

Worldradio

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The OSCAR-10 Symposium

Norm Brooks, K6FO

Eureka! I have found it! Ever since I got my 5BDXCC in October 1983, I have been casting about for another branch of Amateur Radio to get interested in. After spending a day with Ross Forbes, WB6GFJ, AMSAT Coordinator for Northern California, at the symposium he called in San Francisco, I am certain my next major Amateur Radio activity will be to set up an OSCAR station.

The meeting was held at the Officers' Club at Fort Mason, San Francisco (California), on 23 February 1985. Chuck Beasley, WA6UBX, was our host who arranged for the meeting location. About 70 attended. About half were actual OSCAR-10 users, the others, like me, non-users.

Chuck Rubey, W6AHD, was Master of Ceremonies. This was the first such meeting of OSCAR-10 users in the San Francisco Bay area, and if the attendees liked it, it could become a semi-annual affair. The objective was to provide "eyeball QSOs" so users could meet those they heard on the bird. Non-users could learn more about OSCAR-10 from the speakers and question-and-answer sessions.

Gordon Fuller, WB6OVH, was our first speaker. He covered OSCAR history briefly. OSCAR-1 was the first Amateur Radio satellite, launched in December 1961. It was built by members of the Lockheed Amateur Radio Club to replace sandbags in the launching rocket. It had a beacon transmitter only, which sent HI HI HI . . . It was an outstanding success. Hams around the world sent in reports, which were better reception reports than received for NASA weather satellites.

Ten years later, in October 1971, OSCAR-6 was the first widely used Amateur satellite. It had a 2-meter



Ross Forbes, WB6GFJ, AMSAT Coordinator for Northern California

receiver and a 10-meter transmitter. Anyone with a 10-meter receiver could tune it in. Then came OSCAR-7 and OSCAR-8. They were low-level polar satellites. They had 2-meter to 10-meter equipment. They also had 430 MHz to 2-meter equipment for future development.

With little notice, Russia jumped into the Amateur Radio satellite activity by launching eight satellites. They were all like OSCAR-6, low polar orbit and 2 meters to 10 meters. Some had robots aboard to answer your CW contacts.

Modes

At this point, we're going to have to explain some satellite nomenclature. (please turn to page 3)

Amateurs win big in North Carolina

Amateur Radio scored a tremendous victory on 26 February in Fayetteville, North Carolina, where the Cumberland County Board of Commissioners rejected a proposal to limit satellite antenna Earth stations. The proposed legislation would have prohibited any dishes over 12 feet in diameter, disallowed all dishes in front yards, allowed no dishes to be visible from any street adjoining the property where it was to be located, required that approved dishes be constructed no closer than 10 feet to any property line, required building permits for dishes over 42 inches in diameter, and required that approved

dishes be painted to "blend in with the surroundings."

The Cape Fear Amateur Radio Society spearheaded opposition to the proposal, with a large portion of support coming from the television satellite dish dealers in the area. Hundreds of homeowners turned up at the Board meeting, with Burt Vanderclute, N4ERM, acting as spokesman for the Cumberland County amateurs.

Van stressed the public service and emergency preparedness of Amateur Radio operators, citing the March 1984 tornadoes that cut off communications in

FCC lifts moratorium

The FCC has issued an Order which rescinds the moratorium on new repeater operation which was imposed by the NPRM (Notice of Proposed Rulemaking) in PR Docket 85-22. The moratorium had been imposed to "forestall a growing number of amateur repeater interference complaints."

For details on the moratorium and the original NPRM, see Volume 4 No. 3 of *The ARRL Letter*.

The ARRL filed a Petition for Partial Reconsideration in this proceeding, asking the Commission to lift the moratorium, and pointing out that repeater operation is permitted by Part 97, and that a Notice of Proposed Rulemaking could not in and of itself modify an existing rule.

More details on the Petition appeared in Volume 4 No. 4 of *The Letter*.

In addition to the ARRL Petition, the Tri-State Amateur Repeater Council (TSARC) filed a petition recommending that the moratorium be lifted for all bands except the 2-meter band. The original moratorium applied to all repeaters in metropolitan areas, including "digi repeaters."

The Order was adopted 15 February and released 21 February. The Commission states, "Filings by the American Radio Relay League (ARRL) and by the Tri-State Amateur Repeater Council (TSARC) raise serious difficulties with the imposition of the moratorium, including financial hardship to those with repeater construction in process.

"The problems persuade us to rescind the moratorium. Instead we will seek a permanent solution to repeater problems in this proceeding.

"We request substantive comment on all issues relevant to solving questions of interference and congestion by and to stations in repeater operation."

This request for comments on ways to solve repeater-to-repeater interference problems has been the important feature of the NPRM all along. The FCC stated that the NPRM had its origin in the fact

that the number of repeater-to-repeater interference complaints in 1984 was more than three times the number recorded in 1983.

The original NPRM stated "we seek comment on whether we should require an amateur operator to seek the recommendation of a local frequency coordinator for the input and output frequencies of any repeater located within a Consolidated Metropolitan Statistical Area (CMSA) or a Metropolitan Statistical Area (MSA) . . . We also request comments on whether we should consider alternative methods of frequency coordination.

"Additionally, we seek comment on whether the voluntary or required use of modern technological innovations (such as the use of narrow-band technologies, ACSB or tone-operated squelch techniques) is a more appropriate solution . . . than the proposed solution.

"Comments are also sought with regard to whether the FCC should recognize a single national frequency coordinator for the Amateur Radio Service."

The FCC has recognized the repeater-to-repeater interference problem, and asked for input from the amateur community on ways to solve it. We all have a chance to help shape future policy on this issue.

Formal comment requires the filing of an original and five copies, but a single copy may be considered informally. Comments are due by 01 July 1985; reply comments by 30 September 1985.

Copies of the original NPRM, the ARRL Petition for Partial Reconsideration and the Order rescinding the moratorium, may be obtained from ARRL HQ (225 Main St., Newington, CT 06111) by sending a large SASE with 73 cents postage affixed.

— *The ARRL Letter*

Ban threat ends

Arizona amateurs learned that proposed legislation that would have prevented mobile transmissions within that state's incorporated cities has been killed in committee. James Swafford, W7FF, SEC-elect for Arizona, was informed by State Senator Jack Taylor of the good news, after a concerted effort by area amateurs. U.S. Senator Barry Goldwater, K7UGA, quickly responded with assistance, writing the State Transportation Committee, to inform them of the full import of such legislation.

Next month, *Worldradio* will present the story of how Arizona's amateur community marshalled resources to defeat the measure, to help others who may be faced with any similar problems in the future. □

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STAFF

Publisher..... ARMOND NOBLE, N6WR
Editor..... LOU ANN MERCER KEOGH, KB6HP
Managing Editor..... CHRISTINE WILSON, KA6TAL
Associate Editor..... NORM BROOKS, K6FO
Advertising Director..... HELEN NOBLE
Graphics Director..... DIANNE DUNNING
Circulation..... MIN VASEY

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-



Armored Force amateurs to meet

The Armored Force Amateur Radio Nationwide Emergency Team (A FAR NET) will hold an Eyeball Bivouac at Fort Knox, Kentucky on 07-09 June 1985. Fort Knox is the U.S. Army's Armor center.

The gathering place for this unique affair will be the Best Western Gold Vault Inn in Radcliff (just outside the fort itself). Campers will use the Fort Knox campground facilities at Camp Carlson.

Members of the net will start their bivouac on Friday, 07 June, with an informal picnic or cookout. On Saturday, the group will tour Fort Knox via a guided bus tour, which will end with a visit to the Patton Museum. Evening plans call for a cocktail party followed by a sit-down dinner at 8:00 p.m. The group will gather Sunday morning for a farewell breakfast before starting for home.

Additional information on this get-together can be obtained by contacting Carl Quickmire, WB4UBS, 6341 Cloverdale Dr., Columbia, SC 29209.

The A FAR Net is a group of radio amateurs who at some period of their lives served in or were attached to an armored (tank) unit of the Armed Forces. The net members provide a nationwide emergency capability for use in the event of a national emergency. The motto of the group is: "We have served, we are serving, we will serve."

Any Amateur Radio operator who has ever served with or been assigned to an armored unit of the U.S. Armed Forces or its allies is eligible for membership. Family members holding amateur licenses are also eligible for associate membership. The net runs daily schedules and uses both SSB and CW modes of communication.

Individuals interested in joining this unique organization can obtain additional information and an application for membership by contacting Harry B. Thomsen, W2PJH, 348 Jefferson Ave. (Apt. 15), Canandaigua, NY 11424. A business-sized SASE would be appreciated. — Bill Willmot, K4TF

ATTN: Antique radio buffs

The Antique Radio Club of America (ARCA) will hold an international convention at Niagara Falls, New York, 05-08 June 1985.

The club has about 1,000 members who collect and restore antique wireless and radio equipment and who study and record the history of early radio. Antique radio buffs now collect all types of equipment from wireless equipment before World War I to sets of the '40s and '50s.

Once a year, the club has a national convention sponsored by a local or regional group of collectors. This year the Niagara Frontier Wireless Association of Buffalo will be the sponsor.

Many visitors from Canada and overseas are expected to attend this first ARCA international gathering.

During the convention, there will be speakers, tours of radio collections and tours of the Niagara area. Highlight of the convention will be a massive flea market where radio collectors will swap and sell sets, part, tubes and associated literature. Many will be looking for that missing tube or part necessary to finish the restoration of a favorite set. There will also be a large auction of radios and associated items.

The recreational and vacation opportunities in the Niagara Falls area provide endless opportunity for those members of the collectors' family whose interests do not include "old radios."

Information on the convention and information on ACRA membership can be obtained by writing to NFWA, P.O. Box 68, Central Park station, Buffalo, NY 14215.

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ATTN: SWLs and amateurs

Shortwave listeners, amateurs and radio enthusiasts are invited to join a unique shortwave listeners' club.

The Great Circle Shortwave Society is probably the only SWL club in the world devoted to shortwave listening in the 1950's and 1960's. GCSS'ers feel that the '50s and '60s were fascinating years to be SWLs and hams, and are now keeping the period alive with a newsletter devoted to tube-type equipment, nostalgia and, yes, even present-day long-wave, medium-wave and short-wave news and loggings. Special emphasis is placed on SWLs who were active during the period between the Korean and Viet-nam wars and who hold Popular Electronics "WPE" shortwave monitor "call signs."

For a sample newsletter and information on GCSS, send an SASE to Richard H. Arland, WPE7BYR, Secretary, Great Circle Shortwave Society, 2042C Flyer Dr., Bethel Manor, Langley AFB, VA 23665.

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All QSLs for NG840, official Los Angeles Olympics station, have been mailed to those who provided SASEs of SAE/IRCs. Remaining cards are enroute to bureaus. Logs are at Dick Mannheimer, K6LAE, 650 Westholme Ave., Los Angeles, CA 90024 (Callbook address with a large supply of blank cards.

Some printer-damaged cards got into the mail. Replacements can be obtained by returning faulty cards or by providing call, time, date and band to K6LAE with SASEs. PLEASE do not bother Dick Ward, NG6O.

—Dick Mannheimer, K6LAE

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Gary Nakayama, KH6JRB, showed slides of his "homebrew" OSCAR-10 antennas.

OSCAR-10

(continued from page 1)

OSCAR-6 and others carried "Mode A" equipment. That is, 2-meter uplink, 10-meter downlink. OSCARS 7 and 8 also carried Mode B — 430 MHz (70cm) uplink, with 2-meter downlink. Mode J — 2-meter uplink, 70cm downlink, and Mode L — 1296 MHz uplink and 70cm downlink.

Do not confuse "Mode A" (or B or J or L), which describes the satellites up and downlink frequency band, with "all mode", which describes a transceiver's ability to operate on CW and SSB.

Phases

Phase I was OSCAR-1 — a beacon. The OSCARS through 8, plus the Russian satellites are Phase II, in low-level orbits. These are the kind you can work for only 20 minutes or so as they whiz by.

Phase III satellites are designed to have a high elliptical orbit which will allow working through them for hours at a time. The first Phase III OSCAR went into the ocean when its Ariane launching rocket blew up. Phase IIIB was launched on 16 June 1983, and its Ariane rocket launch was OK. As OSCAR-10 separated from the launch vehicle, however, it was bumped by the rocket. This later caused failure of the kick motor, thus preventing its reaching a perfect synchronous orbit. Although its final orbit is not as great as was planned, it does provide six to 14 hours a day of local and DX operation.

Current operational Amateur satellites

Here is a list of the satellites you can work now:

Russian RS series RS-5 and RS-8

Low-level polar orbit, with approximately a 15 to 20-minute window three times a day. Mode A. They travel from north to south and south to north.

UO-9 and UO-11 scientific satellites

Built by University of Surrey, England. They are mainly used for scientific experimentation with some Amateur TV and Packet Radio. The data heard on these satellites would not be meaningful to the average radio amateur.

AMSAT/OSCAR-10 Phase IIIB

Mode B, repeating all modes except

FM. Also carries Mode L. There are CW, RTTY and PLL beacons on 145.81 MHz. Over 100 countries are active on this satellite.

What equipment do I need?

For Mode A operation (the Russian satellites)

- A 2-meter all-mode transitter
- A 10-meter SSB and CW receiver
- A 2-meter beam with vertical and horizontal rotors
- Almost any kind of 10-meter antenna.

For Mode B operation (OSCAR-10)

- A 2-meter all-mode transceiver with pre-amp.
- A 435 MHz all-mode transceiver with transmitting amplifier.
- A 2-meter cross-polarized 10-element beam
- A 435 MHz cross-polarized 12-element beam
- Vertical and horizontal rotators.

You'll notice that Mode A operation does not need receiving pre-amps and transmitting output amplifiers because the satellite is in low orbit. It's up there just a few hundred miles. For Mode B on OSCAR-10, such amplifiers are needed because the satellite is in a high elliptical orbit. It is literally thousands of miles away.

Operational procedures for OSCAR-10

First find a QSO on the downlink frequency. Position your transmitter to the approximate frequency. Use CW until you hear your own signal coming back. Switch to SSB. Adjust your transmit frequency to bring you into the QSO. Continue to adjust your transmit signal to keep your downlink signal on frequency. Use headphones.

Since you are using a separate transmitter-receiver combination, you will hear yourself while you are transmitting. If you used a speaker, you'd create a very long feedback loop. There is about a half-second delay from the time you transmit until your signal is returned. If you are on CW, listen to your keyer — not the delayed signal coming back. On SSB, turn the volume down; otherwise you'll "talk funny" trying to listen to your own echo.



Gordon Fuller, WB6OVH, the symposiums first speaker, gave a brief history of OSCAR.

Ross Forbes, WB6GFJ, as a speaker, gave us additional operating suggestions. He pointed out that we should compare our signal coming back from OSCAR-10 to the strength of the OSCAR beacon on 145-810 MHz. Our signal should not be stronger than the beacon. If it is stronger, it is taking too much of the power from the satellite, and all other signals will be made weaker.



Chuck Rubey, W6AHD, was Master of Ceremonies.

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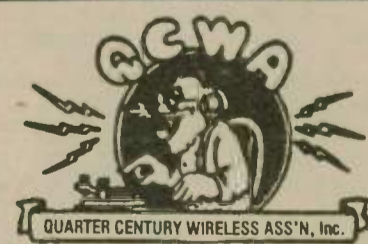
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Monday is QRP day on OSCAR-10 (Sunday night local time). This means all users are limited to 100 watts ERP (Effective Radiated Power). Because of this, everybody's signal is louder on QRP day.

Ross pointed out that this is the time to get involved with OSCAR. Five more amateur satellites will be launched in the next 1½ years. During the next three years, we will continue to have poor long range DX HF propagation. There are over 100 countries on OSCAR 10, and more coming on. DXpeditions are taking OSCAR equipment along. Ross has kept schedules with FO0 and finds they can communicate seven hours out of eight. This is a far cry from the 20-meter band, and you don't have to wait for the band to open.

Questions and answers

The Q and A period was highly informative, especially since it was made clear that there was no such thing as a stupid question. Here are some pearls of wisdom we heard:

Locate your entire OSCAR antenna system as close to your rig as possible. The longer your coax cable is, the more signal you will lose on your downlink (received signal) and your uplink (transmitted signal).

The 3db we never worried about on 20 meters becomes very important at 435 MHz. A length of coax of 30 feet or less from your rig to your antenna is best. Remember your antenna system does not have to be high.

Use the best possible coax you can afford. NEVER use RG-58 or RG-59 coax. Use hardline if you have it. Belden has just released a new coax, Belden 9913, which is the same size as RG-8, with the low losses of hardline. It costs about 55 cents a foot. It is highly recommended for both your uplink and downlink coax.

Get rid of all coax connectors and adapters. Where you must use a connector, use type "N". Change all SO-239 connectors on the backs of radios to female type N. Ross reported that at his station, when he changed to Belden 9913 and changed all connectors to type N, he picked up 1½ S units on receive!

If your wattmeter uses SO-239 connectors, change them to type N. Ross reported he picked up 5 watts transmitted power this way.

The horizontal boom on the elevation rotor should not be metal. Use wood or fiberglass available from KLM.

For your receiver, use a good GasFet pre-amplifier that includes a switching relay which bypasses the amplifier if you transmit through it. Even though you say you don't intend to transmit through it, Ross says "Trust me. One day you will accidentally transmit through it and the applied RF will blow it up!" The GasFet amplifier will help not only old receivers, but new ones, too.

Welcome to the newest DX game in town. There are a number of countries, including the USA, where the stations you will work are of the "Technician" Class. They have never before worked DX "pileups." This is because those stations

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have never been permitted in the usual HF DX bands. You may work foreign stations that speak a very limited amount of English. For those stations, be sure to speak slowly and distinctly, and never use American slang or idiomatic expressions.

There is very little CW operation on OSCAR-10. Other countries *DO* have no-code licenses. You will hear more RTTY and FAX than CW.

There is no TVI in satellite operations. In a rare case of TVI reported, it was coming from a 10-meter transceiver being converted down to 2 meters or 70cm.

Your opportunity to build

If you like to "roll your own", building a satellite station gives you a unique construction opportunity. Gary Nakayama, KH6JRB, showed slides of his OSCAR-10 antennas built entirely by him. His circularly polarized 70cm antenna was especially striking, made of copper tubing. Booms were made of wood. Reflecting surfaces are made of 1/2-inch hardware cloth. For technical details, Gary says you can find them in QST for June 1981.

Gateway stations

In various parts of the country, gateway stations are being set up so that amateurs can use their hand-held radios to talk to DX stations across the world. All it takes is a repeater station that the gateway station operator connects to his OSCAR-10 station. Of course they use manual control, so that DX operators will not hear any of our "kooks" who may try to jam.

Where can I learn more?

Your two best sources of amateur satellite information are ARRL and AMSAT. *The Satellite Experimenter's Handbook* is available from ARRL for \$10 plus postage. This book is a *MUST* if you intend to get involved with satellites. ARRL provides tracking information free to members for an SASE. ARRL bulletins give satellite information daily.

AMSAT is a club of amateurs around the world. Dues are \$24 per year. AMSAT publishes *Satellite Journal* magazine which comes with membership. AMSAT is deeply involved in the building, launching and control of our OSCAR satellites. There are AMSAT nets on Sunday 1800 UTC 21.280 MHz, and Sunday 1900 UTC 14.283 MHz.

The future

The next OSCAR satellite will be a Phase IIIC. It will probably have similar transponders as OSCAR-10, plus a means of linking to OSCAR-10. Thus we'll have worldwide 24-hour coverage using both satellites.


Japan will put a packet radio satellite in orbit next year. This will be Japan's first attempt at launching a satellite.

The French are going to put up an amateur satellite next year.

The Russians are expected to launch several more satellites in future years. They will probably launch two next year, with 15-meter uplinks, 10-meter downlinks.

With these five satellites in the offing, plus OSCAR-10, now is the time for you to get started with satellites! □

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Clarifying test issues

Gordon West, WB6NOA

There appears to be widespread confusion on the proper study material and test questions on the Amateur Radio written examination. Let's clear up this confusion by looking at the FCC schedule for updating and implementing new updated test questions.

Novice, Element 2

The 200 Novice questions were revised last July (1984), and all 20-question Novice exams must use these new revised questions from the first of this year.

Technician, Element 3

The 500 original Technician test questions were revised last October (1984), and there is a six-month implementation period for the new "November 1984" updated questions. The new Technician test questions, 50 on an examination, are now in use by most Volunteer Examination Coordinators and individual Volunteer Examination teams.

The old test questions may not be used after 30 April 1985. This means that any examinations after 01 May 1985 must be based on the new "November, 1984" Technician class questions updated by the Commission.

Test guides that indicate "Updated for 1985 Questions" contain all the revised questions as well as the ARRL-type, multiple-choice answers.

Publishing companies also offer Volunteer Examination teams, under the W5YI Volunteer Examination Coordinator program, a complete set of 10 different updated-for-1985 Technical Class examinations that include the ARRL multiple-choice answers. Examiners may be allowed to reproduce these examination question sets for candidates wishing to take the Element 3 Technician Class test under the W5YI VEC program.

The 10-set examinations also include an answer key, instructions to the examiner and examinee, as well as the Form 610 and blank answer sheets.

A new updated 10-test set is available for \$10, plus \$3 postage and handling from Radio School, Inc., 2414 College Dr., Costa Mesa, CA 92626. Examiners must indicate their VE when ordering.

Advanced, Element 4A

The 500 test questions for Element 4A have been released by the FCC. Examination teams will begin implementing the new revised Advanced Class questions at mid-summer, and the cut-off date for us-

ing the old questions will be exactly six months from when the new questions are issued by the Commission.

The new 1985 questions for Advanced Class have been issued in March, so the changeover date from old to new will be September of this year.

Extra, Element 4B

The 400 Extra Class questions will be updated and released by the FCC around June of this year (1985). There will be a six-month phase-in period for these new revised questions, of which 40 will be administered on the Extra Class test. *The cut-off date for using "old" Extra Class questions will probably be the first of next year, 1986.*

What to study?

If you are planning on taking an Amateur Radio written exam, find out whether or not the examination team is using the old or newly revised questions. Users of Radio School Test Guides that require updated questions need only to contact Radio School, 2414 College Dr., Costa Mesa, CA 92626 for the update supplement. Several other publishers of licensing guides also offer the revisions of updated questions.

While all of this question updating may seem confusing and unnecessary, the FCC should be commended for studying the many comments by Amateur Radio operators on the present FCC test questions. When many comments are received regarding a certain question being vague, the FCC will examine this question and update it at the appropriate time.

It will be several years before all test questions stabilize. During this transition time, the best advice for anyone taking a written examination is to simply find out

from the Volunteer Examination team whether or not they are using the old questions or the new updated questions on their test.

Next, the applicant would double-check his/her study material to insure that it corresponds with the old or new questions that might be given on the test.

If an applicant has an old book but new questions are to be asked, the applicant should write that book's publisher and request the revised question supplement.

Finally, let's once again review the schedule of the question changeover. Novice questions have already changed for the new updated Novice questions. *Technical Class questions change from old to new in May 1985. Advanced Class questions change from old to new this fall, probably around September. Extra Class questions will change from old to new approximately January 1986.*

The code tests are left up to the Volunteer Examination Coordinators and teams to implement. Most code tests are typical five-minute QSO's. Some examination teams may require one minute of perfect copy. Other teams will require fill-in answers.

Some teams may simply ask for a multiple-choice answer regarding the code test message sent. Needless to say, the multiple-choice code test is the easiest, and applicants might wish to find out ahead of time from their examination team what type of code test they will implement.

The statistics on the new examination procedures under Volunteer Examiners are very positive for our new program. When applicants study test guides that contain the actual test questions, passing rates are well above average. The passing rates on code tests are also on the increase.

Many examination teams go out of their way to relax those preparing to take the code test — and relaxing is certainly

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one of the keys to staying calm and up-to-speed while copying down the text.

Congratulations to those Volunteer Exam Coordinators and Individual Volunteer Examination teams that are working so hard to sustain the growth of Amateur Radio. It's your efforts that will keep our ham service growing, and each team member should be congratulated for helping administer ham tests.

For those of you going for your Amateur Radio upgrade, give your examination team as much support as possible. Follow the instructions of your examiner precisely and quietly. Be sure to bring a copy of your license and a properly filled out Form 610 to the examination site and any fee that the examination team may require (\$4.16 maximum).

Continued success to those of you taking exams, and those of you giving them.

VE exams

Florida

The Fort Myers Amateur Radio Club will sponsor their third volunteer examinations for amateurs desiring to upgrade their Amateur licenses, Technician through Extra Class.

The exams will be held at Edison Community College on Friday, 24 May, at 6:00 p.m. The contact person is: Matt Matteson, WO4D, IBE Box 1023, Bonita Springs, FL 33923; (813) 992-7117.

The deadline for registration and submission of 610 Form, copy of license and a check for \$4, payable to ARRL/VEC, is 30 days prior to date of exam. — *Peggy Cummings, KY8Y*

Illinois

FCC/VEC exams will be given on 02 June during SRRC Hamfest in Princeton, Illinois. No pre-registration required. Bring original license, plus photocopy of same. A \$4 fee is required.

For details, send long SASE to Denny Chestney, KM9L, 1212 Dogwood, Bloomington, IL 61701.

Ohio

On Saturday, 18 May, at 9:00 a.m. an ARRL/VEC license exam will be held at the United Community Services Building (Red Cross), 39 North Park Street, Mansfield, Ohio. Send an SASE, 610 and check for \$4 payable to "ARRL/VEC" to Peggy Boyle, KC8NH, 1464 Marion Avenue Rd., Mansfield, OH 44906. The exam site is in the center of Mansfield on the square.

Visitors from Down Under

Ken McLachlan, VK3AH

Due to arrive in San Francisco on 15 May, is well-known amateur and experimenter Ian Williams, VK3MO, and his charming XYL Patti who are commencing a sightseeing tour of the United States with a difference.

"The best signal out of VK" is a common phrase heard during listening to Ian's QSO's from all continents and generally the reports are reciprocal, the secret being Ian's all "homebrew" equipment which is built to perfection, and an antenna system which has to be seen to be believed is the answer to all.

Ian's 14 MHz antenna consists of 3-by-4-element Yagi's mounted on 40-foot booms, on a tower at 46, 94 and 142 feet above ground level. Quite a sight! The tower is fully rotatable by chain drive at ground level and is held in the vertical plane by 1½ inch circumference polyester rope attached to bearings at the three levels.

The 14 MHz Yagi's were developed experimentally by Frank Pellegrino, W0OKC, and then scaled to 440 MHz by Dr. Jim Landsay of the Denver Research Institute where the antennae were compared with other designs, using an antenna range. Ian's intentions are to develop a computer-based system which will automatically produce an optimum radiation angle for transmissions to a specified target area. A "homebrew" computer, specifically designed for the purpose, is on line and at his disposal.

Ian and Patti, with a very flexible but busy itinerary, will leave immediately after touchdown and head up the West Coast to Alaska, look around the Yukon and head south again across to eastern Canada. The complete trip will be accomplished by motor bike and they will be living under the stars in a two-"man" tent during the whole period.

Amateur Radio hasn't been forgotten, as Ian and Patti love meeting people, even briefly to say "Hi," and one can catch up with them on the 2-metre band

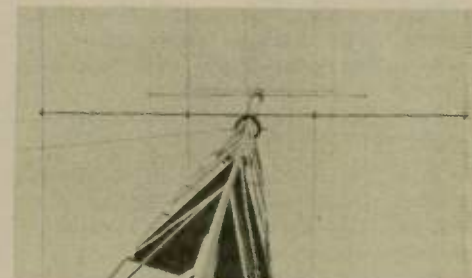


Ian Williams, VK3MO, operating the "homebrew" rig. (Photos courtesy of Colin Smith, VK3YWY)

operating VK3MO/W? Motorcycle Mobile.

Don't forget if you hear this adventurous couple, please give them a call, tell them the places of interest to see, and if you have a spare minute have an "eyeball" QSO. I can recommend that you will never regret meeting this charming couple.

The couple's contact address whilst in this country, where messages may be left, is Joel Korreich, K2QBV, 35 Charlotte Drive, Spring Valley, NY 10977 USA.



Looking up into the antenna.

Active Florida hams

Members of the Fort Myers Amateur Radio Club provided the communications for the Edison Pageant of Lights on Saturday, 16 February.

Earlier in the day, the amateurs helped in the "staging area" by relaying information to aid the pageant officials in getting the floats arranged in proper order.

Supervising the amateurs were: Jack

O'Connor, WB4LPX; Earl Spencer, K4FQU; and Ralph Hauser, WA4PIL.

On Friday, 22 February, the Fort Myers ARC (FMARC) sponsored Amateur Radio license exams at Edison Community College for amateurs desiring to upgrade their ham licenses.

Volunteer examiners (certified Extra Class amateurs) conducted to tests; 23 applicants took the exams. More examinations will be given at a later date.

The following day, FMARC hosted hams and exhibitors at their annual hamfest inside the 5,000 sq. ft. air-conditioned Moose Hall. There was considerable emphasis on computer exhibits.

— *Submitted by Peggy Cummings, KY8Y*

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Worldradio

Please see page 9



Lew Barnard, WA6ESA



Sal Tesoro, W9QG (left), and Norm Brooks, K6FO



Les Cobb, W6TEE (left), and Jim Nunn, Mardi Gras parade chairman



Tom Revak, W6JYZ

Mardi Gras!

Old Sacramento, California staged its first Mardi Gras parade 09-10 February 1985. The Telephone Pioneers of America were called on to be marshals and provide communications.

You will remember that it was the Telephone Pioneers that made the AT&T Olympic Torch Relay happen. (Photos by N6WR)



Bob Weishar, WA6CFI



Adrienne Barnard, WA6CNE

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As both an Amateur Radio Operator and an experienced Real Estate Broker, I am undertaking to provide a marketing service within the Amateur Radio Community.

Our coverage area is mainly California...ALL AREAS...not just Northern and Central areas close to our location. We may not personally visit all locations, especially those at considerable distance. However, we can list the property for sale and go ahead and market it to amateurs. If the property is at a distant location, whenever possible we will ask a cooperating amateur who knows real estate to personally visit the property and provide us with additional information.

SELLERS: LIST YOUR HOME WITH US FOR 30 TO 60 DAYS...BEFORE YOU LIST WITH A LOCAL REAL ESTATE BROKER. LET ME TRY TO FIND A HAM WHO WILL BENEFIT BY AND APPRECIATE YOUR TOWER AND THE INVESTMENT AND EFFORT IT TOOK TO MAKE THE INSTALLATION.

