of the shelves with holes just above the level of each shelf for wiring, coax, power cords, blowers, etc. The front face of this panel is painted flat black.

"I then installed a second but removable panel in back of the first, leaving a 3-inch space between them. The front face of this panel is also painted flat black.

"The board at the bottom of this 3-inch compartment has 1 1/2-inch holes spaced at approximately 4-inch centers throughout its full length. These are access and air vent holes that allow air to be pulled up by the blowers located in back of the computer and transceiver. The blowers are controlled by a powerstat that regulates the speed and assures smooth, quiet operation. The amplifier fan also gets its air through these bottom holes.

"I installed two multiple power plug outlets in this back compartment, one of which is switched on and off by a push rod from the front panel. The antenna switch is also controlled from the front panel by a 1/4-inch rod and flexible connector.

"The net result of all this is that when viewed from the front, you see only the front panels of the components, and everything beyond that is a black void with no wires visible.

"Also, when the back panel is in place, you have a clean appearance from the rear. This is an asset when it is necessary to have your rig out away from the wall and visible from the back.

"In my case, however, I leave the console pushed tight against the wall, which does not present a problem as all the cooling air comes in from the bottom through the holes mentioned above.

"The desk and console are mounted on 5-inch wheels with broad tires and can be pulled across a deep carpet with very little effort with no damage to the carpet.

"The equipment is as follows: (desk surface, left to right) Kenwood TR-7730 2-meter, homebrew SSB timer and identifier; MC-50 microphone; TI computer and bencher paddle.

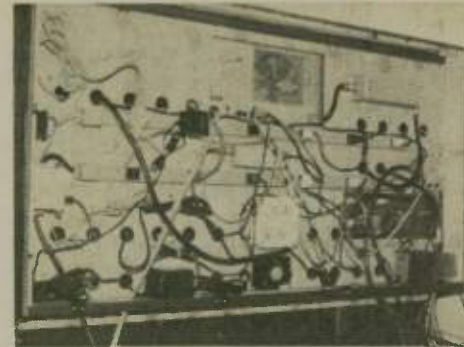
"(First shelf, left to right): Dentron MT-2000A; Antuner tuner; Yaesu Landliner 301 phone patch; Kenwood TS-430S transceiver; Sony TV for computer monitor and tape recorder.



Allen Johnson, N6AKO's award-winning station

"(Under second shelf, left to right): antenna switch; microphone and RTTY switch; Kantronics interface; Heathkit electronic keyer and power switch.

"(Second shelf, left to right): antenna rotator; Varistat to control blowers with clock on top; Heathkit SB-220 amplifier; Kenwood SP-520 speaker; and Kenwood



Panel in back of N6AKO's station, with holes for wiring, coax, etc.



Second panel in back of Allen's station, giving it a neat appearance.

PS-430 power supply.

"The console is lighted by two 15-watt fluorescent lights mounted behind the cornice and call sign plate. The cornice and lights are adjustable allowing the lights to be pulled out a few inches to better illuminate the face of the components.

"I have found this arrangement to be very convenient, with everything visible and within easy reach. Your XYL will be happy to have that rat nest of wires out of sight. Try it. You might like it. 73, Allen O. Johnson, N6AKO"

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Cold faster than hot?

William Plimpton, W2IXH

After reading in your journal, several months ago (April 1984, page 28), the learned dissertation concerning "Dark is faster than light", etc. I have reached several startling conclusions, myself.

Cold is faster than hot.

Open the door of a warm room, on a wintery day. Stand on the doorstep. What do you feel? The warmth of the room? No! You feel the cold, thus proving cold is faster than hot!

Sit in your favorite chair in a warm room. Someone opens the outside door. What do you feel? The warmth of the room? No! You feel the cold, once again proving cold is faster than hot!

Down is faster than up.

Climb a ladder and accidentally step off the top rung. You will hit the ground faster than it took to climb up. Thus proving the validity of down is faster than up!

Try throwing a line with a rock tied to the end over a tree for an antenna. If you stand too close and miss, the rock will come down and hit you faster than it took it to go up. Thus proving again, down is faster than up!

People fall down, don't they? They don't fall up!

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AWARDS

FAR scholarships

The Foundation for Amateur Radio, Inc. — a non-profit organization with Headquarters in Washington, D.C. — plans to award 19 scholarships for the academic year 1985-86.

The Foundation, composed of 50 local area Amateur Radio clubs, fully funds two of these scholarships from the proceeds of its annual hamfest. It administers without cost to the donors, seven scholarships for the Quarter Century Wireless Association, two for the Dade (Florida) Radio Club and one each for the Radio Club of America, the Richard G. Chichester Memorial, the Young Ladies' Radio League, the Edmund G. Redington Memorial, the Amateur Radio News Service, the Columbia (Maryland) Amateur Radio Association, the Baltimore (Maryland) Amateur Radio Club and the Lewis W. Wilkinson Memorial.

Licensed radio amateurs may compete for one or more of 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 in an accredited university, college or technical school. Most of the scholarships require the applicant to hold at least an FCC General Class license or equivalent.

The scholarship awards range from \$350 to \$900, with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs.

Additional information and an application form can be requested by a letter or QSL/postcard, postmarked prior to 31 May 1985 from: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740.

The Foundation is devoted exclusively to promoting the interests of Amateur Radio and to those scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service —
Hugh Turnbull, W3ABC

1984 Anniversary Party results

The top six winners of the 1984 Anniversary Party (three CW and three SSB) are as follows:

CW: *Gold Cup* — Doris Bedford, K4AOH; *2nd Place* — Shirley Hooper, W8MEV; *3rd Place* — June Braunz, KM8E.

SSB: *Gold Cup* — Paula Bloemen, DJ0EK; *2nd Place* — Martha King, WD4NKP; *3rd Place* — Doris Bedford, K4AOH.

Combined SSB/CW scores: *Corcoran Award* — Doris Bedford, K4AOH; *DX Hager Award* — CT1YH. (No entry for NA/CA Award.)

Washington QSO Party winners

The following amateurs received QSO Party Certificate Awards as a result of participating in Washington State's 1984 QSO Party, sponsored by Boeing Employees' Amateur Radio Society (BEARS). Names and call signs follow the

states, counties, provinces or countries worked from:

(AK) Timothy Michael, NL7D; (AZ) Dr. Gordon Henry, W7RIR; (AR) Lester Woosley, W5EIJ; (CA) Rex Trobridge, AA6XX; Richard Darwicki, N6PE; Gerald Burkhead, N6QA; (CT) Mike Baldino, KR1N; (FL) Bill Hord, W4WIJ; (GA) William Barr, N4NX; (ID) Charles Lindsay, NJ7M; (IL) Claude Cain, K9HRC; Brice Anderson, W9PNE; Harold Schrock, W9QWM; (IN) Daniel Dews, KK9G; (IA) Bob Heiderstadt, W0II; (KS) Frank Gunja, N0FMR; Kathleen Callanan, W8KKM; (KY) Russ Friend, WA4EBN.

(LA) Bill Owen, W5WG; (MA) Steve Press, WA1UDH; (ME) Louis Bligh, KA1HB; (MD) Walter McGugan, W3FG; (MI) Gary Le Grow, WD8QBB; Rozetta (W8YL) and Alan (W8WVU) Reed; (MN) Denis Vargason, KA0MCK; Paul Ierino, KJ0B; (MO) Frank Brewer, KA0GGI; (NJ) Barry Ford, NC2V; (NM) Daryl Grant, W7LHO; (NY) Larry Young, WB2NDE, and Stewart Jones, K2QE; Dan Harahus, KD2GB, and Ed Krymowski, NE2W; Ray Teeter, N2RT; (ND) Roger Bjerke, KC0UM.

(OH) Paul Edmonds, W8RYP; (OK) Don Foster, K5KW; (OR) Ed Aho, WA7RQS; (PA) Doug Maddox, W3HDH;

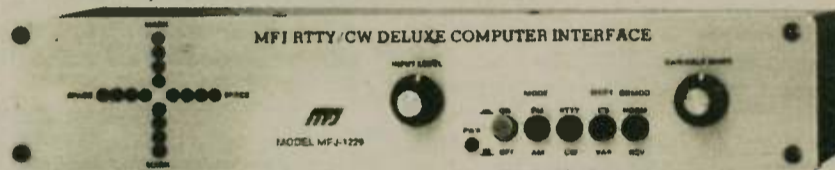
Percy Aadland, WA0BZD; (TX) Arthur Hasbrook, W5NR; (VT) Maurice Woodworth, N1BRT; (VA) Carl Bethel, K4OD; (WV) Bob Johnson, W8VEN; (WI) Denis Christopherson, K9JIG.

CANADA: (B.C.) Fred Stevens, VE7FBS; (Ont.) Marshall Killen, VE3KK; (Sask.) Lorne Morgan, VE5AGM; **BRAZIL** — Rogaciano de Lima Correa, PY1NEZ; **JAPAN** — H. Takahashi, JA7KE; **NEW ZEALAND** — P.N. Baker, ZL2RY; **NORWAY** — Per Oscar Lomeland, LA8PF.

(WA) Asotin County — Charles Parker, KN7L; Chelan — Florence Reitzel, KU7F; (please turn to page 26)

NEW FROM MFJ

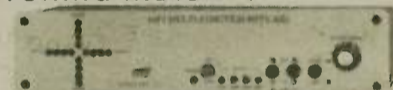
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MFJ RTTY/ASCII/CW software on tape, cables for C-64/VIC-20.

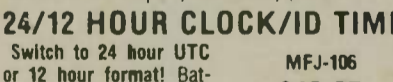
MFJ-1229 Engineering, performance, value and features sets MFJ's most advanced RTTY/ASCII/AMTOR/CW computer interface apart from others. **FM (limiting) mode** gives easy, trouble-free operation. Best for general use, off-shift copy, drifting signals, and moderate signal and QRM levels. **AM (non-limiting) mode** gives superior performance under weak signal conditions or when there are strong nearby stations. **Crosshair mark-space LED tuning array** simulates scope ellipse for easy, accurate tuning even under poor signal-to-noise conditions. Mark and space outputs for true scope tuning.

MFJ MULTI-FUNCTION TUNING INDICATOR MFJ-1221 \$79.95



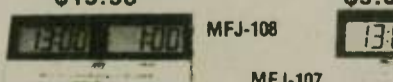
Greatly improve your RTTY copying capabilities. Add a crosshair LED Tuning Indicator that makes tuning quick, easy with pin-point accuracy. Add mark and space outputs for scope tuning. Add LEDs that indicate 170, 425, 850 Hz shifts. Great for copying RTTY outside ham bands. Add sharp mark and space filters to improve copy under crowded/weak conditions. 170, 425, 850 Hz shifts. Add Normal/Reverse switch to check for inverted RTTY without retuning. Add output level control to adjust signal into your terminal unit. Add a limiter to even out signal variation for smoother copy. Unit plugs between your tuner and receiver. Mark is 2125 Hz, space is 2295, 2550 or 2975 Hz. Measures 10x2x6 in. and uses floating 18 VDC or 110 VAC with AC adapter, MFJ-1312, \$9.95.

24/12 HOUR CLOCK/ID TIMER MFJ-106 \$19.95



Switch to 24 hour UTC or 12 hour format! Battery backup. ID timer alerts every 9 minutes after reset. Red .6 in. LEDs. Synchronizable to WWV. Alarm, Snooze function. PM, alarm on indicators. Gray/Black cabinet. 110 VAC, 60 Hz.

MFJ 24 HOUR LCD CLOCKS MFJ-108 \$19.95 MFJ-107 \$9.95



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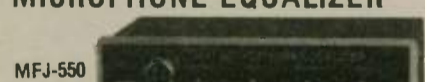
Transmits on both 170 Hz and 850 Hz shift. Built-in RS-232 interface, no extra cost. Variable shift tuning lets you copy any shift between 100 and 1000 Hz and any speed (5-100 WPM RTTY/CW and up to 300 baud ASCII). Push button for 170 Hz shift. Sharp multi-pole mark and space filters give true mark-space detection. Ganged pots give space passband tuning with constant bandwidth. Factory adjusted trim pots for optimum filter performance. Multi-pole active filters are used for pre-limiter, mark, space and post detection filtering. Has automatic threshold correction. This advanced design gives good copy under QRM, weak signals and selective fading.

MFJ ELECTRONIC KEYS MFJ-407 \$69.95



MFJ-407 Deluxe Electronic Keyer sends iambic, automatic, semi-auto or manual. Use squeeze, single lever or straight key. Plus/minus keying. 8 to 50 WPM. Speed, weight, tone, volume controls. On/Off, Tune, Semi-auto switches. Speaker. RF proof. 7x2x6 inches. Uses 9 V battery, 6-9 VDC or 110 VAC with AC adapter, MFJ-1305, \$9.95.

MICROPHONE EQUALIZER MFJ-550 \$49.95



Greatly improves transmitted SSB speech for maximum talk power. Evens out speech peaks and valleys due to voice, microphone and room characteristics that make speech hard to understand. Produces cleaner, more intelligible speech on receiving end. Improves mobile operation by reducing bassy peaks due to acoustic resonances. Plugs between mic and rig. 4 pin mic jack, shielded output cable. High, mid, low controls provide ±12 db boost or cut at 490, 1170, 2800 Hz. Mic gain, on/off/bypass switch. "On" LED. 7x2x6 inches. 9 V battery, 12 VDC or 110 VAC with adapter, MFJ-1312, \$9.95.

Has front panel sensitivity control. Normal/Reverse switch eliminates retuning while checking for inverted RTTY. Speaker jack +250 VDC loop output.

Exar 2206 sine wave generator gives phase continuous AFSK tones. Standard 2125 Hz mark and 2295/2975 Hz space. Microphone lines: AFSK out, AFSK ground, PTT out and PTT ground.

FSK keying for transceivers with FSK input. Has sharp 800 Hz CW filter, plus and minus CW keying and external CW key jack.

Kantronics software compatible socket. Exclusive TTL/RS-232 general purpose socket allows interfacing to nearly any personal computer with most appropriate software. Available TTL/RS-232 lines: RTTY demod out, CW demod out (TTL only), CW-ID in, RTTY in, PTT in, key in. All signal lines are buffered and can be inverted using an internal DIP switch.

Metal cabinet. Brushed aluminum front. 12½x 2½x6 inches. 18 VDC or 110 VAC with optional AC adapter, MFJ-1312, \$9.95.

Plugs between rig and C-64, VIC-20, Apple, TRS-80C, Atari, TI-99 and other personal computers. Use MFJ, Kantronics, AEA and other RTTY/ASCII/AMTOR/CW software.

MFJ ANTENNA BRIDGE MFJ-204 \$79.95

Trim your antenna for optimum performance quickly and easily. Read antenna resistance up to 500 ohms. Covers all ham bands below 30 MHz. Measure resonant frequency of antenna. Easy to use, connect antenna, set frequency, adjust bridge for meter null and read antenna resistance. Has frequency counter jack. Use as signal generator. Portable, self-contained. 4x2x2 in. 9 V battery or 110 VAC with adapter, MFJ-1312, \$9.95.

MFJ PORTABLE ANTENNA MFJ-1621 \$79.95

MFJ's Portable Antenna lets you operate 40, 30, 20, 15, 10 meters from apartments, motels, camp sites, vacation spots, nearly any electrically clear location where space for a full size antenna is a problem.

A telescoping whip (extends to 54 in.) is mounted on self-standing 5½x6¼x2¼ inch Phenolic case. Built-in antenna tuner. Field strength meter. 50 feet RG-58 coax. Complete multi-band portable antenna system that you can use nearly anywhere. Up to 300 watts PEP.

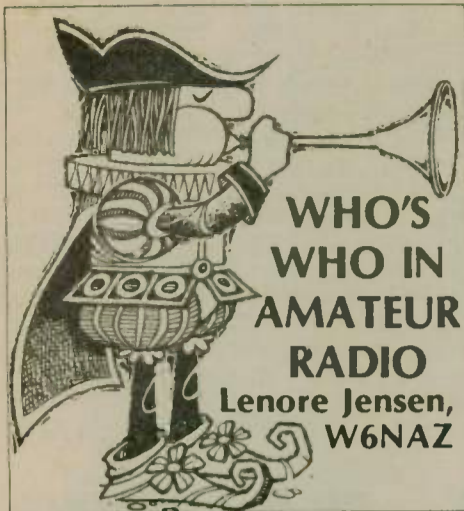


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Put this on your must-see list: In New York City, starting summer of '86, there will be an exciting free AT&T interactive exhibition dealing with the forefront of information age technology. Henry Feinberg, K2SSQ, has been working hard for your enjoyment of it. He's an excellent interpreter of science and technology. As the staff manager of AT&T Corporate Exhibitions, he says, "It will have lots of hands-on things to do and see, all dealing with the fact we are now living in the Age of Information."

An idea of its complexity is realized when we learn that Henry similarly worked on the splendid FutureCom exhibition by AT&T in EPCOT Center, Orlando, Florida, where the communication and computer wonders of our modern world are vividly presented.

"And, by the way," he adds, we are now enhancing the ARIEL (Automatic Retrieval of Information Electronically) system at EPCOT. That's the touch-screen video disc system which lets visitors there learn where to see what, even to read the menus available at the many restaurants." Tourists delight in it.

Henry's career was obviously heading him toward his current interesting position. While still a freshman at New York University, he became assistant to the producer of the highly popular *Watch Mr. Wizard* TV show, a valuable program which interpreted science and technology for the general public, especially aimed at the young. Henry became its Associate Producer.

When it left the air after several years on NBC, Henry worked on the "Experiment" series aired on national educational TV.

He eventually joined Bell Labs as a writer-director. Of the films he worked on,



Henry R. Feinberg, K2SSQ, and the Communicator assembly he devised for "E.T." to phone home in the famous film.

several won important awards. He has two prestigious CINE Golden Eagle honors. Since then he has been in his present job and "couldn't be happier." The tinkering tendency which brought him to Amateur Radio in 1954 has found a fine outlet.

A side, freelance assignment, approved by his company, was a tinkerer's challenge supreme:

He was contacted by the producers of the blockbuster *E.T., The Extra-Terrestrial*. The script called for the appealing E.T., stranded on Earth, to find a way to "phone home." What's more, it had to be made of items easily found around the average home. And they had to be within a child's realm.

"I realized I had to devise a beacon transmitter to operate by itself in a clearing in a forest," said Henry. "We needed a way to generate a message, so I picked up a TI 'Speak and Spell' device with a speech synthesizer. I modified it to produce an alphabet other than English, re-wiring the readout segments.

"Also," he continued, "in order to press the buttons by remote control, I needed a mechanical programming method. I connected wires to each of the key contacts and ran them to the mechanical programmer, a child's phonograph. Instead of a record, I placed on the turntable a metal circular saw blade which had been spray painted with an insulating layer.

"In order to make contact with different keys, I placed a wooden coat hanger across and this had bobby pins inserted

into it which rotate on the surface of the blade. They would ride on the surface but not scratch the paint.

"Then I created the program by scratching away areas of paint so as the blade turned, various pin combinations would contact the metal through the openings in the painted surface."

For fun, Henry found a novel way to turn the saw blade. He fashioned a ratchet out of a knife and fork, connecting the end of the knife by string to a tree branch. "The wind blew the tines of the fork which would pull the teeth of the blade and index it to the next character on the 'Speak and Spell'."

Amateurs will want to know how to transmit the message to outer space. "Well, I used the Disney formula of 'plausible impossible' and found a child's CB walkie-talkie, removed the speaker mike and placed it on top of the 'Speak and Spell' so sound modulated the RF.

"However, I disconnected the antenna

and substituted a coax which I ran to the actual transmitter. It consisted of a frequency multiplier made by adapting a UHF TV tuner (borrowed from the home TV set) and ran that into a microwave resonator made from a coffee can into which was inserted a wave guide/matching section, an aluminum funnel. Its microwave energy is then directed to the parabolic reflector."

In case you want to make one, apparently all you do is find a large golf umbrella, line its inside with aluminum foil and mount the coffee can on its handle!

Yes, it's "plausibly possible!" At any rate, it worked just fine for E.T. and caused national interest.

But that's past history for K2SSQ, who is deeply into the new exhibition which will be in the AT&T building at 550 Madison Avenue and will demonstrate modern technology in ways all of us can readily understand.

That and the impending arrival of Debbie and Henry's first child make it an exciting time. No doubt the good personal news will be announced on 2 meters. □

Who's Who

(continued from page 25)

Clallam — Bill Collyer, WA7YMC; *Clark, Columbia, Garfield, Klickitat, Skamania and Walla Walla* — Bill Smith, W7GHT/M; *Cowlitz* — Bill Farmer, K7WF; *Douglas, Grant, Ferry, Kittitas and Stevens* — Bob Klepper, W7IEU/M; *Grays Harbor* — Stephen Hepp, N7AAL; *Kings* — Morris Shepherd, W7LVI; *Dan Eskenazi, K7SS; Gary Valley, WB7FAH; Sperry Goodman, W7AZU; Kitsap* — Arnold Peterson, KC7GQ.

Lewis — Don Roberson, KW7R; *Mason* — Mike Dormann, W7DRA/7; *Okanogan* — Bob Gregory, KD7H; *Pacific* — Jim Keightley, NF7D; *Pierce* — Eric Olson, N7EPD; *Skagit* — Robert Brown, N7DGZ; *Snohomish* — Steve Morris, K7LXC (op. Brett Graham, KB7G); *Spokane* — Johnnie Cathey, W7DAZ; *Wahkiakum* — Ed Hayes, N7CFA; *Randy Greeley, KA7JVW; Whatcom* — Stan Schmidt, WB7CAO; *Whitman* — Dave Carson, WA7BTZ/M. □

Watt is electricity?

Electricity is a colorless, odorless gas which burns with a bright flame. Light grown from a bulb.

An amp is a little animal that crawls along a wire. An amp lives in an ohm. In summer, an amp lives in a coulomb. Polarization is the changing of an ohm into a coulomb.

An ammeter is an animal that eats amps. A battery fires amps round a circuit. An amp rides round the circuit on a megacycle. Megacycles are parked on a grid. Flemmings Right Hand Rule states that all amps must ride their megacycles on the right-hand side of the wire. A charge occurs when all the amps run down the circuit at the same time. All amps meet an accumulator.

An orstead is an ohmstead for orses. A joule is a fight between two amps. You receive a shock when an amp isn't wearing any shoes.

Editor's Note: When Watt had read this, he invented the steam engine as a decent alternative . . . and was then prematurely retired to the old volts ohm.

— *Summerland ARC Newsletter & Round Table* □

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DX WORLD

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

Activities Calendar

16 - 17 March Bermuda Contest
30 - 31 March CQ World Wide WPX Contest (SSB)

Refer to Contest Calendar, by Frank Anzalone, W1WY, in your latest issue of CQ for details on the above events.

W-100-N

The following DX'ers applied and received their Worked 100 Nations certificates this past period.

248. KA2PHQ Richard C. Schott
249. LA4CAA Knut Bjorn Valso
250. JE6JRY Nobuhiro Tsutsumi
251. JA6CSY Takayuki Kobayashi

Knut, LA4CAA, is the second Norwegian to have applied for Worldradio's award. The first was Halvard Torgersen, LA2AD, who was issued certificate #209 on 13 June 1983.

Our two Japanese friends are the 12th and 13th applicants from that country and both are neighbors in the city of Hita in Oita prefecture. JE6JRY made all his contacts on CW, while JA6CSY used SSB. The first applicant from Japan was Naoki Akiyama, JH1VRQ, who received award #4 early in 1979. Nao received the Asia Plaque for being the first one from that continent.

Details for this award were published in Worldradio last summer. If you missed that issue send me an SASE for details.

Bahrein (A92)

Lars Ingerslev, A92EB, has been busy keeping Bahrein active on the bands. Check 75 meters on 3.795 MHz between 2000 and 2200 UTC, and again 0300 to 0400 UTC. On 20 meters he has been found near 14.205 MHz between 1400 and 1500 UTC, or 14.188 MHz from 1330 UTC.

Another station signing A92EM has been busy the low end of 40 meters near 7.005 MHz from 2100 UTC.

Mozambique (C90)

It appears that activity from this one has begun to show. Chuck Martin, AB4Y, a member of the United States Embassy in Mozambique, has been assigned the call C90A, although we have seen no reports on this one as yet. His QSL manager when you do work him is Bill Shipe, WM4N.

Also operating from the same station is Lars SM0DQE/C9, who has been keeping a schedule with VE3ICR on Tuesdays, around 1800 UTC on 14.204 MHz.

There is reported to be another station also, signing 6W8AL/C9, with the QSL route given as Bill Dunbar, WA4VDE.

Navassa Island (KP1)

A group of 10 DX'ers headed by 6Y5NR are planning a DXpedition to Navassa Island for a few days beginning 04 April. There are to be three U.S. amateurs as part of the team, and they are reported to have received Coast Guard per-

mission to land on the island.

QRZ DX reports on the call sign structure there, stating the reason the FCC will not issue a call for the island (such as KP1AA) is that there is no post office there.

Desecheo Island (KP5)

The DX Bulletin reports that members of the Texas DX Society in Houston will activate Desecheo Island in March. The dates given are 07-12 March, and should be on about the time you read this. A few Puerto Rican operators will be joining them.

The calls reported to be active during

that period will be K5LZO/KP5 on CW, NR5M/KP5 on SSB, and KA5SBS/KP5 on VHF. The calls of the operators expected to be part of this team include N5JJ, K5LZO, KC5M, KZ5M, KD5SP, KA5SBS, NR5M, NP4Z, NP4KA and WP4ATF.

If you worked the recent HI3RST/KP5 and WP4ATF/KP5 operations on Desecheo Island, you should be receiving your card(s) shortly as NP4KA reports they had just arrived from the printer.

U.K. Sovereign Bases (ZC4)

The ARRL Awards Committee voted to accept the recommendation of the DX

Advisory Committee to recognize the U.K. Sovereign Base Areas on Cyprus as a separate DXCC country. When the Republic of Cyprus was established by treaty effective 16 August 1960, the British retained sovereignty over both Akrotiri and Dhekelia military bases. The DXCC countries list had failed to recognize this distinction that has existed since that time.

All contacts made with ZC4 stations on either of those military bases, on or after 16 August 1960, will count for this new DXCC country. They must indicate such. Any contacts made before that date will (please turn to page 30)



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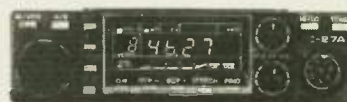
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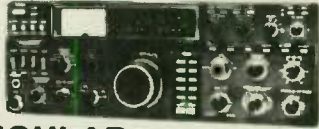
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C106	220	Yes	10W	60W	10A	\$179
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DX World

(continued from page 27)

will count only as Cyprus. If your ZC4 card does not indicate a military base, and you think it was from such a base, submit it anyway as the DXCC will make a good faith effort to ascertain the location. Do not submit any ZC4 cards before 01 June 1985.