BUYERS: BEFORE LOOKING RANDOMLY FOR A HOME, CHECK WITH ME TO SEE IF I HAVE A HOME AVAILABLE IN YOUR DESIRED LOCATION, OR LET ME KNOW WHERE YOU WOULD LIKE TO LIVE, AND I'LL TRY TO FIND YOU A HOME IN THAT AREA WITH A TOWER OR A HOME WITH A GOOD RADIO LOCATION WHERE TOWERS ARE PERMITTED.

Please mail to Mary Bradshaw, 21 Altamount Dr. Orinda, CA 94563 or Phone (415) 376-0762

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() I am interested in a home with tower, good radio propagation location with permit possible, etc. Put me on regular mailing list.

Suggestions, comments, etc _____

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Is the FCC 'going overboard'?

25 January 1985
Chief
Field Operations and Monitoring
Division
Federal Communications Commission
Washington, D.C.

Dear Sir,

I have just returned from a visit to Romania and Bulgaria on my way back from Thailand. While there, I had the opportunity of visiting several active radio amateur operators. Thus, I received two complaints which bother me greatly. Both involve reports of FCC monitoring stations to foreign governments concerning amateur operations of their licensees.

The point with which I am mostly concerned is the opening part of FCC Rules Part 97 wherein the Amateur Service is defined, among other things, to create international good will. These two following reports, much to my personal anguish and embarrassment, certainly do otherwise:

a) In 1967, an FCC Form 74, Report of an Irregularity or of an Infringement of the Telecommunications Conventions . . . , was sent by the FCC Primary Monitoring Station, Livermore, California, directly to the Posts and Telegraph Department, Government of Romania, reporting that on one occasion Amateur Station YO6AW was heard in communication with an American station, operating 960 Hz outside the low frequency end of the Amateur 14 MHz band.

This notice was sent by the Romanian government to YO6AW, suspending his license for one month. A photocopy of the FCC form is attached.

b) In 1969, another FCC Form 74 was sent by the FCC Monitoring Station, Powder Springs, Georgia, directly to the Minister of Communications, Government of Bulgaria, reporting that on one occasion, Amateur Station LZ1SS was heard operating 40 Hz outside the low frequency end of the 7 MHz Amateur band while in communication with a German amateur. This notice was forwarded to LZ1SS with a warning but with no punitive action. (LZ1SS is the current Chief, Bulgarian Central Radio Club, and

he was quite incensed about this action after I told him about the report of the FCC in (a) above.)

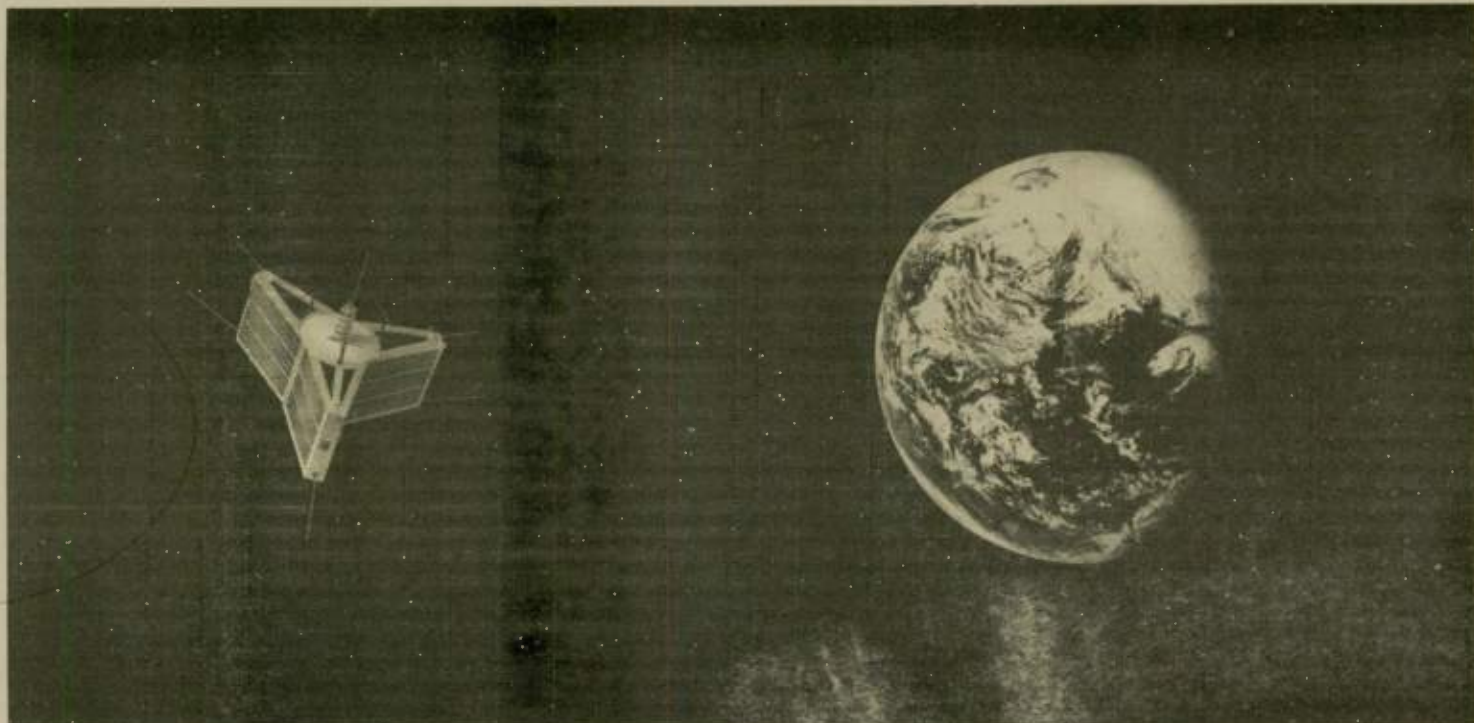
Obviously, I am quite disturbed about these reports, even though old.

This is to ask your office if it is the current practice of the FCC monitoring stations to report such trivial violations as these directly to the communication agen-

cies of foreign governments. If so, it would appear that the time and equipment of the engineers involved could be more fruitfully applied and used in identifying and reporting unauthorized commercial (?) intruders which commonly operate within the limits of the frequency bands assigned by treaty to the Amateur Service.

I am sure you will agree that such a practice as above outlined does not lead to a furtherance of international good will, especially concerning the Socialist countries.

Sincerely,
JOHN KNIGHT, W6YY
La Canada, California



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Ohm-Brew

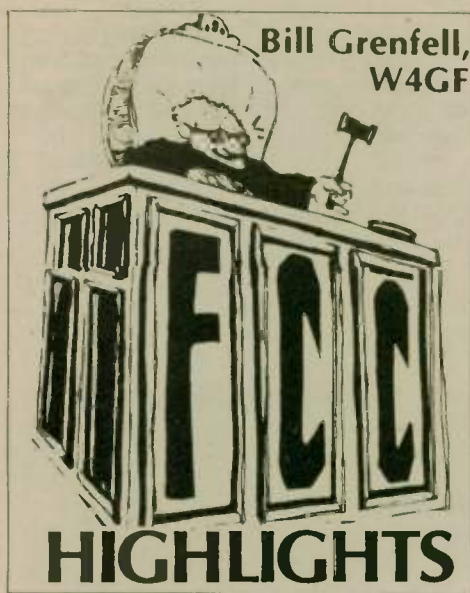
Lester J. Pech, WB9MNG, of Manitowoc, Wisconsin, wins the Ohm-Brew award for May with this entry. If you can't figure out the answer, turn to page 46.



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.



Prices and specifications subject to change without notice.



The FCC has rescinded the moratorium it declared on new repeaters in big-city areas in the PR Docket 85-22 Notice of Proposed Rule Making it adopted 23 January 1985. (See last month's 'Highlights'.)

"The moratorium had been imposed to forestall a growing number of amateur repeater interference complaints." The ARRL filed a Petition for Partial Reconsideration in this proceeding, asking the Commission to lift the moratorium, and pointing out that repeater operation is permitted by Part 97, and that a notice proposed Rulemaking could not in and itself modify an existing rule." (ARRL Letter, 02/28/85)

The Tri-State Amateur Repeater Council filed a petition recommending that the moratorium be lifted for all bands except the 2-meter band. Getting back to the basic aim of the NPRM, FCC desires comment on its proposal which would amend Section 97.85 "Repeater operation" to add new paragraph (h) as follows:

"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."

Original comments should be filed with the Commission on or before 01 July 1985, and reply comments on or before 30 September 1985. Refer to PR Docket 85-22 and mail to: FCC, Washington, D.C. 20554.

"Jerry R. Dyke, WB5LEU, of the Houston suburb of Spring, Texas, has been fined \$2,000 by the FCC for over-power operation in the Amateur 80-meter band ... Dyke was monitored by the FCC's Houston field office. Engineer-in-Charge, Dan Cantrell, said 'the power level was measured in excess of 20,000 watts.' ... The carrier power of the homebrew amplifier was measured at 25kW." (W5YI Report, 03/01/85).

The comment deadline on FCC's proposal to delete the current 30-day wait required before re-taking an examination after failure, has been corrected by the FCC, initial comments on PR Docket 85-21 will be allowed through 08 April and reply comments are due on or before 10 May 1985.

A Florida jury has returned a verdict against Eugene Sykes, W400, in a forfeiture case. The United States had brought suit against Sykes to collect a forfeiture of \$50 imposed by the Commission for overpower operation in the Amateur 80-meter band.

An Extra Class licensee, he was caught, on 27 May 1982, operating on a Novice frequency with more than 540 watts where all operators must observe a 250 watt limit. The Commission monitored him because of complaints that he was causing malicious interference.

"A neighboring amateur ... contended at that time that Sykes was actually us-

Amateur license figures from the FCC

Class	30 November	28 December	29 January
Extra Class	35,910	36,149	36,235
Advanced	97,370	97,765	97,727
General	116,887	116,963	117,093
Technician	80,191	80,860	80,788
Novice	80,565	80,599	80,500
Individual operators	410,923	412,156	412,343
Club stations	2,353	2,343	2,329
Military recreation	175	175	175
Secondary stations	173	103	30
RACES	442	440	399
Total stations	414,066	415,217	415,276

ing excessive power to intentionally interfere with his 20-meter transmissions at the second harmonic level." (W5YI Report, 01 June 1984)

Senator Barry Goldwater's remarks, upon introduction of Senate resolutions 35 and 36 last 03 January, were supplemented by further remarks introduced on 06 January. An extract which seems to indicate his basic reasons for introduction of the resolutions, follows:

"Although I have the deepest concern for the powers of state and local governments and the vitality of the federal system, I am troubled to see the apparent lack of understanding within many localities of the rights of individual citizens and national communications policy intended to foster competition among the electronic media services and adequately provide for personal and safety uses of radio."

James E. Rich, WD6CJB, of Millbrae, California has paid a \$500 fine for conducting "business" over his Amateur station and not properly identifying his station. (W5YI Report, 02/01/85)

Included in the PR Docket 85-23 Proposed Rule Making, primarily concerning the Amateur microwave bands, is the shifting of the status of amateur use of the 1900-2000 kHz band. The part 97 rule would require that amateur stations "must not cause harmful interference to the non-government radiolocation service."

Similar protection for the government radiolocation service is proposed. In the 220-225 MHz band, the international and domestic frequency allocation tables now

put the Amateur Radio Service "co-primary with both the government and non-government fixed and mobile services."

Secondary status to the government radiolocation service continues for the Amateur Radio Service in the 420-450 MHz band. However, the proposed pecking order between the Amateur and the other services sharing various segments of the band is too involved to describe here.

A description of the availability proposed for the Amateur Service in bands which start at the following frequencies is included in the Notice: 1240 MHz, 2300 MHz, 2390 MHz, 3.3 GHz, 5.650, 10.0, 24.00, 47.0, 48, 71, 75.5, 76, 142, 165, 240 GHz, and above 300 GHz. The deadline for original comments was 11 March and 26 March for reply comments.

"FCC has misled Congress on the 160-meter radiolocation issue! Amateurs who contact their Congressmen are being told that 'officials at the FCC' say that at WARC-79, 'it was decided by attending nations that the 1900-2000 kHz band should be re-allocated for radiolocation use.' Amateur Radio licensees in the band were allowed to continue operating in this spectrum, but only on a secondary, non-interference basis.

"This is untrue! WARC-79 decisions were for the amateur and radiolocation services among others, to be co-equal, primary services in that segment in North and South America. The subsequent FCC decision to make amateurs secondary, which has been challenged at every step by the ARRL, was purely a domestic decision that departs from U.S. WARC proposals and violates the ground rules the



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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 March 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	NJ0M	KD0VJ	N0FZL	KA0UCK
1	KY1N	KB1RO	N1DKK	KA1MSD
2	NI2X	KD2LM	N2FJJ	KA2WXO
3	KV3G	KC3RB	N3EGO	KA3NTN
4	AA4HX	KJ4AK	N4LOC	KB4NCK
5	NU5N	KE5XD	N5HSU	KA5VNL
6	WE6X	KG6PA	N6LRI	KB6HVP
7	NM7L	KE7EF	N7GXV	KA7USI
8	NK8V	KD8WY	N8GHR	KA8VZK
9	ND9N	KD9NT	N9FAP	KA9TDT
N. Mariana Is.	AH0D	AH0AC	KH0AG	WH0AAG
Guam	AH2V	AH2BD	KH2BV	WH2AFM
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6W	AH6FZ	NH6DB	WH6BCK
Kure Is.			KH7AA	
Amer. Samoa	AH8B	AH8AB	KH8AD	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAC
Alaska		AL7GR	NL7FH	WL7BGD
Virgin Is.	KP2L	KP2AT	NP2BF	WP2AEJ
Puerto Rico	WP4F	KP4IJ	KP4MS	WP4DYX

Commission itself established for its WARC implementation proceedings.

"If your Congressman tells you that making amateurs secondary at 1900-2000 kHz was a WARC decision, tell him he has been misled by FCC and ask him to demand an explanation."

All of the foregoing is a direct quote from the 14 February *ARRL Letter*. Do you wonder why FCC insists on holding the allocation open for radiolocation when there is no current radiolocation activity therein? In FCC's table of frequency allocation, footnote US290 reads: "In the band 1900-2000 kHz, amateur stations may continue to operate on a secondary basis to the radiolocation service, . . . pending a decision as to their disposition through a future rule making proceeding in conjunction with the implementation of the standard broadcasting service in the 1625-1705 kHz band."

Radiolocation is now allocated the use of 1625-1705 kHz. If AM broadcasting gets 1625-1705 kHz, radiolocation users may have to move to 1900-2000 kHz or find another radiolocation band with a cost of obtaining modified or new radiolocation equipment. All of this for the sake of providing for possible expansion of AM broadcasting! Who needs more AM broadcasting? (I understand FCC's response to Congressional queries on this matter has been modified!)

"Donald L. Rhoads of Cupertino, with a long history of unlicensed behavior, has been referred to the U.S. Attorney for criminal prosecution. He was fined \$750 in 1980 for willful interference (music, indecent language) to the .22/.82 'Grizzly Peak' WB6AAE repeater.

"An Extra Class amateur residing at the same address as Rhoads was issued a citation for failure to maintain control of Rhoads' unlicensed transmissions. The licensee denied responsibility, saying that Rhoads was his landlord and had separate equipment. "This same licensee (not identified by the FCC) was also involved in a similar 'control operator' claim associated with the alleged unlicensed operation in 1983 in the Kerr case." (*W5YI Report*, 03/01/85)

"Gary W. Kerr (ex-WA6JIY) has paid a reduced fine of \$300 without admitting guilt of past infractions and has agreed not to operate Amateur Radio for one year. He had been fined \$2,000 for unlicensed operation.

"The Kerr case goes back several years to an international interference incident." (*W5YI Report*, 02/01/85) (FCC PR Docket No. 81-66)

"You should not use someone else's call sign to identify your station, period," is the response I got when I asked an FCC official what was the intended meaning of the recent amendment of Amateur Rule Section 97.121 "False Signals". See last month's 'Highlights' for the amended text.

"Rick Dwayne Mendell (unlicensed) of Corte Madera, California was fined \$400 for operating under a WD6BJC (not his) call sign." (*W5YI Report*, 02/01/85)

The FCC's simplification in volunteer examiner data required an application Form 610 leaves only the examiner's name and amateur station call sign to be entered. FCC's Order, effective 14 February 1985, advises:

"The spaces calling for the VE's mailing address, class of operator license and license expiration date may be left blank." It encourages interested parties who reproduce Form 610 to block out the

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blanks for the information no longer required.

"Necessary corrections will be made to the Form 610 when it is next revised." The Order makes appropriate amendment to Rule Section 97.28(f)(1).

The FCC "fined Francis P. Allen Sr., KB6DPX, of San Jose, California, \$1,000 for operating SSB outside the 10-meter

ham band. He surrendered his Novice ticket." (*W5YI Report*, 02/01/85)

The FCC proposes prohibiting disqualified persons from participating in third-party communications (PR Docket 85-51). The Commission's rules require an Amateur station to be under the control of a licensed operator at all times. (please turn to page 10)

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FCC

(continued from page 9)

However, the rules permit a third party, who can be any person, to participate in Amateur communications, provided the control operator monitors and supervises the transmissions.

Those whose Amateur privileges have been terminated have wanted to take advantage of the third-party rule by participating in communications from stations licensed to Amateurs in good standing. The FCC believes that any Amateur whose license has been revoked, suspended or cancelled — either voluntarily or involuntarily — because of rule violations, should not be able to participate in any Amateur communication as a third party until such participation has been approved.

Comments are requested as to whether this approval should be by relicensing, by requiring the disqualified person to request and be granted written permission from the Commission to be a third party, or by some other means. The FCC said that any Amateur licensee who knowingly allows a disqualified person to par-

New cable proposal

On 20 February, the FCC released a Notice of Proposed Rulemaking in Mass Media Docket 85-38. In the NPRM, the Commission proposes to update the cable television regulations in Part 76.

Part of the proposal would increase the allowable leakage from 20 microvolts per meter at 3 meters to 50 microvolts per meter at 3 meters on frequencies between 54 and 216 MHz.

The Commission specifically asks for comments concerning whether the quality performance standards for cable television systems should be modified or removed; and whether the signal leakage limits for cable television systems should be relaxed.

The most useful types of comments in this proceeding will be those incorporating technical data concerning

participate in third-party communications will be subject to sanctions for violating the proposed rule. The foregoing would be by deletion of rule Section 97.79 (d) and by appropriate modification of Section 97.114 (a) and (b).

Interested persons may file comments on or before 24 May 1985 and reply comments on or before 17 June 1985. Comments should be sent to FCC, Washington, D.C. 20554.

"Unlicensed David Goto, using another amateur's call sign (WB6DLD), was fined \$750 for conducting 'business' over the WA6QFR/R repeater in San Leandro." (California)

"Another WA6 (otherwise not identified) licensed amateur was cited for participating in prohibited communications with David Goto." (W5YI Report, 02/01/85)

During the four-month period, including October '84 through January '85, a total of 5,137 new Amateur operator licenses were issued. During the same period, 5,324 Amateur operator licenses were upgraded. □

leakage which has caused interference to the Amateur Service. To solicit this type of response, headquarters staff sent a copy of the NPRM and a cover letter to all ARRL Section Managers, Technical Coordinators, members of the RFI Task Group and individuals who have formally registered complaints of harmful interference.

Comments in this proceeding are due by 29 March 1985, reply comments by 15 April 1985. As always, formal comment requires the filing of an original and five copies, but a single copy will be considered informally. Individuals filing comments are also encouraged to send a copy to ARRL HQ. — ARRL Letter
Note: In conversation with FCC engineering staff, emphasis was made that there is no intent to change current interference regulations. — ED. □

• Silent Keys •

Shigetaka Morimoto

Shigetaka Morimoto, JA1NAT (ex-J1FT), has recently become a Silent Key. He was a prominent member of the International Amateur Radio Union and

served as an observer for that body at the WARC '79 in Geneva. He had also served as the president of the Japan AMSAT and vice president of JARL at one time.

I recall working him as J1FT, though I was not aware that was his call when he had come to visit me several years back, when he was on his way home from one of the international meetings he had attended — *Katashi Nose, KH6IJ; Honolulu Star-Bulletin, HI* □

Recycling Amateur Radio QTH's

Moving? Looking for a new QTH? Isn't it a shame to take down all those towers and antennas? Wouldn't it be nice to move into a new place that already has towers, etc? It may be possible in the future.

A new service for amateurs has been established by Mary Bradshaw, N6KLM. She is now acting as a broker for buyers and sellers of Amateur Radio locations. As a relatively new ham licensed only a few years, Mary is now going through all the problems associated with putting up a tower — e.g., getting permits, surveys, inspections and neighbor approval.

Mary recognizes that existing installations are valuable and should be "recycled," not torn down and moved or sold to the highest bidder. Mary has a background in real estate and is currently very successful acting as a broker in the sale and purchase of medical practices and pharmacies. She has recently passed the Advanced examination, and is well on her way toward Extra.

In addition to her expertise in real estate matters, she has available the services of well-known DX'er Chuck Patterson, K6RK, and others to assist in

evaluating Amateur Radio properties. At present she is concentrating on California properties, but inquires from buyers or sellers in all areas are welcome.

Mary can be reached at 21 Altamont Drive, Orinda, CA 94563 or by telephone at (415) 376-0762. Also see her ad elsewhere in this issue of *Worldradio*. □

Contest committee needs help

The World Championship Contests sponsored by 73 Magazine are growing significantly each year. It is more than the 73 staff can handle. 1986 is expected to break all records to date.

Here's your chance to join the volunteer staff of 73's prestigious contest committee. If you understand contesting, we need YOU! Contact Bill Gosney, KE7C, 2665 N. Busby Rd., Oak Harbor, WA 98277. □

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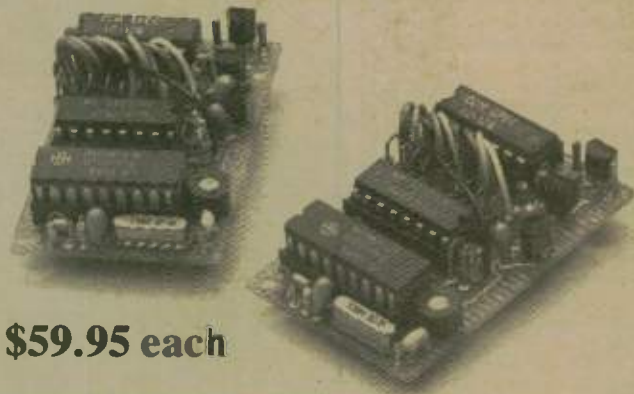
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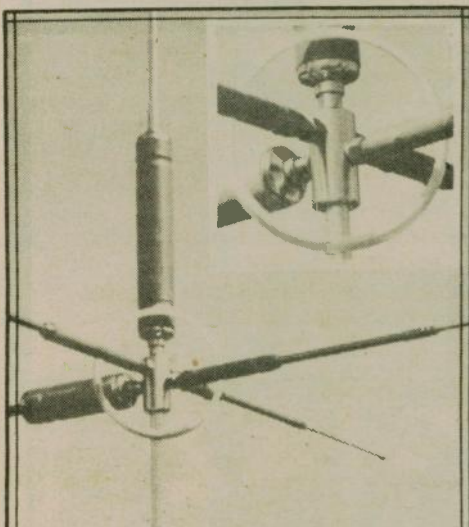
L'Anse Creuse Amateur Radio Club members will operate W8PBO on 7.240 SSB from 1300Z to 2300Z on 04 May and 1300Z to 2300Z on 05 May. These transmissions will be made from a train excursion traveling from Toledo, Ohio to Durant, Michigan in celebration of Train Days.

For a certificate, send a large SASE to L'Anse Creuse ARC, P.O. Box 72, Utica, MI 48087. QSL for contacts only.

— A. C. Koch, KA8JJN

.....

When submitting photos, please DO NOT write on the backs of them — they often stain the fronts of other photos, making them unusable.



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Fire Service Recognition Day

Fire Service Recognition Day will be celebrated by special event station KF6XX on 11 May, from 1700 to 2200 UTC. Operating from Los Angeles City's Fire Station 88, in Van Nuys, California, 15 and 20 meters SSB will be the bands of choice. Custom QSO confirmation certificates will be mailed for a QSL sent to KF6XX, P.O. Box 939, Camarillo, CA 93010.

Armed Forces Day

In recognition of the 36th Annual Armed Forces Day Celebration, the Amateur Radio Station W4ODR located northside aboard Naval Air Station Memphis, Millington, Tennessee, will be operated by sailors and Marines on Saturday, 18 May, from 1400Z to 2200Z. Active duty reserve and retired military personnel will combine efforts for this exciting event for Armed Forces Day recognition.

Plans call for operation on single-sideband at 7.230 MHz, 14.280 MHz and 21.370 MHz (± 10 kHz). CW frequencies will be 21.145 and 28.145 MHz. 2-meter frequency will be 146.52 simplex. It is hopeful that operation will be continuous on all bands but check all frequencies to be sure.

Special red, white and blue certificates will be available to those who work "Whiskey Four Old Dusty Rebel." No SASE required! Certificates to be mailed same day! Calls not in the Callbook should QSL to Military Club Station W4ODR, P.O. Box 54278, Naval Air Station Memphis, Millington, TN 38054. Special attention paid to those hams stationed at Millington over the years.

A brief description of the Navy Memphis complex follows:

The 3,400+ acre Navy Memphis complex is located 13 miles north of Memphis, Tennessee and approximately seven miles east of the Mississippi River. NAS Memphis is the home of the Chief of Naval Technical Training (CNTECHTRA) and 25 other activities, including the Naval

On display at Fire Station 88, 5101 Sepulveda Boulevard, will be equipment from local firefighting agencies, including helicopters, tractors, bulldozers and all types of fire engines and trucks.

Equipment demonstrations, fire prevention information and life-saving techniques will be offered. All licensed amateurs are welcome to stop by the Arson Section Response Van, operating

Air Technical Training Center (NATTC).

CNTECHTRA administers the technical training program. Training conducted under the auspices of CNTECHTRA begins with the basic training. It continues through various levels of technical skills training and includes instruction for the highly advanced technicians who maintain and operate the extremely technical and sensitive devices found on the Navy's aircraft, ships and submarines.

Over 3,000 Navy courses of instruction are conducted throughout the command's network of 58 activities, located at 27 different installations, stretching from the East Coast to the West Coast, Great Lakes to the Gulf and across the Pacific to Hawaii. The coordination, supervision, planning, research and guidance for these courses take place at the Headquarters of the Chief of Naval Technical Training, Rear Admiral R.C. Austin.

Requests for additional information on the Armed Forces Day events at W4ODR, NAS Memphis, may be directed to: *Station Custodian* — Chief Petty Officer Bob Donan, KA4FAL, (901) 872-2007; *Special Events NCO* — Sergeant Major Jim Moffatt, WD4SMW, (901) 363-0778; and Military Club Station W4ODR, Bldg. N-100, NAS Memphis, (901) 872-5134. This phone is manned by off-duty personnel when the station is in operation.

Visitors are welcomed to W4ODR on north side of NAS Memphis at Millington.

headquarters, to sign the guest log and operate.

Stick-on badges and cut-out/fold-up fire engines, as well as a drawing for free smoke detectors, will be held at all Los Angeles City fire stations.

KF6XX is the call held by the Los Angeles Fire Department's Arson Section Battalion Chief, Bill Bisson. — *John Kitchens, NS6X*

Michigan Week

1985 will be the 27th year that amateurs have had their own program to publicize Michigan and its products. Just as for the past 26 years, the governor will award Achievement Certificates to amateurs who take an active part in telling the world of Michigan's unlimited resources, opportunities and advantages.

Certificates are awarded on the following basis:

1) A Michigan ham submits log information and names and addresses (if possible) of 15 or more contacts made to out-of-state or DX amateurs with information regarding Michigan.

2) An out-of-state ham, including Canada, submits log information and names and addresses (if possible) of at least five Michigan amateurs who relate facts to him about Michigan.

3) A foreign ham, excluding any resident of Canada, submits the call letters and name/address plus log information for at least one Michigan ham who has told him about Michigan.

4) Only QSO's made during Michigan Week, 18-25 May, will be considered valid.

All applications for certificates must be postmarked by 01 July 1985 and mailed to Governor Blanchard, Lansing, MI 48902. *State Bird* — Robin; *State Fish* — Trout; *State Flower* — Apple Blossom; *State Tree* — White Pine; *State Stone* — Petoskey Stone; and/or local facts you are aware of!

Throughout Michigan Week, spread the word to others about this award.

Fiddler's Picnic

The Alamance Amateur Radio Club — K4EG, will operate a special event station 18-19 May, on the grounds of the Alamance Historical Museum during the Fiddler's Picnic.

Operation will be in the General portion of 40 and 15 meters, from 1500 UTC to 2300 UTC Saturday, and 1800 UTC to 2300 UTC Sunday.

For certificate of contact, send business-sized SASE and your QSL to: Alamance ARC-K4EG, P.O. Box 3064, Burlington, NC 27215.

Oil centennial

The amateurs of Lima and Allen County, Ohio, will commemorate the discovery of oil in Lima, 18-19 May. Those stations participating will sign /OIL, and operate in the Novice/Technician or General portion of the bands.

Any operator wishing to receive a certificate for contacting a participating station, may do so by sending an SASE to: Northwest Ohio ARC, P.O. Box 211, Lima, OH 45801.

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'Preserving the peace'

The annual Armed Forces Day Communication Test is set for Saturday, 18 May 1985 and marks the 36th anniversary of this event which emphasizes a continuing climate of mutual assistance and warm esteem between the military and Amateur Radio communities. The traditional military-to-amateur crossband operation and broadcast of the Secretary of Defense message are the featured highlights and include operations in CW, SSB, RTTY and SSTV.

These tests give both Amateur Radio operators and short-wave listeners (SWL) the opportunity to demonstrate their individual technical skills. Special commemorative acknowledgement (QSL) cards will be awarded to those Amateur Radio operators achieving a verified two-way radio contact with any of the participating military radio stations. Interception of these contacts by SWLs are not acknowledged by QSL cards. However, anyone who receives and accurately copies the Armed Forces Day CW and/or RTTY message from the Secretary of Defense can qualify to receive a special commemorative certificate from the Secretary.

Crossband contacts

The military-to-amateur crossband operations will be conducted from 18/1300 UTC to 19/0245 UTC May 1985.