The DX News Sheet prepared a list of these calls that should be good for contacts with Sovereign Base Areas (Akrotiri and Dhekelia), which gave us an idea to search further into some old Callbooks we had stored away. We have listed the ones that indicated a location within the limits that will make them valid:

ZC4AK	1965	Club Station, RAF, Akrotiri
ZC4ASG	1979	Akrotiri Scout-Group
ZC4BG	1965	Barry Grainger, RE, Dhekelia
ZC4CB	1971	F/L C. Burchell, RAF, Akrotiri
ZC4ES	1979	Episkopi Scouts
ZC4GB	1965	J. Bassford, RAF, Akrotiri
ZC4GY	1965	Club Station, RE, Dhekelia
ZC4HR	1965	Sgt Robinson, Dhekelia
ZC4JB	1965	J. Bull, BFBS, Dhekelia
ZC4JU	1965	S.G. Abbott, Akrotiri
ZC4KF	1965	Cpl Farey, Dhekelia
ZC4KZ	1965	Sgt Davies, Akrotiri
ZC4PF	1965	H.E. Bennett, RAF, Episkopi
ZC4PR	1965	Peter R. Robson, RCS, Episkopi
ZC4PW	1965	P. West, BFBS, Dhekelia
ZC4TJ	1965	Club Station, RCS, Episkopi
ZC4TX	1965	Club Station, RCS, Episkopi
ZC4WH	1965	Capt Edwards, RCS, Episkopi
ZC4WM	1971	W McEachern, RAF, Akrotiri

The 1963 Callbook does not list any ZC4 calls, but a check with the calls listed with the new 5B4 prefix, the calls 5B4AK and 5B4TJ were listed. These matched the calls of ZC4AK and ZC4TJ. What the

DXCC desk will think about these calls being acceptable for contacts with the Sovereign Base Areas will be up to them.

The DX News Sheet list of calls also included the following:

ZC4AVU	1971	Akrotiri
ZC4BP	1969	Dhekelia
ZC4DA	1968	Dhekelia
ZC4EPI	1984	Episcopi
ZC4IK	1970	Akrotiri
ZC4PC	1966	Dhekelia
ZC4RAF	1970	Akrotiri
ZC4RB	1967	Akrotiri
ZC4TK	1968	Akrotiri

The above were not found in any of the old Callbooks that I have, but of course, that doesn't mean they are not valid. There is also a possibility the ones in the Callbook could be incorrect.

Jules Wenglare, W6YO, of the Central California DX Club, notes that about a third of the island of Cyprus is controlled by Turkey. There is a feeling among some that maybe a third DXCC country could arise out of this.

With the recent ARRL Awards Committee decision there is now a demand for contacts with the ZC4 prefix. It is reported that Martin ZC4MR promises to visit the W7PHO Family Hour. Look for this net on 20 meters on 14.227 MHz around 1530 to 1600 UTC.

There was a ZC4CZ reported recently on 7.007 MHz at 2100 UTC and also a ZC4HMS on 21.050 MHz around 1400 UTC. As to the validity of these two, we cannot answer that.

Maldiv Islands (8Q7)

Nine members of the Japan Ladies Radio Society (JLRS) were scheduled to operate from the Maldiv Islands for about four days beginning 12 February. It is now past that date and we heard nothing on the activity. Perhaps they were late starting, or propagation wasn't at its best. The QSL route for this operation was JA1AEQ.

Check 40 meters CW for 8Q7AV who has been reported on 7.006 MHz around 1300 UTC.

Laccadive Islands (VU7)

QRZ DX and DX News Sheet report of activity from the Laccadives. John, VU7GV, was scheduled to be there for six weeks, and probably will be gone by the time you read this. He is there with VU7MB using an FT101 barefoot. The QSL route for this one is HB9MVW.

Clipperton Island (FO0X)

If the Clipperton DXpedition is on schedule, they should be there right now. They were scheduled to arrive on the island 03 April, the team of operators (as of



When the bands are kaput, it's a good time to take up fishing. Here, Wolfgang Wessely, DJ3TF, shows off his "fish of my life", a 20-pound carp that he caught back in May 1983. The photo was submitted by George Oster, K0EDA, who met Wolfgang a few years ago in the Alps. Wolfgang has also operated on the bands from T77C, 4U1ITU, FC0FOC and as DJ3TF/HB0.

16 January) included W6SZN, W6OAT, W6RGG, N6GJ, KK6X, N7NG, K3NA, WA7NIN, F6GXB, F9LX, DJ9ZB, TI2CF, XE1ZZA, JG3LZG, FO8HL and FO8GW. This is truly an international affair.

All donations and QSL cards should be routed via the YASME Foundation, P.O. Box 2025, Castro Valley, CA 94546. As the cost of this operation is about \$3,500 for each of the operators, it would be nice if there were a little something to help out on the expenses. Funds for this can be sent to the foundation, or the Northern California DX Foundation, c/o Rusty Epps, W6OAT, 948-H Kiely Blvd., Santa Clara, CA 95051. Your checks should be made payable to NCDXF, not Rusty.

Prefixes

Through 09 May of this year, the Soviets are replacing their prefixes with EM, EO, EU, EV and EW to commemorate the 40th anniversary of World War II victories. There is a special award for working at least 10 of these stations known as the PONEPA 40, which translated means "Victory 40". This applies for North

America only, (40 points, 10 contacts worth 4 points each).

Send your list of contacts, verified by two other licensed radio amateurs, to P.O. Box 88, Moscow, USSR. No fee schedule was given and we assume that QSL cards are not required, just log information.

There is a significance to the above prefixes: EM — stations located in former capitals of guerilla activity; EO — stations in cities that were awarded medals for their contribution toward victory; ER — ER3A located in Moscow; EU — stations located in capitals of the 15 Soviet republics; EV — stations in capitals of Soviet autonomous republics (ASSR), and EW — stations located in "hero cities".

Any Soviet calls with an R added, such as UA1CZ/R, are World War II veterans, and as far as we understand, are also good for the above award. The awards offered over there are usually quite attractive and worth pursuing.

Down-under stations in Victoria (VK3) may use the VI3 prefix in celebration of Victoria's 150th anniversary. And above, stations in Ontario during the period 17-24 February were authorized to use the prefix CG3 to celebrate the anniversary of the Girl Guides movement in Canada.

Kwajalein (KX6)

The Kwajalein Amateur Radio Club reports that KX6BU will be on the air commemorating the 41st anniversary of the battles of Kwajalein and Roi-Namur. The operation was during the early part of February, and if you worked KX6BU during that period you are entitled to a 64-page book about the battles, plus a certificate and QSL for \$6. For the certificate and QSL, just send \$3. (What about just the QSL?) If interested, send your order to KX6BU, Box 444, APO San Francisco, CA 96555-0008.

If you missed KX6BU and need this one, look for KX6DS who is very active. This station hits all the bands and was even active in a recent 160-meter contest. He has been reported on 3.506 MHz at 0745 UTC, and 7.004 MHz at 0900 UTC.

160 meters

From the reports there still appears to be an abundance of DX on the top band. We are not going to try to make the selection that was listed last month as there is just too much being reported. Here is just a sampling of what is there waiting to be worked. Frequencies are in kHz and times are UTC.

C31OF	1832	2300
CM2AS	1830	0400
CT1AOZ	1848	0645
CX8DT	1833	0715
CY0SAB	1837	0115

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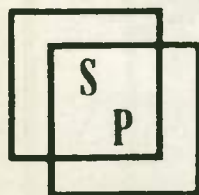
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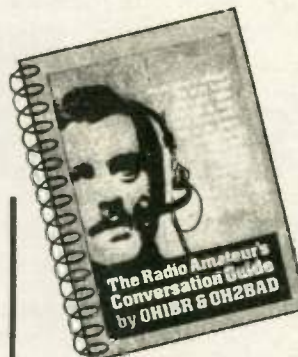
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HK0HEU	1836	0430
HZ1AB	1828	0345
I3MAF	1837	0400
J73EH	1836	0315
J88AQ	1828	0345
KG4DX	1826	0200
KH6CC	1823	0615
KL7GKY	1821	0730
KV4FZ	1802	0600
KX6DS	1827	0845
LZ1KDP	1826	0345
OH0BA	1832	0400
OK2PGU	1823	0500
OZ1W	1832	0730
PA0HIP	1821	0445
PJ2HB	1845	0330
PY1RO	1827	0615
SM7BK	1830	0600
SP1ADM	1832	0545
SV1JG	1837	0515
T32AF	1824	0730
T77V	1842	0530
UA1ZBP	1908	1245
UA9CBO	1854	0345
UJ8JS	1835	0230
UL7ECZ	1830	0230
UO5GQ	1833	0530
VK6HD	1827	1415
VP9LB	1836	0830
VS6DO	1911	1415
YU3EUF	1833	0500
ZB2EO	1827	0730
ZL3GQ	1832	0830
ZS6DN	1826	0345
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\$40 if you pre-register, and \$45 at the door. (Sorry, but we don't have the cut-off date.) There is a price of \$30 for meals only with the purchase of the full convention, and \$15 for the convention only. Send your registration to the Northern California DX Club, ATTN: Convention Registration, P.O. Box 608, Menlo Park, CA 94026.

The following list is comprised of confirmed programs for the convention: Kermedec by W6REC; Travel Through Africa by KC7UU; Clipperton by W6OAT and W6SZN (and perhaps others); TI1C and EA9 Contest efforts by N6NJ; The Huge Antenna by OH8OJ; and Heil Audio Show by K9EID.

And, of course, there will be the standard DX and contest forums, usually held at all conventions. With the pre-registration there will be souvenir coffee cups. Bob Thompson, K6SSJ, who sent us the details, promises us a good show.

Dayton!

For those of you attending the Dayton Hamvention this year, you are invited to stop by a hospitality suite, sponsored by the Southeastern DX Club. Carl Henson, WB4ZNH, who sends us this info, says the suite will be at Stouffer's and the room number is 325. Be sure to look up Carl and share opinions on DX lists.

Although it hadn't been announced at the time of this writing, the Kansas City DX Club will probably have their hospitality suite also, as they did have one last year. It sure sounds like it will be a lot of fun in Dayton. Wish I was going.

DXpedition Russian-style

The following letter was printed in the January 1985 issue of the *DX'er*, the official newsletter of the Northern California DX Club. It was written to Jo Clarke, W36ZUC, from one of her fellow CW types from the Soviet Union.

Dear Jo,

Thank you very much for your letter. I made a little delay with mine so that to have pictures of the DXpedition made. So, I am enclosing here some photos taken during our trip to Mubarek (UI8C), the Kashkadarya Region (O49), the rarest one in the USSR.

I want to tell you about the DXpedition in details and share with you my impressions of the trip.

Just before the expedition we had been given UZ4WWE/R18C call sign while we had asked for R18C. The call was very long and inconvenient, besides, actually we had not been given the license yet, we only had been informed by Moscow about the call.

By the very moment of our departure we had not received any license from Moscow. So, as we were leaving Izhevsk we could only hope that Larry, a local resident of Mubarek, would not be against our using his call R18CA during the expedition. And with this hope we left Izhevsk.

As usual, the organizers of the trip were Willy UA4WF (ex-UA4WBJ) and yours truly. Before the very departure two others joined us: Olly, a SWL from Izhevsk, and Alex from Kazan, UA4PFR. So the original team consisted of four men.

We took with us the big and heavy transceiver of mine, a power amplifier of Willy's which was even smaller than my transceiver but much heavier. At last UA4PFR also took his rig with him. My transceiver and the power amplifier were packed into a big wooden box which then gave us a lot of trouble concerning Aeroflot (Soviet air agency). We had to pay much money for the excessive weight and excessive dimensions of our box! For this reason we finished the DXpedition earlier than had planned (25 September) and went to Izhevsk by train. Oh, I'm getting off the point. I must tell everything one after another.

We left Izhevsk on 02 September 1984 early in the morning. At first we flew to Moscow where we had to change the plane and then to leave for Karshi. It took us about four hours to get to Karshi from Moscow. Also, we spent several hours at Domodedovo Airport in Moscow waiting for the plane "Moscow - Karshi".

Totally we flew around 4,000km from Izhevsk to Karshi. Just to help you imagine how much it is, I want to give the following example: Having flown the same distance, a European can reach such countries as J5, 6W, 3X, 5T, TZ, 5U, TT, 5A! What a fine DXpedition that would be!

In the evening of the same day (02 September), we were met at the Karshi airport by Larry R18CA who was extremely glad to greet us in Uzbekistan. Right at the airport, waiting for our baggage, we came to an agreement of using Larry's call for operation. He agreed without any hesitation. So, the call sign problem was solved.

When we got our baggage, we all left Karshi for Mubarek, Larry's hometown, which is located 100km northwest of Karshi. He found a fine place for our operation - a TV relaying station. Besides the station itself, there was a small room under the big 47-meter tower. We placed all our equipment in that little room and equipped our ham shack there. The tower was successfully used to support antennas. We installed slopers for 1.8, 3.5 and 7 MHz bands and 2-element Delta Loops for 21-14 MHz bands.

Our beds stood in a little yard near the TV relaying station, and there we slept in the open air. Indeed, Larry had done a lot of very useful work before our arrival. I think he had done his best, and we were extremely thankful to him for his outstanding work.

Adjusting the equipment, we discovered that UA4PFR's transceiver received better than mine, and it had digital frequency indicator, and we decided to use it as a main one. We matched PFR's rig with the power amplifier and our operation began on 03 September.

PFR's transceiver appeared to be not as good as we thought at first. It periodically refused to work at all, sometimes its CW did not work either because of unusual heat or due to something else, I don't know. So, when PFR's rig was off we began to match mine with the power amplifier. It, of course, required a lot of time to do. But in spite of all this we tried to operate 24 hours a day.

Propagation was almost completely unpredictable there. For example, one day we worked a lot of JA's on 21 MHz, next day at the same time - hardly a dozen of them (hi)!

Besides us, many others visited Mubarek and operated as guest operators: UA3GEA and UA3GEG from Lipetsk were there during the first week of our stay. UV1AA from Leningrad visited us in the middle of September. At last we met two boys from the Ukraine: UB5-08070 Yuri from Cherkassy and UB5-065494 Toly from Kiev who both worked during the last week.

Other operators were as follows. UI8GAM from Fergana, UI8LC and UI8LAO from Bukhara, and of course, Larry himself - R18CA.

Now, about the results of the DXpedition. We made 8,405 QSO's with 173 USSR oblasts and 112 countries. Propagation to the USA was very poor, and during almost a month of operation we could hardly work 50 U.S. stations. By the way, during the morning hours in Mubarek (0000-0500) UTC, not a single U.S. station was worked! All of those 50 were contacted in the evenings. Among those 50 U.S. hams were such "big guns" as K1KI, W0ZV, AA6AA, N4WW, etc.

On 15 September at 1345 UTC, I worked with Bill Tippett, W0ZV, on 14 MHz CW. Bill had comparatively solid signal, and I informed him about our poor propagation to USA and that we had made practically no QSO's with U.S. stations.

Bill told me to work on the frequency and he would call some U.S. hams to my frequency. Indeed, in some 10 minutes I was called by W0YK and then a dozen of U.S. stations. I felt there were more of them calling me, but propagation prevented me from hearing them all.

Then Steve Orland, AA6AA, came in and asked me to go to SSB with him. When we discussed the time and frequency for our SSB contact, Bill W0ZV also told us he would go there. So, I moved to SSB and worked AA6AA there and again some seven QSO's with USA.

Then I again called Bill W0ZV and asked him about current Solar Flux, A Index and Boulder K Index. He informed me. Then I offered him to establish a sked at a time which was the most convenient to him. He set 0300 UTC and we said "good bye" to each other.

Fresno!

The 1985 International DX Convention will be back in Fresno this year after several years at the Holiday Inn in Visalia. The convention will be at the new Center Plaza Holiday Inn, 2233 Ventura Ave., 19-21 April. If you haven't done so, make your hotel reservations now by calling (209) 268-1000. Be sure to mention you are with the DX convention. If you use the 800 number, most likely you will be told they are full.

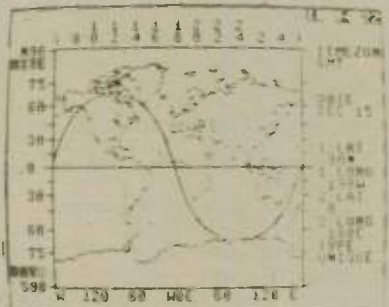
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Unfortunately, because of propagation peculiarities we could not meet. For about a week I waited every morning for Bill but in vain. Then I gave it up, and can you imagine, Jo, on 22 September when I was fast asleep at 0311 UTC, Larry did work W0ZV. Larry then said to me that Bill had told him something, but Larry didn't understand as his knowledge of English left much to desire.

In spite of all the difficulties and propagation whims, I think this DXpedition was the best and the most interesting one of all our expeditions. All the same, we worked a lot of QSO's, met and made friends with a lot of hams from many parts of the Soviet Union.

No doubt, several words must be written about the climate there in Mubarek. The most part of the territory of Uzbekistan is the Kara Kum Desert, Mubarek being situated in a vast plain called the Karshi Steppe. During last years, the Karshi Steppe has been intensively developed and irrigated. The climate of the Karshi Steppe is notable for its very long summer when the sky has practically no clouds at all and for its short unstable winter. As we arrived in Karshi, the temperature was +36 degrees C in the shade! The highest temperature we experienced in Mubarek was +43 degrees C in the shade.

Sweet grapes, watermelons and muskmelons are cultivated in the area. We ate a lot of them in Mubarek. There are many bats which begin to fly about when the night comes, and many small lizards called "varans". Some varans lived even in our ham shack!

The natives of Uzbekistan are Uzbeks who are of Moslem culture. But Mubarek is very young town, about 10 years old, and there is not very large percentage of Uzbeks there. There live people of 56 different nationalities in Mubarek!

We took many pictures during our stay in Mubarek and also when we visited Bukhara for a few hours. I purchased a set of postcards in Bukhara and am now sending it to you. I'm sure you will like the pictures. We enjoyed ourselves very much seeing the Old Town Bukhara. It was worth seeing indeed. There are always many tourists there. Even during our short stay in Bukhara we met two tourist groups: one from France, another one was either from Canada or from the USA.

Well, the end of our DXpedition came on 25 September when we left Mubarek for Volgograd by train. In two days we arrived in Volgograd where we changed the train and went to Kazan, where we again changed the train and at last left for Izhevsk. Early in the morning on 29 September, we arrived in Izhevsk. So, it took us four days to get home by train.

These are the main points of "KARSHI-84" DXpedition, the most successful one of all our trips.

Clubs

The Southern California DX Club has elected the following to serve as their officers for 1985: Marty Woll, N6VI, president; Dan Davitt, N6CGB, vice president; Esther Wolf, KB6HW, treasurer; and Chris Williams, KG6AR, secretary.

Up north a bit, the Central California DX Club also elected the following to run their club for 1985: Harry Billings, WA6UOR, president; Perry Foster, K6XJ, 1st vice president; Jules Wenglar, W6YO, 2nd vice president; and Terry Gaiser, N6UR, secretary-treasurer.

This club is in the San Joaquin Valley and north of the Tehachapis. Any DX'er in that region who is interested in that group should contact the club at 1227 Princeton St., Delano, CA 93215.

Back east, the Western Pennsylvania DX Club selected the following to serve as officers for the year 1985: Don McDaniel, KJ3Q, president; Doug Stark,

WA3CGE, vice president; Wayne Albert, KB3KV, secretary; and Mike Zilavy, KC3MR, treasurer.

Comments

Alfred Haederli, KD0HN, writes that he would like to see a column on the call sign structure of DX countries of the world, (one country per issue), with a map or sketch and an explanation on privileges. This sounds interesting enough, but we wonder if there is an interest for this from others? We don't have that information available here and require a great deal of correspondence and research to prepare such a column.

Perhaps some of our DX readers could send us that information. Most countries do have a structure such as this — Australia, France, Indonesia and Japan, to name a few.

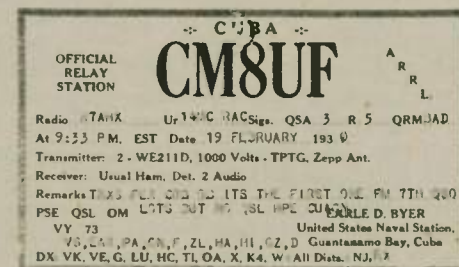
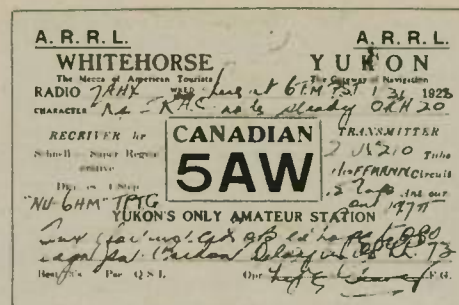
Jules Wenglar, W6YO, comments on the letter on Peter I Island, (see Worldradio, February 1985, page 30), and says that was taken from QST, Ellen White's column 'How's DX?'. He had sent it to her about a year ago. Jules said, "When I knew my friend Rowland Wilson was going to stop at Peter I Island on the Lindblad Explorer, I asked him to make close observations for me. Glad the info was repeated."

DXAC

The new chairman for the DX Advisory Committee is Bob Thompson, K6SSJ, the Pacific Division representative to the committee. Bob replaces Jim Spencer, W0SR. In addition to this appointment, Bob is also running the show this year for the International DX Convention in Fresno, and is an active member of the Northern California DX Club.

Antique QSL Department

The Canadian 5AW card is from the collection of George Heitzman, W7AHX. George was living in Eugene, Oregon, at the time he contacted Yukon's only amateur station — 5AW in Whitehorse — on 31 January 1928. Transmitter is indicated as two UX210 and Hoffmann circuit and a Super Regenerative receiver by Schnell. The call letters are printed in orange with



the rest of the print in green.

The call CM8UF was assigned to Earle D. Byer, who was with the United States Navy at Guantanamo Bay, Cuba. George, who worked CM8UF on 19 February 1930, was the first station in the 7th call area to confirm a contact with that station. Notice this card and the 5AW card above that the ARRL was what most of the dedicated amateurs belonged to.

100 percent QSL?

Garry Hammond, VE3XN, Editor of Long Skip, the official newsletter of The Canadian DX Association, makes a good point regarding the attitude of the

QSL'ing habits of DX stations:

"If you are not prepared to answer all QSL's, whether direct with SAE plus postage or via bureau, it is your editor's opinion you should stay at home."

Garry is referring to a certain DX'er who has made several DXpeditions to rare locations and demands special donations for a card. I will not list the DX'er as there have been others who fall into this category. That way, each one of these individuals will think it is him we are talking about.

The above comments are not meant to say that one should not contribute a little extra to help out the DX'er financially, but when the DX'er demands extra cash for the card, that is something else. Worldradio will not allow me to express my true feelings toward those individuals.

QSL information

George Oster, K0EDA, writes that he worked UJ8JCQ in October 1984. He sent his card to Peggy Arciero, WB2OHD, his QSL manager. His QSL was returned with a note saying that she has not heard from him in well over a year and will be returning all QSL's. Therefore, if you work UJ8JCQ, use Box 88.

George also comments on the February issue where N0DJJ seeks help in a QSL route for 7X2LS. George says, "Sadek is an excellent QSL'er, and an attractive QSL will be returned quickly by direct route only: Sadek Laskri, Immeuble RTA, Bouzarea, Algiers, ALGERIA." George included his call in the address, but we

Propagation

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MAY 1985

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	15.9	20.6	26.0	12.3	22.1
0200	13.6	21.5	26.3	11.8	21.6
0300	13.4	22.2	26.7	12.6	19.9
0400	17.3	21.5	27.1	12.3	18.1
0500	15.3	19.8	25.8	13.0	17.0
0600	13.5	18.2	22.4	13.4	15.3
0700	11.9	17.5	20.4	12.3	12.5
0800	10.5	17.0	17.1	11.3	10.3
0900	9.7	16.1	14.9	10.5	11.5
1000	9.8	14.6	14.3	10.2	14.5
1100	10.8	13.2	14.4	11.4	13.9
1200	12.6	12.7	14.4	12.8	14.5
1300	14.6	13.3	14.3	14.9	16.6
1400	16.3	15.1	14.4	16.9	18.9
1500	17.1	15.9	14.8	18.0	19.6
1600	17.2	15.2	14.6	18.1	19.3
1700	17.4	15.1	13.4	18.1	19.8
1800	18.0	15.5	12.4	18.5	21.6
1900	18.5	17.0	13.4	18.7	23.8
2000	18.6	19.4	16.7	18.7	25.3
2100	18.5	21.3	20.7	17.9	26.1
2200	18.8	21.7	23.7	16.4	24.9
2300	18.8	21.3	25.1	15.1	23.2
2400	17.7	20.6	25.7	13.1	22.1

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don't recommend it. Be sure to provide an SAE with sufficient IRC's. Do not send "green stamps".

Concerning N0DJJ, Wayne Menge, WA0RUD, has a route for 8R1RBF. Wayne says, "I contacted 8R1RBF on 18 March 1984, and QSL'd direct to Richard Fields, P.O. Box 10932, Georgetown, GUYANA, SOUTH AMERICA. I used only an SASE with Guyana postage, and received the card about four weeks later."

George has had much success in using SASEs with mint foreign postage for DX QSL's. He purchases his stamps from DX Stamp Service, 7661 Roder Parkway, Ontario, NY 14519. A price list is available from George Robertson, W2AZX, who runs this service, for an SASE.

George also tried this method for his LU2ZA card to the Argentine address of Gorostriaga 2230 P-1SA, 1426 Buenos Aires, that was listed in Worldradio several months ago. He received his card about four weeks later. He received no response from LU2A the first time.

Carl Zelich, AA4MI, dropped us a line regarding a long overdue QSL card from VS5PM in Brunei back on 14 April 1982. He sent his card to Brunei direct with 2 IRC's, and still hasn't received a card after three years.

Carl writes: "I have discovered that Penigran Haji Idriss, VS5PM, has been appointed as ambassador to the United States for Brunei. After much further investigation, I have located Ambassador Idriss' address as: Brunei Embassy, 301 Third Floor, 2600 Virginia Avenue, Washington, D.C. 20037. Also, the telephone number is (212) 838-1600. I don't know if he has logs and/or QSL's there, but I have sent my SASE and hope this information will be of use to other DX'ers. I will let you know the results of these efforts."