Military stations participating in crossband operations

AIR
2045th Comm. Group
Andrews AFB
Washington, D.C.

NAM
Naval Comm. Area
Master Station LANT
Norfolk, VA

NAV
Hq Navy-Marine Corps
MARS Radio Station
Cheltenham, MD

NMH
Coast Guard Radio Sta.
Alexandria, VA

NMN
Coast Guard Comm. Sta.
Portsmouth, VA

NPG
Naval Comm. Sta.
Stockton, CA

NPL
Naval Comm. Sta.
San Diego, CA

NZJ
Marine Corps Air Station
El Toro, CA

WAR
Hq Army MARS Radio Sta.
Fort Meade, MD

Military stations will transmit on the below listed frequencies and announce the

Freq. (kHz)	Emission	Station
4001.5	LSB	NPG
4010.0	CW	NPG
4015.0	CW	NMH
4025.0	LSB	AIR
4028.5	LSB	WAR
6970.0	CW	NPG
6995.5	CW	AIR
6997.5	CW	WAR
7301.5	LSB	NPG
7306.5	RTTY	AIR
7315.0	LSB	AIR
7346.5	LSB	NMH
7365.0	CW	NPG
7372.5	RTTY	NAV
7375.0	RTTY	NZJ
7382.5	RTTY	NPL
7393.0	Varied	NMN
10259.5	CW	NPG

Receiving test

The CW and the RTTY broadcasts will be special Armed Forces Day messages from the Secretary of Defense to any Amateur Radio operator or SWL desiring to participate. A 10-minute tuning call will

precede each transmission. The CW broadcast will begin at 19/0345 UTC and transmitted at 60 wpm using 170 Hz shift. Both the CW and the RTTY broadcast will be transmitted from the following stations on the listed frequencies:

Freq. (kHz)	Emission	Station
13514.0	RTTY	WAR
13927.5	RTTY	NPG
13975.5	CW	NPG
13986.5	RTTY	AIR
13992.5	USB	WAR
13997.5	CW	AIR
14375.0	USB	NPG
14385.0	SSTV	NPL
14389.5	SSTV	NAV
14400.0	Varied	NAM
14403.5	CW	WAR
14408.0	USB	AIR
14440.0	RTTY	NMH
14480.0	USB	NZJ
20937.5	USB	NMH
20995.5	USB	WAR
20998.5	CW	NPG
21460.0	USB	NPG

Transmitting station

AIR
2045th Communication Group
Andrews Air Force Base
Washington, D.C.

NAM
Naval Communication Area Master Station LANT
Norfolk, VA

NAV
Hq Navy-Marine Corps MARS Station
Cheltenham, MD

NPG
Naval Communications Station
Stockton, CA

WAR
U.S. Army MARS Radio Station
Fort Meade, MD

Frequency (kHz)

6995.5, 13997.5

4005, 7393, 14400

7372.5, 14389.5

4010, 7365, 13975.5

4028.5, 6997.5, 14403.5

Submission of test entries

Transcriptions of the CW and/or RTTY receiving tests should be submitted "as received." No attempt should be made to correct possible transmission errors. The time, frequency and call sign of the military station copied as well as the name, call sign and address of the individual submitting the entry must be indicated on the page containing the test message. Entries must be postmarked no later than 25 May 1985 and submitted to the respective military commands as follows:

Station copied	Address
AIR	Armed Forces Day Test 2045CG/DONJM Andrews AFB, D.C. 20331-5000
NAM, NAV, NPG	Armed Forces Day Test 4401 Massachusetts Ave Washington, D.C. 20390-5290
WAR	Armed Forces Day Test Commander, USAISC ATTN: AS-OPS-CM Ft. Huachuca, AZ 85613-5000

1985

*In this year now in progress
in September will be eighty-five.
The Lord has surely blessed me,
for I am still much alive.*

*With my radio and my writings,
always busy so it seems.
But left my intestinal fortitude,
way back yonder in my teens.*

*So what if I'm now slower,
and don't have the zip of youster.
The time that I still have left,
might make me a Super Booster.
— Newton Wimer, W6ABC*

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ST-142

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219⁰⁰

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For 2-Meters

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PUBLIC SERVICE

Letter assists hams in weather net

Following this letter is information prepared by Joy Largent, WB6VGZ, to help our group run the Amateur Radio assistance net set up for Thanksgiving weekend, 21-24 November.

This idea started several years ago as an outgrowth of calls to "anyone on frequency" wondering about road conditions out of or through the area.

Our particular geography here is somewhat unique. Two main entrances to the Bakersfield (California) area are over 4,000-foot passes, and snow often falls to about that level in winter. Our valley is prone to what is known as Tule fog after rains. This can leave visibility of as low as a car length, at times. Interstate 5, state routes 99, 58, 43, 33, 178, 166, 198, 180 and lesser routes all carry heavy holiday traffic — much of it by those not familiar with the area.

A need was seen and the idea grew. Those monitoring 146.91 and/or 145.15 still give service typical of all amateurs when any need arises, but it became obvious that the traffic handled on major holidays was too much to be left to chance. Hence, the "informal net" approach.

A schedule is set up and filled in with volunteers, each serving an hour, usually on the same time each day of the holiday.

Then there are several on the outskirts of the area who check in periodically with information as to conditions at the coast (Lou Labiaux, KA6RKD, in Santa Maria); in Tulare, about 60 miles to the north (Andy Brown, N6IJF); in the Grapevine pass to the south (Dolores Griffin, KB6BSD); and by regulars in the area near Tehachapi to the east.

We have just "shut down" after Thanksgiving weekend, and the two above-mentioned repeaters, which are linked at these times, and the crew listed below with the help of those using the net, passing local information to be passed on to those needing it later, did a magnificent job.

Several hundred information calls were answered. Reports ranging from a man on crutches on the side of I-5 to the more serious reports of a car running off the canyon road to the river below were reported to the Highway Patrol and/or ambulance

and followed until resolved.

All in all, it was a resounding success. Typical of Amateur Radio, the group is already planning on ways to improve the service.

In our area? Be sure to give a call and say HI! on either of the above repeaters (5.15 to the east, 6.91 north). — Submitted by Andy Brown, N6IJF, for all those taking part

18 November 1984

Dear Fellow Amateur Radio Operator,

Thank you for participating in the annual road and weather condition assistance net. This public service activity has gained nationwide recognition, and I think we all look forward to taking part each year.

This is a good exercise in sharpening up our skills in traffic handling and as such, the Amateur Radio Emergency Service of Western Kern County encourages all of its membership to participate.

This net is informal and would only become formal in an emergency or possibly a priority situation. This net was organized in an effort to guarantee that the usual friendly assistance that the local "hams" are noted for, will be provided even during a time when many of us will be away from our radios due to family and holiday activities.

You may discover that your hour is very slow; you may only monitor or have one or two QSOs. You may get caught up in a very busy time, with unusual road and weather conditions, people looking for directions or asking you to report a disabled vehicle or an accident.

You might wish to consider the following suggestions prior to your scheduled time as net control:

I. Preparation

A. Be sure to have at your operating position

- 1) Supplies (pens, pencils and plenty of paper)
- 2) Maps
- 3) Emergency numbers and any phone

numbers you can think of that would be utilized to better serve the traveler.

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B. Listen a few minutes ahead of your scheduled time; get an understanding of the situation prior to coming on the air.

II. Accuracy

A. Be sure to log the date, time and call of the stations worked.

B. When receiving information, copy it down exactly.

C. Attempt to get all information available (particularly when reporting an accident or a disabled vehicle).

1) Exact location (intersections, road markers, landmarks)

2) Full description (license number, type and color of vehicle, etc.)

3) When reporting an accident, get any and all information that could be used by the Highway Patrol. (Are there any injuries and is an ambulance needed? Is there a fire?)

D. Remember that all the accuracy in the world cannot remove:

1) The element of personal opinion and human error. (What might appear to be a heavy fog to a visitor to our valley might be considered a light fog to a native.)

2) Weather conditions can vary drastically, even within a mile or two.

The following is a sample format that could be used by net control:

W. 5QFJ and WB6VGZ repeaters, this is your call, net control for the amateur Radio Assistance Net. This is an informal net conducted by the "hams" in the area. I will be monitoring 145.15 linked to 146.91 (both down 600) for the purpose of relaying information that would be of value to the traveler."

If you have any questions or comments, please contact me.

73,
JOY LARGENT, WB6VGZ
(mailing address)

Georgia hams open weather net

The week of 25 February was designated as "Tornado Preparedness Week" in Georgia.

When the simulated warning went out and the sirens began to wail in Columbus, Georgia, the weather watch net was opened on Columbus Amateur Radio Club's repeater 146.01/61 at 10:00 a.m. Hal DeVaughn, W4FIZ, assumed net control and within five minutes, 21 stations checked in giving coverage within a 50-mile radius of Columbus and throughout the Chattahoochee River Valley.

As always, this net had a direct link with the National Weather Service and the area hams became the eyes and ears of the weather bureau. The net was closed at 12:00 noon after logging a total of 31 check-ins.

All involved breathed a sigh of relief that this was only a drill, but will be prepared and ready if future needs arise for Amateur Radio to help the community. — J.C. Waller Jr., NO4U

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HENRY REPORT #2

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- *New UHF model 3004 1500 watts output at 440 MHz.
- *New VHF model 3002 1500 watts output at 144 MHz.
- *New HF 5K Classic, 3.5 to 30 MHz (not for sale to U.S. amateurs)

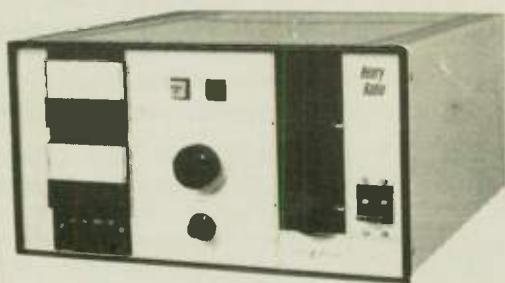
These three added to the already broad line of amplifiers we offer means that we can now cover two MHz to 500 MHz and power outputs as high as 10,000 watts depending on frequency. This may be the most complete line of power RF amplifiers available in the world.

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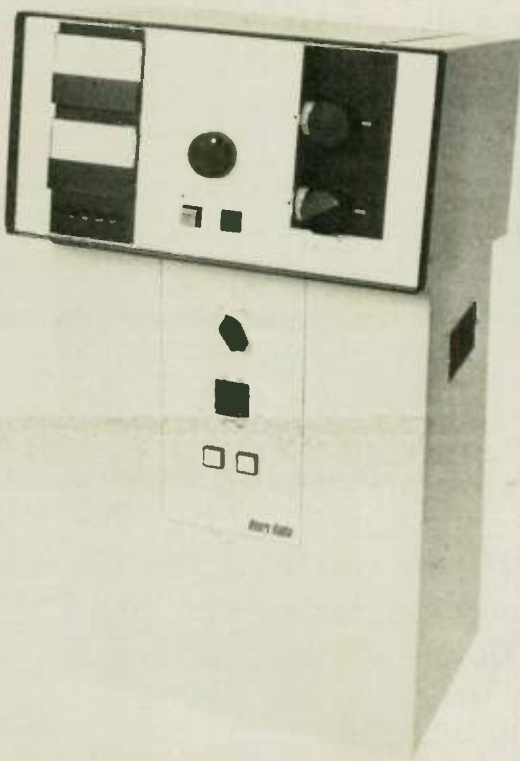
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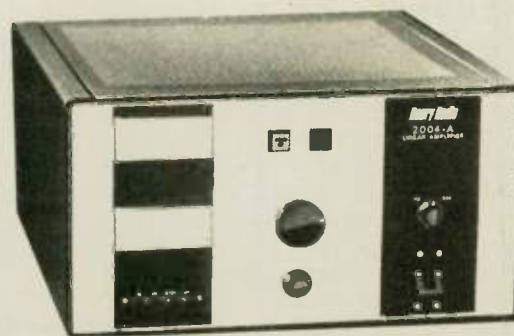
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2002-A...a bright new rework of our popular 2002 2 meter amplifier. Uses the new Eimac 3CX800A7. The RF chassis uses a 1/4 wave length strip line design for extreme reliability. It provides 2000 watts



input for SSB and 1000 watts input for CW. Because this tube is rated at an unheard of 15dB gain, only about 25 watts drive is required for full output.

2004-A is identical to the 2002A except that it is set up for the 430 to 450 MHz band. This amplifier uses a 1/2 wave strip line and offers all of the same specifications as the 2002A.

1002-A A rack mount 2 meter amplifier with the same design as the 2002A, except using one 8874 tube for 1/2 power specifications. Rated at 600 watts PEP output and 300 watts continuous carrier output. It employs the same strip line design as the 2002A.

1004-A...a rack mount half-power version of the 2004A. Covers the 430 to 450 MHz band using a 1/2 wave strip line design.

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Medical emergency in Bahamas

Nancy Gershbein

On 14 July 1984, we were in Allan's Pensacola Cay in the Abacos, Bahamas. Even though the afternoon was cloudy and the rain was falling lightly, we were taking our dinghy into the beach, so our 4-year-old daughter, Sara, could get off the sailboat for a while.

We motored into the beach and ran out of the water about 20 yards before the shore. My husband, Alan, got out to pull the dinghy the rest of the way into shore.

As he was walking, he stepped on something in the water. He looked at the two small spots of blood on his toe and foot and thought he had stepped on a shell. It began to hurt more as he walked, but knowing that Sara had not been off the sailboat in two days, he continued into shore.

When we reached the beach, Alan sat down to rest, while Sara and I took a five-minute walk down the beach. When we got back, Alan said his foot was hurting even more. I looked at his foot and saw three small red spots. There were no spines in the spots, so urchins were ruled out. We headed back to the sailboat.

By the time we got back, Alan could no

longer walk on his foot, and his foot had begun to swell. In another five minutes, his foot and ankle has swollen to twice their normal size. Even though his foot was numb, he had excruciating pain shooting up his leg, and he was rolling on his bunk in agony. Worst of all, he was beginning to have trouble breathing. It was then that he realized he had stepped on a stone fish buried in the sand.

Knowing that a stone fish can cause death, Alan told me to call for emergency medical assistance on the ham radio 14313 net. Alan is a ham operator (W4LTA), but I am not. That morning he had been speaking to another ham on 75 meters. The 14313 net is on 20 meters and ordinarily the antenna would have to be retuned for the 20-meter band. Something I did not know how to do.

Fortunately, just before the trip, Alan had purchased an Antuner. This Antuner allows you to switch bands instantly with no tuning. In addition, he had purchased a Kenwood 430-S ham radio with memory channels. I knew enough about the radio to know that 14313 was programmed into one of the memories.

I turned on the radio and selected the correct memory channel. I listened to the net control, WA3HLP, call for any traffic from boats. I called in for emergency medical traffic. Within seconds, my call

was answered.

The net control kept the frequency clear of other traffic. Calls were made to various poison control centers. WA3HLP relayed the information to me from Tampa Poison Center and other sources. "Soak the foot in water as hot as your husband can stand for 30 to 90 minutes to dilute the poison." I started the pots of water boiling.

WA3HLP was still speaking. "Keep the frequency clear. We have a medical emergency in progress."

I filled a large pan with hot water. Alan put his foot in and the relief was immediate. The pain subsided and his breathing returned to normal. WA3HLP checked with me every 10 to 15 minutes for approximately one hour, until he felt the situation was under control, and then he still informed me to call back if necessary.

The 14313 net, WA3HLP, Tampa Poison Control, the Kenwood 430-S and the Antuner got us through the emergency not soon to be forgotten.

The next day, I could see the five red marks from the spine of the stone fish in a perfect row on the bottom of Alan's foot.

Two lessons were learned. A radio on a boat is only good if everyone on board can operate it. Tennis shoes should always be worn when walking in water. □

Packet Radio

Amateur Digital Communication

The following is the first of a two-part series which originally appeared in Zero Beat, the club newsletter of the Hampden County Radio Association, of Springfield, Massachusetts.

Bob McCormick, KA1KPH

Prior to 1980, digital transmissions on the amateur bands were primarily limited to RTTY. The five-bit Baudot code is widely used and is still the backbone for many commercial services, but it is old and outdated. The number of codes possible is limited to 32, and the games played with the shift-in shift-out give you something slightly less than double that for characters. Have you counted the keys on your personal computer lately?

In some ways CW could also be called a digital mode as it has just two states: on and off. CW has clear and concise rules regarding timing — the lengths of the dots and dashes as well as the spacing intervals. Maybe this explains why we see a great deal of personal computers with software or firmware that provides RTTY and CW to those of us lucky enough to have a PC in the shack.

Most personal computers (and many larger ones, too) use either seven bit (128 character) or eight bit (256 character) ASCII code for at least communications if not also for storage and internal manipulation. It is a shame that it took so long for the FCC to authorize the use of ASCII on the amateur bands. We have had that pleasure now since 1980 and many people have taken advantage of the rule changes.

In comparison, the FCC directives regarding digital modes show that ASCII can be transmitted up to 16 times faster than Baudot on 2M and 256 times (or more!) faster above 70cm. But higher speeds mixed with static, fading, interference and other problems can significantly limit the usefulness of high speed ASCII. Enter Packet Radio!

Indeed, packet radio very much involves computers, but don't let that scare you off. You don't necessarily need a computer to use packet radio (a dumb terminal will do), nor do you need to know how to program computers to get on packet. If you can type (even using the Columbus method: find a key and land on it) and connect a few wires together you can be a successful packeteer.

On the other hand, I don't mean to make this all sound so simple (boring?) either. There is plenty of room for computer hackers, modem designers and traditional ham interests to keep you going with packet for a long time to come!

The key component of any packet station today is the TNC: Terminal Node Controller. The TNC interfaces between a terminal (or a computer that looks like a terminal) and your rig. With a setup such as this, you can type messages or, if you are using a computer, even transfer files to a distant station with a similar configuration.

The TNC is actually a self-contained computer with one or more microprocessors, depending on which unit you obtain. TNC units run software that is stored in read only memory (ROMs) so there is no need for cassette or diskette

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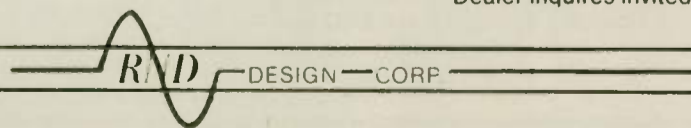
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storage and loading of programs. Turn it on, and you're up and running.

One side of the TNC interfaces to your terminal or computer. This interface is called RS232, which is a standard way of connecting computers and peripherals together. If you have a dumb terminal, it more than likely will handle RS232. Most computers can also handle RS232, although the cheaper priced ones usually require some additional hardware (an interface) to accomplish this. And of course, you may wish to investigate a "modem program" — software that will make your computer look like a terminal.

If you can get your computer connected to a host, possibly to something like CompuServe or the Source, then you'll have no problem connecting to a TNC. Note that you do *NOT* need a modem to connect to a TNC! In fact, the TNC actually performs modem functionality.

On the other side of the TNC, you will connect your rig. For purposes of discussion we will assume you are a typical packet user operating on 2M. As noted, the TNC performs the function of a modem (modulator demodulator). This means that ASCII computer information is changed into intelligent information that you will transmit by the modulator function and likewise information you receive is demodulated into bits and bytes useful to your computer.

To keep things simple, the TNC actually generates (and receives) AFSK, audio frequency shift keying. The speed found on 2M is 1200 baud (between 120-150 characters per second) and the tones and shifts used are the same used by Bell 1200 baud modems that have been in use for years connecting computer equipment over phone lines. Thus we are talking about "voice grade" signals at normal voice bandwidths. All you have to do is connect the TNC to your microphone jack, speaker and PTT (push to talk), make some level adjustments (simple), and you're ready to go.

Packet radio offers some unique characteristics over other traditional modes. These features are realized in the implementation of the AX.25 protocol in the TNC. AX.25 is the protocol approved by such organizations as the ARRL and AMSAT and is a modification of the computer industry standard X.25 protocol (The "A" is for amateur). This protocol is where the "packet" in packet radio comes from.

AX.25 is a point-to-point protocol. This means that you establish a connection between your station and a distant station. After a connection is made, you can transfer information in either direction and this transfer occurs *error free!* Whatever you send will be exactly duplicated at the receiving end. When you are through, you disconnect the previously established connection and are then free to connect to anyone else.

As you may have determined, you can only communicate using the AX.25 protocol to one station at a time. Although this may at first seem to be a drawback, it is, in fact, a feature. When you're connected to another TNC, your TNC will ignore everything except packets from that distant TNC bound for you. In this way, multiple people can be using the *same* frequency at the same time without interfering with each other's communications. In fact, one 2M frequency can support over 20 simultaneous stations QSOing with little or no degradation.

The way this all works is defined in detail in the AX.25 protocol specification which is an involved document. The following description is a simple overview of how it functions resulting in error free transmissions as well as allowing

multiple stations to co-exist on the same frequency.

You sit down at the operating position in your shack and fire up your packet station. Your rig is tuned to 145.010 MHz (simplex), commonly used in many areas of the country for packet activity. You enter a command to your TNC requesting that it connect you to another station across town. For example: CONNECT KA1KPH.

The TNC in your shack, meanwhile, has been monitoring the audio on receive. After you enter the connect command, the TNC waits until there is no activity on the frequency, transmits a connect in-

itiate packet, and goes back into receive mode.

If KA1KPH has his rig and TNC on the air, it too will be continuously monitoring the frequency and will hear the connect request. It looks at the packet received and notes that it is a message bound for itself. After further inspection, it sees that it is a connect request and will reply with a message back to your TNC confirming the request. At this time, your TNC will display *****CONNECTED TO KA1KPH** on your screen.

You then can carry on a QSO by just typing on your keyboard. The TNC will buffer information you type and assemble

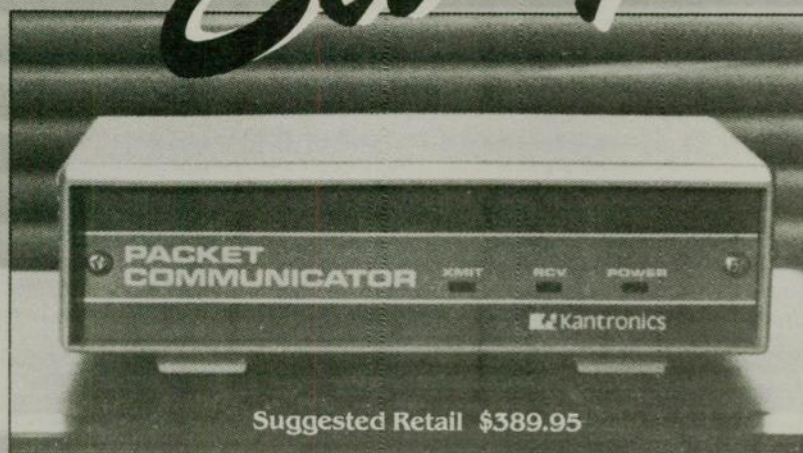
it into packets. A packet consists of three main pieces of information.

First is the header which is like the front of an envelope. It contains the address (call) to send the packet to as well as who it is from (your call). Next is the actual data: information you may have typed or a piece of a file you may be sending. And lastly, the Cyclic Redundancy Check (CRC) which is included to ensure an error-free transfer.

The sending TNC uses a mathematical formula to compute the CRC on the packet and sends it as part of the packet out over the air. The receiving TNC also (please turn to page 46)

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The Kantronics Packet Communicator is a fully assembled and programmed terminal node controller ready for operation. Simply connect the Packet Communicator to the Serial TTL or RS232 port of your computer, and the microphone and external speaker jacks of your transceiver. The power supply, cables, and most connectors are included.

2 Easy to Operate

Because the Kantronics Packet Communicator uses internal microprocessors for protocol and signal processing, the operator simply follows procedures and commands outlined in the operators manual.

Any communications or terminal program, like those used with telephone modems, can be used to set up the computer to communicate with the Packet Communicator. Special Packet Terminal (Pac-Term™) programs for many popular personal computers will be available soon from Kantronics.

3 Compatibility Plus

The Kantronics Packet Communicator has both the AX.25 and Vancouver protocols, making it compatible with most existing Packet terminal node controllers. Added features include both Bell 103 and 202 tones, and the ability to use the unit as a 1200 baud radio modem without special protocols.

Error free data communication via computer makes Packet Radio technology exciting, and the Kantronics Packet Communicator lets you get in on the action.

For more information contact your local Kantronics dealer, or write Kantronics.

Kantronics

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Split code, theory on Extra exam?

I would like some feedback on this, even if a brief line or two on a QSL card. Under the present VEC program, (as well as previously), those amateurs wishing to make the final upgrade from Advanced to Extra Class are forced to get through the 20 wpm code requirement prior to attempting the Extra theory. Thus, an amateur who has burnt the midnight oil in preparing for the code and theory may be knocked right out of the box in the first 60 seconds of the exam experience by doing poorly on the code. Most of us know the apprehensive feeling after those series of six "V's" end and the exam begins.

Once the code is lost, all the effort in preparing for the theory must then be delayed and the memory begins to fade along with the motivation, in many cases. While it could be argued that the amateur is free to study just for the 20 wpm code exam and "see what happens on the theory," I submit that a psychological incentive as well as a non-compromise solution is available.

For many amateurs, this one included, the code is a stumbling block — especially at 20 wpm. Since we are now in the business of issuing certificates of successful completion of examination, can we not propose to the FCC that amateurs be permitted to take the theory for Extra Class first and elect, if they wish, to postpone code or even try it *but* should the theory be passed, be given a certificate of theory completion good for one year with only the code to be passed to complete the Extra Class requirement? In this way, 50% of the battle is over with the theory out of the way allowing full effort toward mastering the 20 wpm code within the year's time.

As it stands, you are out of the running once the code is failed, and you may additionally have to contend with a new set of theory questions as the exam material changes from time to time. Sort of like Sisyphus and his stone. Please let me know your comments on this via a QSL card. My intention is to petition the FCC on this issue, but I wish to first research individual amateur opinion.

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NEEDED: Computer-related info

Are there any Timex-Sinclair computer-oriented magazines or newsletters still being published? If so, what are their addresses?

Also, I've heard there is a modification which improves the AEA CP-1's performance on CW and RTTY. Does anyone have any information about this modification? I use my CP-1 with a Commodore 64.

GARY PAYNE, KE6CZ
1347 East Dakota
Fresno, CA 93704

Who ya gonna call?

Rumors can be good or bad, and can cause undue grief and concern. Rumor has it that the R.L. Drake Company is no longer in business or no longer around for service. Being an amateur and the service manager of the R.L. Drake Company, I would like to relieve the concern that is being caused by this rumor.

While it is true that the company has curtailed its manufacture of Amateur Radio products, it is not true that the company does not exist. The company is alive and doing quite well in its venture into the home satellite receiver market. A complete line of TVRO products and accessories has been introduced and has been well received by the public. The company has received good reviews in several magazines and newspapers, including the Wall Street Journal.

The Service Department still provides service and overhaul on any R.L. Drake Company product ever made, and will continue to do so until unique parts for that product are no longer available or the cost of repair exceeds the value of the product. This service is available at a nominal fee that is in line with today's prices.

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WILLIAM FROST, WD8DFP
Service Manager
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Idea for repeater clubs/owners

Hello, from the Rebel 220 group in San Diego, California. I'm writing in regards to an idea we would like to get started throughout the United States. It involves repeater clubs and repeater owners. We think it would be an interesting way to open those faraway doors to your members and yourselves and communicate all across the United States and Canada for many dollars less and much less problems than noisy and troublesome remotes.

Let's think about it. Say we want to talk from San Diego to Florida or Georgia. Think about the money and time and work to set up remotes, antennas, etc. Then the maintenance to keep them working. Then usually for short contacts right. We think there is a better way and I would like to work with you and clubs or individual repeater owners to set up a contact group list and get the ball rolling. Do I have you thinking? GOOD!

1) Do you have a reverse autopatch on your repeater. (If not get one and join in.)

2) It can be either touch-tone up or simply call line pick-up.

3) Then naturally you'll have total control on your system, and each system calling will have total control of their own.

In other words, I'd like to have repeater groups or owners contact me and get this going. I would set up a user's list and cir-

culate it. On it would be state, city, name of group, repeater frequency, phone number, area code, etc. Then code to go into your repeater via phone lines. Simplex autopatches would also be fine as long as they had reverse patch.

Naturally, each group would pay their own user's phone bills. How this is done is up to you or your group, and of course, phone destination and time logs should be kept by parties involved.

This is a great way to use our reverse-patches to further Amateur Radio and allow Technicians to talk beyond the boundaries of a single repeater from time to time.

I think when you really sit down and look at total cost per year — say \$1,000 and up for a remote, for much less you could talk all over the United States and Canada. Give our idea a try.

Drop me a postcard or letter. Include the following: state; county; city; name of group or individual; repeater frequency and call sign; phone number, area code, etc; and reverse patch line input code if used.

Send to: Rebel Network, Attn: Randy Dominick, WA6RKK, P.O. Box 28, Santee, CA 92071.

RANDY DOMINICK, WA6RKK
Santee, California

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Need Elmer in Oxnard

I have a son who is in the U.S. Navy, stationed at Port Hueneme, California, which is close to Oxnard. He would like to study for his Amateur license. I wonder if you could help us locate some amateurs in that area who would be willing to help him study for the examination?

His name and address is: Kurt R. Roberts, CBC Code 86, Port Hueneme, CA 93043. During the day he can be reached at (805) 982-3150.

He will be going overseas in a few months and I think it would be great if he could have his ticket by then. I would appreciate anything you could do to help him get started. Thank you for your time and attention.

JOSEPH ROBERTS, WA0STV
Valley, Nebraska

Comments on iambic

Ref: "Old dogs can learn new tricks" and "A big NO to the iambic keyer"

These two communications show why Amateur Radio is such an interesting activity. Most amateurs are rugged individualists, and it's hard to get any of us to agree on almost anything other than good manners on the air.

Jim Owens, W5JQE, doesn't like iambic keyers as he makes clear in his communication. This is his right. Not everybody likes blueberry pie either, and that's fine by me. However, he seems to miss the point or doesn't want to see the point in his observations about learning the iambic key. Jim sounds like a long-time bug operator, and many of these people seem to have a harder time with the iambic than a greenhorn.

There are many iambic keys and electronic keyers available — some good and some not so good. My own gear is a Vibroplex Iambic and the keyer is an AEA Morsematic MM1. To "squeeze key", the keyer must have both dot and dash memories. The contacts on my key are turned in until they are "on" and then backed off just a tad. The clearance is less than .003 inches. The spring tension is set very light.