Bob Imhof, AG2K, writes that if anyone still needs a card from Jim Imhof, 9J2JI, please send your request to Bob at 203 Isle Drive, Port Richey, FL 33568. Jim is now signing KP4CZ in Puerto Rico. We also heard from Jim, who gave us a QSL route for 9J2JI. In this case, Jim said he would handle the cards. Therefore, take your choice for 9J2JI, AG2K or KP4CZ, at P.O. Box SM, Villalba, Puerto Rico 00766.

QSL routes

A22ME	-AK1E	CG3SAS	-VE3FO1
AH2U	-K9XR	CO5GV	-W3HNK
A15PTF	-W3HNK	CT2AK	-W3HNK
AP2ZA	-W6NLG	CU5BOH	-CT1BOH
C90A	-WM4N	CX7BY	-W01JN
CE0ERY	-CE3EEO	CX9AU	-CX2SA

CY0SAB	-VE1CBK	V3ZZ	-KE5KK
DJ6SI5V	-DJ6SI	VE2USA	-KA8SEW
	(See Note 1)	VK9XW	-VK6RU
EL2FJ	-JF2QHC	VP2MLD	-WB2LCH
EL7C	-DK5VI	VP2MO	-WB2LCH
EM2C	-UC1AWB	VP5GEX	-K0GVB
EO2QGL	-UQ2GWF	VQ9DG	-WA3HUP
EO3AWK	-U23WWW	VQ9QA	-N3QA
ER3A	-U23AZO	VR6BR	-KA9W
EU1Q	-UQ1GWW	VS6DO	-K4CIA
EU6T	-RT6UW	VU7GV	-HB9MVV
EU8M	-UM9MWA	W1RAN C6A	-W1RAN
EW6AA	-U26AWJ	W3UM/VP2M	-W3UM
FG4CP	-FG7BT	W9DCN C6A	-W9DCN
FG5DL/FS	-F6ARI	X01XG	-VE1XG
FM5WD	-W3HNK	YB5ASO	-W4BBP
FY7AE	-WA4WTG	YC8VCE	-JL1MWJ
FY7BO	-1985 CBA	YS1UL	-WA0JYJ
GB2SDD	-GW4HOQ	Z21BQ	-DJ5DA
	(See Note 2)	ZD9CA	-KA1DE
GD4WBY	-KA1JKN	ZF1AQ	-WA3YJA
HI8LC	-W2KF	ZP2BN	-W4HET
HL2SF	-JH6YBW	ZP2FK	-Q9QVB
HP1XKR	-JA7AGO	ZP2GE	-WA4WTG
HW4KR	-F2YT	ZK1XS	-PA2DXY
HW4RI	-FD1HSZ	ZK1XV	-PA2DXY
HW4SM	-FD6IFJ	ZP5KS	-WA4WTG
HZ1AB	-K8PYD	ZS3GB	-N0AFW
IQ1RA1	-11XA	ZS3HL	-KE1A
J5WAD	-UA4PW	ZS3K1	-K1ZLA
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J37AH	-W2GHK	ZD6AN	-W4KY
J87BS	-KE5KK	4K1A	-U5YD
J88AG	-KA1ILA	4K1F	-UQ2GAG
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KF6ME/DU2	-KF6ME	5N8ALH	-G4HVE
KG4DX	-WB2CPV	5N0ATT	-K4PVZ
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OH2BEJ/EA8	-OH2BEJ	5T5CS	-F6FNU
OX3SG	-LA5UM	5V7NG	-WB4LFM
P29RY	-WA4WTG	5V7RW	-WB4LFM
PY1BVY/		5Z4ED	-JH6FMU
PY0T	-PY1BVY	5Z4RH	-WA4WTG
RT5UL/UJ	-UT5AB	6D1FIC	-K9AUB
RT5UL/UI	-UT5AB	6V2FX	-F6EYS
RT5UY/UH	-UT5AB	6W1K1	-F6EYS
RT5UY/UI	-UT5AB	6W1NQ	-DL1HH
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TG9XHQ	-JA4FGD	8P6AH	-WA4WTG
T11W	-KE5KK	8P6GG	-N4CTC
T12BEV	-W4ZD	8P6IG	-WA4WTG
T12EY	-DF6EX	8P6MI	-VE3JTQ
T12KD	-KE5KK	8P6NW	-KA9EBM
T15FBP	-KE5KK	9J2BO	-W6ORD
TR8AHO	-DK1PO	9J2J1	-KP4CZ
TR8DM	-F3CTW	9J2LG	-1985 CBA
TZ6FE	-DL4BC		
UT5UBW/UW	-UT5AB	9M3HB	-N4FFN
V2AK	-WA4WTG	9U5JB	-ON5NT
V2ARS	-K8BA	9Y4VU	-W3EVW

A4XJZ	-PO Box 981, Muscat, OMAN
A4XKD	-PO Box 981, Muscat, OMAN
C21DX	-PO Box 225, REPUBLIC OF NAURU
C21LD	-Lorenzo, P.O. Box 80, REPUBLIC OF NAURU
CE0ZIJ	-Gus, P.O. Box 1, Easter Island, CHILE
CM2QP	-PO. Box 1, Havana, CUBA
CO2AL	-PO. Box 10, Havana 14, CUBA
EA9IB	-PO. Box 213, Melilla, SPAIN
EL2AY	-PO. Box 3485, Monrovia, LIBERIA
FH8CB	-PO. Box 50, F97610 Mayotte Isle, FRANCE
FO8BI	-Bob, P.O. Box 5924, Papeete, Tahiti, FRENCH POLYNESIA
FT8XB	-Michael Monceau, P.O. Box 83, Argenteuil, F95102 Kergulen Isle, FRANCE
GD4WCY	-PO. Box 19, Ramsey, ISLE OF MAN

HC2SK	-B.P. 8283, Quito, ECUADOR
PJ2KI	-PO. Box 3632, Curacao, NETHERLANDS ANTILLES
PY0TE	-Rua Ageu Romero 93, Fortaleza, CE 60000, BRAZIL
V85HG	-Hassan, PO. Box 222, BSB, BRUNEI
VK9MR	-PO. Box 31, Winnamalee 2777, AUSTRALIA
VP8BDO	-John, P.O. Box 217, Port Stanley, FALKLAND ISLANDS
ZD7BJ	-P.O. Box 25, ST HELENA ISLAND
3D6BU	-P.O. Box 64, Manzini, SWAZILAND
4M4SS	-P.O. Box 510, Valencia 2001, VENEZUELA
5L2BA	-P.O. Box 987, Monrovia, LIBERIA
9L1CISV	-P.O. Box 10, Freetown, SIERRA LEONE
9Y1VY	-Steve Bannham, 251 Upper Serangoon Road, SINGAPORE 1334

- Notes:
1. QSL requests for contacts with DJ6SI5V go to DJ6SI direct only.
 2. An address was also given for this one: R. Jones, Strawberry Place, Morriston, Swansea, West Glamorgan SA6 7AG, WALES
 3. When requesting a QSL from 9J2LG, include 3 IRC's to the address given in the 1985 edition of the Callbook.

Our thanks to the contributors for this month's column that include AA4MI, AG2K, K6SSJ, K0EDA, KA6A, KD0HN, KG6AR, KP4CZ, W6YO, W7AHX, W9LNQ, W9MCJ, WA0RUD, WB4ZNH, The Carolina DX Association (W4WMQ), Western Pennsylvania DX Association (KB3KV), Kansas City DX Club (AB0X), Southern California DX Club (W6ABW), Central California DX Club (W6BYH), Northern California DX Club (N6BLN), Radiosporting (VE3BMV), Long Skip (VE3XN), The Long Island DX Bulletin (W2IYX), The DX Bulletin (K1TN), QRZ DX (W5KNE), and DX News Sheet.

As this is being prepared, we are right in the middle of the ARRL International DX Contest during the CW weekend. Most of the activity seems to be the Texas stations calling CQ TEST. Looks like there is a pipeline direct into Texas from here, and those guys are loud. Other than that, not much else is on and will be that way for a couple of seasons.

Recently, the XYL and I were browsing through an antique store and came across some World War II items that included an old ARC-5 transmitter and a BC-348 receiver. They were priced \$20 and \$50 respectively, and from what I could tell, they were not modified. It reminded me of my early days when I used ARC-5 receivers with my Viking Ranger. I had a lot of fun with those receivers — still wish I had them for old time's sake. 73 es GL DX, de John N6JM.

Why do days get longer in the summer? Heat makes things expand.



RAEM was the call of S/S Cheluskin smashed by ice in the Polar sea in 1934. I was there the chief operator. Since then RAEM is my personal amateur call. Mail address: Ernst Krenkel, Chaplin street, 1/A, Moscow, USSR.

Some years ago, Ernst Krenkel, president of the Central Radio Club, had the unusual call of RAEM. The old-time DX'er is now a Silent Key and has an award in his honor for contacting Soviet stations above the Arctic Circle (and in the Antarctic). The above information was on the back of an old UPOL QSL card, (Ernst Krenkel, operator), for 1965. This explains the story behind the call RAEM. (Thanks to Art Bauernfeind, W9MCJ, for this info.)

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World Radio History

WORLD RADIO, April 1985 33



TEACHER

Alan Kline, KB1DJ

P.O. Box 54
West Lynn, MA 01905

VE program, Part III

Once all the upgrade candidates' 610 forms were checked, they had to be sorted by similarities and studied as to how we might group them together. But before this happened, I did perform a few other functions.

Some of the 610's had no license copies attached, so I sent notes, via mail, to the applicants to supply us with the proper info. Some 610 forms were filled out so poorly that I didn't accept them for upgrading at all. About 50 were received after the required 30-day cut-off period and were sent back with notes saying such.

After I was satisfied we had about 250 correctly filled out 610 forms, I started the final sorting process. The convention committee had originally assigned us only one large room; we immediately requested two. I called the convention center to double-check the maximum seating capacity in each room and then, on a business trip near there, stopped by for lunch one day.

A check on the two rooms gave me an

idea that their seating numbers were on the high side, so I estimated we could only get 35 in one room and only 17 in the other. I checked the 610 forms in their presorted groupings to correlate with these seating numbers.

The upgrade groupings we used were as follows:

Unlicensed applicants to Novice
Unlicensed applicants to Tech. or General
Unlicensed applicants to Advanced
Unlicensed applicants to Extra
Novice applicants to Tech./General
Novice applicants to Advanced

Day	Saturday	Saturday	Sunday
Room	A= 35 seats	B= 17 seats	A= 35 seats
9:00 a.m.	Sitting #1 Novice to Tech./General VE Team #1	Sitting #5 Unlicensed to Novice/General VE Team #2	Sitting #9 Mixed upgrades VE Team #1
11:00 a.m.	Sitting #2 Novice to Tech./General VE Team #1	Sitting #6 Tech. to General VE Team #2	Sitting #10 Tech. to Advanced VE Team #1
12 noon	LUNCH	Sitting #7 Tech. to Advanced VE Team #3	
1:00 p.m.	Sitting #3 General to Advanced VE Team #1	LUNCH	
3:00 p.m.	Sitting #4 Advanced to Extra VE Team #4	Sitting #8 General to Advanced VE Team #5	

This became my master schedule for the weekend's exams. When I designed this original chart, the earliest group of exam takers I scheduled was the Sunday group. The second group to be scheduled was comprised of the upgrading Novices. They and the unlicensed applicants were slated for as early as possible on each day. There was much discussion about this, but I did it for economic reasons.

The one thing that draws exhibitors to various hamfests is the hope that radio

Novice applicants to Extra
Tech./General applicants to General
Tech./General applicants to Advanced
Tech./General applicants to Extra
Advanced applicants to Extra

Some of the presorted groups worked into the proposed schedule easily, as there were exactly 35 in the Advanced to Extra group and the same number in the General to Advanced group.

All the requests for Sunday exam times were put aside. The rest of the 610 forms were sorted for the last time, according to the chart shown here.

amateurs in attendance will spend money — lots of money. I thought that if we helped the Novices upgrade early each day, they would be happy and go out into the show and spend money on a new rig. Also, the newly privileged amateurs could pick out some keynote speakers to listen to. Upgrading Generals and Advanceds probably would not rush out to buy those new rigs.

I talked about this with many of the retailers who were there, and they all con-

firmed my theory; there was not only an increase in inquiries after the early sessions, but an increase in rig sales.

Notification

At this point in the project, I had a paperwork party at my work QTH. Lynn Ladder and Scaffold was kind enough to let us use the facilities to carry out the next in the VE Team process. I called up five of the VE's, my two kids and wife to write out our request for exam papers, prepare the bank deposit, notify the examinees and double-check all of my scheduling work.

I took a letterhead from my ham class and put the following info on it, in big black letters:

NAME: _____
CALL: _____
DAY: _____
TIME: _____
ROOM: _____

Each examinee had to have one of these filled out and mailed to them in the SASEs they had provided. As I am a stickler for perfection, the notification was checked each time before the envelope was sealed. The total number of individual sittings was to total 10. Sitting rosters were hand-written, and the request for exam elements were filled out. All papers sent to the ARRL Headquarters were copied and sent to them along with a check for the total amount due via express mail-overnight service. This is the U.S. Postal Service's \$9.35 for under 2 pound pack.

On paper we should have had 250 examinees that were required to pay \$4 each to the ARRL/VEC; however, I actually had \$20 too much. It took a triple check of the paperwork to find out who had overpaid us. It was easy to deposit all the checks into my own class account and write the ARRL only one certified check. I did not want the responsibility of sending 250 individual checks via the mail.

The ARRL confirmed to me that they had received all of our information and would send our VE Team coordinator the actual exams. John Maglio, KJ1J, took on this responsibility, and he had a few problems you should know about.

As the system was still relatively new, there were some paperwork flaws from the League. It seems the General exams that were sent were the wrong ones, and some of the other exams had been stapled together wrong.

John worked a few extra nights we hadn't planned on to straighten out the exams and double-check that all of the required elements were there. We also did some last-minute juggling of exam times for certain applicants who didn't like the time we had allotted them. That required calling the ARRL and getting extra exams. □

Future Pioneers

Tomorrow's space pioneers will display the same gumption common to yesterday's settlers of the Polynesian islands and the American West.

But instead of traveling in outrigger canoes or covered wagons, they may someday ride into the unknown or microwave-powered rockets and hitch their fortunes to passing comets, predicts Eric M. Jones, an astrophysicist at the Los Alamos National Laboratory.

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(This month's CARI article was written by Mike Sakarias, KL7KE, CARI Member No. 13. Mike, who is CARI's Yukon Editor, is working on professional chess status... as some of you might infer from his writings.)

Radiochess news from Alaska

With the decline in sunspots, propagation to the northern latitudes really suffers. Anyone for radiochess via satellite? (Actually, CARI does have members who use OSCAR.)

Even in better times, chess games in Alaska take a little work to finish, and when you are in a remote corner of Alaska it is hard just to find chess opponents. Joel Gaines, KL7HOU, and I would get to play when he was with the FAA (Federal Aviation Administration) at Middleton Island in the Gulf of Alaska (ca. 59.5N, 146W).

At the time of the following game I was in Goodnews Bay (ca. 59N 162W). We had both checked into the old Alaska Bush Net on 7.245 MHz. Conditions were marginal, with lots of Asian broadcast QRM. We QSY'ed down-band and began the game. WHITE - Mike, KL7KE; BLACK - Joel, KL7HOU.

Sicilian Defense

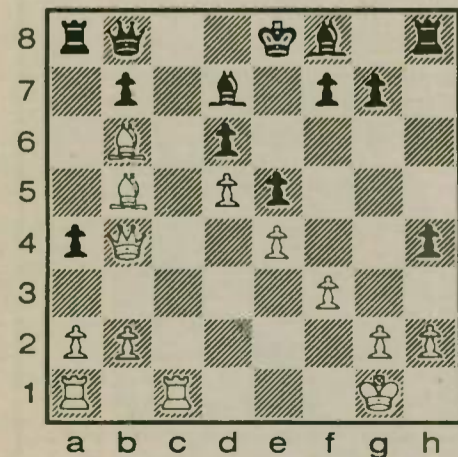
1) e4, c5 2) Nf3, d6 3) d4, cxd4 4) Nxd4, Nc6 (usual is 4... Nf6 virtually forcing 5) Nc3 to defend the e-pawn. 4... Nc6 permits White to play 5. c4= the Maroczy Bind. White will try to Black cramped. Black must fight this with exchanges and pawn breaks to gain room and open up the position.)

5) c4, Bd7 6) Be2, ... Before Black could reply, the band died.

On the following day we again checked into the Bush net and QSY'ed for a resumption of our game. This time, we set up an alternate frequency on 75 meters in case 40 went out.

Black continued: 6... Nxd4 (an ill-advised exchange because now White's Queen dominates the center. Black needed to develop his Kingside.)

7) Qxd4, Nf6 8) Nc3, e5 (this drives away White's Queen but gives White ab-



Position after 19... h4

solute control of d5 and leaves Black's d-pawn backward and an easy target. A better move was 8... e6 and ... Be7 or 8... g6 and ... Bg7. The pawn moves that Black must consider against a Maroczy Bind are ... b5, ... d5, and ... f5. Which one is possible or most useful in breaking up White's pawn formation depends upon the position.

9) Qd1, Bc6 10) f3, Qa5 11) Be3, h6 12) 0-0. Bd7. (Black has done little to help himself. With the powerful position of his Bishops, White begins to pressure the Queenside. An alternate plan would be to attack Black's weak d-pawn.)

13) Nd5, Qd8 14) Qb3, Nxd5 15) cxd5, a5 16) Rfcl... (we were now losing 40-meter contact so we QSY'ed to 75 meters where things were better although with Lower-48 QRM.)

16) ... a4 17) Qb4, (Qxb7 is not a good idea because of Black counterplay with ... Rb8) 17... Qb8 (Black's position is full of weak points; b6, b7, c7, d6 and his

King is still in the center.)

18) Bb5, h5 19) Bb6, h4 (Black tries a desperate Kingside attack but it is too little, too late - see diagram.) 20) Bxd7+, Kxd7 21) Qb5+, Ke7 22) Rc7+, Kf6 23) Qd7, Qe8 24) Qf5 Checkmate. (After both 23... g6 and 23... Rh5, White checkmates with 24. Qxf7, Kg5 25) Be3 mate.) This is a Maroczy Bind that Black did not try to break. It is interesting to see how Queenside pressure ended up in checkmate on the Kingside.

In case anyone is interested, Middleton Island is small (1 x 3 miles) and with hills, grass, rabbits and the FAA site. Goodnews Bay is an Eskimo Village of about 200 people located 10 miles inland from the Bering Sea. No trees there, either. In Bush, Alaska, Amateur Radio is often the only way we get to visit friends.

(For information on Chess & Amateur Radio International, write: CARI, P.O. Box 682, Cologne, NJ 08213.)

No code?

Frank Williams, KA8PIV/IV3

The other day on 14 kHz, I heard the tail end of an SSB conversation in painfully fractured English between a CT1 and an EA1. Finally, I guess exhausted,

the CT1 said by voice "DITTY DI DA DI DAH", and the EA1 also by voice replied "DITTY DI DA DI DAH". Then silence - that was it. I got a big chuckle out of it.

For the unwashed, we can remind them that in Morse code, sk = end of contact.

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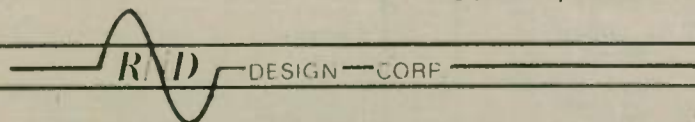
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FEATURES -

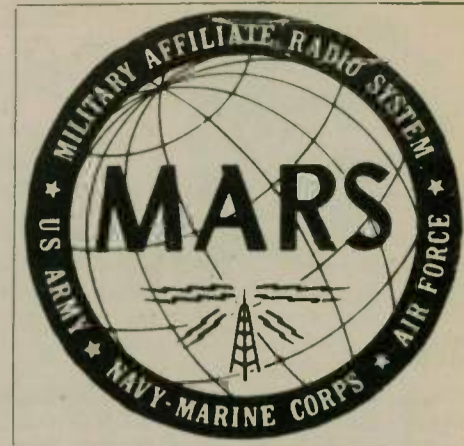
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MARS communications at crash site

On 26 October 1984, at approximately 1400 hours local time, an F-106 fighter/interceptor aircraft based at Griffiss AFB/New York experienced difficulty while on a training mission over northern New York state. The pilot was forced to eject. He did so safely, and the plane crashed in a remote wooded area about 90 miles from Griffiss. Rescuers reported that the area was isolated and could be reached only by four-wheel drive vehicles with great difficulty.

Investigators were sent to secure the area. Almost immediately, the question of communications arose. The nearest telephone was a pay station about 10 miles away. What to do? Call Air Force MARS!

AGA1GI, the auxiliary station of the 2019 Information Systems Squadron, had been organized less than a year before. The station, co-located with the Griffiss Amateur Radio Club and Electronics Hobby Shop, had just completed a move into a newer building and the antennas had been erected just weeks before.

SSgt Al Slough, GAFB Installation MARS Director, notified SSgt Mike Lazaroff, AFB1YD, who was in the process of forming a Base Support Team for AGA1GI. Mike immediately notified other operators, and the station was activated within minutes.

Meanwhile, radio operators and maintenance personnel from the 2019th prepared to depart for the site. Taking along a KWM-2A and associated field equipment, they maintained steady contact with the station back at Griffiss.

For the next five days, AFB1YD and Lt Lane McFarlane, AFA1OK, both of the 485 Engineering and Installation Group, and SSgt Ed Velez (N2FEC/MARS call pending) of the Continental Communications Division, manned AGA1GI. Numerous phone patches were completed between the site and various base agencies, including the Security Police, Job Control and the Command Post. These patches provided the command authorities the rapid voice contact needed for fast action on supply and personnel matters.

In the afternoon and early evening hours, AGA1GI also ran morale patches for the personnel deployed at the crash site. One security policeman received updates on his pregnant wife's condition. Others appreciated just talking to their families.

The importance of backup equipment was also learned. During one patch, suddenly and without warning, the receiver at AGA1GI failed - no audio! Within 30 seconds, an amateur transceiver was quickly pressed into service. Troubleshooting began immediately, and it was discovered that the primary winding on (please turn to next page)



VITA news release

breakthrough in low-cost telecommunications was reported by VITA (Volunteers in Technical Assistance) in mid-January. This was the Digital Communications Experiment (DCE) in which store and forward packet radio was demonstrated successfully through the circumpolar orbiting UOSAT/OSCAR-11.

Groups of amateurs in England, Hawaii and Los Angeles using a PACSAT Project design exchanged messages with letter-perfect precision. The successful communications were accomplished when Harold Price, NK6K, uploaded software to the UO-11 during the weekend preceding the experiment, and later messages were exchanged using the system among Larry Kayser, W3ZIA, in Hawaii. Martin Sweeting, G3YJO, in Surrey, England and Harold NK6K in Los Angeles. The message system is a prototype developed by Hugh Pett, VE3FLL.

AMSAT members Rick Dittmer, WH6AMX, and Chris Wachs, WA2KDL, supported the operation, backing up the Hawaiian and Los Angeles teams respectively.



Martin Sweeting, G3YJO, at the space symposium. (K6PGX photo)

UOSAT ground support was provided by Roger Peel, G8NRF, and Neville Bean, G8NOB.

VITA is promoting the success of the DCE as an activity whose future impact on low-cost Amateur Radio telecommunications can be expected to lead to the kind of communications which would provide message service for developing countries. As an example, VITA points out that were a system such as demonstrated in January available in Ethiopia with solar-powered equipment, a more rapid deployment of aid to the people suffering there may have been possible.

Some of our readers may recall that similar store and forward telecommunications experiments were conducted with AMSAT/OSCARs 6, 7 and 8 during their operating lives. Data relating to the tracking of downed aircraft were obtained by the Canadian government using OS-

CARs 6 and 7. This presaged the present satellite downed aircraft monitoring programs with equipment aboard both U.S. and Soviet birds.

The system goes by the name of SAR-SAT (Search and Rescue SATellites) and has in fact saved a number of flyers' lives.

Also with OSCARs 6 and 7, medical demonstrations have been made in which electrocardiograms were transmitted between Arizona and New York.

The advent of data packet communications will make possible transmissions of detailed medical information, for example, from those equipped with relatively simple and not very costly equipment requiring low power, so that they may be operated with solar cell-charged battery gear.

Amateur Radio has always been in the vanguard of new developments in communications for the benefit of mankind. The Amateur satellite communications activity currently in progress will cer-



Harold Price, NK6K, discussed the PACSAT/UOSAT-11 Project at the AMSAT Space Symposium. (K6PGX photo)

tainly continue this trend.

Think of it. A message via packet radio, generated by a group in a remote location

MARS

(continued from page 35)

the receiver's audio output transformer had opened up. Murphy strikes again! Repairs were begun and the unit was back on-line in less than one hour.

Operations were terminated at 1000 hours local time, on 31 October, with thanks for a job well done coming in from many sources. More people at Griffiss have become interested in MARS operations, and we look forward to having a large enthusiastic Base Support Team soon. — Paul Turkheimer, AFA6YJ/WA6NKL

•••

(Since MARS is one of the most useful aspects of Amateur Radio, Worldradio would like to expand its coverage of MARS activities.)

Contrary to popular opinion, it is not necessary to get permission from the Chairman of the Joint Chiefs of Staff to write an article on how a seven-turn loading coil puts your 40-meter antenna onto the MARS frequencies.

It is *not* a violation of the Official Secrets Act and you will not be tried for

treason by describing how you built a broad-banded 2-meter antenna to cover both ends of the band.

The FBI and the CIA couldn't care less if you, who are a volunteer MARS member, write an article about how you built a cheap trickle charger for your 12-volt battery.

You will not be tried for sedition if you write a note about the correspondence course you took and how helpful it was.

Thus, you may use this space in Worldradio to educate, inform, inspire and amuse your fellow MARS members.

Also, it is not true that MARS members — when on MARS frequencies — must be wearing their Class A uniforms with all medals and decorations.

So, send in your info to Worldradio, 2120-28th St., Sacramento, CA 95818.