The "squeeze" mode is used for most of the characters — not just the seven he mentions. If you would watch me transmit you would be hard-put to see any motion at all. The technique is learned through practice and becomes an automatic motor habit. Once learned, there is no thinking about how to form the characters. My thinking is the statement that I am sending, and I am not

even aware of individual words.

Consider driving a stick-shift car across town. You never think about depressing the clutch, moving the stick, depressing the throttle, releasing the clutch, etc. You are watching traffic lights and fenders. If a ball comes rolling out into the street, your foot is on its way to the brake. All that you are thinking about is, "Where is the kid that's following the ball?"

Mistakes in sending are not the province of any particular keying system. People, not keys, make the mistakes. The worst Morse on the ham bands is that transmitted by old-time bug operators. Most of them have no idea of how to properly set the dot pendulum and usually have the dots going at two or three times their effective speed. They also seem to have a tendency to run characters together.

Good ol wireless

I enjoyed reading Ed Marriner, W6XM's "Looking Back", a rather nostalgic account of a very interesting sojourn into the good old days of just plain "wireless".

I guess there are still many of us who remember, more or less with fondness, QSO's on 40 meters; having to tune over the entire band with no success, in desperation calling a ham friend on the landline on the other end of the town for a contact!

Sure they were the good old days when the transmitter and even the receiver were homebrew. I recall well taking two or more hours for lunch (unbeknownst to the boss) going home, eating a fast repast, and then up to the attic to work on the transmitter. I was a Hartley circuit man and sink or swim, I would not dream of trying any other circuit.

I was a great one for making or putting together power supplies. Antennas were my specialty.

I was first licensed as W2BPU in 1927. Then claiming "portability", I received W2BQV. So I had two licenses. Now it seems that a friend of mine — unlicensed, of course — used W2BQV. He must have had a better rig than I, because QSL cards came in droves to my QTH. In desperation, I begged my friend to go for his license. He did!

I then forgot to renew my two licenses and I lost them, never, never to get them back! I was assigned W2DKH in 1933 and still have this call. I have now modernized and really enjoy myself.

I am a member of a 2-meter group with a FB repeater and have made many new friends among them (I am a newcomer to my present area). I have FB rigs and can operate on 144, 220 and 440, a nice 100 watter on SSB. Since I can't see the minute parts in either the Swan or my Drake UV-3 and would not dream of tinkering with them, I nonetheless have retained my prerogative as an "old-timer." I concoct and put together my power supplies.

In the attic, I have three "J" antennas for the VHF rigs, two additional 2-meter antennas and two so-called long-wave antennas for the Swan. All antennas are "homebrew".

I am blessed in still operating "wireless" and building and concocting power supplies and antennas!

Thus, I have blended modernity with antiquity as behooves an "old-timer" with a bunch of "chevrons" indicating 57 years in "wireless" hobby. Ouch! Ouch!

LOUIS ROTH, W2DKH
Jamesburg, New Jersey

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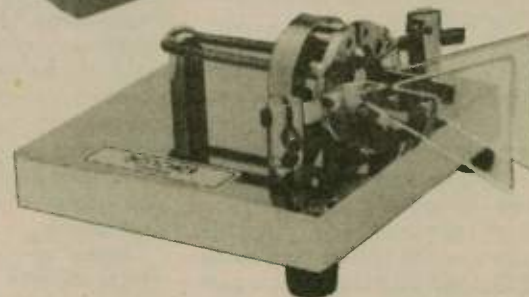
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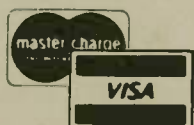
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On the other hand, a good bug operator can send Morse that is music to the ear and a joy to copy. Some of the better ones are retired railroad telegraph operators that have taken up Amateur Radio. Most of the old-time telegraphers think of American Morse as Morse and speak of International or Continental as the radio code.

The keyboard is, of course, the ultimate keyer as far as sending good code is concerned. I spend much of my on-the-air time on the Novice bands. I will send out a CQ at 10 wpm and come back at whatever the response speed justifies.

I use a Commodore 64 and the AEA E-Prom which contains the MBA-TOR software. One of the interesting features of this software is that the Farnsworth mode is automatic below 15 wpm. That is, the effective speed can be set as low as 5 wpm and the character speed remains at 15 wpm — the slowing coming from the increased spacing.

To the best of my knowledge, Farnsworth is only available for the C-64 and VIC-20 computers. Hope someone will write a program that will do this for the Apple II and the Trash-80 as this is the way to go when working with beginners.

Teletype or "Working the Green Keys" is a jolly mode and RTTY people seem to be a law unto themselves. One of the interesting characteristics of most of the RTTY people is that they are very gentle with and supportive of newcomers to RTTY. I think RTTY is a lot of fun, and I suppose that every ham has a least favorite mode that he would like to see outlawed. My own vote would be single sideband. After listening to the "Donald Ducks", the Deedle-Deedle of a RTTY signal sounds like a symphony.

I will make a special plea for some of the old-timers to spend a little time on the Novice segments. Be as supportive and non-critical to the neophytes as RTTY people are. Go as slowly as they need and be prepared to send something a half-dozen times, if necessary. Follow up your QSO with a QSL, and maybe even include an encouraging note.

Most radio clubs will show a lot of interest in the newcomer in the Novice training sessions, but as soon as he gets his ticket, forget about him. The toughest time for a beginner is when he first gets on the air. I am convinced that we lose a lot of hams at this point.

The latest outrage that the League has come up with was the recent poll about extending SSB down into the general part of the 40-meter CW band. I strongly disagree with this and would suggest that if we are going to make any changes to 40 meters that we expand the Novice band.

Nurture a Novice. The hobby you save may be your own.

DEAN STROUD, KA0KKZ
Davenport, Iowa



E-COMM

Many amateurs have gasoline-driven generators set aside to be used in emergency situations. What seems to be neglected, however, is periodic testing to see if the unit is truly operable.

The best maintenance is preventive maintenance. Plus, the best thing you can do for the machine is to fire it up on a regular basis.

Another power source is an automobile battery in the 100 amp range. Unfortunately, some think that with a 100 amp battery at 12 volts you have 1200 watts, which a 200 watt transceiver would run down to nothing in only six hours. Not so.

•First, much of the operation would be on receive, which with a solid-state rig draws next to nothing. Turn off the dial lamps; they draw more than the radio.

Next, 200 watts is peak power. With the normal voice pattern, very little is at peak. And during the actual talking, there is no sound about half the time. With SSB — no talk, no power. With a good-sized battery you should be able to work even at contest pace and easily last a couple of days or more.

Two meters: The printing on the package for the AEA "Hot-Rod" says it is useful for emergency communications. True.

It is a half-wave, collapsible whip. Amateurs have made extensive tests with this antenna vs. rubber ducks, 5/8-wave, and in between. This one is the best. It will give you an honest 6dB over the helical that's on your hand-held. Six dB can make a real difference.

Some emergencies occur many miles from the city. A 4-element Yagi for 2 meters, in knocked-down condition, will fit in the trunk of even the smallest car with two 5-foot mast sections, some coax, and you'll be on the air. Some amateurs carry a board to which a pipe flange has been attached. Use the tire of the car to anchor the board, place the mast section over the flange, and you'll hit the repeater from a

long way out. It will really extend the range of simplex, too.

There is another side to emergency communications than just the equipment, and that is the actual on-air operation. Sloppy operating is a hindrance under "reality" conditions. Like everything else, training and practice is what it takes to be proficient in this.

What is the best way to give groups of numbers? Uncle MARS will tell you. There is no training available to amateurs that matches the disciplined manner of the MARS format.

It would do well for anyone who is seriously interested in emergency communications, and who wants to be as absolutely proficient as possible, to join MARS and go through their training.

You will also meet other amateurs who

are of a like mind. It can easily be said that the amateurs who are truly interested in preparedness are in MARS.

This column is looking for input from those who "have been there". Others can learn from you. Tell what went right and what went wrong under adverse conditions. Some groups prepare printed critiques. If you have one, send it in.

What do you keep in your car? Help make a list for others: map, compass, food, throat lozenges and what else?

There is not a single community that will not have "something happen". Send in your material to help others. When the worse happens (as it will), the group in that town may say, "It's a good thing we heard from -----, who experienced a similar thing before we did." □

From non-ham to Extra in one day

Katashi Nose, KH6IJ


At the Koolau Amateur Radio Club's monthly FCC examination on 16 February, there were nine examinees, three of whom passed.

One of them — Hiroyuki Koza, JA3MAS, of Osaka, a member of the Osaka University Radio Club JA3YKC — took the whole range of exams, from Novice to Extra Class, and passed. He stands a good chance of acquiring the last

of the WH6 single letter Extra Class call — WH6Z.

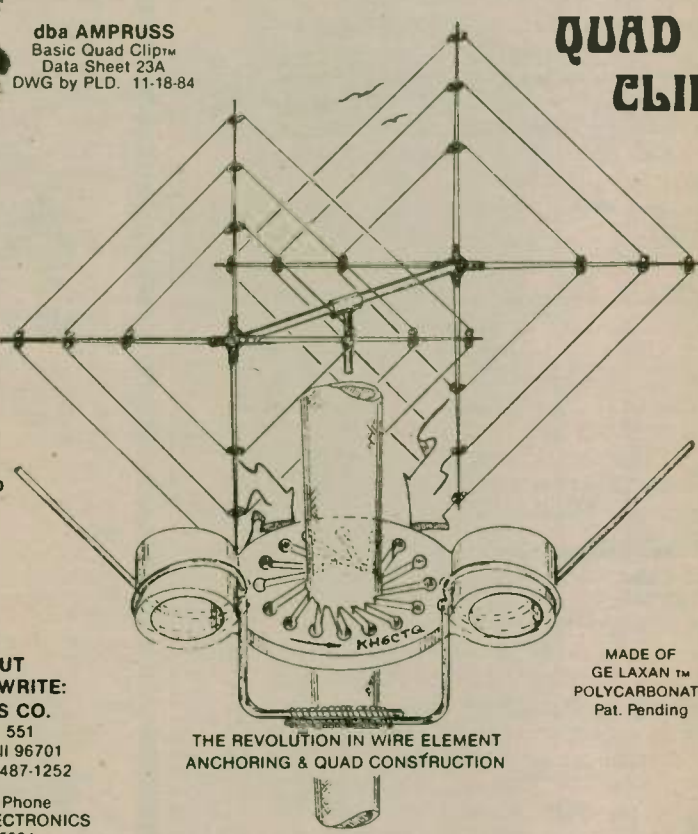
Koza, a master's degree candidate in electrical engineering at Osaka University, is currently visiting in Hawaii. He is a "contest man" and was a member of the DXpedition to Chichi Jima in the Bonin Islands with the Osaka University Radio Club.

— Honolulu Star-Bulletin, HI □



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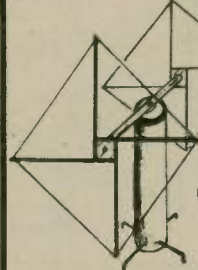
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STATION APPEARANCE

Everett Omohundro, KB0WG, of St. Louis, Missouri wins the Station Appearance award this month, with these two pictures of his shack. Following is Everett's description of his station.

"My ham shack is in one of our bedrooms and fills it very completely. One wall contains the low-band equipment plus slow scan gear. The other wall is used for fast scan ATV.

"The equipment used includes: Kenwood TS-820 transceiver, Kenwood R-1000 communication receiver, Ken-

wood TR-7730 2-meter transceiver; Robot 400 scan-converter; HCV-3k B-1 keyboard; Pioneer cassette tape deck; Heathkit SB-220 power amplifier; MFJ-941C antenna tuner; television sets; TC-1 ATV transmitter; and Mirage D1010 amplifier.

"Two J-beams for the fast scan TV. Mini-quad and inverted Vee for low-band operation.

"I also have a Panasonic portable video

cassette recorder and Ramsey Model 2200 oscilloscope.

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•••••

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Everett Omohundro's fast scan ATV equipment



KB0WG's low-band and slow-scan equipment

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Gordon West's Radio School announces the continued availability of their nationally acclaimed "test guides" for every amateur radio class of license. Originally developed solely for Gordon West's own ham radio classes in Southern California, amateur radio operators throughout the country have been using the test guides to successfully pass the new volunteer-administered examinations.

The Radio School test guides list all revised 500 test questions plus the multiple-choice answers in an attractive 8½ x 11 inch manual. The exact questions plus the exact distractors (wrong answers) and the exact correct answer are listed as they will be found on ARRL or W5YI volunteer examinations. The General and Advanced class test guides list 500 updated questions, the Extra class test guide has 400 questions, and the Novice class test guide covers 200 questions.

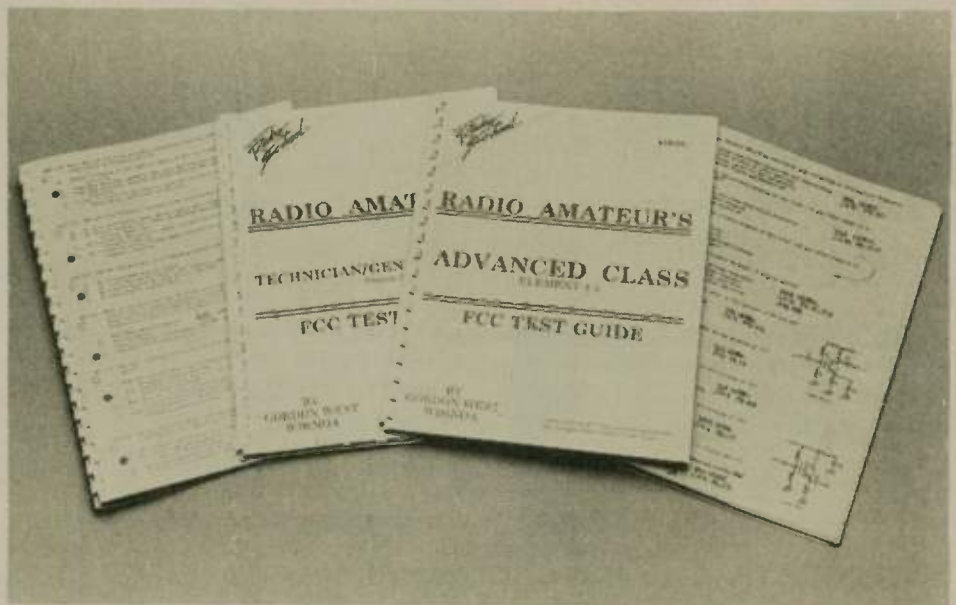
"Our test guides are similar to an FAA pilot's manual," comments Gordon West. "This will take the surprise out of any examination upgrade — every question and every right and wrong answer are in the books exactly as they will appear on an ARRL or W5YI examination," adds Gordon West.

Each test guide also lists "study notes" that reflect reference material on where the questions are derived and where to find out more information about the answers. Formulas for solving the problems are also incorporated in each test guide.

Also included in all test guides are several pages of instructions to the applicant on where to locate a Volunteer Exam Coordinator, and how to sign up for a local volunteer-administered examination. Also included are the necessary test forms that applicants must fill out ahead of time, to include the new FCC Form 610, Revised.

All test guides have also been updated to reflect new rewordings of FCC test questions. This will allow students to see any format change in any one of the FCC-approved questions. This includes the new technician and advanced class updated questions.

Study guides are available for \$19.95 plus \$3.00 postage. Be sure and specify which study guide you want.



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The following article appeared in the September 1984 edition of the 7th Signal Command Western Area Army MARS Bulletin. The article was prepared by Jim Haley, AAR9HN/W6NH.

Is radio operating hazardous to your health?

In a petition filed with the FCC in the recent cellular radio proceeding, Motorola and American Radio Telephone Service (ARTS) asked that implementation of final regulations for the 800 MHz cellular radiotelephone service be delayed because experiments with rats and monkeys had demonstrated "potential very serious radiation hazards."

In these tests, Motorola technicians taught rats and monkeys to use the portable radio equipment designed for the cellular system. According to the petition:

"The monkeys soon had an insatiable desire to make telephone calls and talk for hours at a time. They went bananas over the system, and some of them preferred to telephone each other rather than eat, sleep or engage in sexual activity."

The petition went on that after a period of one or two months, the monkeys began experiencing the same symptoms they

had noticed in earlier tests with the rats — loss of hair, lesions on the head, curling of toes, loss of appetite and loss of sexual desire. "In one extreme case," the petition stated, "after a male monkey had talked to his female mate for two hours and five minutes, he put the telephone down on the floor of his cage and his ear fell off."

By the time the experiments with the animals had been completed, the cellular radio system for the Baltimore, MD/Washington D.C. market area had commenced operations.

The petition related that Motorola and ARTS personnel had received units for their cars as well as portable units. The petition continued:

"We began to conduct the tests with humans in the same way as the rats. They first listened to 'Time' and 'Weather'; they then started talking to Motorola technicians and, finally, began talking to each other and to landline callers. Once again, the same symptoms reappeared: loss of hair, lesions on their head, curling of toes, rocking on their backs, loss of appetite, loss of sexual desire. It was a sad sight."

The petition further related that the two companies conducted a survey among the wives of the men who used the cellular radio equipment. The survey revealed that their husbands were "failing to eat all of their dinner, especially their vegetables; forgetting birthdays, anniversaries and other important family dates; and had a "curious" lack of desire to participate in conjugal activities."

The foregoing information, extracted from Telocator Network of America Bulletin (Washington, D.C.), is furnished to the MARS membership for whatever it is worth to each individual. The Bulletin, its editors, and Western Army MARS draw no conclusions from it and offer none. The caveat does occur to us, however, that if these dire consequences could accrue to 800 MHz users, why not to 420 MHz users, or for that matter, 144 MHz users?

SO! If you have lately experienced a curling of your toes, a loss of appetite, or diminished libido, TAKE HEED! (Especially if you notice that one of your ears has fallen off.)

On the more serious side

Question: Just what is cellular radio?

Answer: Cellular radio is a state-of-the-art technology which promises to revolutionize personal communications with advanced, lightweight, spectrally efficient car and portable radiotelephones.

Cellular radio is based upon the use of small, low-power units with limited antennas which allow calling areas to be divided into small areas or "cells". As the mobile telephone user travels from one area (or cell) into another, a computer automatically switches the call to the other cell with its different frequency.

Tens of thousands (or theoretically, at least, hundreds of thousands) of calls can be placed at one time. This is in sharp contrast to the limit of a dozen or so calls

that can take place at one time on the crowded conventional mobile radiotelephone channels of the existing system.

Question: How will cellular radio affect us as MARS members?

Answer: It's reasonable to conclude that all of the pre-cellular mobile radiotelephone equipment now in use in the service of landline and radiotelephone utility customers will become obsolete and available on the surplus market for a song. Perhaps the greatest effect on MARS members, however, will be that cellular service proves to be so efficient that many of us will become subscribers.

Under the final regulations issued by the FCC for the 800 MHz cellular radiotelephone service, two separate and competing systems will be licensed for each market area — one license to a wireline common carrier (telephone company) and one to a non-wireline applicant (such as a radiotelephone utility). □

Christmas meeting

The Mid-Coast Amateur Radio Club (Maine) had a dinner meeting and Christmas party at the Spinnaker Restaurant in Rockport on 08 December. A buffet was enjoyed by 43 ham operators and guests who came from as far away as Damariscotta, Augusta and Belfast.

Earle "Doc" Maxcy, president of the club who chaired the meeting, also took over the job of M.C. Our guest speaker Richard (Dick) Baldwin, W1RU, International Affairs Vice President, talked about Amateur Radio in the People's Republic of China and of his recent visit there on behalf of the ARRL.

— Rockland, Maine Courier-Gazette □

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DX WORLD

John F.W. Minke III, N6JM

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Activities Calendar

- 27-28 April USKA Helvetia Contest
 11-12 May RSF International SW
 Communication Contest (CQ-M)
 18-19 May ARI International Contest
 25-26 May CQ World Wide WPX Contest
 (CW)

W-100-N

The following amateurs were awarded Worldradio's Worked 100 Nations certificate the first part of March:

252. KA5CFY William R. Wilson
 253. UA3GEA V.V. Naumenko

Vlad UA3GEA is the first amateur from the U.S.S.R. to apply for this award since it was made available six years ago. He used both CW and SSB and made his contacts on the five major bands.

Periodically, we list the DX stations who have been awarded the W-100-N, which we now take the opportunity to do again. Out of the 253 certificates issued, we have:

- | | |
|----------------|--|
| 2. DJ9ZB | Franz Langner
(Europe Plaque) |
| 4. JH1VRQ | Naoki Akiyama
(Asia Plaque) |
| 30. WA4UAZ/HC1 | Steve Hawley (South
America Plaque) |
| 42. KL7JFV | Gregory G.
Nightingale |
| 53. VK6YL | Jill Weaver (Oceania
Plaque) |
| 62. VK6NE | Neil Penfold |
| 65. JH4PRU | Jiro Iseya |
| 67. VQ9KK | Bill Hatcher (Africa
Plaque) |
| 69. EA8TY | Eric Lund |
| 94. VK2FD | Bruce W. Thomas |
| 104. VK3NSY | Ron W. O'Grady |
| 108. VK2DEJ | John Saunders |
| 121. VK6AJW | John A.E. Woodings |
| 138. VK2HD | Heather Pike |
| 143. DF2RG | Gerhard Jaeger |
| 148. VE3FEA | Wilfried Antheunis |
| 152. VE2AFU | Cora Kappert |
| 158. VE3JPJ | Steven Bamber |
| 168. DA1MV | Harvey Campbell |
| 169. VS6CT | Philip J. Weaver |
| 186. HC2RG | Reynaldo G.
Navarrete |
| 191. I0AOF | Giuseppe Loreti |
| 194. VE4AEX | H.V. "Vic"
McKinney |
| 202. JR7ICN | Toshiyuki "Tbm"
Kommo |
| 209. LA2AD | Halvard Torgersen |
| 210. YB2BLI | Niko Indarto |
| 215. | Shigeo Kanehira |
| 223. JA2EVO | Kenji Yamada |
| 224. JJ3FOZ | Akira Uesugi |
| 225. JA3CJL | Kazuo Okiebisu |
| 226. JA6CBY | Masaaki Kono |
| 227. JG3RTT | Nobuyoshi Muraoka |
| 228. JA1HSF | Katsumasa Kudo |
| 229. JA8UUA | Yorimitsu Igarashi |
| 235. YB2BOT | Soegeng Wijono |
| 243. YB0BZZ | Erlangga
Suryadarma |
| 245. VE3GQV | Kenneth J. Smith |
| 249. LA4CAA | Knut Bjorn Valso |
| 250. JE6JRY | Nobuhiro Tsutsumi |
| 251. JA6CSY | Takayuki Kobayashi |
| 253. UA3GEA | Vlad V. Naumenko |

Mozambique (C9)

A station signing OZ2UT/A has been reported on 14.190 MHz at 1640 UTC working Europeans. The operator gave his name as Richard and was said to be located in Beira. He claimed to be the only amateur in the country with full government authorization.

Lars SM0DQE/C9 continues to maintain schedules with VE3ICR on Tuesdays, on 14.204 MHz between 1800 and 1900 UTC.

At least, that is what is being reported, which is all very interesting. Chuck

Martin, AB4Y — who is with the American Embassy in Maputo, Mozambique — sends us a letter dated 12 February. Chuck says the following:

"At this time there is *NO* legal operation in Mozambique. Any station you have heard operating is 'bootleg'. The local hams here have started the Maputo International Amateur Radio Association. Our goal is to get Amateur Radio back in Mozambique. We have grounds to be guardedly optimistic.

"We are also planning a DXpedition to

Europa/Juan de Nova for July of 1985. I will be at the Dayton fest this year, and perhaps we can talk it over."

A couple of the other DX news sources have also reported that Chuck is requesting that DX clubs write on their club letterheads the minimum request, "Please lift the ban on Amateur Radio . . .", addressed to Rul Fernandes, Director of CTT, Mozambique. The letters should be mailed through Charles Martin, American Embassy MAPUTO, Department of State, Washington, D.C. 20520.

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Easter Island (CE0)

There was a DXpedition to Easter Island the latter part of February by Michel Basquin H., CE3DPD; Carlos Vogtherr, CE3EEO; and Horacio Ledo, LU4DXU, where the team operated as CE0DPD and CE0EEO. Most of the activity of this group was reported on 75 meters.

Father Dave Reddy, CE0AE, is a regular from Easter Island and has been reported on 75 meters recently. He can be found anywhere between 3.780 and 3.789 MHz from 0630 UTC. Also, check 20 meters as Father Dave has been found near 14.226 MHz between 1515 and 2130 UTC.

Two other stations have been active from this spot — CE0ERY and CE0ZIJ. CE0ZIJ frequents 75 meters and is found near 3.789 MHz after 1100 UTC. Up on 20 meters, CE0ERY has been worked on 14.289 MHz around 1700 UTC, and on 15 meters, 21.288 MHz about the same time.

Djibouti (J28)

Two stations have been reported from this one. J28EG and J28EI have been active on the low end of 40 meters at 7.007 MHz from about 0030 UTC. J28EB has also been worked on 20 meters on 14.227 MHz at 1830 UTC.

Guinea — Bissau (J5)

The operator at J5WAD is UB5WAD, and should be there until November, according to *The Long Island DX Bulletin*. He is near 14.175 MHz from 1815 UTC every day, except Monday and Tuesday. On those days he is on 14.240 MHz.

Vlad has also been reported on 40 meters near 7.005 MHz at 0125 UTC. As for his 20-meter activity, he has been reported as late as 2130 UTC. The QSL route for this one is UA4PW (via Moscow of course).

St. Vincent (J8)

Often, the activity from one of the many West Indies countries increases during the time of a major DX contest, such as the CW World Wide or ARRL International DX contests.

Just recently, the Ill-Wind Contesters and the Southeastern DX Club appeared on the bands with several J87 calls. Stations signing J87GL, J87UEE and J87VV were busy handing out contacts

on 40 meters with a major effort as J87J during the last ARRL test on SSB. If you worked any of the above, refer to QSL routes for obtaining a QSL card.

J88AQ is a regular down there and has been reported on 75 meters anywhere between 3.785 and 3.790 MHz after 0200 UTC. He has also been worked on 15 meters near 21.034 MHz around 1715 UTC.

Greece (SV)

There have been several Greek stations that have been reported worked during the month of February. On 20 meters, SV1PL has been reported on 14.205 MHz at 1015 UTC, SV1SQ on 14.205 MHz at 1915 UTC, and SW2UA on 14.215 MHz at 1400 UTC.

On 40 meters, we have SV1DO on 7.004 MHz at 0530 UTC, SV1OL on 7.059 MHz at 0545 UTC, SV1RP on 7.010 MHz at 0130 UTC, and SV1UN on 7.078 MHz at 0530 UTC.

There are also a couple of strange prefixes appearing from this one presently, (refer to the item on prefixes).

Franz Josef Land (UA1P)

QRZ DX reports that EO1AOK is on Franz Josef Land. This is one of those special Soviet prefixes celebrating the 40th anniversary of the end of World War II. Activity from this one has been reported on 7.020 MHz around 1330 UTC.

Christmas Island (VK9X)

QRZ DX reports that Steve Chamberlain, VK6IR, and Lance Martin, VK6DU, were to be active from Christmas Island 26 March through 09 April, using the calls VK9XB and VK9XG, respectively. Their main object was to operate during the CQ World Wide WPX Contest the last weekend in March.

All QSL cards for VK9XB go to Steve at P.O. Box 260, Victoria Park, West Australia 6100, AUSTRALIA; VK9XG to Lance at P.O. Box 38, Kelmscott, West Australia 6100, AUSTRALIA.

Ron Dent, VK6XJ, who was formerly VK6KRD, has been reported to be on 80 meters at 3.604 MHz listening for callers up in the American phone band. He has also been worked on 15 meters on 21.253 MHz between 1300 and 1400 UTC. Also, check 20 meters on 14.145 MHz at 1315 UTC Ron, who was the host for the



Ken Palmer, K2FJ, stopped by the other day while visiting his son in Sacramento, to hand-deliver my 5W1ER QSL card for a contact I made with him last spring. Ken spends his vacation visiting and operating from various spots in the world with such calls as K2FJ/EA9 from Ceuta and ZB2G from Gibraltar. Here Ken poses for the camera during his 5W1ER operation from Savai'i Island in Western Samoa last March. (Photo courtesy of K2FJ)

VK9XB/VK9XG DXpedition, is now a permanent resident there.

Kampuchea (XU1)

Due to the hostile situation over in Southeast Asia, XU1SS had gone off the air. On 10 February, on 7.005 MHz between 1300 and 1400, a station signing XU1AA was working stations in Japan. The operator's name was given as Cheng. Two days later, a station signing XU1SS appeared on the W7PHO Family Hour on 14.227 MHz at 0012 UTC.

It is unlikely that the station was located in Ampil, as the former KPNLF base is still in the hands of the Vietnamese. There is a possibility it is from the new KPNLF base at Dang Rek, northeast of Ampil. Our thanks to QRZ DX for this bit of information.

Sovereign Base Areas (ZC4)

Regarding those ZC4 calls as to which is valid and which isn't, a recent issue of *DX News Sheet* had this to say:

"... since 1960, all ZC4 licenses have been issued by the Joint Signals Board and are subject to the rules, regulations and frequent inspection by that body. There is no question at all that all

operations by ZC4's were and are from within either the two Sovereign Base Areas or from within smaller areas administered by the SBA's. No ZC4 call sign has been used from Cyprus territory and no Cypriot national has used a ZC4 call other than from within SBA-administered territory. Under these terms, all ZC4 calls should count, providing ARRL accepts that the smaller areas outside the SBA's, but administered by them, count as Sovereign Base Territory."

We have seen reports for at least three stations in the Sovereign Base Areas. The most active is ZC4MR, who has been found all over the 20-meter band. He has been worked on 14.213 MHz as early as 0900 UTC and has been found up at the other end at 14.311 MHz around 1530 UTC. He has also visited the W7PHO Family Hour on 14.227 MHz at 1600 UTC.

Another station on this band — ZC4ESB, located at Dhekelia — has been hooked on 14.226 MHz around 1430 UTC. Forty meters your favorite band? Then look for ZC4CZ, who has been found and worked on 7.028 MHz at 2100 UTC and later on 7.003 MHz at 2300 UTC, working the East Coast of North America.

St. Brandon (3B7)

DX News Sheet reports that Taher Baccus, 3B8DB, is planning a 10-day DXpedition to Saint Brandon in June or July if he can obtain a linear amplifier and antennas. This should be an all-band operation, both SSB and CW.

Rodriguez Island (3B9)

On the low end of 40 meters, 3B9CD has been worked near 7.005 MHz at various times, including the periods 0100 to 0300 and 1300 to 1330 UTC.

He has also been on 80 meters where he has been nabbed on 3.504 MHz at 0000 UTC by a lucky DX'er in Florida. We have no reports of any West Coast DX'er working him on this band. He has also been found on 160 meters. (See the 160-meter listings.) This station plans to be active until June.

Equatorial Guinea (3C1)

This one came and went in a puff of smoke! Carl and Martha Henson, WB4ZNH and WN4FVU, operated as 3C1BC and 3C1YL, came on the air 14 February and operated until 01 March. Carl did not give advance warning of the

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24 WORLDRADIO, May 1985

World Radio History

operation as he and Martha were not sure of obtaining a license.

There were a few unhappy operators on the West Coast who seemed to feel that mostly the 4th call area seemed to be making the contacts. If you were standing by with your favorite listmaster, well, there was no smoke at all. Nothin' at all. If you want to work Carl or Martha, you have to work at it. QSL cards for Carl go via K4PFE and Martha via N4NX.

U.N. Vienna (4U1VIC)

At the time of this writing, 4U1VIC — located in Vienna — has not been made a

new DXCC country. There are many who feel this one should count as a separate DXCC country. In the event that it does, don't get caught with your pants down. Work him now. Look for 4U1VIC who has been reported on 14.025 MHz from 1400 UTC and on SSB at 14.257 MHz around 1630 UTC.

The U.S. Department of State proposes to establish a third-party traffic agreement with the United Nations, which would permit such communications with this station. From what we have heard, the ARRL Board of Directors is in favor of separate DXCC status; it is the

DX Advisory Committee that opposes the status. They are being asked to reconsider the status of 4U1VIC.

Uganda (5X5)

Jerry 5X5GK seems to have raised some eyebrows with the request for "donations" with your QSL. The Carolina DX Association newsletter has this to say concerning the policy.

"Information has been passed that if you want an extra fast return on a QSL, send \$2 to DJ5RT to help expenses at the clinic. This isn't the way to go about QSLing or asking for assistance at the clinic. The QSL should remain standard — an IRC, \$1 or a proper stamp along with the SAE.

"If donations for the clinic or medical supplies are needed, simply say any donations for that purpose would be gladly accepted if anyone cares to do so. Good intentions do get twisted when not stated correctly." Murf Ratterree, W4WMQ, is the newsletter editor.

DX News Sheet also commented, but said the funds were being used by DJ5RT and 5X5GK, who are both doctors, along with much of their own money for funding the clinic. There should be another German doctor there soon.

Senegal (6W)

QRZ DX lists the call area allocation for the African country of Senegal as follows:

- 6W1 Cap Vert
- 6W2 Casamance
- 6W3 Diourbel
- 6W4 Fleuve
- 6W5 Senegal Oriental
- 6W6 Sine-Saloum
- 6W7 Thies
- 6W8 Louga

A few years back, all the calls from this one had 6W8 prefixes as there was no call area.

Activity from this one includes 6W1NF who was worked on 14.223 MHz around 1845 UTC, 6W1DY on 3.801 MHz at 0700 UTC, and 6W1KI on 14.240 MHz at 2215 UTC.

A station signing 6V1AGM has been

reported on 7.001 MHz around 0430 UTC. This one is on Goree Island and counts as IOTA AF-45 for Geoff Watts' Islands-on-the-Air Awards. Another station with this prefix, 6V1A, was reported on both 40 and 20 meters on 7.037 MHz at 0130 UTC and 14.043 MHz at 1130 UTC.

Antarctica

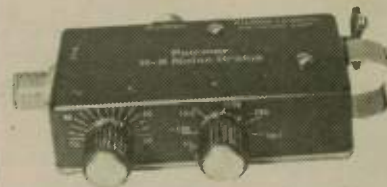
There has been quite a bit of activity reported from the U.S. bases in Antarctica, according to *QRZ DX*. KC4USB (Byrd) has been found on 14.235 MHz at 0430 UTC, KC4USV (McMurdo) on 14.250 MHz at 0620 UTC, and



Ever wonder what those old-timer DX'er stations looked like? Here is the 1931 shack of W6EBM, operated by Ashod Hovsepian of Sacramento. The view shows most of his equipment that he used in his early-day radiotelephone station on 80 meters. The other photo includes the operator at W6EBM.



R-X Noise Bridge



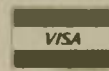
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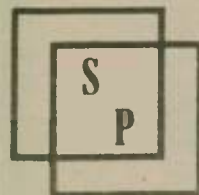
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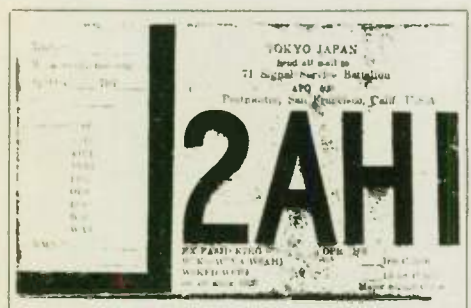
J9SIR

RADIO J9UX CONFIRMING QSO ON 20 M... Dave Fugman

from the estate of W9UX/W9PST. The first card is that of J9SIR on the Marshall Islands...



Roy also had another call back in the old days. In 1928 he was signing NU8UU when he worked SC3CJ of Santiago, Chile...



There were a couple of responses to the J1EE QSL card that appeared in the March issue of Worldradio. Nao Akiyama, JH1VRQ/N1CIX, at ARRL headquarters...

Nao wonders if there is someone on the JARL staff who can find the time to compile a list of Japanese old-timers.

The second response to Mick McDaniel, W6FGE, who had visited J1EE in 1945, was from Lloyd Colvin, W6KG. "I worked J1EE in 1933 and have his QSL," writes Lloyd.

"I was one of the first amateurs licensed in Japan after the war as J2AHI and used the J1EE QSL as a sample for my QSL. Since then my wife and I have sent out nearly a million QSLs and all of them are modeled after the J1EE QSL.

Those of you who have worked Lloyd and Iris during one or more of their Yasme DXpeditions will recognize the design.

QSL information

Bill Wellborn, K4CLA, sends the following note: "We have been and remain, as best we know, the only QSL route to try to get QSO confirmation for the following off-the-air stations: 4W1CW, YN1Z, YN1CW, H7Z and TG9XGV. However, USPS notified us this week that the only known address to which we sent all QSLs is now obsolete.

"We will research the current DX Callbook line by line and page by page. Possibly we can locate him at a different QTH. But for now, we are holding all incoming QSLs for the above call signs until we can get a re-route address.

"The operator's handle is G-U-N. Works very high speed code. 95 percent of QSOs are via CW. Would appreciate any clues as to his whereabouts. We do not have any of the logs. We were only the source of getting QSLs to him for him to confirm and forward to each ham as he saw fit."

QSL routes

- A22DP - W1GVC H10DX - H18MFP
A22TE - AK1E H10MF - H18MFP
A35CQ - WA6VNR H10MFP - H18MFP
A99A - Bureau HJ0LR - HK1QQ
A15P TF - W3HNK HR5SB/2 - WB0TEC
AP22A - W6NLG HW5CJ - FE6DMT
AT0A - YU2IF HW5SI - F5SI
C30LBM - EA5AGY J6LMY - N8DE
CE0DPD - CE3DPD J6LOA - K4AIP
CE0EEO - CE3EEO J37XC - W2BJI
CT0BI - CT4UW J87GL - K9QVB
D44BC - (See Note 1) J87J - K4UEE
DJ6SI 5V - DJ6SI J87T1Y - WB9T1Y
DP0GVN - DJ4SO J87UEE - K4UEE
EL2FJ - JF2QHC J87VV - KB9AW
EM3W - UZ3AXJ JD1AMA - W7EDA
(See Note 2) JY4MB - W4HYL
EM6AAK - UZ6AWA JY5CI - G4WVZ
(See Note 2) K2BS FS7 - K2BS
(See Note 2) K2KTT PJ7 - K2KTT
(See Note 2) K5LZO KP5 - K5LZO
EO1AOS - UA10L K4LTA J7 - K4LTA
(See Note 2) K8CV VP2E - K8CV
ER3A - UA3AZO K8WV VP9 - K8WV
(See Note 2) K9DXO V4 - K9DXO
EU2P - UP1BWW K A2DXO V2A - WB4OSN
(See Note 2) KF1V C6 - KF1V
EU3A - UA3AZW KK9A PJ7 - KK9A
(See Note 2) KK9A VP2E - KK9A
EV4AP - UZ4PWR LU2BC - SM6CR
(See Note 2) LU2EYO Z - LU2CN
EW7BF - UB4FWW N2ALO T15 - N2ALO
(See Note 2) OX3SG - LA5NM
F511 FY - F511 P29KJ - VK9NL
F6RFF HY8 - F6ISN P44A - K1AR
FG5DL FS - F6ARI P37A - K1AR
FG7BP - KA3DSW S21JA - JA1JJ
FK8FI - F6FNU SM0QEC9 - SM4CLR
HA5JI - WB9YXY T2CQ - WA6VNR
HB9TL PJ - HB9TL TE1C - T12CF
HC1BW - KT1N K1GSK (See Note 3)
HI0A - HI8LC TF5BW - W3HNK

- T11C - (See Note 4) ZX0ECF - PY2ASK
T19J - T12J ZV9ZZ - PY51W
T19TTY - WB4UBD 1Z9D - W7PHO
T19WI - T12J 3A5E - FE9RM
TL8ER - F6GQK 3A5F - 3A2LF
TRADM - F3CY 3B8CF - K5BDX
TZ2XN - UP1BZC 3C1BC - K4PHE
(See Note 2) 3C1YL - ANX
V2AO - KE4OC 3D2CQ - WA6VNR
VE1CHG/4U - VE1CHG 3D2NW - DF6FK
VE3LRU/J3 - VE3LRU 4J5YJC - UB4JYF
VK9XB - VK61R (See Note 2)
VK9XG - VK6DU 4S7PVR - F6FNU
VP2MDB - W2WSE 5J0LR - HK1QQ
VP2VFE - WB6FCR 5N3RTF - DK2IF
VP5HPX - KC2RS 5N8FOC - G3TXF
VP5SBX - KC2RS (See Note 5)
VP9KA - W1BPM 5T5CJ - W4BA5
VQ9CQ - WB3CQN 5T5RD - F61IM
W2ZZ/CT3 - W2ZZ 5V7NG - WB4LFM
W5RK/1P1 - W5RK 5X5GK - JA1BK
W9NUF/PJ3 - K9QVB 5Z4ED - JH6FMU
XE2MX - K6VNX 7P8BC - VE3FXT
XF4MD - XE1MDX 7P8BE - VE3FX
XT2AT - OE8ENK 8P6NW - KA9EBN
YB3ATB - PA6LOU 8Q7CE - DL9GHS
YB5ASO - W4BBP 8Q7CG - 15JHW
YS1UL - WA0JYJ 9G1RU - 11B9BSS
YV7AXM - YV7AXI 9J2JN - KB2ZP
ZC4MR - G4SDJ 9J2LO - DL1FX
ZC4YC - G4IYC 9M2L0 - YU1HA
ZF2AY - K9LA 9M2RT - KB6UF
ZK2CQ - WA6VNR 9M8EN - WB0TEC
ZL7OC - VK3DWJ 9Q5JE - DK0HT
ZP5JAL - K02A 9Y4F - VE7BRW
ZS3E - K8EFS 9Y4VU - W3EVW
A4XJZ - PO Box 981, Muscat, OMAN
C21RK - PO Box 139, REPUBLIC OF NAURU
CE9ZLJ - Gus, PO Box 1, Easter Island, CHILE
CM8AR - PO Box 9028, Havana, CUBA
D68AZ - PO Box 410, Moroni, COMOROS
EP2MA - PO Box 34214, Tehran, IRAN
ET3PG - Bekele Asfaw, PO Box 22976, Addis Ababa, ETHIOPIA (See Note 6)
FM4CL - Maurice Herve, PO Box 1119, F97206 Fort de France Cedex, FRANCE
FP8HL - Henri, PO Box 1107, ST. PIERRE & MIQUELON ISLAND
FW8AF - PO Box 92, WALLIS ISLAND
FY5KRU - PO Box 450, F97310 Kourou, FRENCH GULANA
J5U91 - PO Box 510, Bissau, Guinea Bissau
J6LLO - PO Box 800, Castries, St. Lucia, WINDWARD ISLANDS
J28EB - PO Box 2417, DJIBOUTI
J28EI - PO Box 2417, DJIBOUTI
PY1BVI PY0T - R. Leite, PO Box 1502, 24000 Niteroi, BRAZIL
S79JW - John, PO Box 487, Mahe, SEYCHELLES
T77C - Tbn Ceccoli, Via Della Carrare 67, 47031 REPUBLIC OF SAN MARINO (via ITALY) (See Note 7)
TA1A - PO Box 787, Istanbul, TURKEY (See Note 8)
TG9XHQ - Hiro, PO Bdx 531, Guatemala City, GUATEMALA
TR8IG - PO Box 740, Libreville, GABON
VK9XJ - PO Box 138, Christmas Island 6798, AUSTRALIA
VK75A - VK3 Outwards Bureau, 412 Brunswick Street, Fitzroy, Victoria 3065, AUSTRALIA
VP2EZ - Jerry White, General Delivery, Anguilla, WEST INDIES
VP8BDJ - PO Box 217, Port Stanley, FALKLAND ISLANDS
VP8BDO - Jon, PO Box 217, Port Stanley, FALKLAND ISLANDS
WA5FFK HR5 - PO Box 303, San Pedro Sula, HONDURAS
XT2BR - Alain, B. P. 116, Ouagadougou, BURKINO FASO
YN5RR - Jose, PO Box 122, Jinotepe, NICARAGUA
3B8FP - Rashid, PO Box 164, Curepipe, MAURITIUS
3D6BD - PO Box 254, Mbabane, SWAZILAND
3D6BQ - PO Box 780, Mbabane, SWAZILAND
5H3DG - PO Box 6306, Dar-es-Salaam, TANZANIA
5Z4DJ - PO Box 991, Mombasa, KENYA
6V1A - PO Box 971, Dakar, SENEGAL
6W1NX - Massa, PO Box 3140, Dakar, SENEGAL

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Notes: 1. DJ6QT is not the QSL route for this station. Send all QSL cards for D44BC direct per Callbook address. This also applies for D44BS. 2. Unless otherwise stated, all QSL cards via Soviet stations must be sent to PO Box 88, Moscow, U.S.S.R. 3. This route applies for contacts made with TE1C during the CW World Wide DX Contest for November 1984 only.

Contributors this month include KT1N, K2FJ, K4CLA, AB4Y, KD4RH, W6EBM, W6KG, W6YO, W6FGE, W7AHX, W9LNQ, VY1CW, DJ9ZB, JH1VRQ, British Columbia DX Club (VE7AHA), Kansas City DX Club (AB0X), The Carolina DX Association (W4WMQ), Southern California DX Club (W6ABW), Region 1 News (G3FKM), The Long Island DX Bulletin (W2IYX), The (please turn to page 30)

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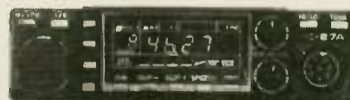
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B108	2M	Yes	10W	80W	10A	\$159
B1016	2M	Yes	10W	160W	20A	\$249
B3016	2M	Yes	30W	160W	17A	\$199
C22A	220	Yes	2W	20W	5A	\$89
C106	220	Yes	10W	60W	10A	\$179
C1012	220	Yes	10W	120W	20A	\$259
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'New era' began with 1984 SET

The 1984 Simulated Emergency Test (SET) was highlighted by the first SET formal messages being sent to ARRL HQ via satellite. John Champa, K8OCL, in Dearborn, Michigan, and Dave Eanes, N4AZI, in Baton Rouge, Louisiana, originated the messages and transmitted them through OSCAR-10 to Victor Politi, W1NU, in Connecticut. W1NU then called ARRL HQ by landline.

The text of these historic messages was: "AMSAT Satellite Emergency Communications System activated for 1984 SET on OSCAR-10 SSC H1 X ASECS will be available for all future drills and emergency situations"

A new era in emergency communications has begun with the 1984 SET. ASECS is the AMSAT Satellite Emergency Communication System. N4AZI is AMSAT Emergency Communications Manager while K8OCL is Acting Vice President for Operations. (Tks ARRL Letter)

— Amateur Satellite Report

DX World

(continued from page 27)

DX Bulletin (K1TN), DX News Sheet (G4DYO) and QRZ DX (W5KNE).

With the increased amount of activity that has been showing on 75 meters, it is a good time to look around and see what is there. There are many of the DX'ers who are there trying to increase their DXCC count on that band. I'm there too with my barefoot IC-740 and inverted V. Unfortunately, it is tough competing with the fellow running his rig with an amplifier — and many of them overdriving their audio section.

I don't know what has happened, but there is a new breed of DX'er here, (if you can call them that). During the last Desecheo DXpedition, the guys would keep calling and calling, even when he would come back to a specific station. (He was working split, so there was no chance of the KP5 of being covered up.) I didn't even try with that mess, so I worked him on 80-meter CW.

Don't let the 75-meter disaster discourage you. There is still much to be found on the CW band. I worked 3B8CF and I was

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Out in California Valley, Arco Solar has installed a field of photovoltaic solar electric converter arrays to produce 6 MW peak power with maximum insulation. Norm Chalfin, K6PGX, had an opportunity to visit the area and wondered how it would be to operate an Amateur Radio system with one of these 750-watt arrays programmed to follow the sun. The units are az-el controlled. The El Axis is the yellow cylinder which appears bent because each panel has a pair of mirrors to enhance its output. You see the reflection of the bar and the solar panel on each side in the mirrors. The Az Axis is the center post.

only running about 100 watts. If I can work them, so can you. The DX contests are another source, usually the second night after the Big Guns have had their pickings.

Hope to see many of you in Fresno during the annual California international bash. 73 es GL DX, de John, N6JM.

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Satellite stations

Ross Forbes, WB6GFJ, is requesting help from all those on any of the OSCAR or RS satellites. A collection of 35mm color slides is being formed to make a program of those stations on the satellites. This program will also be reproduced onto VHS and BETA video if enough interest is shown, and the video would be made available through the AMSAT video library.

Here is what stations need to do. Send two or three good, clear 35mm color slides. One slide should clearly show most of the person's stations, and if possible, include the person operating their equipment. If necessary, send one slide of

equipment and one of the operators at the rig. The last slide should show the OSCAR antennas.


If a person has something unique about their station, or has slides of an OSCAR DXpedition, please include one or two of those also. In other words, please send more than the minimum number of slides requested, if you wish.

Send your slides to: Ross Forbes, WB6GFJ, AMSAT Coordinator for North Central California, P.O. Box 1, Los Altos, CA 94023.

We would like slides from stations all over the world, and will make videotapes available in PAL and SECAM format if there is interest overseas.

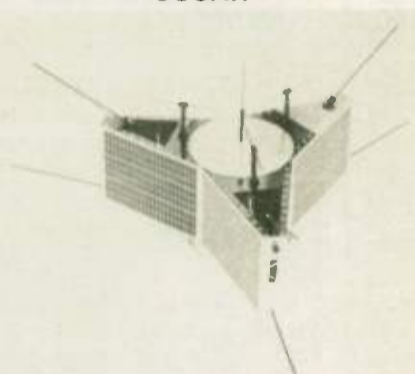
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Please send additional free information on the Amateur Space Program and AMSAT membership. Enclosed is a business-sized, self-addressed, stamped envelope.

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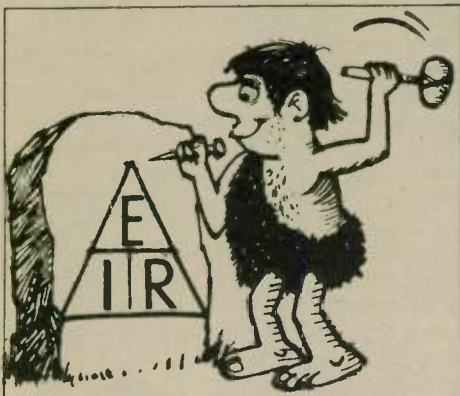
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*Although an Amateur Radio license is required for two-way communications via OSCAR satellites, you do not have to hold such a license to be a full voting member of the AMSAT team.



TEACHER

Alan Kline, KB1DJ

P.O. Box 54
West Lynn, MA 01905

rooms, as when we notified the examinees of the room assignments, we were not quite sure of what two rooms the convention committee would assign us. As we were at a large convention center, they already had a seminar room marked A & B. This confused some exam takers. Our room A was the "Director's Room", not seminar room A; our room B was the "Liberty Room", not seminar room B. So watch out.

Handicapped

Please make special arrangements to give exams to the handicapped. They cannot be examined with the others, but a hamfest/convention is an ideal place to

give them the exam. This is another reason for having many VE's available for your session.

Novices

Yes, we offered the Novice exam. Most of the VE's said I shouldn't have. Correcting their exams is different from the others, but I still think you should offer them. Just handle them like the handicapped, maybe in a special room with only one VE.

VE's

My VE Team #1 was also my convention committee, so they were given free rooms for the weekend event by the con-

vention committee. In appreciation of this, I expected them to give the most amount of exams, but I was wrong. They had already done the bulk of the paperwork. They would have to check all the paperwork of the other VE teams, so I tried to get them some free time off at the convention to enjoy it themselves.

I used 18 VE's on five teams; each team had three to five VE's. All the VE's did a super job and had plenty of time to enjoy the banquet and visit the flea market area.

Passing rates

After all the code and theory tests were (please turn to next page)

VE program, Part IV

My original plan called for only three VE teams to do all the work. Team #1 was to give exams in Room A all day on Saturday and do both sessions on Sunday, but this would've left them with no time to see the convention. Team #2 was to do three of the four sittings on Saturday, which would not have left them very much time either. Team #3 was supposed to be used as a fill-in so everyone could go to lunch and freshen up.

By the time teams #1 and #2 had completed two exam sessions each, we realized that my planning wouldn't work. I definitely needed two more exams teams. I asked for help at the ARRL booth. The Section Manager from Maine — Cliff Laverty, W1RWG — offered to help. The word spread fast that accredited VE's were needed.

At the 2:00 p.m. forum, a group discussion with ARRL exec's had been scheduled. I walked into the meeting and handed the ARRL officials a slip of paper saying, "Help is urgently needed to give exams!" For the 3:00 p.m. sittings, we had more than enough VE's.

My original plan in teaming up various VE's together was to get a team of three or four from major clubs that came from different geographical regions of the New England states. Even after rescheduling the VE teams, I still kept that basic idea. We had five teams from five different clubs. All of the VE teams would be going back to their own clubs with the knowledge gained to have their own exam session dates.

At the time I had to send out each applicant's appointment time slips, the ARRL had not printed any standard form yet, so I printed my own. All it said was:

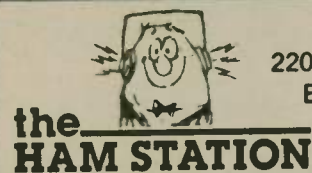
NAME:
CALL SIGN:
DATE:
ROOM:

I printed it on my ham class stationery that has my phone number on it, so if they had any problems they could call me. But I left out one very important fact — no indication where the exam was being held. We should've included a reminder that it was at the hamfest in Boxboro.

Rooms

Our assigned rooms were overcrowded, hot and not conducive to giving exams en masse. I suggest you carefully check out the seating capacity of the room before you schedule how many exam takers will be in there: don't trust hotel figures. Next time I am going to schedule 25 for a room that seats 35, so we can spread them out. This will prevent cheating.

We assigned the letters A and B to our



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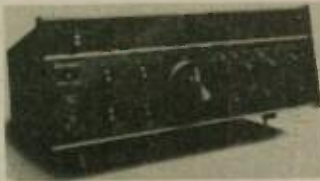


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OK, June and Field Day are again staring us in the face.

At the risk of ruining some well-laid plans of two certain QRP'ers, whom I'll call Jim and Bob for the sake of this piece, I am about to divulge the results of almost a year of hard work, planning and scheming which, they claim, are going to propel them well into first place in this year's competition.

We're talking a serious effort they say will capture top honors not only with the ARRL event but in the simultaneous Milliwatt Field Day trophy competition sponsored by Adrian Weiss, W0RSP, the QRP columnist over at CQ.

"Not since D-Day," said Bob in a head-to-head discussion over a few cold ones recently, "has this much planning gone into any effort."

As best I can recall it — based largely on my reconstruction of our conversation next morning through the haze — here is their secret plan.

It is laid out in the interest of letting other QRP'ers know what has to be done to mount the ultimate assault on the scores. And it might not be too late for some last-minute planning on a crash basis for this year.

QRO'ers should not read this. "We've been preparing for this for months," Bob told me. "Nothing is going to stand in our way. Nothing."

"I've scheduled a few warm-up contests just to keep my fist limber," said Jim. "Never mind this 'Dr. DX' madness, I'm talking active contests against live people. It's also giving me a chance to get all my equipment into first-class condition for the real thing."

Fumbling in a pocket, he produced two return receipts for certified mail.

"See these?" he asked, waving them over his beer. "I've notified my wife in person and by certified mail that while I love her, she and the kids are not to expect to see me for about three days in June. They are not to look for me or call me or anything — zip, nada — until I turn up late Sunday night."

"I've done the same thing with my girlfriend," Bob interjected.

It was just after last year's Field Day, which was something of a disaster for my friends, that they began planning for the 1985 assault. The pair went out in 1984 for a laid-back but serious effort only to have every thing go to pot because a competing club station, complete with high-powered rigs, picked a site on a nearby hill and proceeded to wipe out everything on virtually every band.

Within weeks, they launched a search for the ideal site for 1985. It cost a few bucks, they confided, ducking mention of a specific amount, but the key ingredient appears to be that they have leased an entire 145,000-acre ranch somewhere in south Texas.

The two wouldn't even tell me where they are going, but their agreement gives them exclusive use of the full 145,000 acres for four days. As near as I could judge, the actual site will be some 20 miles from the nearest highway.

"There can't be another Field Day station within 20 miles of us this year!" Jim shouted triumphantly, knocking an almost-full beer over with the back of his hand in a sweeping gesture.

"Yeah, and we got the option of using some of the oil well drilling rigs out there to hang antennas from," said Bob, as he nimbly scooted to one side to avoid a small river of beer headed his way.

And there was a glint of triumph in Bob's eyes when he muttered something to the effect of being surprised to learn the rigs were spaced in almost-perfect patterns for rhombic antennas with up to four wavelengths on a leg for 80 meters.

"Incredible," he kept mumbling to himself.

"Yeah," replied Jim, flashing a knowing smile.

In addition to making sure their QRP rig is in top working condition, that their antennas will work in virtually any configuration and that they won't be swamped by other stations, this duo has prepared for creature comforts and possible problems.

Since south Texas in June can be hotter than the hinges of hell, they have leased a small house trailer — air-conditioned with a back-up unit — for the period. All electrical appliances have been tested to see that they will operate properly and quietly for the whole contest.

Rather than risk problems with the trailer's wiring, they hired a master electrician to rig a special wiring system, the likes of which neither has seen before. And they have laid on a 3kW generator and a week's supply of gasoline just in case the commercial power to the trailer fails.

"There will be no telephone, televisions, computers or anything else that will



generate interference or bother us," Jim said.

"We're going for the points, so we're going to be battery-powered," he went on. "We've bought six new golf-cart batteries — heavy-duty ones — that are going to be charged to the hilt."

Never ones to neglect their stomachs, they will have two refrigerators fully stocked, one with food and the other with beer and water. Both are within arm's length of the main operating position, so neither will have to get up to grab a beer or some potato chips, in case of the need for solid foods.

Also within easy reach will be giant fly swatters, spray cans of insecticide to deal with the occasional scorpions that inhabit south Texas, and snake-bite kits in case an unwanted visitor happens by.

A special, comfortable chair, also pre-tested for sitting in for up to 24 hours at a time, has been found with the aid of an orthopedic surgeon and a well-known chiropractor for the main operating position.

To make sure the call of nature doesn't disrupt the call of "CQ FD," Bob bought a relief tube from a World War II surplus

bomber and had it installed as part of the chair.

Both are making sure their diets for the seven days prior to Field Day exclude such items as prunes, fiber and the like.

"And I've got one final thing I'm going to do," Jim smiled confidently. "Just before we pull off the main highway into the ranch, we're going to stop at the filling station and call my friend at the National Bureau of Standards. He's going to give us an up-to-the-minute propagation reading for all bands for the entire weekend."

A wave of sadness swept across the face of bachelor Bob.

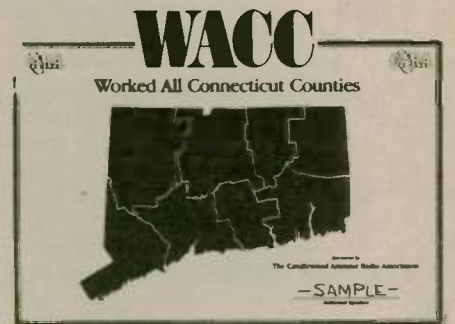
"What's the matter?" I asked. "Nothing, except that I can't take my dog along. He barks too much, and we are afraid he might keep us from pulling out the weak ones," he replied. □

AWARDS

WACC Award

The Candlewood Amateur Radio Association is the sponsor of the Worked All Connecticut Counties Award (WACC). This award is available to all amateur operators who have been able to contact all eight Connecticut counties. The counties are: Fairfield, Litchfield, New Haven, Hartford, Middlesex, Tolland, New London and Windham.

They may be contacted on any amateur band using any mode. Repeater contacts are not allowed. Send a copy of your log information (dates, calls, counties, etc.) and \$1 (W, VE, XE) or 3 IRC's (DX) to: WACC Manager, Candlewood ARA, P.O. Box 143, Bethel, CT 06801. □



Teacher

(continued from page 31) graded and results tabulated, the final averaged passing rate was 53.7 percent. This is not as bad as it sounds. We had our exam session only four months after the FCC had published the new question pools, and many amateurs who didn't upgrade claimed to have little knowledge of the new question pools.

The highest code passing rate was 71 percent, which was in a 13 wpm Novice upgrade sitting. Strangely, the lowest passing rate for code was the same test, but given to Techs. It seems Novices wanted to upgrade to General more than the Tech's wanted to. The highest combined passing rate was 84 percent; that was in a group of unlicensed people upgrading to different levels.