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Here is your opportunity to take an active part in the space frontier. Whether your interest is in building future spacecraft, space communications, computer applications, space studies, satellite tracking, or just keeping informed regarding the exciting developments of the space age, here is your chance to get involved in the new frontier. By joining the AMSAT team you will receive regular news on the various amateur space projects, the latest home station equipment for receiving or transmitting via satellites, membership discounts on space shuttle/satellite tracking software for your home computer, plus much more. Further, your membership helps support the Amateur Space Program and ensures its continued success.

Please send additional free information on the Amateur Space Program and AMSAT membership. Enclosed is a business-sized, self-addressed, stamped envelope.

Please send free information on home computer programs and other software for tracking the space shuttle, satellites, and other objects in earth orbit. Enclosed is a business-sized, self-addressed, stamped envelope.

Yes, I want to become a member of AMSAT and receive *ORBIT* Magazine! Enclosed are my annual dues of \$24 (\$26 overseas - surface. Special rates are available if you desire air mail delivery service).

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Please send me a sample issue of *ORBIT* Magazine. Enclosed is my personal check, money order, or appropriate credit card information, for \$2.

I am very interested in the Amateur Space Program and the efforts of AMSAT. Enclosed is my tax-deductible donation in support of these efforts. Please send me the gift indicated.

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OSCAR Solid Brass Belt Buckle - \$13 minimum donation.

Fly my name on the next OSCAR satellite and send me the special personalized certificate attesting to my support of the Amateur Space Program. \$15 minimum donation please.

Enclosed please find my check. Please charge my VISA/MC account.

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For VISA/MC: Card No. _____ Exp. date _____

Bank No. (MC only) _____ Signature _____

*Although an Amateur Radio license is required for two-way communications via OSCAR satellites, you do not have to hold such a license to be a full voting member of the AMSAT team.

requiring emergency assistance, is up-linked to an amateur polar orbiting satellite and picked up either on the same orbit or a following orbit by an agency which can give medical advice or other information. The receiving agency uplinks a help message which the group in trouble can receive and take appropriate action.

Of course, if the satellite is in an orbit like that in which AMSAT/OSCAR-10 now finds itself, the delays can be reduced substantially, but the necessary equipment is more complex and costly. However, packet radio makes even this less costly than otherwise.

N2CF changes jobs

Bill Lazzero, N2CF, who for some time now has been the manager/executive director of AMSAT, has stepped down to accept a post with the ARRL in their Washington office. The title will be Development Manager. We wish Bill great success in his new post. AMSAT doesn't lose Bill entirely. He will continue as a volunteer.

AMSAT/OSCAR-10 operating schedule

AMSAT/OSCAR-10 will operate on a modified schedule for the next few months because during this period the spacecraft will be obscured from the sun part of the time. In order to conserve battery power, the off times will be greater than otherwise.

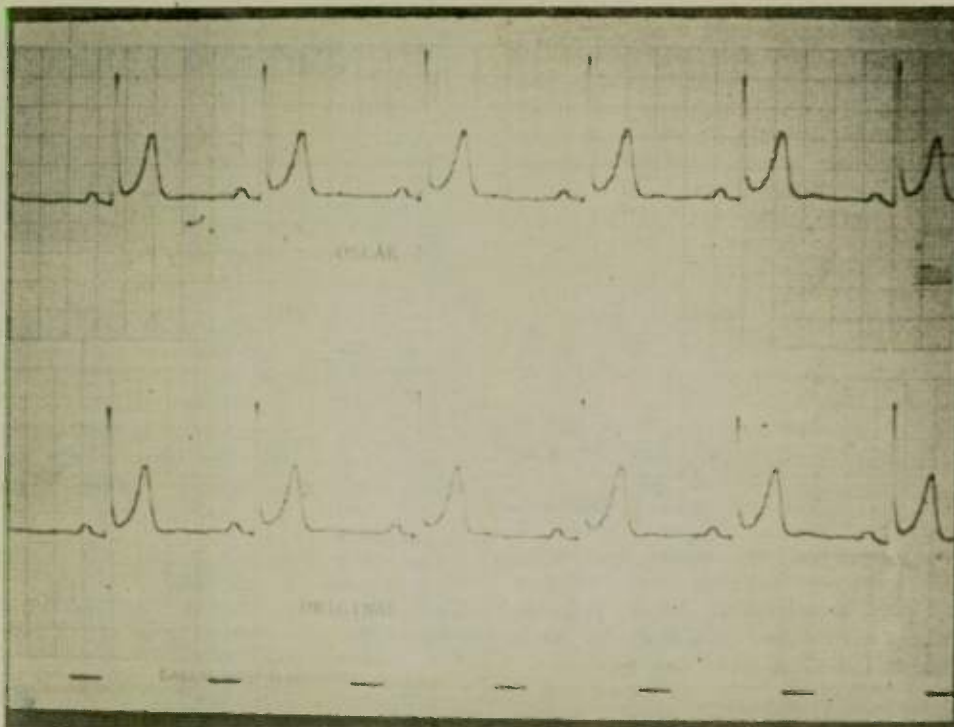
Check into the AMSAT/OSCAR nets in your area or on the HF bands for detailed information about the AO-10 operating schedules.

ACSSB kits available

Amplitude companded single-sideband experimenter kits (a surplus lot) have been purchased by the ARRL and will be made available to amateurs so that this newest of analog voice processing techniques can become more familiar to them.

Project COMPANION — a joint effort of ARRL, AMSAT and Project OSCAR — expects to improve realizable signal-to-noise ratios in communicating through satellites such as AO-10.

There are seven different packages



Originally transmitted EKG can be compared with the EKG received from the satellite in this print made from slide projected at ARRL Southwest Division HAMCON in Tucson, Arizona. (K6PGX photo)

available, each including equipment and documentation. For information, contact "Rip" Riportella, WA2LQQ, at AMSAT HQ, P.O. Box 27, Washington, D.C. 20044.

Although it has been reported that Yaesu Electronics, Inc. of Los Angeles, California has been granted an experimental license by the FCC to transmit ACSSB for development purposes under the call sign KO2HXB, one of our informants on the JPL AMSAT/OSCAR Net reported that a telephone call to Yaesu revealed that they are currently only experimenting in Japan.

Video Tape Library

The AMSAT Video Tape Library now has tapes of the November AMSAT Space Symposium held in Los Angeles. The library also has tapes of the UOSAT-2/OSCAR-11 Story and of the plans for

future AMSAT/OSCAR spacecraft.

For information, contact AMSAT Video Tape Library, c/o Roger Johnson, WB0GAI, 1637-36th Ave. Court, Greeley, CO 80634. An SASE will bring you a complete listing of videotapes available.

This program will print the logo for AMSAT/OSCAR column. It is designed for "PC" and "PC" compatibles, but will also work on any computer equipped for BASIC, GW BASIC or BASICA programming.

- 10 REM ** AMSAT LOGO **
- 15 PI=3.141628
- 20 REM ** Set High Resolution **
- 30 CLS
- 40 KEY OFF
- 50 SCREEN 2
- 60 '

- 80 CIRCLE (320,100), 80,,0,4.71239
 - 90 CIRCLE (320,100), 70,,0,4.71329
 - 100 LINE (380,100)-(410,100)
 - 110 LINE (410,100)-(395,110)
 - 120 LINE (380,100)-(395,110)
 - 130 '
 - 140 CIRCLE (320,60), 70,,3.9793.5.4555
 - 150 CIRCLE (320,140), 70,,.8277,2.3139
 - 160 '
 - 170 LINE (320,75)-(320,125)
 - 180 LINE (265,100)-(375,100)
 - 190 VIEW (25,25)-(615,175)
 - 200 LOCATE 16,52: PRINT "AMSAT/OSCAR"*
 - 210 LOCATE 17,42: PRINT "By Dr. Norman L. Chalfin"
 - 220 LOCATE 18,61: PRINT "K6PGX"
- *If you stop here, only the logo will be displayed on a 600 x 640 pixel screen.

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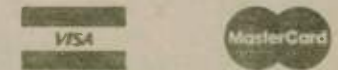
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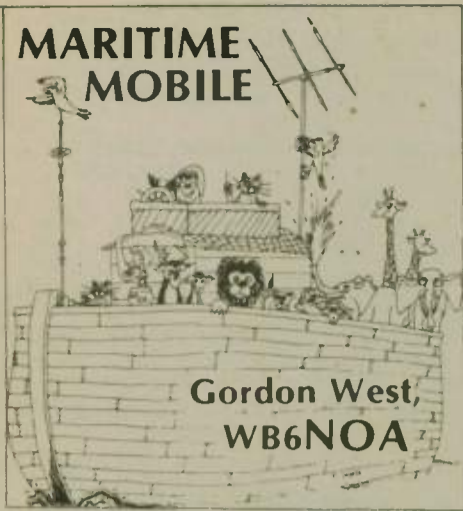
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manual tuner, providing a good ground-plane is available. For maritime mobile operation, the groundplane would be the capacitance contact with the sea water through foil inside the hull or an encapsulated lead keel that has been added to the ground system.

For portable operation, a good ground to work against is that lake next to your cabin, wet soil, or ground rods pounded into semi-wet soil.

For mobile and motorhome operation, your antenna will work quite nicely against the aluminum or metal body of your mobile conveyance.

For manual antenna tuners, the MFJ-941D seems to work quite nicely. It has the capacity to tune anything from 20 feet to 100 feet on any frequency between 2 MHz and 30 MHz. If you write down the optimum settings once you find them, you'll never need to fiddle around to tune up again. Keep a little black book on where the settings should go for each band of operation. You might want to copy *Chart A* on your duplicator to list your tuner settings.

If you decide you want a completely automatic antenna tuner, you will probably be spending over \$1,000 — but they do work well. As we have said before in several back issues of *Worldradio*, the

Automatic tuners and loaded antennas

This month our article will apply to not only maritime mobile operation, but also for temporary operation with long-wire antennas, portable operations or weekend trips to the cabin, as well as motorhome and mobile operation.

Any long-wire antenna or non-resonant whip antenna will tune up nicely with a

Maritime Mobile Frequency Directory

Services	TX	RX	Tuner
Ham — Local nets	7.235 MHz	Simplex	— — — —
Ham — Local nets	7.285 MHz	Simplex	— — — —
Ham — Pacific nets	14.313 MHz	Simplex	— — — —
Ham — Pacific nets	14.340 MHz	Simplex	— — — —
Ham — Worldwide nets	21.404 MHz	Simplex	— — — —
Ham — Gordo, WB6NOA	14.340 MHz	Simplex	— — — —
Ham — Marine nets	28.500 MHz	Simplex	— — — —
Marine — Emergency, Coast Guard	2.182 MHz	Simplex	— — — —
Marine — Ship to ship local	2.096.5 MHz	Simplex	— — — —
Marine — Races, 4A	4.125 MHz	Simplex	— — — —
Marine — Races, 8A	8.291.1 MHz	Simplex	— — — —
Marine — Worldwide, 12A	12.429.2 MHz	Simplex	— — — —
Marine — Worldwide, 16A	16.587.1 MHz	Simplex	— — — —
Marine — Worldwide, 22A	22.124.0 MHz	Simplex	— — — —
Marine phone — KMI local	4.063.0 MHz	4.357.4 MHz	— — — —
Marine phone — KMI local	4.109.5 MHz	4.403.9 MHz	— — — —
Marine phone — Mexico, KMI	8.204.3 MHz	8.728.2 MHz	— — — —
Marine phone — Mexico, KMI	8.219.8 MHz	8.743.7 MHz	— — — —
Marine phone — Mexico day, KMI	12.330.0 MHz	13.100.8 MHz	— — — —
Marine phone — Worldwide, KMI	16.463.1 MHz	17.236.0 MHz	— — — —
Marine phone — Worldwide day, KMI	22.040.3 MHz	22.636.3 MHz	— — — —
Marine — Coast Guard, local	4.134.3 MHz	4.428.7 MHz	— — — —
Marine — Coast Guard, Mexico	8.241.5 MHz	8.765.4 MHz	— — — —
Marine — Coast Guard, worldwide	12.342.4 MHz	13.113.2 MHz	— — — —
Marine — CG, worldwide, day	16.534.4 MHz	17.307.3 MHz	— — — —
Time — GMT	No TX	5, 10, 15 MHz	— — — —

WEATHER: Weather broadcasts from KMI phone station at 0000, 0600 and 1500 GMT on 4.357.4, 8.728.2, 13.100.8 and 17.236.0. Traffic lists every three hours beginning 0000 GMT.

SPECIAL NOTE: All marine channels are used upper sideband (UA). When dialing in marine frequencies, be sure to select upper sideband!

DUPLEX NOTE: When using marine phone and Coast Guard channels, be sure and switch to duplex. The simplex position (same transmit and receive) is used only on marine ship-to-ship (race) channels and on Amateur Radio frequencies.

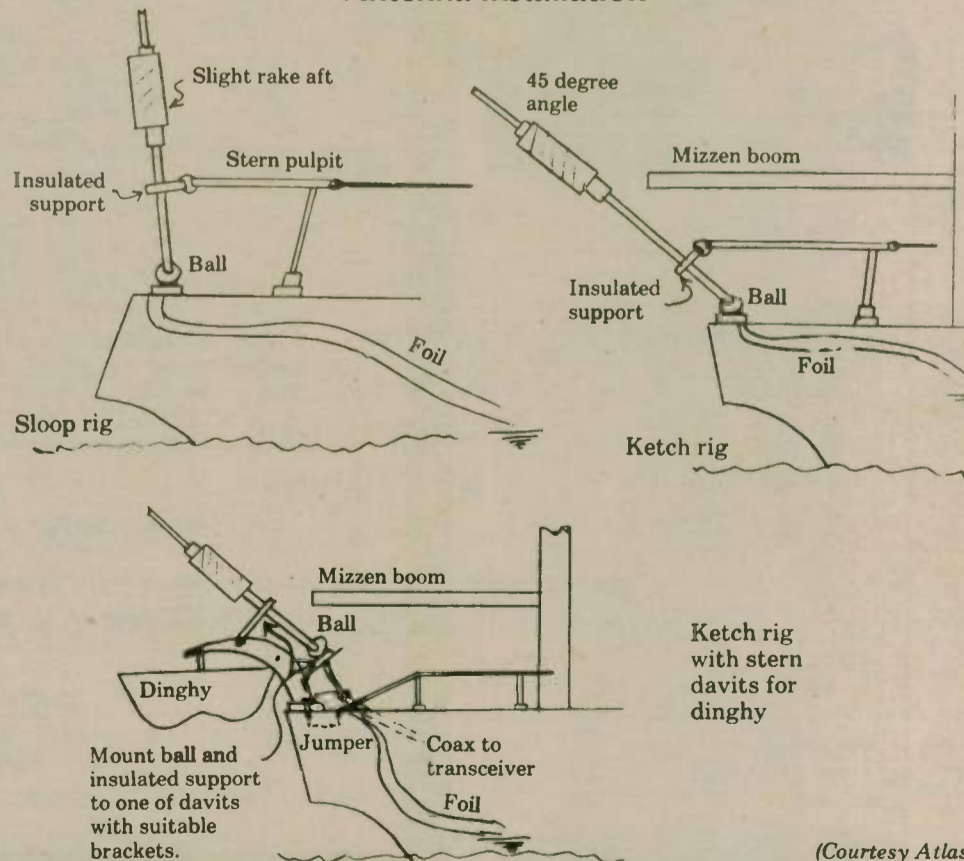
LEGAL NOTICE: Using Amateur Radio equipment on marine frequencies is specifically prohibited and not recommended. Only in an emergency would you use this set.

TUNER: To double-check the antenna tuner for best resonance, switch to AM and transmit briefly once the tuner is properly set with listed readings. Then switch back to SSB and watch needle deflect with voice as needle barely moves.

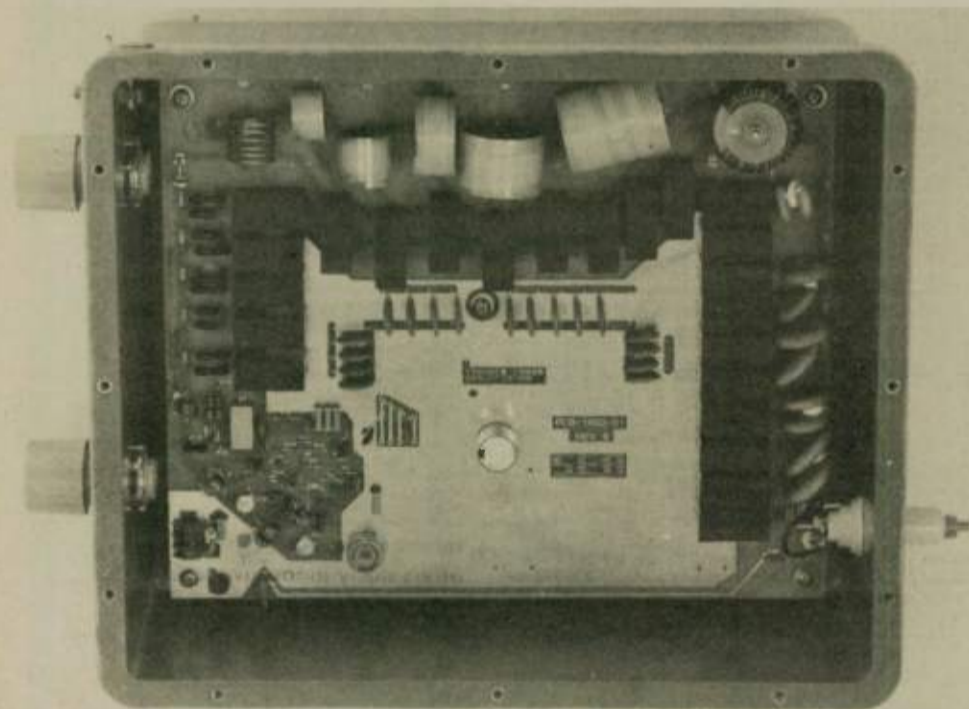
IN AN EMERGENCY: Always leave your set and tuner tuned to 14.313 MHz, the International maritime mobile band. Using the words "May Day" will always bring a response from Amateur Radio stations. In an emergency, you may use any frequency and any means to signal for help.

Chart A

Antenna installation



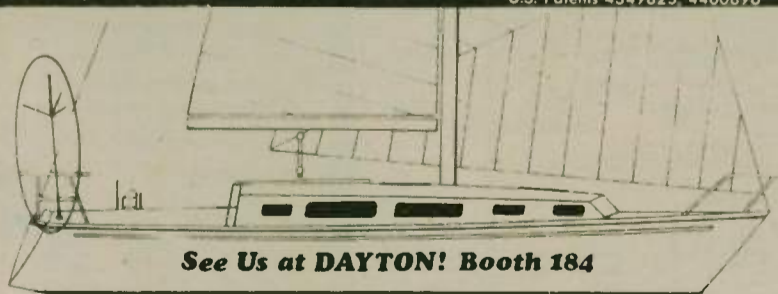
(Courtesy Atlas)



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resistive-type "magic" \$600 antenna tuner is quite lossy. Although you can get some sort of signal out into the air with resistive-type tuners that claim to be fully automatic, you will find that most of your energy will go up in heat.

Instead of spending \$600 for resistive automatic tuning, spend only \$100 and put a better signal out by using a manual tuner. Or better yet, spend \$1,200 and let a completely automatic antenna tuner do the work for you.

True "long-wire" automatic antenna tuners are sold exclusively by marine electronic dealers. Ham dealers only sell 50 ohm antenna "trimmers" that will not, and cannot, tune up long-wire antenna systems. Repeat, those automatic Kenwood, ICOM and Yaesu Amateur Radio-type tuners will only work on 50 ohm antennas and their job is to trim out a 50 ohm antenna that is not perfectly resonant — not to resonate a random-wire antenna.

Hull Electronics and Stevens Engineering produce some of the finest marine automatic antenna tuners around.

The Hull unit Model H402CU requires start and stop tuning information from a marine sideband set in order to "do its thing." The ICOM M-700 marine/Amateur Radio has this information that is transmitted down the control line to the Hull automatic tuner. About 16 reed relays will snap in place to choose the best L/C ratio to develop a L-network antenna that will be matched perfectly providing a good groundplane is brought up to the tuner box itself (which usually mounts just under the antenna feedpoint).

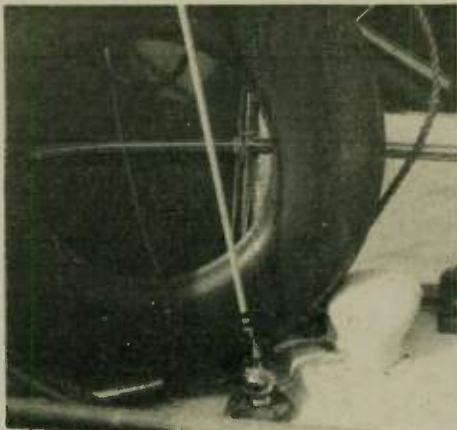
Stevens Engineering has a \$1,600 automatic tuner Model SEA 1612 that you can "whistle up" and it will automatically sense a new frequency, change its L/C ratio, and give you a perfect match in just a few seconds. You may need to alter your SWR protection circuit on your ham transceiver to enable it to get enough signal out when the match is terrible to "kick" the antenna tuner into resonance.

Some ham sets will see the unresonated tuner as a high SWR, and shut down before the tuning process can take place. Ten watts is all that most automatic tuners require to self-tune.

For more information about these automatic antenna tuners, write your local marine electronics dealer for catalog sheets, or check with ICOM America, 2112-116th Ave., NE, Bellevue, WA 98004. They can send you more information about these antenna tuners as well as their M-700 marine/ham set.

Whips

An alternative to using an antenna tuner is to use resonant whips in your mo-



Ball mount assembly

bile and mobile marine setup. Resonant whips, like tuners, will only work if a good groundplane is brought up directly be-

neath the whip itself. This means copper foil must be attached to the plate holding the whip to the deck and the side of your cabin.

Most mobile whips will work quite nicely aboard a boat or on temporary home installations providing you have a good groundplane directly beneath them. A poor groundplane will decrease the amplitude of the antenna current and will convert RF into heat. Those antennas for mobile operation that feature large coils will give you high Q with low losses, less heat and more RF radiation.

Make sure the base of your mobile antenna is just above the groundplane or any surrounding metal. The current is maximum at the base and will be minimum at the end of the antenna.

On base-loaded antennas for mobile, the current falls off dramatically as you go to

the top of the whip. Helical-wound antennas, my favorite being the fiberglass Mark antennas, feature a fairly constant current distribution until you get to the very tip of the antenna.

On center-loaded antennas, which are very common, there will be zero current at the top and a much higher and fairly constant current below the loading coil for good radiation. This is why you need as much of the antenna "in the clear" as possible from the base up — not just from the coil up. (Thanks, Ed Ranson, K5ER, for your help on this one!)

Mobile whips mounted "in the clear" are usually not quite as strong as well-grounded backstay or long-wire installations aboard a boat. However, mobile whips do a yeoman's job in putting in good signals thousands of miles away if they are mounted and grounded properly. Mobile whips with poor grounds or just a

Maritime Mobile — Region 3

ICOM

751

Icom's top of the line, deluxe Ham Transceiver. Includes full super sensitive general coverage that tunes from 0.1 to 30 Mhz.

- † Covers all Ham bands from 160 to 10 meters.
- † Operates on CW/SSB/AM/RTTY & FM.
- † 32 user-programmable memories.
- † All Solid State, 200W input.
- † Operates on 12V (optional AC supply avail.)

List \$1399.

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745

One of today's most popular maritime mobile transceivers and for good reason!

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- † 16 programmable memories.
- † Scan memories, freqs. & stops on squelch breaks.
- † One of the most sensitive receivers around.
- † Full gen. coverage receiver 0.1 to 30 Mhz.
- † Stores full duplex information in memories.
- † Full 200 watt input capability.
- † Operates on 12V (AC w/optional ACC supply).

List \$999

SALE \$749



R71A

One of today's best short wave receiver buys, the Icom R71A offers many innovative features

such as keyboard frequency entry & optional wireless control.

- † 32 programmable memory channels.
- † Scan memories or between frequencies.
- † Dual VFO's
- † 5-year memory backup
- † Includes receiver pre-amp for excellent sensitivity.

List \$799 Call for our Sale Price

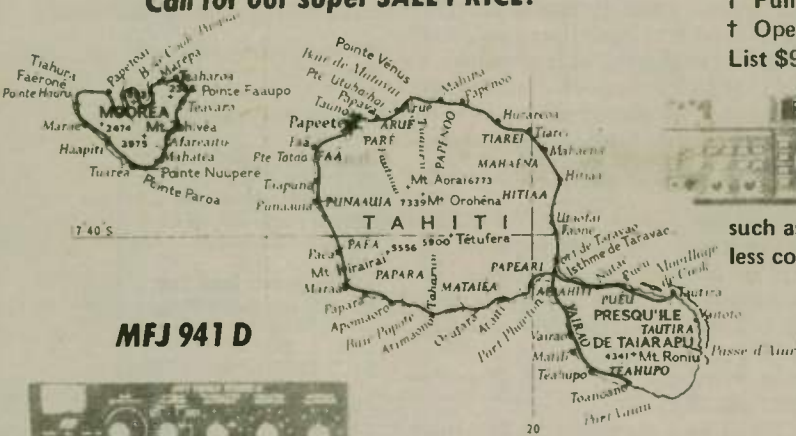


M700

This full capability Marine SSB can be used on all Marine SSB and on all the Amateur Radio frequencies up to

- 24 Mhz. † General Coverage Receiver.
- † Frequencies from 1.6 to 24 Mhz.
- † 150 Watts PEP
- † Built for the Marine Environment.
- † Optional fully automatic antenna coupler Available.

List \$1995 Call for our Special Price



MFJ 941 D



The popular MFJ 941 D is one of the most popular manual antenna tuners on ocean-going boats. This tuner will tune just about any reasonable long-wire back-stay or verticle antenna, mobile whip, beam or most any other type of antenna over the range 1.8 through 30 Mhz. Includes SWR meter and will handle up to 300 Watts of RF power.

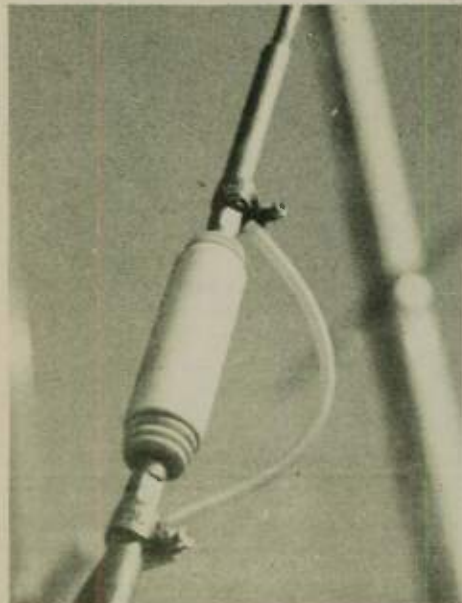
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Consider us first for all your electronic cruising needs. You'll save time and money. We carry one of the largest inventories in California and stock many hard to find items, such as copper ground strap, knife switches and other accessories.