In the next installment in this series, I am going to wrap up all of my observations of how we survived the beginning of the VE age. □

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- Anything you can do manually with your 16 digit keypad, the RAP-1 will do remotely using audio touch tones from any source.
- Two (four digit) programmable access codes are used to operate relays or other on/off functions.
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- Hook eight wires (4 rows and 4 columns) in parallel with the existing keypad of the radio you wish to control remotely. Connect audio from any source, 12 volts D.C. and you are in control.
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CARI

Radio chess is a real thrill!!

Vince Luciani, K2VJ

kill, it leaves a big gap in your extrasensory perceptions when you find an opponent's piece where it shouldn't be or vice versa, all because of an earlier move incorrectly received.

Often, all is not lost even with such goof-ups because most radiochess players keep a written score of all moves. We have to — we never know when the band might fold or QRM get to be overwhelming.

That's about the whole of it, although — as mentioned — we do send out more detailed information to CARI newcomers.

For more information on radiochess, write: CARI, P.O. Box 682, Cologne, NJ 08213.

In a previous CARI article, I had given some statistics on Chess & Amateur Radio International members which included numbers of years each have been in either Amateur Radio or chess. As it stands, more than half have been radio amateurs less than five years, and one-third have been playing chess less than five years.

All of this suggests it may be time to put out some reassuring comments on the subject that bothers some newcomers, such as how do you go about playing chess over the air?

To begin, we have adopted use of what is known as "algebraic notation" for our chess moves. With this, each square had a letter-number identifier. Early in our formation, we published instructions on the subject of radiochess methods, one set written by John Dould, N1BHL, and one by Stan Obritski, WB2TTY. A summary of their advice follows.

Set up the chessboard with "white on right" and Queen on color. That is, the right-hand corner of the board must have a white square; the white Queen must be on a white square, black Queen on black square.

Horizontal rows are referred to as "ranks" and are numbered 1 through 8. Vertical rows are "files" and are lettered a through h.

In sending moves, give the name (or initial letter) of the piece, the square moved from and the square moved to. For example, Ng1f3 means Knight moves from square g1 to square f3.

Practice makes perfect, although — in this effort — one game makes you very nearly an expert at sending moves over the air. However, we have more detailed information for new members.

CW is a different critter. Some say it's easier to play chess on CW, which turns out to be true for those of us who are more comfortable with the keyer.

Under our recommended procedures for CW radiochess, we break the move down into three parts: 1) the preamble, 2) the message and 3) the request for confirmation. It goes like this.

Send three R's as a preamble alert to the other station that a move is forthcoming. The three R's are followed by the move sent twice in algebraic notation. This is then followed by a single R which asks the receiving operator if the move is acknowledged.

The opponent sends an R to acknowledge receipt of the move, repeats the move to give the sender chance to verify that what was received was received correctly (it saves many a busted game doing it that way), and closes the acknowledgement with another R. All this is followed by the sending station's single R to show agreement.

Now, all this may seem terribly redundant and time-consuming to the efficient traffic handler, but to tell you the truth, if you get hot and heavy into a game in its 30th move and you are closing in for the

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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

After two years as president of 10-10 International, Carl Winter, W6OAW, 10-10 #10947, handed his gavel over to the new president, Howard Bowman, W6Q1R, 10-10 #4509, at the recent 10-10 meeting and luncheon on 10 February 1985.

Howard is no newcomer as president. He guided 10-10 as president during 1980-1982 and has been either an officer or on the board of directors since 1977.

The new slate of officers for 1985 include Norm Lefcourt, W6IRT, 10-10 #14981, vice president; Bob Hartley, W6WPY, 10-10 #14949, secretary; and Gerry Gross, WA6POZ, 10-10 #21274, treasurer. Directors for the 1985 year are Carl Winter, W6OAW, 10-10 #10947; George Elliott, W6ENC, 10-10 #1774; Morrie Goldman, W6EHM, 10-10 #4189; and Don Hirst, W6AGP, 10-10 #39046.

The 10-10 Spring CW QSO Party will be held on 04-05 May. The contest begins at 0000Z, 04 May and ends at 2400Z, 05 May. All contacts must take place between 28.0 and 28.2 MHz. Exchange call sign, name, city, state and 10-10 number. All stations are welcome. A 10-10 number is not required to join into the fun; however, only 10-10 members with paid-up dues are eligible for awards. Non-members may use numbers collected to qualify for memberships; members use new numbers collected toward bar awards.

Members submitting logs can obtain detail contest rules from page 10 of the Winter 1985 10-10 INTERNATIONAL NEWS or an SASE to the writer at the address listed below.

10-10 Contests are fun and a great way to increase your 10-10 numbers for bar awards. If you write for the Spring QSO Party Contest Rules, I will also include a 10-10 Dupe Sheet with detail instructions for use. All 10-10 QSO Parties require a dupe sheet to facilitate scoring.

Has your 10-10 membership expired? It may have if you are no longer receiving the quarterly 10-10 INTERNATIONAL NEWS. If your membership has expired, get out an old copy of your 10-10 NEWS and send \$4 to your call area manager right now and enjoy the next issues of the NEWS. Your 10-10 number is issued for life and is yours to keep and use even though you elect to not keep your dues current.

For only \$4 a year (\$5 foreign), you can receive the quarterly 32-page NEWS and participate in the 10-10 CW and Phone contests held throughout the year, and support activity on 10 meters. Even though band conditions are at a low ebb, 10 opens at various times. When was the last time you checked to see if 10 was open?

The 10-10 net is active every day but Sunday on 28.8 at 1800Z. Listen for the net and check-in. If you are not a 10-10 member, check into the net and pick up your 10 contacts and join the 10-10 group.

How many members does 10-10 have you ask? Over 39,000 numbers have been issued since its beginning in 1962. The highest number I have worked is 39268, Gene Patton, K5PHU, in Burns Flat, Oklahoma. There are 10-10 members in all 50 states, most U.S. possessions, and at last count, dozens of DX countries.

If you are not a member and are interested, just work 10 10-10 members and you can receive a 10-10 number of your own for life. For more information, just



The new officers of 10-10 International for 1985 are: (left to right) Howard Bowman, W6Q1R, 10-10 #4509, president; Norm Lefcourt, W6IRT, 10-10 #14981, vice president; Gerry Gross, WA6POZ, 10-10 #21274, treasurer; Bob Hartley, W6WPY, 10-10 #14949, secretary; and Jim Michaels, W6PGM, 10-10 #10, editor of 10-10 INTERNATIONAL NEWS. Not present, Directors Carl Winter, W6OAW, 10-10 #10947; George Elliott, W6ENC 10-10 #1774; and Don Hirst, W6AGP, 10-10 #39064. (Photo by Chuck Imsande, W6YLJ)

ask any 10-10 member or send a #10 SASE to the writer at 18130 Bromley St., Tarzana, CA 91356 for details and a copy of the 10-10 Net Guide.

There are over 200 active 10-10 Chapter nets operating throughout the country, and chances are one is in your area. Many 10-10 Chapter Nets operate weekday evenings or Saturday mornings. With a net guide, you can check into the net in your area or look for a net during band openings. Short skip openings during early evening hours will let you check into many nets.

A 10-meter code practice QRP station has been operating continuously for the past two years on a carrier frequency of 28.888 MHz from North Hollywood, California. This station, running 5 watts

input, is operated by 10-10's vice president, Norm Lefcourt, W6IRT, as a public service. Check 28.888 MHz to see if the band is open. Norm has received QSL's from around the world reporting the hearing of his 5 watts.

JY may be on ten soon! Alan Kaul, W6RCY, 10-10 #19628, may be QRV from Jordan as JY8AK on 10 meters. Alan is active on 10 and a member of the QRP Chapter of 10-10. His assignment by NBC News in Jordan may be our best chance of getting JY as a 10-10 country. Alan's assignment is expected to last for 2-years. Lets hope for band openings to that part of the world.

Although this may be a little late, 10-10's good friend and hard worker, Bill Risher, WB6OMH, 10-10 #6608, decided that it was time for him to retire from the job of Bar Manager for the 1000 and up Bar and Plaque Program after six years.

Bill has handled this job extremely well and many thanks go to Bill for turning those award submittals around in short time. Chuck Busby, KC5FX, 10-10 #21872, has volunteered to take over Bill's job, and the transition should be completed by the time you read this. 1000 and up bars should now be sent to Chuck at 4621 Catchin Dr., Forth Worth, TX 76118.

Incidentally, Chuck is retired from the FAA, has been a ham since 1977 and a 10-10 member since 1978. He has his 2000 bar and has held ARRL appointments as NCS, ORS and Net Manager of the Southwest Traffic Net. Good luck, Chuck, on your new job and thanks for volunteering!

W3GXX's seven laws of hamfests

- 1) You will buy something that does not work.
- 2) You will buy something you do not need.
- 3) You will sell something you need later.
- 4) You will see something at five hamfests, but will not find it at the sixth, when you need it.
- 5) If you do buy something you need, and if it works, you will call it a good hamfest.
- 6) After you buy something, you will find it cheaper at two other places.
- 7) You will buy something you need, but only to find out you do not need it anymore.

— The Milliwatt, BRATS



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appreciation of having been a recipient. Those who met this ambitious young man were greatly impressed by his presentation. He carried 15 units in his first quarter at Cal, 17 units the second quarter and maintains an A average. He plans to go on to medical school after earning his bachelor's degree. It will be many years before Ian will be eligible for QCWA membership. However, as a token of their esteem, NorCal Chapter "adopted" Ian as an honorary member and presented him with an attachment case.

QCWA has two nets each week which enjoy national and sometimes international check-ins. The phone net is held on 14347 kHz at 2000 UTC every Sunday. Herb Gleed, W6FC, is the genial net control and does an outstanding job of calling roll, keeping track of the participants and presenting an enjoyable air time for all QCWA members. The CW net, held each Wednesday at 0100 UTC, is ably conducted by George Clark, W2JBL, who runs a popular and informal session. The CW net operates on 3535 kHz from late October to late April

with an understanding that when conditions on 75 meters are intolerable, the participants should QSY to 7035 kHz. With the return of daylight-saving time, the CW net is conducted on 7035 kHz. It should be noted that it is the frequency which changes when DST goes into effect. The time 0100 UTC remains the same. All QCWA members are encouraged to check in on one or both of these nets and get acquainted with others who share their affiliation. □

• Enthusiasm creates energy •

QCWA now boasts the formation of 153 chapters over the past 34 years. As chapters were formed, numbers were assigned which identify them permanently as having been established. QCWA membership is issued in the same manner; a member's number is a permanent ID in the association.

It strikes many as odd that Chapter #1 came into being in Cleveland, Ohio three years after the organization originated in New York City. The 54 "founding fathers", content with their local luncheon and dinner get-togethers, were oblivious to the fact that they had come up with an idea of universal appeal. However, word had gotten out, and many amateurs — qualified as 25-year licensees — wanted to share in the prestigious Quarter Century Wireless Association's scientific and social endeavors. Thus the idea of worldwide membership and regional chapters was born, and Cleveland received charter #1. Not until 1969 did the original New York City area members apply for a charter which made them Chapter #46.

Some of the early chapters covered great geographical areas — in some cases, several states. Over the years a few of these have become inactive because new chapters of smaller scope were formed within their boundaries. However, those chartered over the years will always be on record as having served their purpose well. Frequently when these divisions occur, a QCWA member may continue membership in both the original chapter, which perhaps was statewide, and the newer one which might cover an area around a large city.

There is one major requirement for chapter membership. All chapter members must be members in good standing of the host organization, Quarter Century Wireless Association Inc.

Each chapter is an extension of QCWA Inc. and its charter is issued when ten or more QCWA members in good standing, petition and agree to be governed by the principles of the constitution and by-laws of QCWA Inc.

QCWA NorCal Chapter 11 entertained a special guest at its luncheon on 03 February 1985, Ian McNicholl, KA9KOW, one of the 1984 QCWA scholarship award winners and presently a freshman at University of California, Berkeley. Ian gave a brief resume on his background as a ham, his filing for the scholarship application a year ago and his

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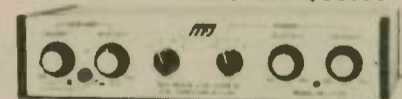
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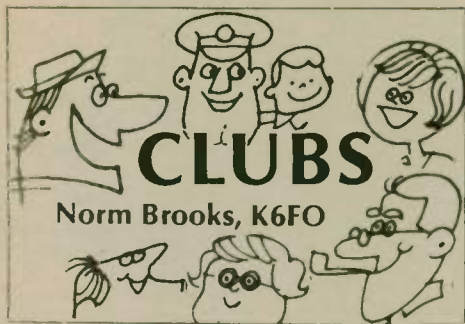
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From W6SD Carrier, San Fernando Valley ARC, Van Nuys, California:

Chinese auction

Bring one or more items to be donated to the club for this special auction. You will be given "sticks" to write your call or name on and when an item goes up for bid, the bids will be limited to 5 cents to 25 cents. You may put as many sticks and the bid price in the hat as you wish. The money is given to the club treasurer and then one stick is drawn; the item goes to the one whose stick is drawn from the hat.

Suggested items to bring: small ham gear (no "boat anchors" please), cakes, cookies, books, pictures, puzzles, small appliances, or any other item that can be hand-carried. Manuals for any electronic item or appliance are appreciated.

If you win an item, you have to take it out of the meeting room. A large barrel will be outside the building for anything you don't want, but remember, *one person's trash is another person's treasure.*

From Dayton Amateur Radio Association's *RF-Carrier* comes the following:

Homebrew clinics

In a continuing effort to help DARA members become more technically competent, the Technical Committee (Gerd and Al) will hold homebrew clinics on the Tuesday evenings preceding our regular meetings. Members will have an opportunity to build useful projects that will become part of their station equipment.

This is an excellent opportunity for members who have never built anything to get started on this enjoyable part of Amateur Radio. Don't be afraid that you aren't technically competent. The goal of the program is to help you understand more about the equipment you use.

The first session will be 02 October 1984 at our club station W8BI. Time 7:00 p.m. The subject will be an RF sniffer and RF sensor. No ham shack should be without one of these little gadgets. You can and will build one for just a few dollars, maybe less if you have a good junkbox.

There will be help in planning your pro-

ject, including parts procurement. There will also be an opportunity for questions.

The second session on Tuesday, 16 October 1984 will cover frequency counters and digital readouts.

Better plan to attend and get into one of the most fascinating aspects of Amateur Radio.

From *MARC Times*, the Murgas Amateur Radio Club, Wilkes-Barre, Pennsylvania:

To avoid the situation where good people hurt good people.

In our participatory club structure, we encourage members to be active in all aspects of its operation. At meetings, we can see many fine people who we know are reliable and talented; we already have those who are "giants" and whose leadership will be remembered for years.

But this may have set up a situation in which good people will be continually hurt by other good people, leaving disappointment and bitterness as a result. We may have here seeds of permanence which might discourage new members from growing in the club.

At King's College, I moderate two activities which are structured so that many members have the opportunity to serve in positions of leadership. Election to office, in this view, is not an honor, nor does anyone deserve it; the members feel the candidate has the ability to serve for a year. Likewise, it holds open the chance that people who desire to share their talents this way will have a reasonable chance to do so.

While one or more of the office-seekers may be disappointed when the votes are counted, no member feels bound to vote for an office-holder simply because the job done was so good that selecting another would be taken as an insult.

In view of club offices being a service to the membership, I propose the following:

1) Club members may hold any office for one year, and be elected once to another office.

2) Club members may be on the Board of Directors up to three years.

In this way, new and fresh talent will not only rise to the surface, but will be pulled up due to constant openings.

In *Kettle Drums*, Kettle Moraine Radio Amateurs, Waukesha County, Wisconsin, Bill Littlewood, W9HE, writes:

At a meeting on 16 October, KMRA and the W-K ARC signed the articles of war! This season is to be a battle of contests between the two clubs.

Five contests were selected for competition and the club amassing the largest aggregate score will be toasted with free beer at the surrender ceremony next summer. All members are invited to take part, and all of you (including non-participants) are invited to the picnic at the end.

Here are the contests in which we compete:

1) Sweepstakes 03-04 Nov. CW only 17-18 Nov. Phone only

2) ARRL 10-meter test. 08-09 Dec. CW and/or Phone

3) CQ Worldwide 160 test in Jan. Details later.

4) ARRL DX test. One weekend in Feb. and one in March.

5) Wisconsin QSO Party. One Sunday in late March.

All the scores from our members will be combined for each test, and the totals for the five events will be added together to determine the club's aggregate score. To win we need lots of participants, so get those HF rigs and antennas ready to roll. The W-K club does not have many members, but all of them are active and only a

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)
P.O. 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
P.O. 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
P.O. Box 1094, Pine Grove, CA 95665, Pioneer Elementary School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WIY Rptr. - 146.835, 146.235.
Net Tues. 7:30 p.m.

Contra Costa Communications Club WD6EZR/R
P.O. Box 661, San Pablo, CA 94806
Meets 2nd Sunday at 9:00 a.m.
Hickory Post Restaurant/Lucky Lanes
For info call Carl KA6OLK (415) 237-2621

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
P.O. 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

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets: 2nd Friday/monthly - 8:00 p.m.
Wawoha Middle School; 4524 N.
Thorne; Fresno. W6TOR 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
P.O. Box 3262, Auburn, CA 95604
Office of Education Bldg.
360 Nevada St., Auburn, CA 95603
2nd Friday/monthly - 1930

Simi Settlers ARC (SSARC)
P.O. Box 3035, Simi Valley, CA 93063
3rd Thursday/monthly - 7:30 p.m.
Bank of A. Levy (across Larwin Sq.)
K3HZP/R 147.165/765 Simplex 147.48

South Bay Amateur Radio Association
P.O. Box 91 • Fremont, CA 94536
Fremont School, 40230 Laiolo Rd
3rd Wednesday - 7:30 p.m.

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

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

South Bay Amateur Radio Assn (SBARA)
Fremont School, Laiolo Rd, Fremont
3rd Wednesday/monthly - 7:30 p.m.
Talk-in 147.015 MHz
Frank Kibblish, WB6MRQ/(415) 657-5730

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

CONNECTICUT

Tri-City ARC, Inc.
P.O. 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., P.O. Box 1004
Melbourne, FL 32902-1004
Meets: 2nd Monday/monthly at Melbourne Red Cross
Talk-in on 146.25/85 or 146.01/61 rptr.

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 Kilauaea Avenue, Hilo
Call-in 146.28/88
2nd Tuesday, monthly - 7:30 p.m.

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.

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Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.
(312) 971-1156 for more information

Fox River Radio League
Valley National Bank, Lower Level
Northgate Shopping Ctr. & RT. 31, Aurora, IL
(312) 898-2779 for more information
2nd Tuesday/monthly — 7:30 p.m.

Radio Amateur Megacycle Society, Inc.
Irvingwood Acacia Church
3900 N. Plainfield, Chicago, IL 60634
(312) 625-2879
3rd Friday/monthly — 8:00 p.m.

Schaumburg Amateur Radio Club
Meineke Rec. Center, Schaumburg
3rd Thursday/monthly — 7:30 p.m.
Net on remaining Thursdays — 8:00 p.m.
147.285 and 443.625

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.

IOWA

RSCB (Radio Society of Council Bluffs)
Richard Swig, WA0ZQG, Secretary
46 Rolling Hills
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

Billerica Amateur Radio Society (BARS)
1st Wednesday/monthly - 7:30 p.m.
Honeywell Cafeteria
300 Concord Rd., Billerica, MA 01821
Near Jct. Rte. 3 - Info - Rptr. 147.12

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. 147.75/115
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 Tylol, WA6RVZ,
Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA
95818.

NEW YORK

Hall of Science Amateur Radio Club, Inc.
P.O. Box 131, Jamaica, NY 11415
Queens County Dental Society Bldg.
86-90 188th St., Jamaica, NY
2nd Tuesday/monthly — 7:30 p.m.

Orleans County ARC
Civil Defense Center
West County House Road
Albion, NY 14411
3rd Wednesday/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)
Erin 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.

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.
Box Morris, WA8CTO, Sec. Treas.
308 Edgewood Cir., Ripley, WV 25271
First National Bank of Ripley, WV
1st Thursday/monthly — 7:30 p.m.

good turnout on our part will beat them.

The SS test is already here, and if you missed the CW weekend, be sure to fire up for the phone event. Both weekends run from 2100 GMT Saturday (3:00 p.m. local time) until 0300 GMT Monday (9:00 p.m. Sunday). Work only USA and Canadian stations (including other club members) on any band with the following exchange.

QSO number beginning with 001; Precedent — A if output power is less than 150 watts; B if over 150 watts; your call. Check — the last two digits of your first year licensed; and your section — Wisconsin.

A sample exchange might be: 168 A W9XXX 68 Wisconsin — This is my QSO #168, less than 150 watts, call, first licensed in 1968, section.

Count 2 pts. for each complete exchange (each station can only be worked once regardless of the band) and multiply the QSO points by the number of different sections worked. Be sure to log the time of each QSO in GMT! If you have any questions or need forms, please call Ken Sytsma's N9KS, or myself.

After the SS, check and eliminate any duplicate contacts, and send your log to the ARRL before 18 December. Those with more than 200 QSO's must also send a dupe sheet along with the log; and you will get a special certificate from the ARRL for having made the 200 level.

If you prefer, send your log to me before 08 December, and I will forward it to the ARRL. At any rate, be sure to let me know your final score so I can compute the club total to see how we are doing.

The 10-meter test weekend will be here before the December Kettle Drums is mailed so here is how it goes. (Details also will be in the November QST.)

Operate any time between 0000 GMT Saturday, 08 December (6:00 p.m. Friday local time) and 2400 GMT Sunday (6:00 p.m.) and work anyone, including DX and other club members.

You exchange RST report and state with USA and Canadian stations; send RST-Wisconsin to DX, but you receive RST and QSO number. Count 2 pts. for each phone contact and 4 pts. for each CW.

Final score is your total QSO points multiplied by the number of different states, provinces and DXCC countries.

It takes awhile for anyone to pick up the swing of a contest exchange and the log-keeping. Just keep at it long enough to pass that point, and you will find the sport of contesting can be real fun. We need your score. Whether you QSO 10 or 1,000, your score adds to the club aggregate and we will need every possible point to insure a victory.

So give it a try. Hope to work each of you in every test. □



Ed Pores, WA2ZBV (left), with Mukul Chandra, VU2MCD, during Ed's trip to India last November. (See "Hams meeting hams in India", page 17, April issue of Worldradio.)

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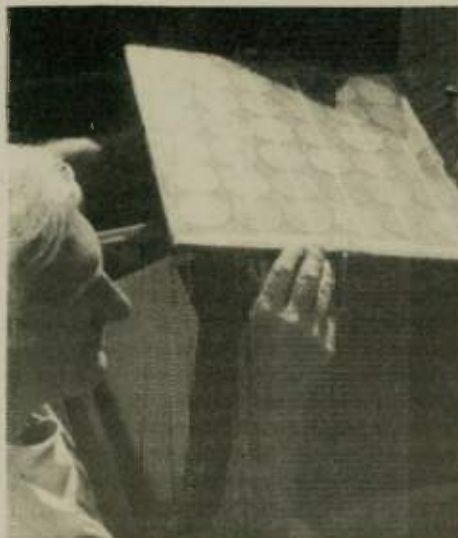
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MARITIME MOBILE



Gordon West,
WB6NOA



Solar mobile power

This month's column on sun power should be of keen interest to maritime mobile operators, recreational vehicle owners, campers and backpackers, and my many ham friends in isolated areas throughout the world. You all have something in common — there are no power lines to keep your communication station going, and everything runs off of batteries that will ultimately need to be recharged.

A solar charging system may be just the answer for you, and recent technological advances and dropping costs of solar cells may make sun power an affordable alternative to cranking up your noisy generator for a fast charge on your batteries.

If you select a modest solar panel and use it in conjunction with a top-quality, deep-discharge battery, chances are you can float your 12-volt system quite nicely to not only run your Amateur Radio station but provide enough additional power for lights, television and all of the other amenities within your self-contained mobile set-up.

Solar systems

The technical name for a solar system is the word "photovoltaic." We will simply abbreviate this big, long word by referring to our photovoltaic system as a PV system.

A 12-volt photovoltaic system is made up of individual PV silicon cells through a complex and relatively expensive manufacturing process. Lucky for us, silicon is the second-most abundant raw material on our Earth (carbon is the first), so manufacturers have an almost unexhaustible supply of materials with which to develop their silicon cells.

The silicon cells are manufactured similar to producing a modern transistor, which includes crystal growth, wafer sawing, wet chemistry, junction formation and metal screening. This will give us a solid-state junction which is formed by the creation of two different regions within a semiconductor material that have been carefully doped to produce the desired electrical properties of a solar charging cell. Boron and phosphorus — impurity materials — are added to the

silicon to create this desired electrical property.

Technically speaking, phosphorus-doped silicon forms n-type material — a donor of negatively charged electrons. The boron-doped silicon will form a p-type material which will accept these electrons. We interface the two dissimilar regions with a junction that will allow electrons to move in a preferred direction across the junction.

When sunlight strikes the PV cell surface, electrons are freed from their atoms by small bundles of light energy called photons. A charge develops across the junction, developing dissimilar charges on the front and back of the surfaces. If we now place electrical conductors with these surfaces, we can develop an electromotive force across the cell. Voila, we have now created voltage!

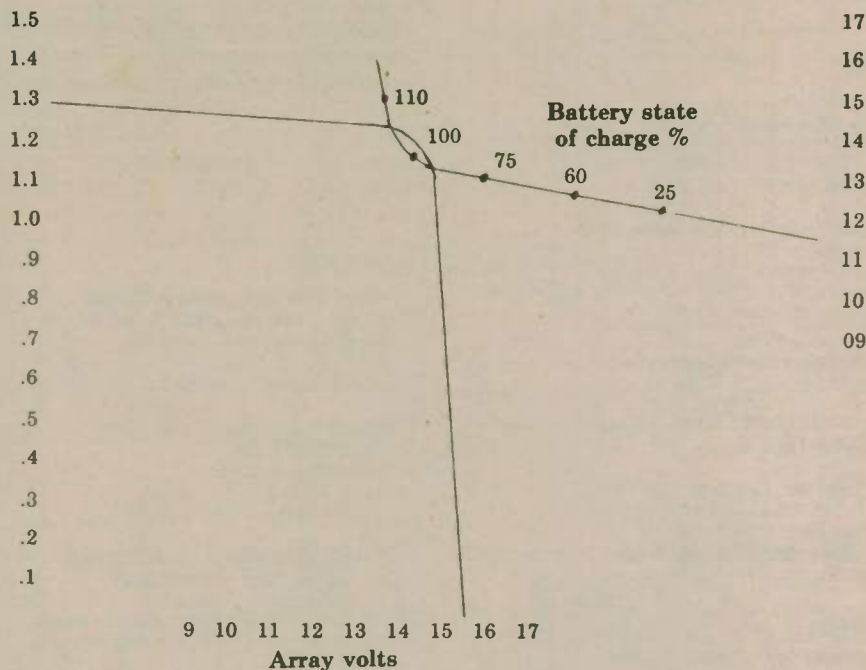
A single cell, reacting to sunlight (no load), will typically develop .55 volts. The output current of this cell is directly proportional to its surface area and the amount of sunlight illuminating the cell.

Of course, there is an additional myriad of steps in developing individual solar cells — such as developing a texturing technique that allows light reflected obliquely from the side of one part of a cell to strike another peak of a cell where it has a second opportunity for transmission through the surface. This is what gives us the front surface of a textured cell appearing black.

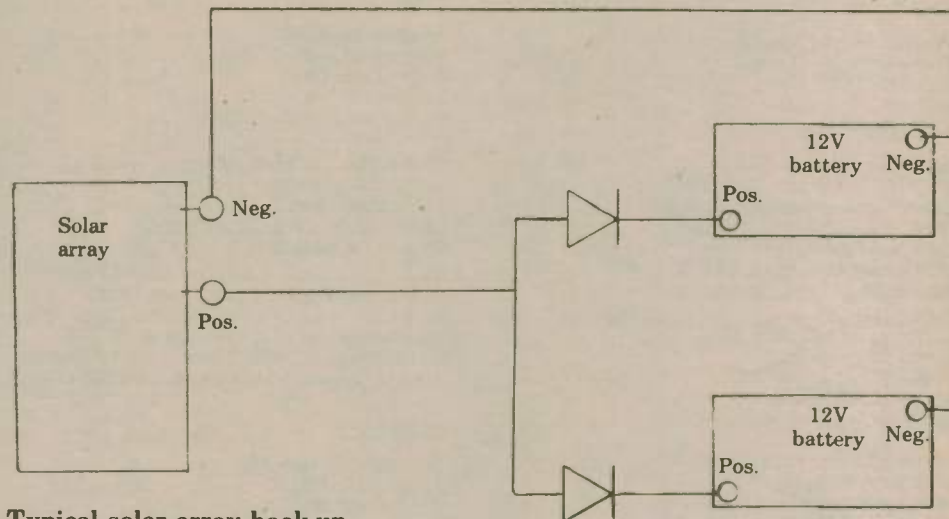
Just take my word for it — producing the intricate solar cell is expensive. However, manufacturers of solar cells are continuing to find better ways to make the cell and improvements in cell

Array current
(amps)

Battery
(volts)



Self-regulation occurs because the current from the array decreases as the array voltage increases. As the state of charge of the battery increases, the terminal voltage increases. The sudden rise in battery voltage at full charge is what the array needs to "see" to shut down the current. BHC modules and arrays have the proper characteristics in this knee region to self-regulate.



Typical solar array hook-up

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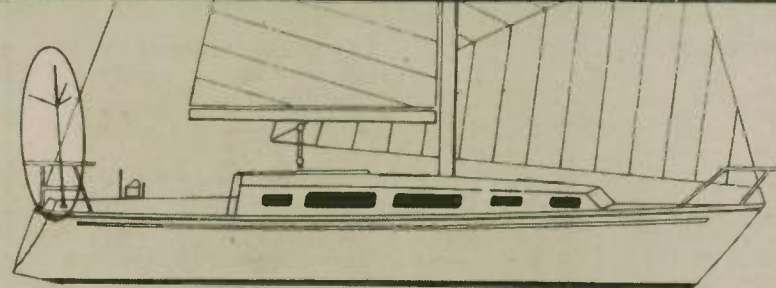
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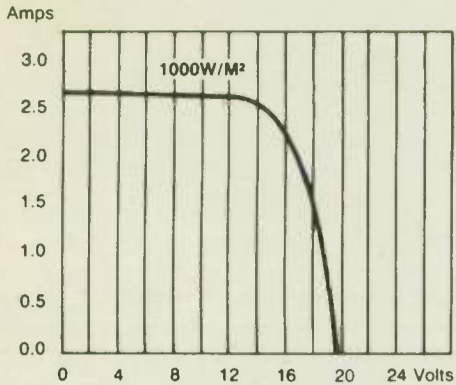


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TELEPHONE: (818) 341-5460



Performance characteristics — The IV curve (current vs. voltage) below demonstrates typical M73 power response to light at 25°C cell temperature.

manufacturing techniques to reduce costs.