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Backstay coax connection

small wire going to a ground may (often) not load up at all.

If you find that you cannot resonate your mobile whip on your maritime installation, chances are you will need to run copper foil and copper screen directly below the antenna in the lazaret. (Thanks, Emery Flinn, N4DX, for your help on this one, too.)

Before we end this month, let's take a look at some popular questions that everyone seems to be asking regarding maritime mobile operation.

Maritime mobile "regions" are broken up into three areas, as defined by the International Radio Regulation in Geneva, 1959. Maritime mobile Region 2 includes the United States, Canada, Alaska and South America — approximately 2,000 miles offshore. M/M Region 1 is generally Europe and Africa. Region 3 will be those picturesque islands in the South Seas, Australia and Japan.

If you are leaving the Pacific Coast for the South Seas, when you pass Hawaii you will soon be entering Region 3. If you leave the Atlantic for Europe, about halfway across you will leave Region 2 for Region 1.

Operating maritime mobile aboard a U.S. flag vessel compels you to stick to U.S. Regulations. Just because you are outside of territorial waters does not relieve you of staying within the proper frequency allocations for your type of license.

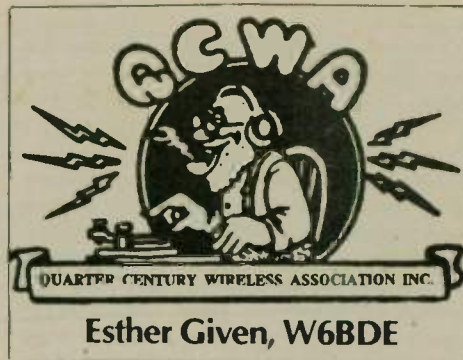
By the way, ICOM America, Inc. has now taken over our colorful ham band licensing guide, and you can write them for this great aid to operating.

What would I look for in a good ham set that could also be used to monitor marine channels? Since it's illegal to transmit on marine channels, almost any ham set with all-frequency capability will do a nice job. However, in an emergency, you are allowed to transmit on marine channels with a ham sideband set, and the ICOM M-700, IC-751 and the Kenwood 430 all have memory channels that will accept duplex Coast Guard transceiver information.

The very popular Yaesu 757 can only store simplex channels, so you must maneuver between the A and the B VFO to work marine duplex Coast Guard and marine telephone stations. This is why I prefer the ICOM or the Kenwood ham sets — because of their memory capabilities for duplex (split-channel) operation.

Regarding business traffic on ham channels, anything that smells like business traffic is strictly out. This even includes airline reservations, or ordering of any other materials that someone else sells. Unless it's an emergency or you are ordering materials to effect an emergency repair, the FCC indicates that ordering any type of service from another party that sells it (even though you don't make a penny) is strictly business traffic.

Finally, give me a call with your on-the-air questions any morning on 14.340 MHz between the many nets that take place on this frequency. I'd be more than happy to give you a signal report and wish you the best of cruising or motoring. □



QCWA member Byron Lindsey, W4BIW, of Decatur, Georgia is featured in a PBS TV release entitled *New Tech Times*, which is being shown currently.

Lindsey's shack is a ham's dream. The amateur equipment includes everything he has ever owned and operated and covers the fields of CW, SSB, TWX, SSTV, computer, satellite and robots. The remarkable feature is that every piece of gear from the crystal set to the robot is in working condition. The brand names, both past and present, represent every famous manufacturer in the radio and electronic industries. The treasured items appearing on this excellent telecast are gems of well maintained and highly regarded amateur equipment which have served the ham well and made Amateur Radio a joy.

Lindsey's major amateur involvement at this time is in the satellite program. He is active in AMSAT and ARRL as well as QCWA, in which he holds a 50-year Golden Certificate of amateur licensing. His first job was as a transmitter technician for WAPO in Chattanooga, Tennessee in 1936. He retired as chief engineer of WXIA-TV in Atlanta, Georgia.

Lindsey's philosophy is that anything can be cured and/or endured with a little nip of spirits and a big dose of Amateur Radio. He credits Amateur Radio with doing more to keep him alive than his blood pressure pills. He points out in the show's interview that he has spent his life trying to stay abreast of electronic advances, and at 68 is having to hurry to keep ahead of the speedily advancing state of the art.

QCWA salutes Robert Erler, W6LL, of Vallejo, California. First licensed on 05 July 1914 as 6LM, he has completed 70 unbroken years of Amateur Radio service. He is a member of QCWA NorCal Chapter #11 and holds QCWA Golden Certificate awards for 50, 60 and 65 years of amateur activity.

W6LL's 70 years of experience in Amateur Radio and the contributions of amateurs in his lifetime to the expansion of electronic communication possibilities have allowed him to witness and participate in the greatest marvel of the 20th century. Congratulations, Bob!

VISIT YOUR LOCAL RADIO CLUB.

ALASKA

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

ARIZONA

Arizona Repeater Assoc., Inc. (ARA)
PO. Box 5291
Phoenix, AZ 85010
4th Thursday/monthly except July/Dec. 7:30 p.m.
4250 E. Camelback Rd., Suite 475-K

Tucson Repeater Association
PO. Box 40371, Tucson, AZ 85717-0371
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

Amador County Amateur Radio Club
PO. Box 1094, Pine Grove, CA 95665, Pioneer Elementary School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WYI Rptr. — 146.835, 146.235.
Net Tues. 7:30 p.m.

Contra Costa Communications Club WD6EZR/RC
PO. Box 661, San Pablo, CA 94806
Meets 2nd Sunday at 9:00 a.m.
Hickory Post Restaurant/Lucky Lanes
For info call Carl KA6OLK (415) 237-2621

East Bay Amateur Radio Club
Salvation Army Center
Rheem Ave. & 36th Street
Richmond, CA 94804
2nd Friday/monthly — 8:00 p.m.

El Dorado County Amateur Radio Club
PO. Box 451, Placerville, CA 95667
W6HBH Repeater — 147.825 Out/147.225 In
Net Thursday 7:30 p.m.
Meets 4th Tuesday/monthly • Call for location

Electronic Museum ARC
Foothills College, Los Altos
Last Monday/monthly — 7:30 p.m.
(except January and December)

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

Gabilan Amateur Radio Club
Monterey Savings & Loan Public Room
Corner First & Westwood
Gilroy, CA 95020
2nd Thursday/monthly — 7:30 p.m.

Livermore Amateur Radio Klub
3508 Gresham Ct., Pleasanton, CA 94566
Meets: Valley Memorial Hospital
Multi-purpose room, Livermore, CA
2nd Saturday/monthly — 9:30 a.m.

North Hills Radio Club
Meets: 3rd Tuesday/monthly — 7:30 p.m.
Carmichael Elks Lodge
5631 Cypress Ave. • Carmichael, CA.
Net 145.19 Thur. at 8:00 p.m.

Sacramento Amateur Radio Club, Inc.
Contact: Norm Nelson, KA6YRC, (916) 428-7122
after 6 p.m. Meets: Army Reserve Ctr., Army Depot,
Fruitridge and Florin-Perkins Road
2nd Wednesday/monthly — 7:30 p.m.

San Fernando Valley ARC (W6SD)
Red Cross Building
14717 Sherman Way
Van Nuys, CA 91704
3rd Friday/monthly — 7:30 p.m.

San Gabriel Valley ARC
Bowling Green Clubhouse
405 S. Santa Anita Avenue
Arcadia, CA 91006
1st Tuesday/monthly — 7:30 p.m.

S. Counties Amateur Teleprinter Society (SCATS)
2nd Sat/monthly — alternates in L.A. & Orange Counties
60 WPM RTTY Net, Wed. 8 p.m. on 146.10/70 W6IWO/RPT.
For info. call Howard Rose, N6CPP, (818) 997-1067

Sierra Foothills ARC
PO. Box 3262, Auburn, CA 95604
Office of Education Bldg.
360 Nevada St., Auburn, CA 95603
2nd Friday/monthly — 1930

Simi Settlers ARC (SSARC)
PO. Box 3035, Simi Valley, CA 93063
3rd Thursday/monthly — 7:30 p.m.
Bank of A. Levy (across Larwin Sq.)
K3HZP/R 147.165/1.765 Simplex 147.48

South Bay Amateur Radio Association
PO. Box 91 • Fremont, CA 94536
Fremont School, 40230 Lailo Rd
3rd Wednesday — 7:30 p.m.

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

Sonoma County Radio Amateurs, Inc.
Box 116, Santa Rosa, CA 95402
Hank Davis, W6DTV (707) 823-7885
County Office of Emergency Service
1st Wednesday/monthly — 7:30 p.m. rptr 146.13/73

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

West Coast Amateur Radio Club
Fun Meetings — No Business
Fountain Valley Elementary School
Visitors welcome — call in 144.330 simplex
Call KA6RRR (714) 636-8661 for dates

West Valley A.R.A. W6PIY
Meets: Los Gatos Red Cross Bldg.
18011 Los Gatos - Saratoga Rd.
Los Gatos, CA 95030
1st and 3rd Wednesdays/monthly

West Valley Amateur Radio Club
American Legion Hall Post #826
5320 Fallbrook Ave.
Woodland Hills, CA
2nd Thursday/monthly — 7:30 p.m.

Yolo Amateur Radio Society (YARS)
Rolind Mahan, AJ6P (916) 756-0882
Heart Federal S&L, Conf. Rm.
3rd & F Sts. (opposite Davis PD)
Davis, CA 95616

CONNECTICUT

Tri-City ARC, Inc.
PO. Box 686, Groton, CT 06340
Meets: Groton Public Library
Rt. 117, Groton, CT
2nd Tuesday/monthly — 7:30 p.m.

FLORIDA

Dade Radio Club, Inc.
Museum of Science
3280 South Miami Ave.
Miami, FL 33133
1st and 3rd Tuesdays/monthly — 8:00 p.m.

Platinum Coast Amateur Radio Society
1150 S. Hickory St., PO. 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.

Vero Beach Amateur Radio Club W4OT
Charles Heichlinger, W4NPS, President
Meets second Thursday/monthly — 8:00 p.m.
American Red Cross Bldg.
2506 17th Ave. • Vero Beach, FL 32960

HAWAII

Big Island Amateur Radio Club
Helco Auditorium
1200 Kilauea Avenue, Hilo
Call-in 146.28/88
2nd Tuesday, monthly — 7:30 p.m.

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ILLINOIS

Bolingbrook Amateur Radio Society
532 Sheffield Rd.
Naperville, IL 60565
(312) 369-0747 / call in 147.93/33
3rd Monday/monthly — 7:00 p.m.

Chicago Suburban Radio Association (CSRA)
Clyde Federal Savings & Loan Assn.
7222 West Cermak Road
North Riverside, IL 60546
2nd Wednesday/monthly — 8:00 p.m.

Dupage Amateur Radio Club
Mid-America Savings and Loan
55th & Holmes (55th St. near RT 83)
Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.
(312) 971-1156 for more information

Radio Amateur Megacycle Society, Inc.
Irvingwood Acacia Church
3900 N. Plainfield, Chicago, IL 60634
(312) 625-2879
3rd Friday/monthly — 8:00 p.m.

Six Meter Club of Chicago - K9ONA
Rptrs. 146.37/146.97 448.300/443.300
Info net - Tues. 9:00 p.m. 146.37/97
Annual Hamfest 2nd Sunday in June
Santa Fe Park, Willow Springs, IL.

INDIANA

Fort Wayne Radio Club
Ron Koczor, K9TUS
P.O. Box 15127, Fort Wayne, IN 46885
The Salem Church
3rd Friday/monthly — 7:30 p.m.

Northeastern Indiana ARC
Jim Sellers
P.O. Box 745, Auburn, IN 46706
Daily 6 p.m. net on 147.96/36
2nd Tuesday/monthly — 7:30 p.m.

IOWA

RSCB (Radio Society of Council Bluffs)
Richard Swig, WA0ZQG, Secretary
104A Jennings Road
Council Bluffs, IA 51501
2nd Tuesday/monthly — 7:30 p.m.

MARYLAND

Frederick Amateur Radio Club
Old Frederick Court House
Rick Ogden, N3RO
(301) 845-2670
Meets: 2nd Tuesday/monthly — 8 p.m.

MASSACHUSETTS

Quannapowitt Radio Assn. (QRA)
United Methodist Church
Vernon St.
Wakefield, MA 01880
4th Friday, September-May at 8:00 p.m.

Whitman Amateur Radio Club (WARC)
Pine Street, P.O. Box 48
Whitman, Massachusetts 02382
Call-in 147.825/225
1st & 3rd Mondays/monthly — 8:00 p.m.

MICHIGAN

South Eastern Michigan A.R.A.
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15
Grosse Pointe North High School
Building C, Cafeteria Commons
For info contact N8CDY (313) 885-5557

MISSOURI

Heart of America Radio Club
American Red Cross
3521 Broadway
(816) 756-2365 x65
3rd Tuesday — 7:30 p.m.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG
P.O. Box 911, Dover, NH 03820
(603) 742-0130/332-8667
2nd Sunday/monthly — 7:00 p.m.
Dover Dist. Court. Talk-in 147.57

NEW JERSEY

Central New Jersey Chapter No 138, QCWA
Net: Ea Tue. evening - 10:00 p.m. 147.645/147.045 MHz
Mtg: Quarterly; Membership or more info:
Bob McKinley, W2OMR, Sec., 89 Stratford Rd.,
Tinton Falls, N.J. 07724 (201) 542-2113

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

For information on how to get your club listed in this column,
plus receive many other benefits, write to Dave Tykol, WA6RVZ,
Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA
95818.

NEW YORK

Hall of Science Amateur Radio Club, Inc.
P.O. Box 495, Staten Island, NY 11415
Queens County Dental Society Bldg.
86-90 188th St., Jamaica, NY
2nd Tuesday/monthly — 7:30 p.m.

Staten Island Amateur Radio Assn. (SIARA)
P.O. Box 495, Staten Island, NY 10306
3rd Friday/monthly — 8:00 p.m.
Rm. B-201, College of Staten Island, Sunnyside
Club Repeater — KA2PBT/R — 440.825/445.825

Westchester Amateur Radio Association (WARA)
Scarsdale Village Hall
Scarsdale, New York 10583
Bernard Dubbs, President, WA2FSR
1st Wednesday/monthly — 8:00 p.m.

Westchester Emergency Communications Assn. (WECA)
147.66/147.06, 222.80/224.40, 447.475/442.475
Mtg: 2nd Monday/monthly - 7:30 p.m. Little Theater
County Center, White Plains, N.Y. For further info write:
P.O. Box 131 N. Tarrytown, N.Y. 10591. Call (914) 631-7424.

OHIO

Ashtabula County ARC
Ken Stenback, A18S (964-7316)
County Justice Center
Jefferson, OH
3rd Tuesday/monthly — 7:30 p.m.

C.A.R.S. (The Clyde Amateur Radio Society)
Ervin Remaley, KA8CAS, Secretary
2nd Tuesday/monthly — 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 144.75/145.35

NOARS - Northern Ohio Amateur Radio Society
P.O. Box 354, Lorain, OH 44052 - 3rd Mon. 7:30 p.m.
K8KRG — Home of the WW II Submarine USS COD
WB8JBM — Noars Contest Station — K8KRG/Repeaters:
— 146.10/70; 144.55/145.15; 449.8/444.8; 223.10/224.70

OREGON

Oregon Tualatin Valley ARC
Beaverton Elks Lodge
3500 SW 104th Ave.
Beaverton, Oregon
2nd Wednesday/monthly — 7:00 p.m.

SOUTH CAROLINA

Trident Amateur Radio Club (TARC)
P.O. Box 73, Summerville, S.C. 29484-0073
Meet-Park Circle Presbyterian Church
North Charleston, S.C.
3rd Monday — 7:30 p.m./Nets — Tuesday 8 p.m.

TEXAS

Panhandle Amateur Radio Club, Inc. W5WX
Meets at Naval Reserve Center
2309 Line Ave., Amarillo, TX
2nd Tuesday/monthly 7:00 p.m.
Pres: Gary Rutherford, WB5MDJ

VIRGINIA

Eastern Shore ARC (ESHARC)
110 Church Street
Chincoteague, VA 23336
Repeater WA4TVS 147.855/255
Net Mon. 9 p.m. Mtgs. as announced

Southern Peninsula Amateur Radio Klub (SPARK)
Repeater 146.13/146.73 - K4DHO (804) 851-5573
Salvation Army Community Center (Big Bethel Rd.)
P.O. Box 4128, Hampton, VA 23664
1st and 3rd Tuesday/monthly — 7:30 p.m.

Virginia Beach Amateur Radio Club (VBARC)
Open Door Chapel
3177 Virginia Beach Blvd., Va. Beach, VA
1st Thursday/monthly — 7:30 p.m.
For information (804) 497-1235

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
Bob Morris, WA8CTO, Sec. Treas.
308 Edgewood Cir., Ripley, WV 25271
First National Bank of Ripley, WV
1st Thursday/monthly — 7:30 p.m.



Robert Erler, W6LL, recently awarded with a QCWA 70-year certificate. First licensed 05 July 1914.

QCWA Dayton-Cincinnati Chapter #9 will hold its annual banquet in conjunction with the OOTC at the Dayton Hamvention on Friday, 26 April 1985 at Nell's Heritage House, 2189 South Dixie Drive, Dayton, Ohio. A COD bar at 6:30 will be followed by dinner at 7:30. Ticket reservations are \$12.50 per person and may be made through Bob Dingle, 657 Dell Ridge Dr., Dayton, OH 45429; (513) 299-7114.

Jules Wenglare, W6YO, found himself in the position of reunion organizer recently. While visiting Harlow Blain, N6OT formerly 6AFH, he noticed a QSL card from Don Rinaldi, 6BVM, mailed 02 November 1924, confirming a QSO of that date. Sixty years later, Jules had the pleasure of introducing the two old-timers



Don Rinaldi, W6BVM (left) and Harlow Blain, N6OT, meet at QCWA Chapter 99 meeting in Bakersfield, California.

to each other at the 27 January meeting of QCWA Chapter 99 in Bakersfield, California.

Don — now W6BVM — was a co-worker of Jules at Voice of America and both now reside in Delano, California. Needless to say, Harlow and Don, who are both still active CW men, had lots of memories to exchange.

QCWA offers one \$500 and six \$600 scholarships for 1985. Applicants must be enrolled in or accepted by an accredited college or university on a full-time basis and in pursuit of an AA or greater degree. Applicant must also hold a General Class amateur license or higher and be sponsored by a QCWA member.

The awards program is handled by the Foundation for Amateur Radio which processes scholarship applications for 10 or more Amateur Radio clubs and organizations, for which they will offer a total of 19 scholarships in 1985.

Interested applicants or sponsors should write to: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740, for additional information and application forms. Requests must be post-marked prior to 31 May 1985, and application deadline is 30 June 1985.

Some donors have specific requirements such as geographical residence or pursuit of certain study programs; QCWA does not. All applicants are eligible for any of the 19 scholarships FAR administers, which range from \$350 to \$900, if they meet the donor's requirements. □

Coax centennial

Werner Seimens, the German inventor and industrialist, received patent number 28978 in Berlin dated 27 March 1884 for an induction free cable, consisting of "a conductor surrounded by a metallic enclosure serving as the return path". The first cable of this type was installed between Berlin and Leipzig in 1936 to carry TV signals from the Olympic Games in Berlin. Congratulations, coax!

— Simi Settlers ARC, Simi Valley, CA □

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TS-930S	W/AT, 160-10 meters	\$1,485.95
SP-930	Comm. spkr w/filters	\$69.95
TS-430S	Compact 160-10 meters	\$650.00
PS-430	Pwr Supply 20A	\$129.95
TL-922A	160-10 meters amp	\$995.00
R-2000	Comm. rcvr	\$459.95
R-1000	Comm. rcvr	\$379.95
R-600	Comm. rcvr	\$309.95
TR-7950	.2 meter mobile 45w	\$349.95
TM-211A	.2 meter mobile 25w	\$299.95
TS-711A	.2 meter all mode 25w	\$660.00

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I remember the night very well. It was a Sunday in late February and it was bitterly cold. The wind howled relentlessly across the Minnesota prairie. As miserable as it was outside, there were still a few brave, crazy or dedicated souls out there who were willing to traverse the country roads in order to do what had to be done. And what had to be done for me that night was that a relationship had to be started — a relationship between me and a radio.

Jon Vervair, WA0WPP, who was my HANDI-HAM one-to-one, had promised that when there was a receiver available I could borrow it from the System and could practice my CW on the air in preparation for my Novice exam. And it happened that that cold, below zero weekend was the weekend that an old Hammerlund receiver became available through a donation and I was to be the lucky recipient.

Jon didn't have to drive the several miles to the Twin Cities from his Buffalo, Minnesota home to pick it up and then drive the 40 miles across snowblown country roads to deliver it to me the same weekend it became available, but that is the kind of guy Jon was. Someone I will never forget. Unfortunately, Jon became a Silent Key last year.

That relationship, like any relationship between two people, started out slowly. Years later when a ham friend I had met through HANDI-HAMS gave me a Swan 350, he said, "Approach any new rig like a baby. Be very gentle and go slow." That, I have found, is sound advice. And that is kind of how the relationship between me and my rig started.

Once Jon had the receiver set-up, I was afraid to touch it, afraid to explore the shape of its knobs and find out which ones were which. He wisely didn't try to go into too much detail before leaving that night, but showed me how to turn it off and on and how to change frequencies. After a few turns of the VFO, I realized it wouldn't bite me and wouldn't be as delicate as I first thought.

I remember staying up late that first night (not listening to and practicing CW like I should have been), but having a

good laugh over some guys on the phone band from Mississippi discussing the weather. I couldn't get over their accents and the fact that they thought 32 degrees was cold.

As time went on, the receiver became old hat — I took it for granted. There wasn't too much you could do with it other than listen to the ham bands, and I had long since discovered all of the knobs and felt I knew my way around the bands. When I passed my Novice two months later, I almost resented it because I no longer needed it. Now I needed a transceiver. Unfortunately, this relationship — like that of human relationships — was coming to a rather sure end because I wanted to move on to bigger and better things.

Those were in the very early years of HANDI-HAMS when to find a rig to loan to a student who couldn't financially handle the purchase of a rig was a major task and there were long waits for equipment. I had that old Hammerlund for six months before someone donated a HW-12 for me to use as a Novice.

I didn't have time to develop a relationship with this rig for two reasons. Firstly, I was afraid of the Novice bands and only made one or two contacts as a Novice, and secondly, and most importantly, I only had it for two weeks and passed my General. It is kind of like some of those brief encounters we have with others. You know when you meet someone who impresses you and you always remember them but never get to know them well.

HANDI-HAMS came through immediately after I passed my General, and I obtained an Eico 753. I was very excited about the rig and about using voice on the air; however, the rig was sick and it was hard to have a real strong relationship with it. It drifted terribly. I used to come home from school (I was a junior in high school) and do my physics while my rig floated nonchalantly from 4 MHz down to about 3800 in two hours time.

After the Eico I was given a Swan 350 which was also terminally ill, having tube problems, and then a Heathkit was for 80-meter voice only. This Heathkit lived in my dorm room at college, and we had a splendid relationship although it was limited in abilities, and at times I was bored with it.

All of these rigs — from the first receiver to the Heathkit — were property of the HANDI-HAM System and were on loan to me. I was able to use HANDI-HAM equipment in order to be on the air for the first seven years of my ham career. Without the donations of other hams, Amateur Radio for me probably would not have existed other than the fact that I would have passed the tests and held a

piece of paper with call letters on it in my possession.

The Courage HANDI-HAM System still loans equipment to those who have a valid amateur license and are saving to purchase equipment on their own. This program is effective and seems to be working well. It is through the generosity of amateurs everywhere that this is possible.

We encourage HANDI-HAM students to try to make efforts to purchase their own equipment as soon as they can so that others who are on the waiting list can make use of the equipment.

When students get a rig from us, it is like the end of a dream. Many of them have wanted to be amateurs for years, but fixed incomes and high medical expenses kept them from seriously looking into the

hobby. In most cases, people save their pennies and in time buy their own stations. Our equipment helps them make wise decisions about purchase of their own equipment. That first relationship with a rig is special and always remembered. The start of a relationship with a new rig is exciting. It's hard to part with the radio that got one started.

Recently, a student phoned me to give me an update on his progress and said, "I have some good news and some bad news."

"Well," I said, "what's the good news first?"

"Well, I got a rig of my own now, an ICOM."

I congratulated him and then asked hesitantly what was the bad news.

"Well," he said, "I'm sending yours back."

"Why is that bad news?" I inquired. "Someone else can use it."

"Well, I've had so much fun with it, and it's kind of hard to give it up and I don't know this one as well."

"You'll get to know and love this one just like our loaner rig."

The importance of the loaner program is best stated in this letter from a South Carolina student.

"I sent the Century-21 back last Friday. It is a fine rig and has given me many hours of pleasure. I hope whomever gets to use the rig has as many fine QSO's as I did. I made 1,873 contacts with it. I almost had to cry when I packed it and felt like I was losing a very dear friend.

"I hope whoever gets this rig takes good care of it. I've found that if you just run her at 60 watts input, she does an excellent job. She's the best rig in the world."



Sightless Carmen Carreno, KA5UPF, sits for upgrade code test at the HANDI-HAM camp in mid-January in Malibu (California) mountains, one of 30 handicapped applicants. Volunteer examiners (standing, left to right) Adrienne Sherwood, WA6YEO, and Judy Teeter, WD6FWZ, administer while Carmen copies on her Braille writer. She was born in Spain and lives in Corpus Christi. (Photo by Bob Jensen, W6VGG)

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Dean LeMon, KRØV sure is! Dean got active in Amateur Radio when he was 16 years old and earned his Extra Class license in less than four years! "It's a fascinating hobby and a great way to meet all kinds of new people from all over the world."

Dean has cerebral palsy and got started in Amateur Radio with help from the Courage HANDI-HAM System. The HANDI-HAM System is an international organization of able-bodied and disabled hams who help people with physical disabilities ex-

pand their world through Amateur Radio. The System matches students with one-to-one helpers, provides instruction material and support, and loans radio equipment.

Isn't it time you got radioACTIVE with the Courage HANDI-HAM System?

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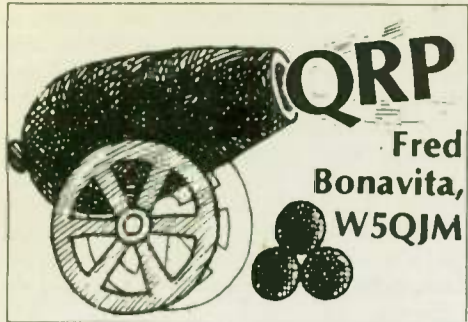
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Heathkit's HM-9 QRP SWR/wattmeter stands atop the companion HFT-9 antenna tuner. (Photo courtesy of Heath Co.)

Heath Company is marketing a pair of QRP-related items which, if they have escaped your notice in the year plus since they were introduced, deserve some attention — especially by those looking for the biggest bang for their bucks. And which of us isn't these days?

These units are the HFT-9 antenna tuner and the companion HM-9 watt and standing wave ratio (SWR) meter. They come in identically sized cases and feature the dark color scheme now appearing on the HW-9 QRP transceiver and other kits the company offers. The HW-9 will be reviewed in these pages later.

As is the case with those Heath kits which I have assembled over the years, this pair goes together easily and beautifully, provided — of course — the assembly instructions are followed.

The MFT-9 tuner is a straightforward item, using a large, tapped coil for the inductance and a pair of air variable capacitors for tuning. Unlike some tuners in its class, however, the HFT-9 includes a 1:4 balun so the unit may be used to tune balanced feedlines — an important consideration for low-power fans concerned about getting every drop of power possible into the air.

Too many low-priced, commercially made tuners are capable of handling only unbalanced (coaxial) feedlines — a short-

sighted move at economy at the cost of versatility.

The HFT-9 is designed for the high-frequency amateur bands (160 through 10 meters); however, the builder must choose between 160 or 10 meters. The unit comes with a pair of 100pF ceramic capacitors which must be wired in parallel with the main tuning capacitors to hit 160 meters but which provide too much capacitance for 10 meters.

Builders are faced with an "either/or" situation with the HM-9 SWR/wattmeter, too. The unit can be wired to work up through 30 MHz, from 50-54 MHz or from 140 MHz up — but not all bands. Any way it's done, the builder will wind up

with some resistors left over, so don't panic.

This meter is assembled with the same ease as the tuner, and its accuracy is within tolerable limits. The HM-9 offers two power scales: 0-5 watts and 0-50 watts.

If there is any disappointment about this Heath pair, it is that they are not packaged in the same box.

There is ample room left over in the HM-9 to tuck an antenna tuner in there, but not one that will handle 50 watts of RF as the HFT-9 does. For most QRP'ers, however, this 50-watt capability is overkill — about 10 times more than the generally recognized power output levels of 5 watts CW or 10 watts PEP for QRP.

A smaller tapped inductance on a toroid and physically smaller main tuning capacitors should fit in the HM-9 — provided, of course, the other components are rearranged to accommodate them. The resulting package should be an attractive one for the low-power enthusiast looking for a small, efficient tuner/wattmeter combination — something ideal for a vacation outing or Field Day.

As the pair stands, however, it can be used with other rigs, such as the Ten-Tec Argosy or the Century/22, or other transceivers capable of kicking out more than QRP

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This is what the new QRP-endorsed Worked All Continents (WAC) certificate looks like. The International Amateur Radio Union has only recently made this endorsement available for low-power operating. See the QRP column in *Worldradio* for February 1985.



RACES

Governmental officials have long recognized Amateur Radio's capability for providing communications when no one else can, and there have been many formal and informal agreements between governmental bodies and amateur groups on all levels from local to national. The FCC has repeatedly stressed this service of Amateur Radio, and in particular has emphasized it as the first item in Section 97.1, the basis and purpose of Amateur Radio. Then it devotes Subpart F of the Amateur Radio Service regulations to the Amateur Radio Civil Emergency Services (RACES).

Why does the government make frequencies available for the Amateur Radio Service anyway? Actually, it is impossible to answer this question. The government has no aims, no purposes. Only the people who run the government have aims and purposes, and where several people are involved, there may be as many different sets of aims and purposes.

Possible, but unlikely, reasons for allocating frequencies to Amateur Radio could be:

- 1) Amateurs have clout and were able to get the frequencies because of political connections;
- 2) Wealthy amateurs bribed the allocators;
- 3) Amateurs so made a nuisance of themselves and were so incorrigible that the government finally, in desperation, gave them some frequencies to keep them out of everyone else's hair;
- 4) Radio equipment manufacturers lobbied for Amateur Radio so as to sell more products.

More likely reasons in the minds of the legislators are those listed in Section 97.1 of the FCC's regulations, in particular the one in paragraph (a), providing a volunteer communication service, especially in times of disaster.

There is another reason occasionally mentioned, which may have existed in the minds of at least some of the officials: amateurs perform a holding service, occupy frequencies that would be needed by the military in the event of a full-scale war, and this makes it easy for the military to commandeer these frequencies when needed with a minimum amount of disruption of normal communication circuits. This happened in both world wars — amateurs were silenced, and the military took over amateur bands. It wasn't a total loss for Amateur Radio, however, as after the wars there were oodles of surplus rigs available for next to nothing.

One other reason why amateurs are put off the air during wartime is to maintain closer control over all communications.

The FCC has recognized, however, that services rendered by Amateur Radio could well be even more important during wartime than they are during times of peace, so in 1951, it added Subpart F to the Amateur Radio regulations, providing for limited operation by amateur stations even when other amateur activity is ordered to stop. If that happens, amateurs registered by a civil defense organization will be allowed to operate as authorized by that organization and within the limitations contained in Subpart F of the FCC rules governing Amateur Radio.

Specifically, this means that frequencies will be restricted to those listed in 97.185; operators as well as stations must be enrolled by the civil defense organization; and communications are limited to those listed in Section 97.191, to what might be summarized as emergency communication.

Section 97.179 contains another restriction — that an operator may exercise only the privileges granted by the class of license currently held. That would mean that half the band 3500-3550 kHz would be available only to Extra Class licensees, and you would need an Advanced ticket to operate on the lower half of 14220-14230 kHz. The only frequency band open to Novices would be 7100-7125 kHz. The FCC might waive some of these restrictions in its Order if it ever becomes necessary to stop amateur operation.

Some amateurs seem to have the mistaken belief that the restrictions contained in Subpart F apply to RACES operation during peacetime, that RACES stations may not communicate with non-RACES amateur stations during a drill, for example, or that a RACES group may

not schedule more than one hour drill time per week.

This misunderstanding comes from the fact that RACES rules were completely rewritten in 1976, but some read them with the older rules in mind. The sections in question were taken over from the old rules, but have a different meaning in the new context.

The earlier rules, dating from 1951, allowed holders of FCC commercial licenses to operate RACES stations, but only when they were being used specifically as RACES stations. For that reason, the restrictions were in force even during peacetime.

Now, however, during peacetime a station operating in RACES is no different from any other amateur station: the operator can put on or take off the RACES hat at will.

If one wants to do something prohibited by Subpart F, one simply decides this is not RACES communication but ordinary amateur communication. If a RACES group has used up its allotted hour in a given week and wants to meet again, it's not a RACES net, but an amateur roundtable, even though everyone in the net is a RACES member.

So when normal amateur operation is allowed, RACES stations may do anything any amateur station may do, even during time of disaster when working under the direction of civil defense officials. Thus they may exchange traffic with non-RACES nets, or handle health-and-welfare and routine traffic when time permits.

It's only when other amateur activity is prohibited that the restrictions come into force. Otherwise, 97.189 (b)(1) would mean that by registering your station with RACES, you make it illegal for you to use it for anything other than civil defense. That certainly was not the intention of the FCC.

As QST said in May 1976, announcing the new rules, the FCC was making RACES an amateur service, no longer a way for civil defense to use the amateur bands.

RACES vs. ARES

RACES is a government-sponsored service. ARES (Amateur Radio Emergency Service) is sponsored by the ARRL. There is no reason why an amateur should not join both organizations. Indeed, joining both is the best way to make your station available for emergency service. In fact, there is no reason why in a given locality the two groups should be distinct, but a fusion of the two could pose problems where strong-minded individuals occupy posts of authority. "No one can serve two masters."

Still, if a civil defense radio officer is also appointed Emergency Coordinator for the same area, and stations are encouraged to register their facilities in

both RACES and ARES, one organization can do the work of two, and there will be a group already organized and accustomed to work together, ready to take over the RACES operation if other amateur operation is suspended.

Incidentally, ARES is sponsored by ARRL, but ARRL membership is not required for one to participate in ARES. Only the officials are required to be League members. We need all the help we can get!

To join ARES, write or send a hamgram to your Section Manager (name and address on page 8, any issue of QST, and ask for the name and address of your Emergency Coordinator (EC).

A word of warning: your Section Manager may reply that there is no Emergency Coordinator appointed for your area, and would you like to take the job! In many places that's a problem. The EC is a no-pay job, except in the consciousness of serving those in need. But it's definitely a job.

As for joining RACES, contact your local civil defense, disaster preparedness, or similar organization listed in the telephone directory under state, county and city government offices, and ask how to contact the Radio Officer, or Communications Officer.

Amateurs have also had close and fruitful cooperation with other public-service organizations, such as the Red Cross and various church groups such as the Salvation Army. Liaison with such groups is usually best handled through the local EC or RACES Radio Officer, but amateurs associated with such groups can give much useful assistance too.

In particular, it is most helpful for amateurs to be active in their local Red Cross chapter. Things can run much more smoothly and efficiently if the Disaster Services Chairman of the Red Cross has an amateur close at hand who can brief him on the capabilities and limitations of the Amateur Radio Service, advise whom to contact, and even be right there with a hand-held rig to keep in touch with the action.

The CB group REACT is another organization with which public service-oriented amateurs may wish to cooperate. The large number of CB'ers can make them useful allies in an emergency operation, and giving them the opportunity to have access to Amateur Radio circuits can greatly enhance their contribution at such times.

There's no reason why amateurs can't add a CB operating position to their stations. It is true that operating on 11 meters can try the patience of anyone, but when lives are at stake, we should be ready to try anything.

Finally, cooperation with REACT can help bring into Amateur Radio the type of CB'er who will make a good ham. And again, we need all the help we can get. □



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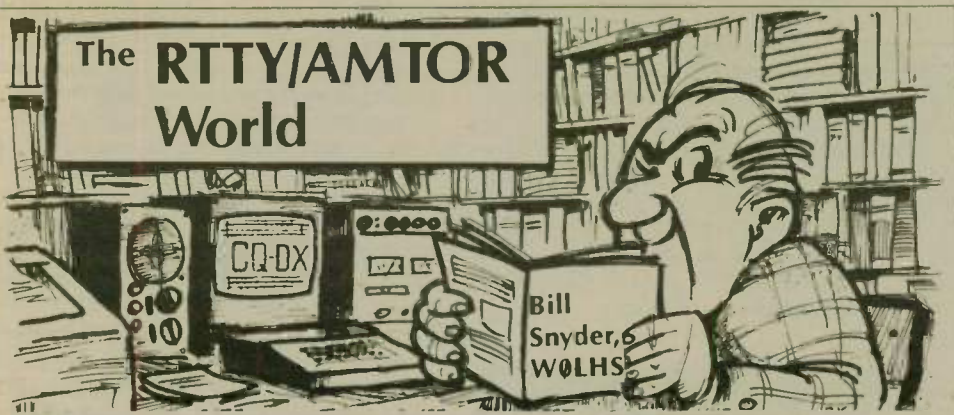
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The RTTY/AMTOR World



Off and on, throughout my RTTY/AMTOR hobbying, I've thought about the choice of sideband on which to transmit. Perhaps I should say "wondered" instead of "thought," because I really didn't give the matter much attention until I received a very interesting letter from Bill Skipper, K0ARG.

"Where does it say in the FCC Regs," Skip's letter began, "that CW must be on upper sideband and RTTY on the lower? And why do ham equipment manufacturers persist in perpetuating this ancient nonsense? It's sheer insanity to try mixing RTTY and CW modes on the same bands. At one time there was a 'gentleman's agreement' to maintain RTTY within certain narrow portions of the CW bands because they were in the minority, but this tradition went down the tube with the sudden inundation of the hobby with microprocessors and the 'discovery' of the mode by new and old hams alike.

"Until we all wise up," Skip continued, "and use one sideband or the other exclusively for both CW and RTTY, we are going to have this everlasting hassle of QRM'ing each other. The bands are full of both right now and the old traditional segments are neither respected nor observed any longer. A CW station 4.250 kHz below a RTTY station tears the latter up without realizing it, and the RTTY station tears a CW station up 4.250 kHz above. If all were on the same sideband, this would be drastically reduced."

After reading Skip's letter, I dropped a line to Bill Henry, K9GWT, the guru at Hal Communications who has most of the RTTY facts at his fingertips. Here's part of his answer to the sideband question:

"The U.S. high-tones date back to WWII and before to efforts of Bell Labs for first long-line transoceanic cables and then for the Army Signal Corps in WWII. The 2125 Hz mark and 2975 Hz space tones correspond to standard Bell Labs signal tones for which filters already existed. They were also easily calibrated with a 425 Hz tuning fork and Lissajous patterns on a CRT.

"After the war, these same tones were adopted by early U.S. amateur RTTY'ers, first on VHF and then on HF using diode keyers in the transmitter VFO. Early HF amateur RTTY was plagued with a wild assortment of shifts and signal polarities, prompting Merrill Swan, W6AEE, and Dusty Dunn, W8CQ, editors of *RTTY Journal*, to campaign for some standards. For years, *RTTY Journal* carried the slogan 'LSMFT - Low Space Means Fine Teletype.' - our standard of today.

"Because we would like to use the same demodulator for VHF and HF, the use of SSB transmitters in the late 1950's caused a problem. When transmitting RTTY, the higher ratio frequency is mark and the lower is space - just the reverse polarity of the demodulator standard of 2125 mark and 2975 (or 2295) Hz space.

"Use of LSB gives us the sideband (or tone) inversion required. This is the only

standard used for U.S. amateur HF RTTY. Other countries (England, in particular) may use USB with a different tone order. One of the more recent *BARTG Journals* shows space at 1275 Hz and mark varying from 1445 Hz (170 shift) to 1700 (425) or 2125 (850). They then also use USB, and it all works out in the wash except that his receiver/transmitter dial frequency differs from yours.

"Another variation shows up in SITOR vs. AMTOR. All commercial marine radio-teleprinter regulations (U.S. included) require use of USB with mark at 1615 Hz and space at 1785 Hz. This is upside-down from current U.S. amateur AMTOR standards which carried over from RTTY standards. There are also many different commercial and military standards which can be either polarity. It gets confusing, and hams and boats are the only users who seem to be consistent!"

Bill enclosed reprints from CQ magazine articles he had authored on the above subject. As he says, it is one of his favorite subjects, and he is working on another for the *RTTY Journal*.

AMTOR auto response QRM

In January I commented on hearing an automated AMTOR station calling CQ every few minutes, looking for automated answers. As a result, I received a nice letter from the operator of the station I had been watching. He was very apologetic and said he had stopped doing it on 20 meters. Actually, he had been doing some propagation studies, and he thought mail-drop AMTOR would be a good way to do

it. I agree with him, but *not* on our present ham band segments. I still feel we need band-use planning to find a spot for such activities.

Eavesdropping

"THIS MODE KEEPS YOUR MIND ACTIVE, EVEN IF YOU DON'T UNDERSTAND IT." ... "THE NICEST THING ABOUT POOR PROPAGATION IS THERE IS NO WOODPECKER!" ... "WHEN YOU ARE OVER 50 THE ONLY ADS YOU PAY ATTENTION TO ARE FOR HEMORRHOIDS, HAIR LOSS, WRINKLES OR CONSTIPATION." ... "BEEN TRYING TO FIGURE OUT HOW TO ENCODE THESE SIGNALS SO EAVESDROPPERS CAN'T DECODE THEM." ... "DO YOU WANT THE TEXAS BRAG TAPE OR THE REAL ONE?" ... "MY WIFE WORKS 'ASKY' MOST OF THE TIME." ... "RIG RUNS LIKE A SEWING MACHINE - WOULD RATHER HAVE IT RUN LIKE A TRANSCEIVER!" ... "DO YOU DRIVE A CAR THAT WAS CARRIED OUT IN YOUR LUNCH BUCKET (LIKE THE SONG)?" ... "WE HAVE NO CRIME HERE EXCEPT THE SKI CROWD ON WEEKENDS." ... "I'VE BEEN PRUNING A PEACH OF A PROGRAM FOR THE APPLE." ... "YOUR SIGNAL WAS COVERED UP BY AN 'RY' FACTORY." ... "WHY IS WHEN YOU WANT TO FIND OUT THE SOLAR FLUX FROM WWV, IT IS ALWAYS JUST 19 MINUTES AFTER THE HOUR." ... "PLEASE QSL AS DELAWARE IS JUST AS RARE AS NORTH DAKOTA!" ... "IT IS SUPPOSED TO READ: VEGATATION RECYCLED THROUGH A HEREFORD BULL." ... "WHEN I ROTATE THE BEAM I LOSE THE RTTY PROGRAM IN THE COMPUTER." ... "I TRANSMIT HIGH TONES ON THIS ROBOT." ... "THIS IS ONLY A HOBBY, I'M NOT TRYING TO SEE HOW MUCH WORK I CAN CREATE!" ... "I'VE GOT THOSE LOW-FLUX-DX BLUES!"

Operating Tip of the Month

Keep off of 14.100 MHz (carrier frequency); that's the beacon frequency and it is easy to forget about it. I know. I answered a CQ on that frequency recently, and was advised by an outsider that I was on the beacon QRG. I had not paid much

attention to the transceiver dial; I was just watching the tuning scope. I'm sorry, it's easy to do it wrong.

Mod for the ICOM-730

Phil Du Rall, KF6IF, sends this AGC modification for an ICOM 730. It will speed up the RX recovery time on AMTOR.

Prior to modification, Phil reports the recovery time was 90 MS, afterward only a measured 8 ms. Here are the steps:

1) Remove wires from AGC switch and solder them together and insulate. This leaves the AGC in "Fast."

2) Connect two wires to the AGC switch in place of the others.

3) Find the orange wire on the Detector board (the AGC line), and unsolder this wire from the board.

4) Solder one of the wires from the AGC switch to the board where the orange wire was, and the other wire from the AGC switch to the end of the orange wire and insulate.

After the mod has been made, the S meter will not work when the AGC is "Off." This is a small price to pay for ARQ master operation. The receive audio should be taken from pin 4 (the detector) of the rear accessory socket. With the AGC working in the fast setting, no objectionable effects have been noted on SSB or CW operations.

(please turn to page 47)

COMMODORE 64 AND VIC-20 OWNERS!

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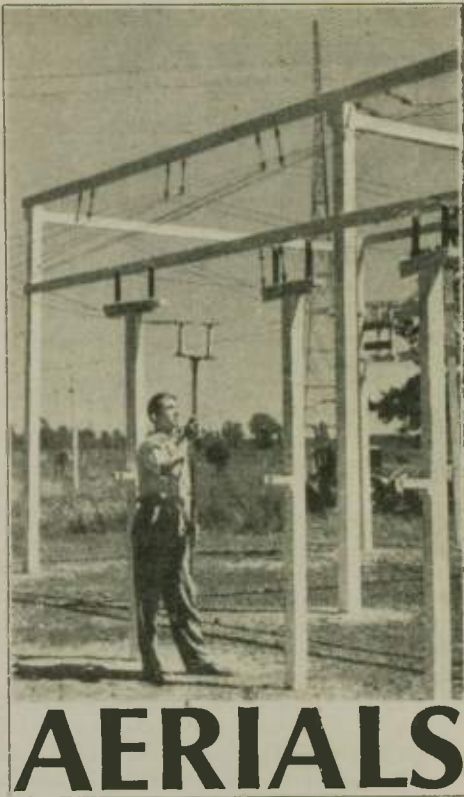
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AERIALS

Kurt N. Sterba

There is in this world poor information, bad information and dis-information.

An example of the latter was in the January issue of Ham Radio magazine. It said, "The 5/8-wave antenna . . . has become a broadcast industry standard antenna."

Not true. The overwhelming majority of BC antennas are quarter-wave or shorter. No more than 1 percent of the radio stations have 5/8-wave antennas. Here's why, and the proof.

A station at 600 kHz would have to erect a vertical stick about 975 feet high. At 1500 kHz it would be 390 feet tall. Have you ever seen a 1,000-foot AM tower? Not even the wealthiest of Top-40 stations can afford the megabucks such a monster costs. The little putt-putt stations at the high end of the band can't afford it either.

Then the December issue of CQ had a real gem (there must have been a full moon or something when these articles were written). We quote, "I don't know of any home-made dipole that will cover the entire band with a low enough SWR for modern equipment."

Well, first off, a good tuner will do the job just fine. OK, what if you don't have a tuner? It's really simple! Build a two-wire or three-wire dipole, depending on how much of a purist you are.

For example, you could use everyday

zip cord, cut one of the two wires to the high end of the band, and cut the other to the low end of the band. The longer wire will work just fine on the low end, and the shorter one will put you in the high end. A purist will have a third wire for the middle of the band.

You could even use multi-wire rotor cable and cut each of the wires to a different small slice of the band.

With such, when you run your SWR sweep across the band you will see a very smooth flat curve. The power is being accepted by the particular wire cut closest to the frequency you are on, and being thrust out into the ether.

Then, in the most recent Handbook, there was much space devoted to the Wullenweber antenna. Hilarious! The number of hams who will build such a thing is a big zero. The number of hams who will ever even see one is about zip, unless they are in the spook business.

What might be a bit more relevant for the individual who is dependent on the Handbook for their technical information would be the Windom, which is no longer mentioned.

The great virtue of this antenna is: should you be without coax, open wire, 300-ohm line or even twisted pair and are down to your last few scraps of wire, you can still get on the air.

In this bare-bones situation, should the physical set-up at your QTH keep you from wanting to do the end-fed bit (a very high impedance, tough to match), the Windom will be ideal for you.

A very simple tuner, one capacitor and a coil will match it, and it is fed with only one wire. The antenna is a half-wavelength at the lowest frequency. An 80-meter Windom will work on 80, 40, 20 and 10. One cut for 40 will work on 40, 20, 10, etc.

The antenna is one solid, unbroken wire. Find the exact center. Then starting from the center, you will have quarter-wave on one side and quarter-wave on the other side. You will attach the one-wire feedline at .3 of the distance from the center to the end. It's not as complicated as it sounds; here's an example: Antenna for 3800 kHz. Antenna is 123.15 feet long. Center is at 61.57 feet. Measure 17.5 feet from center and solder wire. That's your

feedline. Bring it away as straight, 90 degrees from the antenna for as long as possible. With this antenna, it is important to have as good a ground system as possible.

Here are some other dimensions to give an assist: At 3.500 MHz, 19 feet from center; 3.6, 18.5; 3.7, 18; 3.9, 17; 4.0, 16.5.

On 40 meters at 7.000, the tap would be 9'6 3/4" from center and at 7.300 it would be 9'2" from center. At 14.000, 4'8 7/8" and at 14.350 it would be 4'7 7/8".

Spider Antennas and Adapters

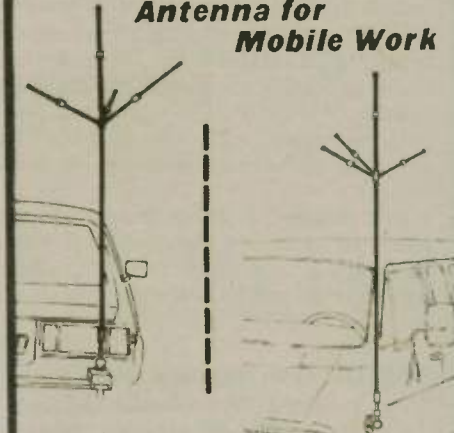
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that I do like? Well, I very much like the Palomar light-bar SWR meter, and we'll talk about that next month.

I like the MFJ dummy load. I'm convinced that the Butternut Company has a giant computer and everyone who has bought one is entered in it. During contests the Butternut Company sends people with great receivers all over the world, each with a computer printout, and they work you if you are on the list. That's the only answer I can think of as to why it works so well.

Then there is a new antennas book coming out. This one is minus the bull feathers that is in so many others. From the excerpts I have seen, this one will be the "Bible". I don't know if the dumps will be able to handle the influx of paper when the hams buying this upcoming book empty their shelves of what they previously had.

See, I really can praise something when it is really GOOD! The book is coming to hand from the great state of Texas.

I think someone knows who we are, because on Christmas morning, when I went out to get the newspaper, sitting in front of the door was ... a really ancient Heathkit Antenna Impedance Meter, Model AM-1 (in the original box). It is so old that not only are there no zip codes, there aren't even the old postal codes. Gee, it really made me feel good.

To my unknown friend, Thanks. But please keep the secret.

(K.N.S. goes by his nom de guerre so as to travel his path of pointing out clay feet, Trojan horses, and goombah without having to face those who would be furious or, on the other hand, attempt to curry favor.)

RTTY/AMTOR

(continued from page 45)

RTTY bits and stuff

If you own an AMT-1 AMTOR unit, there is a modification kit that will improve the sharpness of the tuning. Contact your dealer about the modification.

The next National Teleconferencing network will be on 29 March at 1800 Central time. Because of the nature of the network, you must inquire locally to find out where to catch it.

A 25-issue subscription of *GATEWAY*, the ARRL Packet Radio newsletter, is available to League members for \$6; \$9 for non-members. More for overseas subscribers.

George Hitz, W1DA, has logged over 20 MSO stations on discrete frequencies. If you wish to go into MSO operations, it is suggested you join those already in operation; don't stake out another frequency.

Alle Lofgren, SM7AIA, informs that C-64 AMTOR programs written for the USA won't work in Sweden due to the computer crystal frequency being different to work with their power line frequency.

Tom Holtby, VE7VP, worked a ZL station on 3.545 MHz at 0830Z.

Phil KF6IF would like to see more activity on 10.145 MHz. Phil says it's an interesting band.

I enjoy your letters and ideas. Please feel free to communicate. 1514 So. 12th St., Fargo, ND 58103 will get to me. 73 de Bill, W0LHS. DIT DIT

If a foreign amateur visits your area, do a picture story for Worldradio.