Five years ago, you would spend approximately \$100 for every watt of power developed by a solar panel. The cost is now down to about \$13 per watt, and in 10 years, a breakthrough in cell production could bring the cost down to \$1 per watt. However, \$13 a watt seems fairly stable, and I wouldn't hold off in trying out a solar panel because the \$1 per watt cost is still many years off.

Solar panels.

These ½-volt cells are connected in series to develop an open circuit voltage of approximately 18.6 volts DC. The physical size of the panel of individual connected cells will determine its ultimate charging capability of a 12-volt battery.

Typically, a 1' X 1' panel may develop ½ amp of 12-volt charging capability at noon. Combine two of these and you have slightly over 1 amp of charging capability for your 12-volt system.

More about this in just a moment, but let's look at the individual panels for marine and recreational vehicle use.

Environmental protection to these delicate solar cells is extremely important in the rugged marine and mobile industry. The best protection is afforded by glass encapsulation on both the front and back of the entire solar panel module. A glass front and plastic back may not be desirable in the wet marine environment. This type of panel may quickly develop corrosion within the cells and may become contaminated and just about useless after a year at sea or on the top of your motorhome.

In selecting a solar panel for the maximum amount of moisture and dirt protection, all-glass encapsulation may be slightly more expensive but ultimately is the best way to go.

Power ratings

A 14" X 14" square panel consisting of 32 3-inch cells, completely encapsulated in polymer and Borosilicate glass, is rated at 17 watts at 18.6 volts DC, and under typical 12-volt battery conditions will develop 1.23 amps on a bright, sunny day.

The typical cost of this submersible, marine-rated solar power system is about \$199. Yes, you can buy the same amount of power capability for about \$150, but these panels may not be appropriate for rugged mobile and marine use. (Less expensive panels might fare well inside an environmentally protected greenhouse.)

If you just want to trickle charge your 12-volt battery system when you are away from your camper, cabin or boat, an 8½ watt solar panel array will give you well over ½ amp of charging current

throughout most of the day and will cost under \$100.

For those of you who may wish to actively use your 12-volt system as you are sailing the waters or plying the back roads, simply hook up, in parallel, two 17-watt arrays and watch your ammeter hover around 3 amps in mid-morning, noon and mid-afternoon sunshine at a cost under \$400 — completely sealed in glass to protect it from the elements. If you find you need even more power, simply add another panel in parallel to it and watch the ammeter go higher and higher. Two identical modules interconnected in parallel provide twice the cur-

rent output of a single module, with a nominal voltage unchanged.

Natural overcharge protection

Now you are probably wondering what's going to happen when your 12-volt batteries have received all the current they wish and you want to make darn sure the batteries don't get overcharged. The terminal voltage will increase, and a secondary reaction on the battery plates will result in liberation of gases. Incidentally, these gases are harmful, if not fatal, so always keep your batteries in a well-ventilated area and away from the occupants on your boat or motorhome.

When the battery begins to emit gases in a fully charged state, the gradual increase in terminal voltage from the solar cell suddenly rises. This sudden rise of voltage at a fully charged state will cause the current from the array to decrease. This shut-off occurs at the fully charged condition providing that the proper total number of photovoltaic cells is used in series in the array and that the "knee region" of the voltage current curve of the array is sharply defined.

To test this natural shut-off protection myself, I brought in several solar panels from Bob Hutchinson, WD5EQM, 1716 Woodhead St., Houston, TX 77019;

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<p style="text-align: center;">99</p> <p>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.</p>	

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phone (713) 522-5755 — a solar panel expert and a well-known Amateur Radio solar power station authority. His glass encapsulated panels along with stainless steel maritime mobile mounting hardware were the highest quality I have ever seen — you could even walk on them if you plan to use them as hatch covers.

I hooked them up to two relatively new, deep-cycle, 100-amp marine batteries that I use aboard the boat to power my HF ham radio station plus auxiliary lighting.

For the first week, my 35-watt array (which cost just under \$500 including the stainless steel mounts) developed a steady 4 amps of charge during the daylight. At the end of the fourth day, the battery voltage began to approach 13 volts, and the array kicked back to 2 amps during the bright daylight. The next day, the battery voltage began to rise quickly, indicating they were fully charged, and the charging current dipped below 1 amp.

As I would talk on single sideband, I would watch the solar array respond with more current during each voice peak. My new sun-powered charging system indeed develops its own voltage regulation. Of course, I would always recommend a shut-off switch in case you plan to not use your battery system for an extended length of time and would rather manually control the amount of regulation you would like to see. How simple — on a long cruise, simply switch the panel in and out depending on the state of your battery, the amount of sunlight, and how much time you have been using your 12-volt electronics.

Solar panel systems also require a blocking diode, usually silicon, to keep the battery voltage from flowing backwards at night and discharging through your solar array. Better arrays include this diode as well as the proper number of cells in series to make up for the 0.75 volt drop (¾ volt) that most silicon diodes exhibit.

Recent Amateur Radio articles have recommended the use of a Schottky diode in series with a positive lead, mainly because the Schottky diode has only a 0.2 volt drop. However, Schottky diodes were found to experience a high failure rate, and reverse current leakage was found to be unacceptable.

Stick with a germanium diode. You can add additional diodes in series so that your array will "see" the proper battery terminal voltage to shut down the array current. This is usually not necessary except for a short wire run to a small battery charged by a large array.

Mounting considerations

If you use No. 10 or 12 wire, you can run your panels up to 40 feet away from your batteries. You can use smaller wire if your panels are close to the batteries, such as in marine installations.

Get the panels out there, in the clear, and pointing in the direction of the sun. On a boat, we usually mount them straight up. The stainless steel mounts from Bob Hutchinson Company (BHC) allowed us to point the panels directly to the sun for even more current capabilities.

In a fixed installation, such as at your cabin in the woods, put a tilt on the panel so it points toward the sun. Every couple of months, go up on the roof and change that tilt to agree with where the sun is within the season.

You are never going to avoid shadows in most marine installations, but try your best to put them in an area where shadows won't completely cover the panel. Solar cells like to see a lot of sunshine, and an errant shadow on just a couple of cells will dramatically decrease the charging current output — and I mean dramatically!

Again I emphasize the importance of a completely glass-sealed solar cell set-up for marine installations. I have tried others, and in less than a year, you can watch the cells slowly deteriorating because somehow moisture seems to creep in. After a year with the glass cells, which have actually been submerged for test purposes, there is no sign of decay.

Start your cells out on relatively new batteries. In another article we will talk about good battery maintenance and the need to check fluid levels with sterile, non-contaminated hydrometers, and only add distilled water that has absolutely no impurities in it. Hooking up a new solar panel to an old battery may lead to disappointing results until a new battery is brought into the system.

There is virtually no maintenance of a solar panel except for periodic cleaning. You may need to experiment in mounting locations to keep the face from becoming a target for bird droppings. A single seagull dropping may cost you 2/10th of an amp in charging. A pelican could just about take you off the air! Simply clean off the mess with a wet cloth, and you are back in business.

Solar panels certainly have their place aboard boats, motorhomes and at rural hideaways. There are no moving parts to foul or break down. There is nothing to tow behind the vessel or put out in the wind. They charge silently and will even trickle charge on a cloudy day. The output is pure DC, and reflections from the ocean and from snow will actually enhance the current output characteristics of the array.

The United States Coast Guard is using solar arrays on many lighthouses and weather data buoys. The commercial communications industry relies on solar cells for mountaintop repeater operation. Amateur Radio repeaters on mountain sites are often powered by solar cells.

So why haven't you tried out a solar panel on your 12-volt system? You might even drop my friend, Bob Hutchinson, a letter for his fact-filled solar maritime and mobile installation guide that talks about his solar systems to include new 100-amp batteries if you need them.

Or you might even consider the advantages of dropping your grounded, shore-power, electrical line that might be giving you corrosion problems at your

neighborhood marina. Dropping your plug to the shore will isolate you from a common ground to other vessels and may thereby decrease your corrosion problems.

Your solar cells will keep your 12-volt battery system nicely charged when you're next ready to cast off.

I've tried the solar system, and it works well. □



was going to a funeral," she joked recently. "I was so afraid to be alone that I forgot to be afraid of flying."

That trip and obtaining her Novice ham radio operator's license were turning points in Carmen's life. "I had always been so dependent on my husband, even before I was blind," she said.

Carmen, who is a victim of retinitis pigmentosa, began losing her vision at an early age and was totally blind by the time her fourth child was born.

While Carmen was changing planes in Houston, a woman who sat next to her on the transfer train struck up a conversation. The woman, it turned out, was also blind, but she traveled quite a lot by herself and taught school in Minneapolis.

The woman gave Carmen hints about traveling alone. She then told Carmen that her cane was named Abraham and asked the name of Carmen's cane.

Carmen had a cane, but had not used it since learning to get around with it 20 years before. The woman said, "Here, put your cane next to Abraham. Abraham, meet Moses."

"I'm a very religious person," said Carmen, who is originally from Madrid. "When this happened, I said, 'Dear Lord, you are showing me the way.' It gave me such faith and confidence meeting this woman."

Now, Carmen takes Moses with her everywhere. "It was a new feeling for me. I always was hanging on my husband's arm and now I was just walking with my Moses," she said. "When I have my cane in my hand, I see many more things."

Texas woman 'sees' the world

Mary Sherwood

Carmen Carreno, who has been blind for 20 years, never traveled outside Corpus Christi without her husband until August 1984. At his insistence, she attended a week-long Amateur Radio camp for the disabled in Minnesota.

"I said, 'No way I'm going without you,'" the diminutive gray-haired woman recalls. But her husband put her on the plane, kissed her goodbye and she went, crying all the way to Houston.

"I guess people around me thought I



Dean LeMon, KI 4V 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?

Call or write the Courage HANDI-HAM System WØZSW at Courage Center, 3915 Golden Valley Road, Golden Valley, Minnesota 55422, phone (612) 588-0811.



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Attending the Amateur Radio camp, which is sponsored by a non-profit organization called HANDI-HAMS gave Carmen even more confidence. She learned to get around in a hotel room and at the camp and learned enough radio theory and Morse code to pass the FCC's No-vice exam.

Now she has her "rig" in a closet off her bedroom and spends many happy hours talking with other hams. In fact, Carmen said her son told her the other day, "All you know how to do these days is be with the radio."

The Carrenos are avid sailors who enjoy long cruises, and her Amateur Radio skills not only provide her a pleasurable pastime but will also be useful.

Carmen recently attended HANDI-HAM camp in Malibu, California in order to obtain her General license.

Carmen can't say enough good things about HANDI-HAMS, which is a service of Courage Center, a non-profit independent rehabilitation center in Golden Valley, Minnesota.

HANDI-HAMS was started in 1967 as a non-profit volunteer group by Ned Carmen, who worked in collections for the Mayo Clinic in Rochester, Minnesota.

He was often in the homes of disabled people and saw how bored many were. On his own, he got a number of disabled people to start studying for their Amateur Radio licenses.

Later, he contacted the Sisters of Assisi, many of whom he knew through the Mayo Clinic, and got several of them interested in his idea of helping disabled people to become Amateur Radio operators.

After his death in 1972, HANDI-HAMS continued as a non-profit volunteer group until 1975 when it became a service of Courage Center. Not only blind people, but those who cannot talk, who have cerebral palsy, who are quadriplegics or have physical disabilities, are taught at the HANDI-HAM camps.

Campers must pay their own transportation, but the fee for the week-long camp is only \$100 or whatever the person is able to pay. That fee includes room and board, instruction and whatever assistance the handicapped person requires.

HANDI-HAMS, as well as running camps twice a year in Golden Valley and Malibu, provides educational material, loans equipment for a limited time, and will introduce new hams to an experienced ham in their area who can work with them and provide encouragement.

For more information about HANDI-HAMS, contact Sister Alverna at Courage Center, 3915 Golden Valley Rd., Golden Valley, MN 55422.

— Corpus Christi Caller, TX

bachelor's degree, two-plus years of administrative experience, strong verbal and written communication skills, and a General or higher level Amateur Radio operator license.

Resumes received in confidence. Appointment will be made as soon as possible after 01 June 1985. For more information, contact Todd Johnson, Director of Human Resources, Courage Center, 3915 Golden Valley Rd., Golden Valley, MN 55422.

• Help a friend become a ham! •

Rules for selling equipment

Ed White, W1NPL

1) Clean up the gear, making it presentable.

2) Permit a demonstration or a trial period.

3) When stating the selling price, be firm about the figure. (Be certain what you want!)

4) If you wish to bargain, don't set the price.

5) If you're willing to ship it, be certain to state who pays the shipping costs.

6) Sometimes a better all-around trans-

action can be had by accepting a trade.

7) Under no circumstances, accept "\$10 down, and 50 cents a week!". If the buyer needs cash, let him get a loan from the bank!

8) Should the equipment be defective, state it and make sure the buyer knows it.

9) Don't be misleading. (i.e., it was only used by a grandmother to set her father's watch to WWV!)

10) Remember that the vast majority of hams are anxious to please the buyer.

— The Oscillator, VARC Newsletter

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Position qualifications include a



CW mailbox?

Bob Franklin, K6TP, Assistant Director and Section Traffic Manager, San Francisco, wrote to suggest a possible "mailbox" for CW traffic, where one could drop a message to be picked up by the addressee or by someone who could relay it to the addressee. So if you couldn't meet a net yourself, you could leave it in the "box" instead. Or if one of the locals doesn't check into the net when there is traffic for that station, the traffic could be filed in the box for later pickup.

Bob says there are a lot of details, both technical and procedural, that would have to be worked out. He is just testing the waters. Does anybody know of anything being done along this line?

Even without any automation, there is something that can be done on many nets — traffic storage. Someone checks in with a message for W4XXX, but W4XXX is not on the net. What will the net control do? There are several possibilities:

"Sorry, W4XXX is not on the net, wish we could help you." "Sorry, maybe W4XXX will be on the late net, or tomorrow night. Suggest you check in and try again then." "Can someone call W4XXX on the landline and tell him he has traffic?" "Can someone take the traffic and pass it to him?" or: "Please send your message to K4XYZ."

The last solution would be the best, but few nets provide for it. In the National Traffic System we have liaison stations between various nets, section to region, region to area, area to area, but there is no

standard provision for liaison between successive sessions of the same net.

In many cases, it would be helpful to have a station designated as "traffic holder" or "mailbox" to take any traffic offered on a given net and hold it until the next session.

But what if there is no outlet on the next session either? Is the "mailbox" station stuck with it? Not necessarily. The traffic can be passed to the "mailbox" station for that session.

Again, this is offered for comment, and it would be interesting to know what has been done by any nets. The experience of someone who has done it is more valuable than the speculation of a columnist who hasn't.

Very high speed CW

Bob offers another suggestion, one he has proposed in several local bulletins.

Before Teletypes began to be used on radio circuits, busy commercial, military and government stations with heavy traffic loads used CW at high speed, as high as 250 wpm. Signals were recorded on tape by a moving pen or by photographic means and then transcribed by typists.

We could use the same method for stations with heavy traffic loads — in December, for example, when sometimes there is not enough time on an area net to clear all the traffic.

It could be done by tape recorder. You could send your traffic to the recorder at a convenient slow speed, then speed up the tape when transmitting the messages on the air. The receiving station would record at high speed, then transcribe at a convenient speed.

How about fills? There would be much less need for fills. If you're copying from the tape and miss something, you just back up and play it over. Should this method of passing traffic be used, however, one change in procedure would be needed. Instead of giving receipt for the message immediately, it would be necessary to wait until the receiving operator had transcribed the message and counted the check. Meanwhile, the net could continue with other business, and

later provide a chance for receiving stations to QSL.

Codes and ciphers

At the end of 1939, as war clouds descended on Europe, the FCC took a number of drastic actions in the name of national security. Most have since been rescinded, but one still remains and has been incorporated into the current rules.

U.S. amateurs were forbidden to communicate with any foreign station, to transmit in any language other than English, to use codes or ciphers, and were required to give the call sign of the station with which they were communicating as well as their own when identifying themselves.

The last one has only recently been rescinded, except for stations handling international third-party traffic. The one that still remains, of course, is the prohibition of codes and ciphers.

Even this has been relaxed somewhat. In the days before the United States became involved in World War II, we were directed to add CQ to net calls, to make it clear we were not calling a station with a call sign of D4RN. There was fear that amateur stations might be used for covert activity, and there were good grounds for such fear. While the spying success rate of the Axis was quite low in the United States, it was not for want of trying.

Actually, today this prohibition (97.117) is not of any great import to most of us. We don't feel any urge to pass classified material to the Russians.

Maybe any of us who also dabble in cryptography might wish we could exchange cryptograms, but if we want to do that we'll have to use something other than Amateur Radio. The rule recognizes our official and unofficial abbreviations as legitimate; the only prohibition is against what is done to conceal the meaning of a message.

Our ARL list is an example of a code. Each number stands for a complete sentence. Q signals are another example, but they are permitted because they are not intended as a means of concealing the meaning; they are merely a quick way to

say something. They are codes, not ciphers, because ideas are manipulated, not letters.

When the letters of a message are replaced by other letters, or are rearranged, you have a cipher. If you substitute a letter for each letter of the message, write Z for A, Y for B, for example, it's a substitution cipher. If you change the order of the letters, write the message backwards, say it's a transposition cipher. Both are forbidden, of course.

Cryptographers also can conceal the meaning by hiding the message in the middle of one that looks innocent enough. "Brother of my boss outlined new policy last August. Now effective," looks harmless enough. But if the FBI or the FAA put together the first letters of each word, they would search every plane on the field! Or one can read only every fifth word, say, of a message and find something hidden there.

You can find an example of this in the King James Version of the Bible. The translators were working anonymously, did not identify themselves, at least they were not supposed to. But one of them did. In Psalm 46, you can find his name by counting the 46th word from the beginning and the 46th word from the end (he was 46 years of age when he did it, too — too many coincidences for it to have been accidental).

And there were the drug runners who had a way of passing their shipping orders by long-distance telephone, free of charge.

"I have a collect call for Mr. Cocaine at area code 803-747-5859." "I'm sorry Operator, Mr. Cocaine is not here now, but will be in Memphis tonight at area code 901-555-6789."

The drug runner then tells the operator he will place the call again and heads for Memphis. When he arrives, he has the number to call to receive delivery instructions.

What does this have to do with traffic handling? Fortunately, not very much. But there's always the possibility that somebody will try to use Amateur Radio for illegal purposes.

Don't forget the Jonestown incident in Guyana a few years ago. It can happen again. It takes very little bad publicity to offset years of public-relations growth. If something smells fishy, there is probably a fish in it, especially if there is money or politics involved.

The FCC does check occasionally, and has taken action against amateurs using their stations for illegal purposes such as for regular business communication. And that hurts the rest of us if only because when FCC's monitoring turns up violations, the monitors will watch our bands more frequently. □

Thanks to TVI . . .

Charlie Hooker, AD3L

I received a call from a resident of Shantytown, Pennsylvania, out in Inkerman. He said that a ham moved into his neighborhood recently and is now getting TVI. So he called me as a member of the club — don't know how he got my name — and I told him we could help him, and would get back to him.

I also explained that it's a two-way sort of thing, that his TV set might not be designed to work in the vicinity of a high-powered transmitter.

That was OK with him, but he did want to know how a person might want to go about becoming an amateur; what he heard was interesting!

—Murgas ARC, Wilkes-Barre, PA □

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Aerials

Lil Paddle

For some years now, this column has been extolling the virtues of 1) the Butter-nut vertical antenna and 2) the horizontal loop antenna.

In the latest issue of one of the ham-mags, they made much of both in the same issue . . . finally. We yawn.

We've certainly come a long way in apparatus which displays that RF is indeed going in the direction we wish. People have used bulbs, large and small, with the amount of light indicating radiated power. The reckless among us even used lead pencils in close proximity to the final tank coil and judged power by the arc that was drawn.

Then came the SWR bridge and its SET control and a switch to look for REVERSE. Then came the devices with two needles so one could see what was happening simultaneously in both modes without having to throw a switch.

Now let's look at the light-bar SWR and power meter from Palomar, that very fine company which introduced the first really useful noise bridge to the amateur.

On the power side of things, there are 10 light bars with a switch that selects scales of 2,000 200 or 20. Printed next to the light bars are the numbers 200, 150, 125, 100, 70, 50, 30, 20, 10, 2, 0.

Depending on the position of the switch, the light bar would be reading either 500, 50 or 5 watts. My little transceiver lights up the bar at the 70 level.

On the SWR side there are also 10 light bars. The printing on the panel is 10, 3, 1.5, 1.2, 1.1, 1.0.

Preliminary tuning-up can be done at a power level so low that the first light in the lowest power range doesn't even light, but you will see the SWR bar light up. Coming up from the bottom of the band there was no SWR light until I hit 14.050. Then I put the tuner into the circuit and tuned it out.

Various antennas were tried out, and I had a feeling of satisfaction to see the SWR lights drop down to where none lit.

It should be pointed out that you will not, as with an analog metre, read 62.5 watts. The virtue of this metre is you are able to see both actions at once.

Yes, you seem to have a different grasp of the situation than with the needle metres. It did seem that tuning up went faster than before.

Also, there is an ego trip when using voice and the power peaks are lighting up and the SWR side shows not a glimmer.

One thing this unit has going for it is that it is manufactured by Palomar! As a functional tool and a pleasant addition to

the shack, we say it's highly recommended.

Another subject: With some better weather coming, people will be working on antennas again. Unfortunately, this will mean (ugh) tuner-uppers. The enlightened among us will have written on 3" x 5" cards the settings for various frequencies. The not-so-erudite will continue to twist every knob in sight as they move 10 kHz.

So, to minimize the birdies and irritated people when their QSOs are ruined, let us do all our antenna experiments on one frequency and at certain times, such as on 40 metres, GMT times, 0000-0400, 7215; 0400-0800, 7260; 1600-1800, 7175; 2300-0000, 7165. So, if you must, that is where and when to do it. (You clever people who figure out the why of those times and frequencies will get a prize.)

Now we move on to something great! *The Easy Way — HF Antenna Systems* by John M. Haerle, WB5IIR. It's \$12 plus \$1 for postage and handling from Overtones, Inc., 1710 Highland Park Rd., Denton, TX 76205. **BUY IT! BUY IT! BUY IT!**

Kurt (the clod) read it first and I ended up with a dog-eared book full of underlines. I was peacefully trying to watch *Jewel in the Crown* and he said, "Hey, listen to this," and from the book read, "If you're using a transformer to match a low-impedance mike into your rig's high impedance mike input, would you say, 'The transformer is just fooling the mike?'"

And then he chortled. During *All Creatures Great and Small*, he interrupted with, "Here's a letter this book's writer got." My concentration was broken with "For sixteen years I've been contentedly hamming away and thoroughly enjoying myself. I never flinched when told to cut my antenna to an intended operating frequency in order to always have a 1:1 VSWR despite excursions up and down the band. I never questioned the assertion that tuners soak up most of your power and that reflected power came back down the line and zapped your finals. A QSO with you prodded some remedial-type study. I found you were right indeed, and at that moment I ceased thinking of antenna systems in terms of voodoo, witchcraft and old wife's tales."

Now, should any folks quibble with what is in this book, I'd like to point out that at one time Haerle was head of the broadcast division of Collins Radio. He quotes generously from the words of Walt Maxwell, W2DU, and if you disagree with him, well, you must be the type who buys the Brooklyn Bridge.

To a sad note — WB5IIR is now a Silent Key. On his way home from giving an antenna presentation to the Dallas Amateur

Radio Club, his car was struck by another car. It is a mark of the man that his son (not an amateur) published the book which his father had started.

John had written to us a couple of times saying our articles were right and that we should press on in ridding the hobby of myths that exist.

The book talks about baluns, ground systems, radials, towers, dipole, zepp, G5RV, Windom, the truth about the coaxial dipole, sloper, DDR, Beverage, folded unipole, vacation-mobile-portable antennas, W8JK, Yagi, quad, 160-metre antennas and receiving loops.

Many Worldradio readers and a book publisher had suggested that Kurt and I do an antenna book. Since both of us have busy schedules, we put it off. Now we don't have to write one. It's all in this one.

You know us — we have savaged books. There is not a single word in this one with which we disagree!

Five stars . . . spend the money. It's a price to pay to be the smart one in your club and to have a good signal.

(The ersatz monikers used by the writers are so the people they [with good reason] praise won't try to buy them a drink at Dayton, and so they don't get in fights with people whose bulloney they expose [like next month]. But they do have their self-defense plan should anyone get violent — Kurt grabs them by the nose while Lil kicks them in the pants.) □

Weller Method 'Tornado alert'

1) Warm your TV set and turn it to Channel 13.

2) Darken the picture tube with the brightness control knob until the screen is almost totally black.

3) Then turn to Channel 2 and leave the set alone.

4) If your screen is stark white, or turns white, or you get a picture after being black like Channel 13, this means a tornado is within 5 to 20 miles of you or possibly closer. Head for shelter — QUICK!!

5) If lightning flashes (horizontal white streaks across your screen) become wide bands and linger, a dangerous storm is near and you should get to safety immediately; tornadoes often spawn from isolated violent thunderstorms.

With the Weller Method, there is no guessing. A tornado funnel can be positively identified by this method near area about to be stricken.

—Hamfester Radio Club, Oak Lawn, IL

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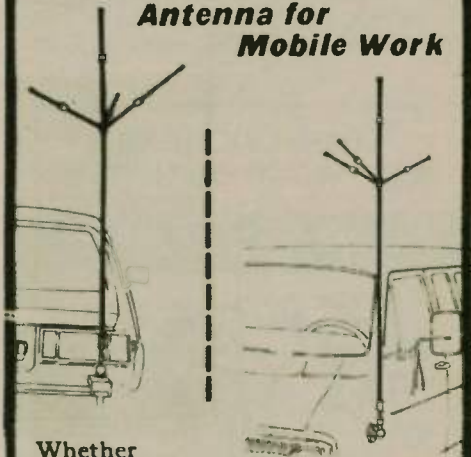
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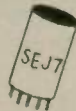
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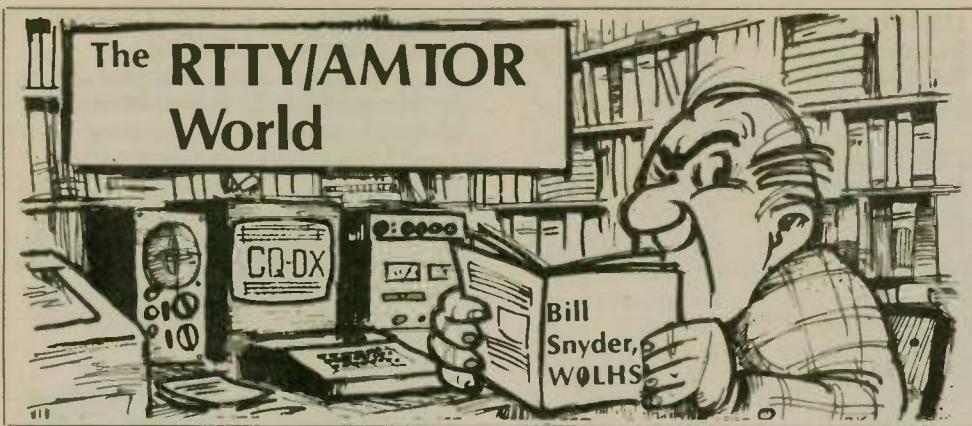
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DX chasing on RTTY/AMTOR has always been a rather laid-back sport. Whenever a new country appeared on the bands, nearly everyone who joined the hunt "filled," as wild animal hunters usually put it. That's the way it was, until the recent TI9 DXpedition to the Cocos Islands.

What was announced as a trip for RTTY/AMTOR only turned out to be two DXpeditions — one by TI9TTY and another by TI9WI and TI9J. They both appeared the same day, the latter beating the former by a few hours.

But that is not the story; the story is the hog-pile of U.S. stations — the worst I have ever seen — and the operating practices within the pile. There have been some historic scrambles after rare sta-

tions, but never anything to match that one.

To my way of thinking, it was Lid-city. The manners of some of our fraternity were atrocious, and as a result, there were a number of amateurs who completely missed working the TI9 country. The Cocos groups were doing their best, but the pile-up was sprinkled with genuine hogs.

To add to the confusion, the TI9TTY station was transmitting upside-down. This caused me a little trouble because they were listening right-side-up. My aging mind had trouble remembering to shift the "reverse" button prior to transmitting, so a few of my calls went out downside-up. But that was really no problem; the hogs were!

Everyone was looking for TI9TTY to appear on schedule; however, TI9WI appeared first. I heard him working W5HEZ in Baton Rouge, Louisiana. The TI9 told Jack it was the second QSO of the trip. When he finished with Jack, the TI9 stood by "five down." Camille Serio, KA5CQJ, another Baton Rouge DX'er answered the call. I checked down five and put my transmitter on the frequency and called when Camille had finished.

I'll never know if TI9WI answered my call because the pile-up started in earnest. Everybody and his brother must have been calling the DX station on his frequency, not split like requested, so I couldn't tell if he came back to me or not. And they called and called and called.

One station ran a string of RY's (heaven forbid), then sent the DX station's sign a dozen times, signed his own call at least 20 times, and then listened. By then the DX station was saying goodbye to a different stateside operator. And then it started all over again.

I wasn't aware that there were two DXpedition stations in action from Cocos. It was confusing. Apparently, TI9WI and TI9J were operating SSB with a little RTTY on the side. They had no connection with TI9TTY and were located on another part of the island. After about a half-hour, they faded out on me.

At 2213 TI9TTY, manned by Sigurd Koberg, TI2SK, and Javier Prada,

TI2FPE, broke the silence and contacted Leo Small, K4AGC. An hour later I managed to squeak through the pile-up and work the "juicy DX station." And I did it with 110 watts, no linear and short calls. By short calls I mean: W0LHS W0LHS W0LHS K.