Regulations

(continued from page 1)

New York-Northern New Jersey-Long Island, NY-NJ-CT
Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD
Pittsburgh-Beaver Valley, PA
Portland-Vancouver, OR-WA
Providence-Pawtucket-Fall River, RI-MA
St. Louis-East St. Louis-Alton, MO-IL
San Francisco-Oakland-San Jose, CA
San Juan-Caguas, PR
Seattle-Tacoma, WA

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Baltimore, MD
Columbus, OH
Indianapolis, IN
Kansas City, KS-MO
Minneapolis-St. Paul, MN-WI
New Orleans, LA
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Phoenix, AZ
Sacramento, CA
San Antonio, TX
San Diego, CA
Tampa-St. Petersburg-Clearwater, FL
Washington, D.C.-MD-VA

NEWS FLASH

In response to the petition filed by the ARRL, the FCC has issued an order lifting the moratorium on new repeater operation imposed in Docket 85-22. The order states that the FCC will instead seek permanent solutions to repeater problems in this proceeding.

Full details will appear in the next *ARRL Letter*.

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No VHF line-of-sight path to Joe? Again, no problem! Digipeat through other stations to Joe!
Joe's not there? Store a message at his station!
RTTY is too slow? "Packet away" at up to 1200 baud or more.

In Packet Radio, your station is a radio, a computer terminal, and a TNC (Terminal Node Controller, hopefully the AEA PKT-1). You type and the TNC sends short bursts (packets) of two-tone modulation called AFSK. The other station decodes them and displays them on his monitor screen. He then sends to you.

There is a lot of activity—local clubs, voice nets, mailboxes/bulletin boards, links between bands, long range (digi)repeaters and chained digipeaters, voice nets, search/rescue and emergency work, newsletters, satellite communications, technical development of new equipment and software, etc. 220 MHz will be very important to packet radio. Help us populate it and "Save the Band"!! We need your help and participation.

Packet radio is:

Standardized—your station can talk to any other packet station.
Popular—fast growth over the last year to about 2000 stations in the U.S.
Multi-frequency—10.147, 14.103, 145.832, Oscar 10, 145.01 (and other local 2M frequencies) are being used now.
Public Service—traffic handling, search and rescue, public events, emergency service.
Multimode—conventional radio, meteor scatter, but no EME/moonbounce yet (will you be first?).
Simple—you control the PKT-1 by typing 5-6 simple one- to four-letter command words on the terminal or computer. Several of them are shown in the above monitor screen simulation, which shows a connect via digipeaters, and an interchange between two stations.

It's easy to get going. You probably already have the radio, and the computer or terminal. You'll need to operate your computer in RS232C mode using "communications terminal" software that is free or cheap. We can usually furnish information on what to use for popular computers. The rest of the software is resident in the PKT-1 (you will need to buy a PKT-1). And you need a MIC connector to connect to the (furnished) radio cable you'll plug into your radio MIC jack. And "BRAAP," you're on the air with "Packet Racket."

You're likely aware of Packet Radio already. If not, read WB4GXD's three excellent tutorial articles in the Sept. and Oct. '83 and Jan. '84 issues of 73. Clip the coupon below, and we'll send articles, a reading bibliography, product literature on our PKT-1 Packet Controller, answers to commonly asked questions about packet radio, lists of packet clubs in your area, sample packet newsletters from the ARRL and clubs, AEA dealer locations, packet videotape and audio cassette loan info, voice net info on HF/VHF where you can listen and ask questions, a blow-by-blow description of how easy it is to get started, a free AEA Packet Lapel Button, AND WE'LL PUT YOU ON OUR PACKET MAIL LIST to ensure you'll get further mailings!!!

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RAM length is 2000
cmd: connect to N7ML via KB7G, K6RFK
cmd: ***CONNECTED TO N7ML
Hi Mike - have you seen the great new AEA PKT-1?
YES JOHN - LOOKS GOOD K
Bye Mike sk
cmd: ***DISCONNECTED
cmd:

AEA INC., P.O. BOX C-2160, LYNNWOOD, WA 98036
OK AEA, send packet information to:

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Zip _____ Call me at _____

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The telegraph

Joe Rice, W4RHZ

Since the dawn of civilization, it was learned that there was a need for communications. In early times, the movement of a hand or an arm could tell someone to approach or go to the right or left.

These, of course, were limited to line-of-sight. Then the secret of fire was discovered; thus, a whole new realm of light-signaling was born.

In 429 B.C., the Greeks had developed a crude system of communication by arranging these signal-fires over long distances. They also found out their brightly polished shields blazed with a glare which could be seen for miles.

There were countless other forms — the huge mirror heliograph on the island of Capri by which the Emperor Tiberius governed Rome in the last years of his life; the unique voice-telegraph of Julius Caesar where an endless relay of sentinels shouted messages to each other extending for miles.

Think of our own United States, with the elaborate smoke signal code of the Indian, the smoke caught in a blanket and sent into the air in definite puffs; their tom-toms; and the unique method with which news of the opening of the Erie Canal was sent from Buffalo to New York in 80 minutes, by booming cannons spaced within hearing distance of each other.

The next step in signaling remained for a painter of landscapes and portraits by the name of Samuel Finley Breeze Morse.

The electromagnetic telegraph

Sam Morse traveled extensively in Europe as an artist and also taught art in New York. On one of his voyages in a sailing ship, he struck up a conversation with another passenger about electricity. At that time it was all new, and it evoked romantic visions of an entirely new world for that of man.

Wire had not been invented yet, but men of vision could imagine that electricity could be sent for miles if they only knew how. The Greeks knew about static electricity as long ago as 600 B.C. They sent charges of electricity along a rope which had been dunked in water.

It was found later by men like Joseph Henry and Michael Faraday that current going through a small, round strip of metal affected the needle of a compass. It didn't take long before they reasoned that if a coil of wire was wound on a spool, they could actually create a magnet. Until that time, men had to use rocks which were called lodestones, for magnets.

Morse thought if he could devise a code for each letter, numeral and punctuation mark, he could make a magnet duplicate what he sent. The code was laboriously worked out, and a piece of iron — called an armature — was placed above the pole piece of the magnet in such a way it would pull in when current was run through the

coil. He knew he could signal far more distant than anyone had ever done before.

Morse was not a mechanic, and he certainly did not know anything about electricity. He labored and struggled for almost 12 years with his idea until he met a man by the name of Alfred Vail. Vail was a mechanic and knew something about electricity. With the mind of Morse and the hands of Vail, a crude electromagnet telegraph was formed.

Morse obtained a patent on 20 June 1840. It was called "TELEGRAPH SIGNS." This system of type he called PORT RULE. The system was fully automated. He had metal cast with his signs to represent the letters of the alphabet. They were set up much like a printer sets type to form the words. This worked for sending words and for receiving he had a system of gears and clockwork which pulled a thin strip of paper over rollers and a pencil actuated by his electromagnet made marks on the paper. An "operator" read these marks and wrote down the appropriate letter for the message.

The days of the pony express, carrier pigeon and semaphore were numbered. The colorful pony express required 10½ days to carry a message from St. Joseph, Missouri to San Francisco. The stagecoaches required 44 hours to bring news from New York to Washington. The electromagnet telegraph transmitted signals almost instantaneously.

At last, the chains which had slowed the development of communications to a snail's pace were broken, permitting the eventual invention and growth of radio

and television.

On 24 May 1844, Samuel Morse sent the first message ever sent over wire using a code. The message was sent from the Supreme Court to a railroad depot in Baltimore, Maryland. The first message was chosen by Annie Ellsworth, a daughter of a patent examiner, from the Bible's book of Numbers 23:23. This message will live forever in the history of mankind: WHAT HATH GOD WROUGHT?

In 1843, Samuel F.B. Morse, the inventor of the magnetic telegraph, received permission from the Baltimore and Ohio Railroad to lay, or string, four telegraph wires along their right-of-way, from Baltimore to Washington, D.C. The terminals were in the Pratt Street Depot of the railroad in Baltimore to Washington, D.C., in the Supreme Court Chambers.

Then Morse had his friend Annie Ellsworth send the first message. It was she who first brought word to Morse that Congress had voted him a grant of \$30,000 so that he might demonstrate the practicality of his invention. A photo of the first message along with the signature of Samuel Morse resides in the Library of Congress.

Morse used up over \$20,000 of the grant digging a ditch in which to place the wires. This proved unsatisfactory, as water seeped in and shorted out the wires. He hurriedly strung wires on trees and poles for a distance of 40 miles and got his system working.

Wireless

Hundreds of telegraph companies

sprang up across the country, and in large cities like Chicago, over a million messages were sent daily. A "message a minute" by the top "bonus" operators of the day.

Most companies merged with large concerns such as Western Union and Postal Telegraph. The railroads recognized the advantages of the telegraph to speed up and to make railroading safer for everyone.

Railroads carried their time into different areas, so each city was able to keep correct time. The telegraph companies would send a long dash at noon to set watches across the country. Later on, when radio — or wireless — was born, the U.S. Navy established a spark transmitter at Arlington, Virginia, using the call letters of NAA. This was the year of 1923 and the beginning of the Bureau of Standards. Radio stations used this to set their clocks.

Numerous people were experimenting with a device which did not need wires to send messages; hence, the name "wireless"! Radio would go through space. Men could not explain how these waves went through air. They used an old Greek Work of "aether" (later shortened to "ether"), which translates into "a vacuous substance" or invisible medium.

Meanwhile, men found out they could "read" the relays of the Morse by ear without resorting to looking at the paper. The first man to do this was James Francis Leonard of Frankfort, Kentucky. He is buried there alongside the grave of Daniel Boone.

Alfred Vail gets the credit for making the first manual telegraph key. A whole new era of manual telegraphy was born. In 1903, another person named Martin invented the semi-automatic key, to be named later "the bug."

Morse code became known as American Morse, and many other countries of the world devised their own code to fit their particular alphabet. There are codes for Russia, Germany, Arabia, Japan and many others today.

Wireless was born that day in December 1901, when Guglielmo Marconi received the first signal across the Atlantic of the letter "S".

Marconi again shook the universe with the stentorian bellows of his rotary gap spark station located in South Wellfleet, Massachusetts on 18 January 1903. He successfully completed a two-way contact between the United States and England. President Theodore Roosevelt and King Edward VII of England exchanged messages.

In 1912, the International Ship Act was passed, making it mandatory that all ships have wireless apparatus installed aboard, as well as duly licensed operators.

Although there had been a conference in 1853 to establish a universal code, it was not until 1912 that the new code we now know as International Morse Code was officially adopted. The landline Morse, as the old code was called, ran side by side with the new code for many years thereafter. The United States and Canada refused to use the new code on the landline wires, though. Today, the only code in use in the United States on radio is the International Code. □

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Ohm-Brew Answer

OHM STRETCH (Home Stretch)



Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Wattmeters

Welz Corporation and their American distributor Encomm, Inc. are pleased to announce the introduction of a new series of wattmeters and VSWR bridges. Some models measure peak and average power, while the mobile units also measure the automobile operating voltage.

For more information on the new line of wattmeters, please contact Encomm, Inc., 2000 Ave. 'G' Suite 800, Plano, TX 75074. □



Digital multimeter

Penril's Triplett Electrical Instrument Corporation has introduced its new Model 4700 Digital Multimeter. This unique test instrument utilizes microprocessor control to provide features well beyond standard volt-ohmmeter capability.

The unit is ideally suited for in-the-field and laboratory usage for industrial, commercial, communications or consumer electrical/electronic applications, using true RMS measurements to directly measure complex non-sinusoidal signals.

The instrument offers an audible continuity function, permitting quick testing of diodes, logic probe, voltage measurements displayable in dBm, plus the capability to store an input signal as an offset or relative function. Each measurement function has autopolarity, over-range indication, overload protection and quantized feedback A/D conversion, yielding accurate linear measurements.

Only 7 1/4" x 3 7/8" x 2", this digital multimeter has a 4 1/2-digit, high-contrast LCD readout. The unit operates on four AA batteries and has recessed jacks and extra-duty gauge test leads for maximum operator safety. The unit sells for \$330.

The Triplett Electrical Instrument Corporation is a major supplier of electrical and electronic scientific test and measurement instruments to industrial and government markets.

Penril Corp. is listed on the American Stock Exchange (PNL) and manufactures high technology computer data communications equipment, electronic scientific test and measurement instruments and superior quality audio systems oriented for the audiophile market. The Company is headquartered in Rockville, Maryland, and has manufacturing operations in Maryland, California, New York, Connecticut, Massachusetts, Ohio, Switzerland, Mexico and Japan. □

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Kenpro rotator products

The famous Kenpro brand line of rotators and accessories are now available from Encomm, Inc. The KR-400 and KR-500 pair of rugged rotators are the most popular set for satellite and space communications, while the KR-600RC medium-duty and the KR-2000RC heavy-duty units are now available for use on the USA voltage system and incorporate the easy reading 360 degree controller units.



For further information and specifications, contact Encomm, Inc., 2000 Avenue 'G' Suite 800, Plano, TX 75074; phone (214) 423-0024. □

Computer-interface terminal

Amateur-Wholesale Electronics announces the new 0-777 computer-interface terminal, featuring RTTY, bit inversion, AMTOR modes ARQ, FEC and SEL-FEC, ASCII and CW, any speed, any shift (ASCII and BAUDOT).

The 0-777 is a self-contained unit including software that allows reception and transmission with any computer or terminal that has RS232 or TTL I/O. The 0-777 automatically decodes signals and displays mode, speed and polarity on the CRT. Operation is made simply by the use of 28 Bar-LEDS and LEDES including a bar-graph tuning indicator that allows precise centering of received signals.

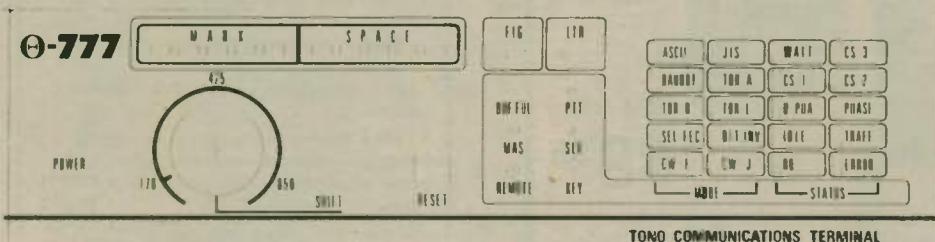
In BAUDOT and ASCII modes, communications speed can be set from 12 to 200 baud using the modem, or 12 to 600 baud using TTL level RS232 or TTL level data connection is 100-2400 baud (ASCII) or 45.5-200 baud (Baudot). Morse speed can be varied from 5 to 100 wpm in 1 wpm increments and is fully auto-track on receive.

Other important features of the 0-777 include

15 channels of message memory plus a 768-character input or type-ahead buffer, manual/automatic PTT switching, selective calling, provision for tape-recorder backup memory, automatic carriage return and line feed, pre-loading function, error correction (rub-out), CW random generator for code practice, variable CW weight, test messages (RY and QBF), bit inversion for RTTY reception and transmission, diddle, echo, full CRT function display, audio monitor, CW sending practice function, mark-only or space-only reception, crystal-controlled AFSK modulator, anti-noise feature, and much much more. The instruction manual provides sample computer terminal programs for use with NEC or Apple II personal computers.

The 0-777 operates from a power supply of 11 to 14 volts DC. The unit measures approximately 2.5"H x 9"W x 10"D.

For more information, please contact Amateur-Wholesale Electronics, Inc., 8817 SW 129 Terrace, Miami, FL 33176. □



TONO COMMUNICATIONS TERMINAL

SANTEC units

Priced at a level to make your budget smile, the ST-200ET and the ST-400ET are direct hardware replacements for the famous ICOM* series of thumbwheel switched hand-held radios.

Present accessories for the 2AT and the 4AT should work on the ST-200ET (VHF) and ST-400ET (UHF) with no modifications**. The same slip-off battery pack style (250mA \bar{h}) and the same mic and speaker jack arrangements are used to provide as much compatibility as possible.

IC-3200A Dual Bander

ICOM announces the IC-3200A 25-watt compact full-featured Dual Bander. With only 14 front panel controls, the IC-3200A is simple to use, yet offers these outstanding standard features:

- Frequency coverage: 2-meter (140,000-150,000 MHz); 70cm (440,000-450,000 MHz)
- 5 kHz fully programmable offsets for MARS and CAP repeater operation
- Size is 5 1/2"W x 2"H x 8 1/2"D
- 25 watts output on both bands
- Memory lockout
- Scanning . . . memory, band, programmable and priority
- Ten tunable memories with lithium battery to maintain memories when disconnected from the power source
- New enlarged LCD display — easy to read in bright sunlight
- Tone encoder (all PL and subaudible tones built-in)
- One antenna connector (duplexer is already installed)
- Variable tuning increments — 5 and 15 kHz (2 meters) 5 and 25 kHz (70cm)

The IC-3200A also comes standard with an IC-HM14 touchtone mic with up/down scan, DC power cord, and a mobile mounting bracket.

The IC-3200A Dual Bander will be available in April 1985. Pricing has been set at \$549 suggested retail.

For more information, contact ICOM, P.O. Box C-90029, Bellevue, WA 98009-9029; (206) 454-8155. □



These units are made by one of Japan's leading Amateur Radio companies, sold by SANTEC, backed by the famous Encomm two-year extended service plan and serviced by the Encomm service facilities centrally located in Plano, Texas.

The prices? Well, how does \$199.95 for the ST-200ET (VHF) and \$249.95 for the ST-400ET (UHF) sound for suggested retail? No, it's not a misprint. Those are the suggested retail prices. Please see your favorite SANTEC dealer for his best price.

* ICOM is a registered trademark of ICOM, Inc. of Japan.

** ST-200ET/400ET batteries are not fully compatible with BC-30/35 drop-in chargers. □

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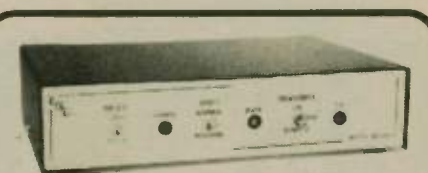
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DX-YL to North American YL

The DXYL to North American YL Contest will be held 10-11 April and 17-18 April. Operation times will be: CW — 1800 UTC, Wednesday, 10 April, to 1800 UTC, Thursday, 11 April; Phone — 1800 UTC, Wednesday, 17 April, to 1800 UTC, Thursday, 18 April.

Suggested frequencies: CW — 21.080-21.110 and 28.080-28.110 MHz; SSB — 14.250-14.280 and 21.350-21.380 MHz.

Eligibility: All licensed women operators throughout the world are invited to participate.

Procedure: DX YLs call "CQ North American YL" and North American (N.A.) YLs call "CQ DX YL".

Operation: All bands may be used. No cross-band operation. Net contacts, repeater contacts and contacts with OMs do not count. Stations may be worked and counted once on each band and mode.

Exchange: Station worked, QSO number, RS or RST, state or country. Entries in log must also show time, band, date and transmitter power.

Scoring: (A) Phone and CW will be scored as separate contests. Submit separate logs for each contest. (B) DX YLs, 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 QSOs by the number of different states and provinces or countries worked. A multiplier is counted only once in the contest. It is not counted on each band. (F) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of E by 1.25 (low-power multiplier).

Logs: All logs must show state or country to qualify for awards. 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 post-marked by 06 May 1985, and received no later than 29 May 1985, or they will be disqualified. Please send logs to: Marty Silver, NY4H, 3118 Eton Road, Raleigh, NC 27608, USA.

Duplicates: For each duplicate contact that is removed from the log by the Vice President, a penalty of three 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. 2nd and 3rd place DX and N.A. winners in each contest will receive certificates. □

QRP ARCI Spring SSB Contest

The QRP ARCI Spring SSB Contest will be held from 1200 UTC, Saturday, 20 April to 2400

UTC, Sunday, 21 April. Participants may operate a maximum of 24 hours.

Exchanges: Members give RS, state/province/country and QRP ARCI membership number. Non-members give RS, state/province/country and power output.

Stations may be worked once per band for QSO points. Each member contact 5 pts. regardless of location; each non-member contact, same continent, 2 pts.; each non-member contact, different continent, 4 pts.

Multipliers (state/province/country): The United States and Canada do not count as countries (count states and provinces only for W/VE). A state/province/country (s/p/c) may be worked once per band for s/p/c multiplier credit. Add s/p/c's separately for each band, 1 pt. each, then add up s/p/c points for all bands to arrive

at total s/p/c multiplier.

Power: The power multiplier is based on peak envelope power (PEP) as follows: 8 to 10 watts output × 2; 6 to 8 watts output × 4; 4 to 6 watts output × 6; 2 to 4 watts output × 8; less than 2 watts output × 10. More than 10 watts output counted as check logs only. The highest power used for any contact, any band, will determine the multiplier to be used for scoring the whole log.

Bonus multipliers: Natural power (solar, wind, etc. — with or without storage) × 2. With storage, storage cells must be charged by the natural power source within 48 hours preceding the start of and/or during the contest. Battery power × 1.5. No other source of power may be used at any time during the contest to qualify for these multipliers.

Suggested frequencies: 1810, 3985, 7285, 14285, 21385, 28885, 50385 kHz; Novice and Technicians — 3710, 7110, 21110, 28110 kHz. No 30-meter (10.1 MHz) contacts will be counted. (Novice/Tech. — use one-half of PEP powers shown to determine CW power multipliers and Milliwatt award scores.)

Calling method: CQ QRP CONTEST FROM (call sign).

Scoring: QSO points (total all bands) × s/p/c multiplier (remember, an s/p/c may be worked on more than one band and counts once on each band for s/p/c multiplier points) × power multiplier × bonus multiplier (if none, use 1) = claimed score. Use of the scoring summary sheet will help avoid errors; summary sheets may be obtained by sending a large SASE or 2 IRC's to the contest chairman.

Logs: Separate log sheets for each band is suggested for ease of scoring. Send full log data plus separate worksheet showing details and time(s) off the air. No log copies will be returned. All entrants desiring results and scores please include a large SASE or 2 IRC's. It is a condition of entry that the decision of the QRP ARCI contest chairman is final in case of dispute.

Awards: Certificates to the highest scoring station in each s/p/c with two or more entries. All entries are automatically considered for the Triple Crowns of QRP Award.

In addition, Adrian Weiss, W0RSP, is sponsoring a special Milliwatt certificate to the highest scoring station in the less-than-2-watts category, provided there are two or more entries in that category.

Deadline: Logs must be received by 21 May 1985. Logs received after that date or missing information will be used as check logs.

Send logs to: QRP ARCI Contest Chairman Eugene Smith, KA5NLY, P.O. Box 55010, Little Rock, AR 72225 USA. □

Contact Worldradio for hamfest prizes.



California

The 43rd Annual Fresno Hamfest, sponsored by the FRESNO ARC, will be 03-05 May at the Tropicana Lodge of Fresno, 1406 N. Blackstone.

The planned program includes technical talks, swap tables and flea market, transmitter hunts, CW contest, ARRL forum, commercial exhibits, prizes, eyeball QSOs, buffet dinner and more.

Full registration and eligibility for pre-registration prizes is \$24 before 19 April; \$26 and no pre-registration prize after that date.

For more information, contact Fresno ARC, P.O. Box 783, Fresno, CA 93712. □

Georgia

The ATHENS ARC (formerly the Northeast Georgia ARC) will sponsor a hamfest at the

Hear Police/Fire Weather

on 2 Meter Handhelds with this MFJ VHF Converter.



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New MFJ VHF converter turns your synthesized scanning 2 meter handheld into a hot Police/Fire/Weather band scanner.

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Loop Antenna



Here is an exciting new device to improve your reception on 160, 80, the broadcast band, and on VLF.

It is well known that loops pick up far less noise than most other antennas. And they can null out interference. Now Palomar Engineers brings you these features and more in a compact, carefully engineered, attractive desktop package.

Unlike ordinary direction-finder loops, it tilts to match the incoming wave front. The result: Deep nulls up to 70 db. You have to listen to believe it!

Does local noise on 160 give you a headache? The loop practically eliminates it. Broadcast station 2nd harmonic ruining your DX? Turn and tilt the loop and it's gone. Does your friend in the next block with his kilowatt block those weak ones? Use the loop and hear him fade out.

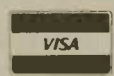
Loop nulls are very sharp on local and ground wave signals but usually are broad or nonexistent on distant skywave signals. This allows local interference to be eliminated while DX stations can still be heard from all directions.

The loops are Litz-wire wound on RF ferrite rods. They plug into the Loop Amplifier which boosts the loop signal 20 db and isolates and preserves the high Q of the loop. The tuning control peaks the loop and gives extra preselection to your receiver.

Plug-in loops are available for these bands:

- 10-40 KHz (Omega)
- 40-150 KHz (WWVB, Loran)
- 150-550 KHz (VLF)
- 540-1600 KHz (Broadcast)
- 1600-5000 KHz (160 & 80 meters)
- 5-15 MHz (HF-1)

Free catalog on request.



Loop Amplifier \$84.95; Plug-in Loop Antennas \$62.95 each (specify frequency band). To order add \$4 packing/shipping. California residents add sales tax.

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2N1692	25.00	2N4428	1.85	2N5922	10.00	269-1	18.00	40894 RCA	1.00	A50-12	24.00	BLX67	12.25	EFJ4026	35.00
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2N3119	4.00	2N5108	3.45	2N6081	7.00	711	4.00	3753883 RCA	50.00	B2-82	10.70	BLY951	10.00	HEPS3003	30.00
2N3134	1.15	2N5109	1.70	2N6082	9.00	733-2	15.00	615467-902	25.00	B3-12	10.85	BLY568C/CF	30.00	HEPS3005	10.00
2N3287	4.90	2N5160	3.45	2N6083	9.50	798-2	25.00	615467-903	40.00	B12-12	15.70	C2M70-28R	92.70	HEPS3006	19.90
2N3288	4.40	2N5177	21.62	2N6084	12.00	3421	28.00	2SC568	2.50	BAL0204125	152.95	C25-28	57.00	HEPS3007	25.00
2N3309	4.85	2N5179	1.04	2N6094	11.00	3683P1	15.00	2SC703	36.00	BF25-35	56.25	C4005	2.50	HEPS3010	11.34
2N3375	17.10	2N5216	56.00	2N6095	12.00	3992	25.00	2SC756A	7.50	B40-12	19.25	CD1659	20.00	HF8003	10.00
2N3478	2.13	2N5470	75.00	2N6096	16.10	4164P1	15.00	2SC781	2.80	B70-12	55.00	CD1899	20.00	HFET2204	112.00
2N3553	1.55	2N5583	3.45	2N6097	20.70	4243P1	28.00	2SC1018	1.00	BF272A	2.50	CD1920	10.00	HP35821	38.00
2N3553JAN	2.90	2N5589	9.77	2N6105	21.00	4340P3	18.00	2SC1042	24.00	BFQ85	2.50	CD2188	18.00	HP35826B	32.00
2N3632	15.50	2N5590	10.92	2N6136	21.85	4387P1	27.50	2SC1076	2.50	BFR21	2.50	CD2545	24.00	HP35826E	32.00
2N3733	11.00	2N5591	13.80	2N6166	40.24	7104-1	28.00	2SC1216	2.50	BFR90	1.00	CD2664A	16.00	HP35831E	30.00
2N3818	5.00	2N5596	99.00	2N6267	142.00	7249-2	10.50	2SC1239	2.50	BFR91	1.65	CD3167	92.70	HP35832E	50.00
2N3866	1.30	2N5636	12.00	2N6304	1.50	7283-1	37.50	2SC1251	24.00	BFR99	2.50	CD3353	95.00	HP35833E	50.00
2N3866JAN	2.20	2N5637	15.50	2N6368	30.00	7536-1	30.00	2SC1306	2.90	BFT12	2.50	CD3435	26.30	HP35859E	75.00
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2N3866AJANTXV	5.30	2N5643	25.50	2N6567	10.06	7795-1	15.00	2SC1600	5.00	BFW92	1.50	CM40-12	27.90	HXTR3101	7.00
2N3924	3.35	2N5645	13.80	2N6603	13.50	7796-1	24.00	2SC1678	2.00	BFX44	2.50	CM40-28	56.90	HXTR5101	31.00
2N3926	16.10	2N5646	20.70	2N6604	13.50	7797-1	36.00	2SC1729	32.40	BFX48	2.50	CME50-12	30.00	HXTR6104	68.00
2N3927	17.25	2N5651	11.05	2N6679	44.00	40081 RCA	5.00	2SC1760	1.50	BFX65	2.50	CTC2001	42.00	HXTR6105	31.00
2N3948	1.75	2N5691	18.00	2N6680	80.00	40279 RCA	10.00	2SC1909	4.00	BFX84	2.50	CTC2005	55.00	HXTR6106	33.00
2N3950	25.00	2N5764	27.00	021-1	15.00	40280 RCA	4.62	2SC1945	10.00	BFX85	2.50	CTC3005	70.00	J310	1.00
2N3959	3.85	2N5836	3.45	01-80703T4	65.00	40281 RCA	10.00	2SC1946	40.00	BFX86	2.50	CTC3460	20.00	JO2000	10.00
2N4012	11.00	2N5842	8.45	35C05	15.00	40282 RCA	20.00	2SC1947	10.00	BFX89	1.00	DV28205	25.00	JO2001	25.00
2N4037	2.00	2N5847	19.90	102-1	28.00	40290 RCA	2.80	2SC1970	2.50	BFY11	2.50	DXL1003P70	22.00	JO4045	24.00
2N4041	14.00	2N5849	20.00	103-1	28.00	40292 RCA	13.05	2SC1974	4.00	BFY18	2.50	DXL2001P70	19.00	KJ5522	25.00
2N4072	1.80	2N5913	3.25	103-2	28.00	40294 RCA	2.50	2SC2166	5.50	BFY19	2.50	DXL2002P70	14.00	KJ5522	25.00
2N4080	4.53	2N5916	36.00	104P1	18.00	40341 RCA	21.00	2SC2237	32.00	BFY39	2.50	DXL3501AP100F	47.00	M1106	13.75
2N4127	21.00	163P1	10.00					2SC2695	47.00			EFJ4015	12.00		

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TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
M1107	\$16.75	MRF221	10.00	MRF525	3.45	MSC82001	33.00	PT4642	20.00	SD1007-4	15.00	SD1088-8	22.00	SD1220	8.00
M1131	5.15	MRF223	13.00	MRF559	1.76	MSC82014	33.00	PT5632	4.70	SD1007-5	15.00	SD1089-5	15.00	SD1220-1	9.50
M1132	7.25	MRF224	13.50	MRF587	11.00	MSC82020M	130.00	PT5749	25.00	SD1009	\$15.00	SD1090	15.00	SD1220-9	8.00
M1134	13.40	MRF227	3.45	MRF605	20.00	MSC82030	33.00	PT6612	25.00	SD1009-2	15.00	SD1094	15.00	SD1222-8	16.00
M9116	29.10	MRF230	2.00	MRF618	25.00	MSC83001	40.00	PT6619	20.00	SD1012	10.00	SD1095	15.00	SD1222-11	7.50
M9579	6.00	MRF231	10.00	MRF626	12.00	MSC83003	82.00	PT6708	25.00	SD1012-3	10.00	SD1098-1	30.00	SD1224-10	18.00
M9580	7.95	MRF232	12.07	MRF628	8.65	MSC83005	70.00	PT6709	25.00	SD1012-5	10.00	SD1100	5.00	SD1225	18.00
M9587	7.00	MRF237	3.15	MRF629	3.45	MSC83026	POR	PT6720	25.00	SD1013	10.00	SD1109	18.00	SD1225-1	15.00
M9588	5.20	MRF238	13.80	MRF644	25.30	MSC83303	POR	PT8510	15.00	SD1013-3	10.00	SD1115-2	7.50	SD1229-7	10.95
M9622	5.95	MRF239	17.25	MRF641	27.60	MSC84900	60.00	PT8524	25.00	SD1013-7	10.00	SD1115-3	7.50	SD1229-16	10.95
M9623	7.95	MRF245	35.65	MRF646	29.90	MT4150	14.40	PT8609	25.00	SD1016-5	15.00	SD1115-7	2.10	SD1232	4.00
M9624	9.95	MRF247	31.00	MRF648	33.35	MT5126	25.00	PT8633	25.00	SD1016-5	15.00	SD1116	5.00	SD1240-8	15.00
M9625	15.95	MRF304	36.00	MRF616	15.00	MT5596(2N)	99.00	PT8639	25.00	SD1018-4	13.00	SD1118	22.00	SD1244-1	14.00
M9630	14.00	MRF306	50.00	MRF623	20.00	MT5768(2N)	95.00	PT8659	25.00	SD1018-6	13.00	SD1119	5.00	SD1244H12	25.00
M9740	27.90	MRF313	11.15	MRF646	44.85	MRF8762	25.00	PT8679	25.00	SD1018-7	13.00	SD1124	50.00	SD1262	15.00
M9741	27.90	MRF314	29.21	MRF692	35.50	NEO2136	2.00	PT8708	20.00	SD1018-15	13.00	SD1132-1	15.00	SD1263	15.00
M9755	16.00	MRF315	28.86	MRF694	46.00	NEO2160ER	\$100.00	PT8709	20.00	SD1020-5	10.00	SD1132-4	12.00	SD1263-1	15.00
M9780	5.50	MRF316	55.43	MRF901 3 Lead	1.00	NEO21350	5.30	PT8727	29.00	SD1028	15.00	SD1133	9.50	SD1272	10.95
M9827	11.00	MRF317	63.94	MRF901 4 Lead	2.00	NE13783	61.00	PT8731	25.00	SD1030	12.00	SD1133-1	10.00	SD1272-1	10.95
M9848	35.00	MRF412	18.00	MRF902/2N6603JAN	15.00	NE21889	43.00	PT8742	19.10	SD1030-2	12.00	SD1134-1	2.50	SD1272-2	10.95
M9850	13.50	MRF420	20.12	MRF902B	18.40	NE57835	5.70	PT8787	25.00	SD1040	5.00	SD1134-4	12.00	SD1272-4	10.95
M9851	20.00	MRF421	25.00	MRF904	2.30	NE64360ER-A	100.00	PT8823	25.00	SD1040-2	20.00	SD1134-7	12.00	SD1278	13.75
M9860	8.25	MRF422	38.00	MRF905	2.55	NE64480 (B)	94.00	PT9700	25.00	SD1040-4	10.00	SD1135	10.25	SD1278-1	13.75
M9887	2.80	MRF427	17.25	MRF911	2.50	NE73436	2.50	PT9702	25.00	SD1040-6	5.00	SD1135-3	12.00	SD1278-5	13.75
M9908	6.95	MRF428	63.00	MRF965	2.55	NE77362ER	100.00	PT9783	16.50	SD1043	12.00	SD1136	12.50	SD1279-1	18.00
M9965	12.00	MRF433	12.07	MRF966	3.55	NE8260ER	100.00	PT9784	32.70	SD1043-1	10.00	SD1136-2	12.50	SD1279-3	18.00
MM1500	25.00	MRF449/A	12.65	MRF1000MA	32.77	PRT8637	25.00	PT9790	56.00	SD1045	3.75	SD1143-1	10.00	SD1281-2	8.00
MM1550	10.00	MRF450/A	14.37	MRF1004M	31.05	PT3127A	5.00	PT31083	20.00	SD1049-1	2.00	SD1143-3	17.00	SD1283	10.00
MM1552	50.00	MRF452/A	17.00	MRF2001	41.74	PT3127B	5.00	PT31962	20.00	SD1053	4.00	SD1144	4.00	SD1283-2	10.60
MM1553	50.00	MRF453/A	18.40	MRF2005	54.97	PT3127C	20.00	PTX6680	20.00	SD1057	10.00	SD1145-5	15.00	SD1283-3	10.00
MM1607	8.45	MRF454/A	20.12	MRF5176	24.00	PT3127D	20.00	RE3754	25.00	SD1065	4.75	SD1146	15.00	SD1283-4	10.00
MM1614	10.00	MRF455/A	16.00	MRF8004	2.10	PT3127E	20.00	RE3789	25.00	SD1068	15.00	SD1147</			

HAMFESTS

(continued from page 50)

Athens Vocational-Technical School, Highway 29, Athens, Georgia on 21 April, from 8:30 a.m. to 3:30 p.m. Registration is free.

Talk-in on club repeater, output 147.825.

For more information, write Norman Archibald, KB4IIA, P.O. Box 225, Athens, GA 30603. □

Indiana

The PUTNAM COUNTY ARC will hold its third auction and flea market on 06 April, at the Putnam County Fairgrounds north of Greencastle, Indiana on U.S. 231. Note the addition of the flea market this year.

Doors open for set-up at 6:00 a.m.; flea market opens at 8:00 a.m. Flea market tables are \$2 each. Food and beverage available on location. All events inside building. Commercial exhibitors welcome.

For more information, send SASE to John Underwood, K9IIB, RFD 1, Box 10, Fillmore, IN 46128, or call (317) 246-6335. □

Massachusetts

The FRAMINGHAM AMATEUR RADIO ASSOCIATION, Inc. will hold its annual spring flea market on Sunday, 14 April, at the Framingham Civic League Bldg., 214 Concord St. (Route 126), downtown Framingham.

Doors open at 10:00 a.m. (sellers may begin set-up at 8:30). Admission is \$2, and tables are \$10 (includes one free admission). Pre-registration required. Radio and computer gear; food on premises; bargains galore.

Talk-in on 147.75/15 and 146.52.

Contact Jon Weiner, K1VVC, 52 Overlook Dr., Framingham, MA 01701; phone (617) 877-7166. □

Minnesota

The BEMIDJI ARC will hold its annual hamfest/swapfest on Saturday, 04 May, in the Middle School Cafeteria, Bemidji, Minnesota, from 9:00 a.m. to 4:00 p.m. Licensing exams will be given.

Talk-in on 146.13/73

For more information, contact Jerry Potratz, Bemidji ARC, P.O. Box 524, Bemidji, MN 56601; (218) 751-7502. □

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Missouri

The PHD AMATEUR RADIO ASSOCIATION will again sponsor the 1985 Missouri State ARRL Convention, Saturday and Sunday, 13-14 April. Location is the Trade Mart Building II, Kansas City, Missouri downtown airport.

There will be a complete program of forums: ARRL, computer, FCC, ARRL, VE, DX, PR, CW and homebrew contests, QCWA, AMSAT. Volunteer exams, 200 flea market tables, 75 commercial booths, all inside the 45,000 sq. ft. building. Unlimited free parking adjoins the site. RV's welcome, but no hookups. Plaques will be given for the Missouri-Kansas Amateur of the Year award and the open CW contest winners.

Doors open 9:30-5:30 both days. Commercial exhibitors set up 7:00-9:00 p.m. Friday or 7:00-9:00 a.m. Saturday. Banquet Saturday evening at the World Famous Gold Buffet. Special guests will include Dale Clift, WA3NLO, ARRL General Manager; Al Markwardt, W5PXX, ARRL Advisory Committee, Richardson, Texas; and Bill Pasternak, WA6ITF, Westlink Radio News, Los Angeles, California.

Volunteer exams by PHDVEC at 5:00 and 7:00 p.m. Friday, and 8:00 a.m. Saturday and Sunday. Applicants should give first and second choice on time. Send applications with \$1 and SASE for confirmation to PHDVEC, P.O. Box 11, Liberty, MO 64068-0011, by 08 April 1985.

Registration \$4 (good for both days). Banquet \$10.50. Swaptables \$10, good for both days. Includes one registration per table. Those desiring swap tables are urged to pre-register as there was a sell-out in 1984. All pre-registration will be held at the door; SASE for confirmation.

Talk-in 146.34/94.

Registrations to PHD Amateur Radio Assn., P.O. Box 11, Liberty, MO 64068-0011; or phone (816) 781-7313 or 452-9321. □

Nebraska

The MIDWAY ARC of Kearney, Nebraska will celebrate its 8th Annual Nebraska ARRL Spring Convention. As usual we will "take over" the Holiday Inn for the weekend of 30-31 March 1985.

The Friday night pre-activity will be the North American Teleconference Radio Network live from the Holiday. According to net manager Timothy Loewenstein, WA0IVW, the two-hour program features Jim Larsen, K7GE, of Larsen Antennas, and will begin at 8:00 p.m. CST.

FCC license exams will be sponsored by the Lincoln ARC on Saturday morning.

Convention symposium speakers: John Champa, K8OCL, on AMSAT; Ralph Wallio, W0RPK, on packet radio; Joe Eisenberg, WA0WRI, on frequency coordination and RFI; Also Steven Place, WB1EYI, live-and-in-person from Newington, Connecticut. Other League leaders are Paul Grauer, W0FIR, Midwest Director and Dick Dyas, W0JCP, Vice Director, to conduct the ARRL forum.

Our Ladies Activities Coordinators, Janene Feikert and Delaine Loewenstein, WB0MMI,

have events planned to distract the ladies from their husbands' favorite hobby.

And then there's the banquet with terrific cuisine, Four Keys music, ventriloquism, Belvin B. Bump's humor and more. Kearney definitely has a convention for the whole family.

For more information, contact Midway ARC, Box 1231, Kearney, NE 68847. □

New Hampshire

SPRINGFEST '85, the 5th annual flea market-hamfest sponsored by the Great Bay Radio Association, will be held on Saturday, 20 April 1985, from 9:00 a.m. to 3:00 p.m. at the Somersworth Armory, Blackwater Road, Somersworth, New Hampshire. Admission: \$1. Tables: \$8 (includes one admission). Plenty of free parking. Food and refreshments available.

Talk-in on 146.40/147.00.

For more information and advanced table reservations, write to: Great Bay Radio Association, P.O. Box 911, Dover, NH 03820. □

New Jersey

SHORE POINTS, ARC, Inc. invites everyone to Springfest '85 to be held Saturday, 30 March, from 9:00 a.m. to 2:00 p.m. at the Atlantic County 4-H Center, Egg Harbor City, New Jersey - approximately 15 miles west of Atlantic City.

Buyers and sellers can make their deals inside 8,000 square feet of heated indoor selling space. Covered tailgating will also be available, weather permitting. Limited air conditioning in indoor space. Sellers \$5 per space (bring own table); buyers \$2.50 advance, \$3 day of hamfest.

For more information, write to SPARC, Box 142, Absecon, NJ 08201. □

New York

The SUFFOLK COUNTY RADIO CLUB Indoor/Outdoor Electronic Flea Market will be held on Sunday, 05 May, 8:00 a.m. to 3:00 p.m. at Republic Lodge No. 1987, 585 Broadhollow Road (Route 110), Melville, New York.

There will be refreshments on the premises and plenty of free parking. General admission is \$2 (wives and children under 12 free).

Indoor seller's tables are \$7, and outdoor space is \$5 and includes one free admission.

Talk-in on 144.61/145.21 and 146.52.

For additional information, contact: Richard Tygar, AC2P, (516) 643-5956 evenings. □

North Carolina

The 13th Annual RALEIGH AMATEUR RADIO SOCIETY Hamfest will be held on 14 April at its new 110,000 sq. ft. "indoor only" location, the Jim Graham Building, North Carolina State Fairgrounds, Hillsborough Street, just west of the Raleigh Beltline.

Registration is \$3.50 each until 01 April, and

\$5 at the door. A flea market space, one table and two chairs (ours only) will be \$5 each. FCC amateur exams will be given the same day, nearby. Pre-register for them by 08 April; contact John Johnson, WM4P, direct, at 2118 Lyndhurst Dr., Raleigh, NC 27610.

There will be major prizes; QCWA, MARS and ARRL-NTS meetings; CW and homebrew contests; and ARRL and RARS booths. Dealer set-up on Saturday, 4:00-10:00 p.m., and Sunday, 6:00-8:00 p.m. Welcoming party in the building Saturday, 7:00-10:00 p.m.

Talk-in on 04/64 and 28/88.

For pre-registration/flyer and dealer information, contact Rollin Ransom, NF4P, at (919) 779-5021, or Jim Bradley, WA4AOO, at (919) 851-2437; or write to RARS, P.O. Box 17124, Raleigh, NC 27619. □

Ohio

THE LAKE COUNTY AMATEUR RADIO ASSOCIATION will present their 7th Annual Lake County Hamfest and Computer Fest, Sunday, 31 March, at Madison High School, Madison, Ohio.

Doors open for exhibitors at 5:30 a.m. and for the public at 8:00 a.m., at this large indoor location. We'll close at 4:00 p.m. Admission is \$3 advance and \$3.50 at the door. Table and display space is \$5 for 6-foot table, \$6.50 for 8-foot table.

Plenty of free parking and all display space is indoors at this location, just 40 miles east of Cleveland. Main prize drawings start at 3:00 p.m.

Talk-in on 147.81/21.

Information and reservations are available by sending SASE to Lake County Hamfest Committee, 713 W. Jackson, Painesville, OH 44077. Telephone (216) 953-9784. □

Pennsylvania

The 3rd Annual Southern Alleghenies Hamfest will be held Sunday, 14 April, from 7:00 a.m. to 4:00 p.m. at the Bedford County Fairgrounds located one mile west of Bedford on Route 30 and one-half mile west of the Route 220 Bypass. This location is close to the Bedford Exit of the PA Turnpike. The sponsoring organizations are the BEDFORD, ALTOONA, SOMERSET (all of Pennsylvania), and CUMBERLAND (Maryland) ARC's, and the BLUE KNOB REPEATER ASSOCIATION.

Talk-in on the Bedford repeaters 145.49/89, 444.2 ± 5 MHz and 146.52 simplex.

Admission \$3; tables \$5 each; outside tailgate spaces \$2. All the special features of a good hamfest will be available. Dealers can set up the day before.

For more information contact Joel Cunard, KB3TR, RD 6 Box 104, Bedford, PA 15522; (814) 623-9697. □

Wisconsin

The MADISON AREA REPEATER ASSOCIATION, Inc. (MARA) is pleased to announce its 13th Annual Madison Swapfest which will be held on Sunday, 21 April, at the Dane County Exposition Center Forum Building in Madison, Wisconsin. Doors will open at 8:00 a.m. for commercial exhibitors and flea market sellers and at 9:00 a.m. for the general public.

The Forum Building has over 20,000 square feet of space for commercial exhibitors and the flea market, as well as plenty of space for parking in the adjacent paved lot. Hotel accommodations are available within walking distance of the swapfest.

Commercial exhibitors and flea market sellers will provide a large variety of equipment and components for amateurs, computer hobbyists and experimenters. An all-you-can-eat pancake breakfast and a barbecue lunch will also be available.

Admission is \$2.50 per person in advance and \$3 at the door. Children 12 and under are admitted free. Flea market tables are \$4 each in advance and \$5 at the door. Be sure to reserve early as tables were sold out last year.

Talk-in on WB9AER/R, 146.16/.76.

For reservations or more information, write to MARA, P.O. Box 3403, Madison, WI 53704. □

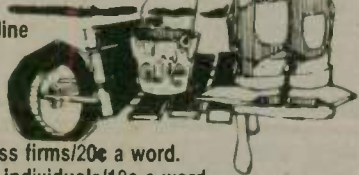
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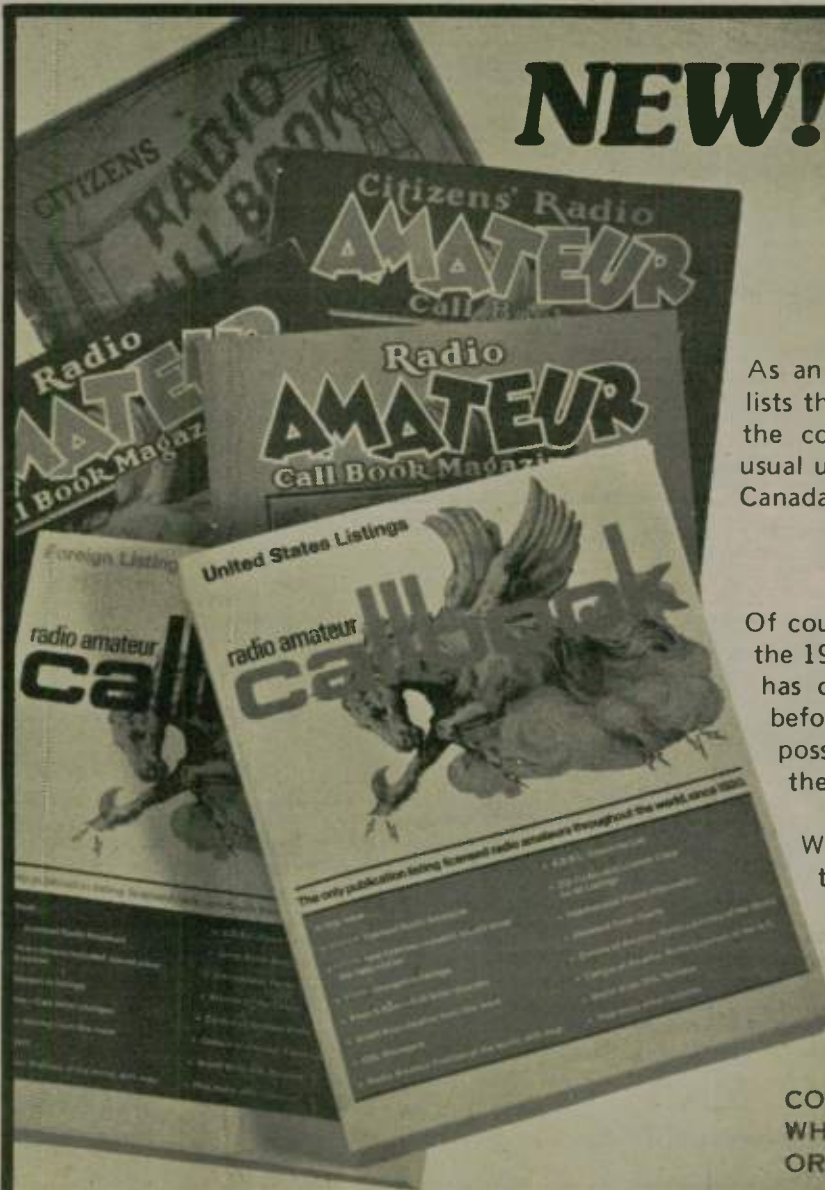
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Some of Steve Solo, W8IEC's awards, on display in his shack.



George Vincent, WD5CKF (right), gave the Novice exam to **Frank C. Drewes III** (left) at the 1984 World's Fair station, K5WF, on 30 October. He passed the code and theory that same night, and received his call on 19 November — **KA5UWW**. Frank is now on the 40-meter Novice band and a member of the Westside Amateur Radio Club, and is looking for his General ticket.



Swapmeet at San Diego Stadium, December 1984

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AMSAT — 36
Antenna Co. of America — 19
Antennas, Rudy Plak — 2
Azimuth Clock — 33
BHC, Inc. — 2
Britt's 2-Way Radio — 18
Butternut Electronics — 6
C & A Roberts, Inc. — 17
Callbook — 53
Certified Communications — 6
Coin Int'l — 16
Communications Specialists — 11
Courage Center — 42
Dana — 45
Dayton Hamvention — 23
Digital Instruments, Inc. — 42
Display Your License — 32
DX Edge — 31
Electronic Put-Ons — 20
Engineering Consulting — 26
ESC Products — 19, 49
Fallert's Engraving — 4
Fox Tango Corp — 12
Glen Martin Engineering — 32
Ham Radio Outlet — 28, 29
Ham Station (Ham Shack) — 27
Handi-Tek — 42
H.C. Van Valzah Co. — 16
Henry Radio — 15, 24
H.L. Heaster, Inc. — 41
IMRA — 16
Jinx Electronics — 22
J.L. Industries — 12
Johnson Hicks — 39
JRW Electronics — 40
Kilo-Tec — 8, 40
La Cue Communications — 34
Lance Johnson Engineering — 44
Long Island DX Bulletin — 55
L-Tronics — 10
Madison Electronics Supply — 21
Metheny Corporation — 46
MFJ — 12, 25, 50
MHz Electronics — 51
Microcomm — 19
Mike Forman — 54, 55
Mil Industries — 31
N.P.S. — 10
N6KW QSL Cards — 3
Oak Hill Academy — 44
Oregon State Ham Convention — 9
Palomar Engineers — 22, 37, 50
P.C. Electronics — 49
Peter W. Dahl Co., Inc. — 48
Portland Radio Supply — 43
QCWA — 3
QSL by Fred — 50
Radio Amateur's Conversation Guide — 30
Radio Clubs — 40, 41
Radio Engineers — 4
Radio Store — 52
RND Design — 35
Rogers Advertising — 6
Sartori Associates — 46
Sierra Electronics — 52
Skylane Products — 30
SpectrumWest — 36
Spider Antenna — 38, 46
Spi-Ro Distributors — 8, 30, 44
Ten-Tec — 5
TNT Radio Sales, Inc. — 37
USQS — 10
Van Gorden Engineering — 2
Vanguard Labs — 36
Vector Radio Co. — 14
Wendell Kent, NV6C — 33
Williams Radio Sales — 13
W9INN Antennas — 32
Webster Associates — 3
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