Our QSO took place on a simplex frequency as the DX station had abandoned split-frequency operations. The strange thing about it was I had to wait at least two minutes after I made my call to hear Javier come back to me. He waited until all the long-winded callers stopped sending and then returned to me. Earlier that day, I had witnessed W1DA catch TI9WI with a very short call, and the same thing happened. There was a long wait before the TI9 answered George.

What is the upshot of all this? Well, we need better protocol for DX-calling on RTTY. AMTOR is another kettle of fish. I don't think DXpeditions should bother with the chirpy mode except for schedules with managers, etc. The battle to latch up with the DX station would be horrendous, and might last hours!

Personally, I believe DXpeditions should stick with RTTY for fast, efficient operations. Of the 109 contacts made by TI9TTY, only five were on AMTOR and four of those were with home country TI stations, the other with the USA.

On CW, most DX'ers usually send their call only once, and the rare DXpeditions almost always work split. We should try the same on RTTY. The calling station should only send his call letters three times and then listen for 30 seconds. If everyone would adhere to this policy, the DX station could quickly pick out one station to answer and the pile-ups be orderly. Two or three minutes of bedlam is a waste of time for both parties. Short calls will do it!

I've witnessed DX stations go QRT because of incessant callers causing hardship for the distant station. So please — *no RY's when you call — omit the DX station's call letters when working simplex — sign your call only three times — and listen, listen, listen!* Give the DX a chance to come back, and give the chosen station a chance to hear the DX station come back.

A couple of "Lid Managers," as I call them, tried to tell the early hog-pile that the station was listening "down five," but to no avail. The mess of RY's and long calls stayed right on the DX station's QRG. People use short calls when working contests; why can't they do it when a "juicy" one shows up on RTTY?

Jim Sladek, WB4UBD, the QSL manager for the TI9TTY operation, gave us a rundown on the statistics of the operation. Conditions were very poor during the trip. Only 21 Europeans made contact, and none of those were from the eastern EU countries. Only one station in Scandinavia, OZ1CRL, made the grade. Likewise, F8XT was the only lucky ham in France.

Sid, VK2SG, was the sole Oceanic station to work the Cocos, and that was via long-path. To complete the tally, TI9TTY worked 73 in the USA, three in Canada, and six in South America plus the Caribbean.

Jim also reports that Sigurd was so excited with his RTTY operation, he is thinking of returning to Cocos on another trip. So if you missed the last one, there is hope. The original DXpedition grew out of a luncheon conversation with Sigurd, so Jim is the natural QSL manager. QSL's for TI9WI and TI9J go to them direct, not to WB4UBD.

RTTY for the hearing impaired

I recently had a telephone call from a

very nice lady who inquired if RTTY would be suitable for her boss, a former active amateur who had lost his hearing. Apparently, the gentleman had read this column and became excited with the idea of returning to the airwaves via visual communications. I referred the lady to Dave Ingram's book, *RTTY Today*. This reference should help him choose equipment and get started properly.

Over the years, I have worked a number of amateurs who have found a home on RTTY after suffering loss of hearing. If you know amateurs who have quit because of hearing loss, I suggest you have them consider RTTY/AMTOR as a way of life. For those who are deaf and not licensed hams, perhaps they should contact the HANDI-HAMS in Courage Center, Minnesota for information. The Minnesota group has come up with some very innovative ways to license handicapped people.

Packet radio happenings

Packet radio is rapidly becoming the new mode of operations. The March QST magazine has a little note about a breakthrough in packet operations involving the UoSAT/OSCAR-11 satellite. A station in Hawaii transmitted letter-perfect messages to Surrey, England via the bird, and then received replies via the same low-orbiting satellite. This is a first for messages being stored in the UO-11 and then later being down-loaded while the bird was over another part of the world.

The first full-service Packet Communications Satellite (PACSAT) is tentatively set for early next year. This should be a new frontier for Amateur Radio.

I recently got my hands on an AEA packet outfit and am learning the intricacies of the mode. In addition, I am in the process of setting up an OSCAR station, with an eye to the packet future. A March blizzard and antenna problems have set me back a bit, but we are working on it.

Eavesdroppings

"I AM A SECURITY GUARD IN CHARGE OF ONE PHONE AND ONE LONELY DOOR." ... "INDIAN FOOD IS VERY SPICY, U.S. FOOD IS VERY BLAND" ... "THE BIRD BATH IS FULL OF DANDY ICE CUBES." ... "JE SUIS TRES NOUVEAU SUR CE RTTY MODE." ... "THE AGE HERE IS PUSING 170" ... "HAVE COWS IN THE BACKYARD AND RADIO CONTROLLED MODEL PLANES IN THE FRONT YARD." ... "BEST 73 FROM A SWAMP CALLED F-L-O-R-I-D-A." ... "THIS IS MY THIRD DAY ON RTTY SO PLEASE BARE WITH ME." ... "MY WIFE RAN AWAY WITH MY BEST FRIEND, AND GOD HOW I MISS HIM." ... "I DROVE FROM PAINTED POST TO PEPPER PIKE." ... "ALL OF A SUDDEN WE HAVE A MAILBOX ON OUR NET FREQUENCY." ... "IF WE MOVE DOWN FROM THIS QRG WE ARE IN AMTORG." ... "I HOPE TO WRITE OR SPEAK TO YOU AGAIN." ... "THEY CALL THEIR COLLECTION AGENCY AN 'ACCOUNT FULFILLMENT CENTER!' HOW ELEGANT." ... "THE TEMPERATURE HERE IS 20 DEGREES MINUS ZERO." ... "THE HOME BREW IS NOW HOME-BLEW!" ... "I FREEZE UP ON SSB, SHE FREEZES UP ON RTTY." ... "I WOULD LIKE TO SEE A CONTEST ON SSB WHERE EVERYONE CALLS CQ AND NOBODY CAN ANSWER." ... "WELCOME TO FAILBOX-64" ... "LOG OF CURRENT USERS: URCALL

(continued on next page)

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G.E. "Beb" Bebermeyer, WB0UNB

Worldradio has asked me to be their new SSTV columnist. I have agreed to give it a try and help them furnish the readers with an insight into this interesting mode of ham communications.

Color SSTV

One of the hottest slow-scan converters on the market in the last few months has been the new Robot 1200C color high resolution converter. Of the different color slow-scan converters I have operated and seen in operation in the last three years, this unit has the best quality image of all the systems available.

Other good systems on the market are the Robot 450C, the German Wraase SC-1, the Robot 400 with WA7DOD 3064C board, the TRS-80 color computer systems, and the Commsoft system using the Apple computer.

Due to the various sending modes of the above systems, the users are splitting the frequency band. For instance, the 14.230 frequency has become the home of the Robot 1200C and the Robot 450C, sending at 12 and 36-second frame

RTTY/AMTOR

(continued from page 44)

03/25/85" . . . "MY NOMINATION FOR CLICHE OF THE MONTH IS: REAL FINE ON THE RIG THERE!"

YJ8TT's QSL dilemma

Augustin Cheung, YJ8TT, shipped 50 cards for the French Radio Club Worked All States award. Well, apparently they were lost in the mail (registered, no less). So Augustin's WAS chase went down the drain. Les West, VE7FW, has undertaken the gigantic task of chasing down new cards for Augustin. But he made a boo;

while the 14.233 frequency has the rest of the systems. The only common speed between all of the systems is the lower resolution of 8.5 speed.

Color slow-scan TV is advancing so fast that within a few years, images will be sent faster than 8.5 and with the higher resolution.

New band for SSTV'ers

Soon to be open is the 24 MHz band. All modes will be available, with specific areas of operation recommended by the ARRL: 24.898-24.928 MHz for CW; 24.920-24.938 MHz for RTTY, and 24.930-24.990 MHz for phone, SSTV and FAX. 24.935 MHz is suggested by the USATVS for SSTV calling/operating area.

SSTV nets

There are two SSTV nets in operation on the 14.230 frequency every Saturday morning. International Visual Communications Association (IVCA) at 1500Z with John Gray, W1REQ, the net coordinator. The other net is at 1800Z with Brooks W1HKF as the coordinator.

The IVCA net has been running contests for the different holidays and awarding winners with beautiful certificates. The categories are for the best black-and-white, color, and multi-frame images. Judging was for the best original subject material covering the designated holiday. The winners to date are as follows:

10/22/84 Halloween Contest:

Black-and-white — Donald Muth, K6KUF
Color — Herman Perkins Jr., W4TUQ

boo; for all duplicate card requests, he listed the station as YB instead of YJ.

If you received a letter from Les asking for a duplicate card, please check the call sign. If you have worked YJ8TT in the past and would like to help him get his award, please send a duplicate card to Les, his manager.

I wish to thank all those who have written about RTTY and AMTOR. I appreciate your input. Hope to work everyone on RTTY/AMTOR/PACKET, that is if I can get all the gear on my bench! 73 and DX. Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 58103. DIT DIT. □

11/24/84 Thanksgiving Contest:
Black-and-white — Garnet Bebermeyer, WB0UNB
Color — Gale Sells, W7AMQ

12/22/84 Christmas Contest:
Black-and-white — Glen Tillack, W6KZL
Multi-frame — Thomas Pilgreen Sr., W4UTR
Color — Lawrence Ruffs, Jr., WB5UZS

12/29/84 New Year Contest:
Black-and-white — Herman Perkins Jr., W4TUQ
Color — Garnet Bebermeyer, WB0UNB
William Welles Jr., W4CVS

2/09/85 Valentine Contest:
Multi-frame — John Gray, W1REQ
Color — Claud Kelley, WA4VPU

SSTV on space shuttle

For the next space shuttle launch, NASA has given the approval to have on board slow-scan television (SSTV) relay equipment (Robot 1200C modified) for receiving on 2 meters. Stay tuned to W1AW and other HF SSTV nets for further information.

Computer interfaces to the Robot 1200C

The designers of the new Robot 1200C have programmed the unit's ROM so you can interface different computers to the scan converter. The TRS-80 Color, Commodore 64 and some IBM computers are now being used.

Three different interfaces are being used: serial, serial to parallel, and parallel. Software has been written by different hams to generate graphics, framing, zooming, storing images, and operating the front panel of the 1200C unit by the computer keyboard.

Some of the amateurs writing software are Alan Applegate, K0BG; E.J. Williams, KC5VC; Clayton Abrams, K6AEP; and Dwey Wright, KQ9T. Anyone interested in obtaining more information on the software can write to me or tune to the SSTV nets Saturday mornings.

International Visual Communications Association (IVCA)

I have received the following information from IVCA. They are taking dues for the 1985 year. The dues are \$10 and should be sent to IVCA, c/o John Gray, 99 Oenoke Lane, New Canaan, CT 06840. Also, they would appreciate any suggestions as to how to improve the organization. Newsletters will be sent only to paying members.

Please write WB0UNB on suggestion to improve my column or news items which may be interesting to the SSTV world. Send information to Worldradio, 2120-28th Street, Sacramento, CA 95818, c/o WB0UNB. □



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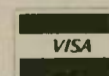


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Packet

(continued from page 17)

computes the CRC using the same formula on any packets it receives and then compares what it computed against what was sent (and received). If the compare finds two different values, the received packet is assumed to be received in error and it will not be used.

As you type information, packets are assembled and sent to KA1KPH. The

TNC at KA1KPH receives your packets, checks the CRC, and if good, returns an acknowledgment packet back to you. The messages you type appear at KA1KPH error-free. Both your TNC and the TNC at KA1KPH may successfully receive other packets of other stations in the area on the same frequency, but they are ignored since they are not properly addressed.

Your TNC expects to receive the above-mentioned acknowledgment (ACK). This is used to verify that the message (packet) has been successfully received. This is

called guaranteed delivery (return receipt requested), somewhat like what the post office offers. If your TNC does not receive an ACK within a short period of time, it will retry the transmission again.

You have control over how long the TNC will wait for the ACK. Of course, if the other station's rig died, your TNC could try forever sending the same packet.

You also have a choice here. You may either abort a connection at any time or set a retry counter to limit the number of

attempts. You can see that marginal conditions or intermittent interference will only limit the throughput of packet radio. When your TNC receives the ACK, it knows the packet has been received and its contents were intact.

When you are finished with your QSO with KA1KPH, you issue a command to your TNC to DISCONNECT. A disconnect message is sent, an acknowledgment is received and both TNCs are no longer connected. You are free to connect to anyone else on frequency.

The TNC also has the ability to monitor packets it receives. For example, after you disconnected with KA1KPH, you wanted to see what other activity there was on frequency. You can enter a TNC command to turn on MONITOR mode, and the packets your TNC successfully receives will be displayed. You could then "listen in" or "read the mail" on any other QSOs that might be occurring on frequency.

The TNC can broadcast a beacon comprised of a message you enter. You can also control the frequency of how often beacon messages are sent. Typical values range in the 10 to 30-minute intervals. In conjunction with the beacon feature, you can also broadcast messages. Since there is no connection in this mode, thus no ACK, there is no guarantee that anyone will ever receive your packets. This can be used for calling CQ or broadcasting general QST messages.

Next month we will continue the discussion on packet radio with information on how packet radio "digipeaters" can extend the range of packet radio communications, packet radio on AMSAT/OSCAR-10 and future satellites including PACSAT, high speed terrestrial links, and a look at who is currently offering packet radio hardware with overviews and suggestions. Also, some info on packet experiments with meteor scatter contacts, various mailbox computers with message store and forward, and a look at the KA1KPH-1 digipeater serving the greater Springfield area as a link in Eastnet, the East Coast intercity ever-growing network of stations. □

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- Set receive MARK & SPACE filters independently from 1000 to 3000 Hz
- All shifts, 170 Hz fixed or 0 to 2000 Hz adjustable
- Set AFSK output tones independently from 1000 to 3000 Hz to one Hz
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- Front-panel squelch control
- Built-in 4 digit counter
- CW filter adjustable 700 to 2500 Hz
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- Discriminator-type tuning Indicator
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- 13 VDC operation, 110 VAC adaptor supplied
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When things go wrong

Anything that can go wrong, will.

According to the Air Force News Service, the familiar "Murphy's Law" was coined in 1949 by AF Capt. Ed Murphy while on temporary assignment to the Air Force Flight Test Center at Edwards AFB, California.

Although the original statement — "If there's any way to do it wrong, he will" — was made about a technician working on a special Air Force manned rocket sled project, the remark was reformulated, termed "Murphy's Law" in honor of its discoverer, and brought up as a joke during a press conference following one of the tests.

Newspapers and magazines widely reported the statement, and applications for it were quickly found in all fields. Since its inclusion in Webster's New World Dictionary, Murphy's Law has gone legitimate.

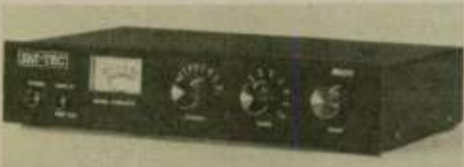
— OFF DUTY Enterprises, Costa Mesa, CA □

Ohm-Brew Answer

OHM-BRELLA (Umbrella)



Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.



Satellite receiver

SATTEC puts an end to family squabbling over which TV channel to watch. The company has introduced the R-5100 block receiver, which makes it possible to operate multiple TV sets off the same dish, receiving multiple channels simultaneously. Now, everyone can watch his own program choice.

The R-5100 is the first competitively priced block receiver designed for the home market.

The R-5100 features a Polarator 1 interface, a skew control with built-in protection from accidental burnout and an A/B switch that automatically switches from the VHF to the dish.

An internal, crystal-controlled modulator is switchable to channel 3 or 4. Channel lock AFC and automatic gain control lock in each transponder, eliminating fine tuning.

Paired with the R-5100 block receiver is the DC-5100 downconverter, a commercial-grade unit built to hold a signal steady. Its DRO (dielectric resonator oscillator) circuit compensates for outdoor temperature variations. In addition, its weatherproof zinc case is designed to "breathe", preventing condensation that can impair a signal.

SATTEC manufactures satellite TV receivers and related equipment for both consumer and commercial markets. For further information, contact Sat-Tech Sales, Inc. 2575 Baird Road, Penfield, NY 14526; phone: (716) 586-3950. □

New antenna info

Cushcraft has just released their latest full-line amateur antenna and accessory catalog. The 16-page, two-color booklet contains complete specifications on antennas in the frequency range from 3 to 450 MHz. There are three new Boomer 2-meter antennas, a two-element 40-meter beam, Cushcraft/Signals VHF mobile antennas and a through-the-wall lightning arrester.

To receive your free copy, write Cushcraft Ham Catalog, P.O. Box 4680, Manchester, NH 03108. □

Awards record keeping software

AMPRO Software, Annapolis, Maryland announces the release of its Amateur Radio Series of software packages for the IBM-PC and compatibles, as well as many other MS-DOS machines. These programs require 256K RAM and 1 disk drive; printer preferred but not necessary.

The initial release offers four separate packages for complete record keeping while working toward the DXCC, the 5-Band DXCC, the WAZ/5-Band WAZ and the WAS/5-Band WAS awards. Each package includes complete documentation, but being menu driven, minimal instruction is required.

All programs contain complete data bases (countries, zones or states as applicable), with a means to edit as necessary to keep them current. A cross reference data base is also included on the DXCC and the 5-Band DXCC which is automatically searched if the prefix entered is not valid. The cross reference, if found, is then displayed on the screen.

The queries and listings can be obtained either on the CRT or the printer, with output formatted to suit the selection. The printed versions of "NOT WORKED" are particularly useful for giving to friends to use as NEED LISTS, while the "WORKED" versions are formatted so that the information is printed exactly as it is required on the award application forms. The WAS/5-Band WAS data base also includes all state capitals with a means to track progress by band and mode.

The PC-DOS version (IBM-PC and Compatibles) runs either in full color or monochrome. The MS-DOS version is monochrome only.

Kantronics Packet Communicator

Kantronics announces a new product for amateurs using computers in the shack — the Kantronics Packet Communicator.

Data is transmitted between the Kantronics Packet Communicator and the computer using a Serial RS232 or TTL port. Baud rates of 300, 1200 and 9600 can be used. Any terminal or communications software program can be used to set up the computer to communicate with the Packet Communicator. Special Packet Terminal (Pac-Term™) programs for many popular personal computers will be available soon from Kantronics.

System compatibility, the ability to exchange data with existing Packet Terminal Node Controllers, has been achieved with the Kantronics Packet Communicator by using the popular Tucson Area Packet Radio group software.

Almost all of the commands and operation procedures used by the TAPR group are used with the Kantronics Packet Communicator. Both the ARRL standard AX.25 and Vancouver protocols are incorporated in the unit. The Kantronics Packet Communicator supports baud rates of 300, 400, 600 and 1200, but the unit does not support full duplex operation.

An added feature of the Kantronics Packet

Communicator is the ability to select either Bell 103 or 202 tones for 300 baud operation. This will allow the operator to switch to the lower tone set, improving performance at slower speeds on the HF bands. This feature makes the Kantronics Packet Communicator an excellent choice for gateway use on the HF bands.

The Kantronics Packet Communicator will also function as an unintelligent 1200 baud radio modem. This feature gives the operator the ability to transmit and receive data at high speeds without using any special protocol.

The unit is housed in an extruded aluminum case measuring 1.9"Hx5.9"Wx8"D. An external power supply and cables for connection to the transceiver and computer are included. The user must provide the RS232 and microphone connectors for his station. The Kantronics Packet Communicator is not available in kit form.

The Kantronics Packet Communicator will be available in April 1985, with a suggested retail price of \$389.95.

For more information contact your local Kantronics dealer, or Kantronics, 1202 E. 23rd St., Lawrence, KS 66046. □

VHF/UHF receivers, transmitters

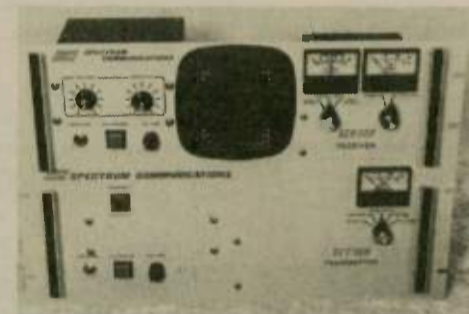
Spectrum Communications is introducing new high performance rack-mounted VHF and UHF receivers and transmitters.

The Spectrum SCR500 is a state-of-the-art solid-state NBFM receiver which will give many years of service as a repeater link or control receiver, satellite or monitor receiver, etc. Voice, tones and computer data (with a modem), may be received.

Numerous amateur and commercial versions are available for the 2M, 220 and 450 MHz bands, with or without full panel metering or AC power supply, as well as with several front-end and IF filtering options. They are extremely sensitive (0.25uV/12dB SINAD typ.), yet able to reject strong local interference at high density sites.

For the UHF unit, an exceptionally sharp and wide dynamic range 4-pole helical resonator option is available. A panel monitor speaker and AF monitor jack are included. One channel is standard, but three or six-channel units can be supplied as an option.

The Spectrum SCT500 Transmitters have a

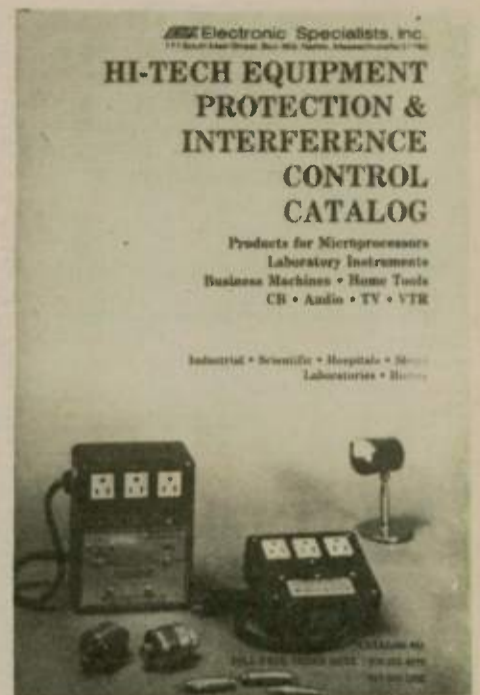


wide variety of applications for high-quality transmission of voice or data, ranging from conventional voice (e.g., repeater links) to computer data links (to replace costly phone lines in commercial service). The units are designed for very heavy-duty 100 percent continuous operation.

The transmitters can be provided at various power levels — 10, 30 or 75W VHF and 10 or 40W UHF. Spectrum SCA100 Power Amps may be added for outputs up to 150 watts, one or two channels. A heavy-duty 115/230VAC power supply is "built-in", along with 12VDC input and "battery backup" capability. □

The disks are not copy protected so that back-up copies are easily made. (Your honesty is appreciated!) For hard disk owners, a batch file is provided to automatically install the programs on the hard disk.

The cost is \$29.95 per disk plus \$2 S&H. MD residents please add 5% state sales tax. For more information, write: AMPRO Software, 101 Maple Lane, Annapolis, MD 21403. □



Guide/catalog for ham gear protection

Electronic Specialists is offering a 40-page color catalog describing power line problems such as noise and high voltage spikes. Damaging and disruptive effects on ham communication are included.

Typical communication interference problems and suggested solutions are included. Hundreds of protective and interference cure products are described. Request Catalog 851.

Electronic Specialists, Inc. 171 S. Main St., P.O. Box 389, Natick, MA 01760; phone: (1-800) 225-4876. □

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HAMFESTS



Arizona

The COCHISE AMATEUR RADIO ASSOCIATION (CARA) invites you to participate in the inauguration of the CARA Training Facility and Range, which will be held during the group's annual hamfest, 04-05 May.

The facility is a 40-acre complex located in Cochise County, some five miles east of Sierra Vista, Arizona, on Moson Road, off of Hwy. 90 East.

A flea market is planned and all tailgaters are welcome.

For more information, please contact: Cochise ARA, P.O. Box 1855, Sierra Vista, AZ 85636; ATTN: Bob Clay, KB7HB.

California

The NORTH HILLS RADIO CLUB will be sponsoring its Hamswap '85 on Sunday, 05 May, at Placer County Fairgrounds, Roseville, California. Doors open at 9:00 a.m.

Free parking, free admission, free door prize. Advanced table sales (before 15 April) are \$6 per table. On-site table or tailgate sales are \$8 per table or tailgate location.

Talk-in on K6IS repeaters: 145.19 and 224.78 MHz.

For more information or reservations (raffle tickets \$1 each), contact Carl Schultz, KA6KWB, 2542 Gwendolyn Way, Rancho Cordova, CA 95670; (916) 366-9111.

The 1985 HAMCON Radio Convention for the Southwest Division of the ARRL will be held aboard the R.M.S. *Queen Mary* in Long Beach, 09-11 August.

A beautiful exhibit area with over 100 exhibit spaces (8' x 10') will be featured, as will technical sessions, a ladies program and prizes. Biggest parking bargain ever — free to Queen Mary Hotel guests, parking is only \$1 for visitors. RV, trailer and camper spaces nearby.

Senator Barry Goldwater, K7UGA, will be the keynote speaker at the banquet. Roy Neal, K6DUE, NBC Science Editor, will be the Master of Ceremonies.

"Early Bird" pre-registration (postmarked by 31 May) is \$5, advance registration (postmarked by 15 July) is \$6, and regular registration is \$7. Banquet tickets \$25; ladies luncheon \$10.50; Sunday breakfast \$10. Register as an "Early-Bird" and also receive tickets for the advanced and regular registration drawing!

For more information and to register, write to HAMCON, P.O. Box 91313, Long Beach, CA 90809.

A swapmeet is held the first Saturday of each month in the San Diego Stadium parking lot, about three miles from Ham Radio Outlet. The meet lasts from 7:00 to 11:00 a.m. Admission is 50 cents for buyers.

Colorado

The LONGMONT ARC Longmont, Colorado, will hold the annual Boulder Spring Hamfest on Sunday, 05 May, from 9:00 a.m. to 2:00 p.m., rain or shine, at the Colorado National Guard Armory, 4750 North Broadway, Boulder, Colorado.

The admission donation will be \$3 per family; no seller's charge. We suggest that sellers bring their own tables. Some tables will be provided; if any seller needs more than one table, they must contact the organizers in advance. Food and drinks will be available.

The door prizes will include a synthesized FM transceiver, and extra raffle tickets will be available. In addition to the big hamswap, we

will again hold our popular technical demonstrations and seminars, covering topics such as packet radio, satellite communications, equipment testing, etc.

The repeater seminar will be a round table discussion by the representatives of various repeater associations. The topics will cover a wide range of technical areas and common problems. This will be an event that no one seriously interested in repeaters should miss.

Talk-in 146.16/76 and 146.52 MHz.

For more information, contact William Currie, WD0EHJ, 1232 East Fourth Ave., Longmont, CO 80501; (303) 776-2829.

Illinois

The KISHWAUKEE ARC will sponsor its annual hamfest on Sunday, 05 May, at the De Kalb County Fairgrounds in Sandwich, Illinois. The fairgrounds are located on Suydam Road, just north of Route 34 between Routes 23 and 47.

Donation is \$2 in advance, \$3 at gate. Inside display tables are \$5 each. Overnight camping; no hook-ups. All parking free; outside areas for tailgating. Hamfest markers at airport on Rt. 34. Hourly door prizes. Coffee and doughnuts are available for "early birds"; food wagon thereafter.

Talk-in on 94, 13-73.

For more information, contact Kishwaukee ARC, P.O. Box 349, Sycamore, IL 60178.

The CHICAGO ARC (CARC) Mini Hamfest, Wednesday, 15 May, from 6:00 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.

The STARVED ROCK RADIO CLUB Hamfest will be held 02 June, in Princeton, Illinois. Plans include FCC/VEC exams. Registrations \$2.50 before 20 May; \$3, 02 June.

For advance registrations and/or complete information, furnish a long SASE to Starved Rock Radio Club, W9MKS, RFD #1, Box 171, Oglesby, IL 61348; (815) 667-4614.

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

Kansas

The PITTSBURG REPEATER ORGANIZATION (PRO) will be sponsoring Hamfest '85 on Sunday, 19 May, 0900-1700 CDT, at Lincoln Center in Pittsburg. Air-conditioned facilities.

Admission is \$5 for hams; extra hams in family \$1; others free. Free flea market tables. Also, ARRL books, door prizes, YL prizes, dinner and exams.

W5YI volunteer exams (upgrade only) will be sponsored by PRO and the SOUTHWEST MISSOURI HAMS ARC, Joplin. Exam fee \$4. Hamfest admission not required for exams. Two sessions: 1000 and 1400 CDT, walk-ins welcome.

For more information, contact Pittsburg Repeater Organization, P.O. Box 1303, Pittsburg, KS 66762.

Louisiana

The BATON ROUGE ARC will hold our annual hamfest on 11-12 May, from 8:30-5:00 Saturday and 8:30-2:00 Sunday on the campus of Catholic High School in Baton Rouge, Louisiana. Admission is free. Prizes Saturday and Sunday.

VE exams to Extra; 9:00 a.m. to noon both days by 30-day advance registration only. Send SASE, Form 610 and check for \$4 payable to "ARRL/VEC" to George Perry, W5LVX, 17424 Lady Constance, Greenwell Springs, LA 70739.

Features will include swap tables, forums and new equipment dealers.

Talk-in on 146.79(-).

For further info, send SASE to Rick Pourciau, N5HHF, 879 Castle Kirk Dr., Baton Rouge, LA 70808.

Massachusetts

The HAMPDEN COUNTY RADIO ASSOCIATION Flea Market will be held rain or shine on Sunday, 05 May 1985, at the West Springfield Elks Lodge on Morgan Road, West Springfield from 9:00 a.m. to 3:00 p.m.

Admission is \$1 per person; tables are \$3 each. Dealers may display from vehicles at \$3 per vehicle. Food and refreshments will be available.

Directions: Take Massachusetts Turnpike to West Springfield, exit four and travel about a half-mile south on Route 5. At Abdow's Restaurant, turn right onto Morgan Road. The Elks

Lodge is three-quarters of a mile on the left.

For more information, contact Paul Kress, WA1ZKT, at (413) 568-8291.

Michigan

The 11th Annual Midland Hamfest, sponsored by the CENTRAL MICHIGAN AMATEUR REPEATER ASSOCIATION, will be held Saturday, 01 June, at the Midland Civic Arena, 8:00 a.m. to 2:00 p.m.; set-up at 6:00 a.m.

Tickets are \$3 in advance; \$4 at the door. Tables are \$6 for full table; \$3 for half table. Trunk sales \$3. Door prizes; drawing at 1:30 p.m. Free parking, including parking for handicapped. Refreshments on site.

FCC exams will also be given. Send 610 Form and \$4 (payable to ARRL/VEC) with SASE and copy of current license to Gary Fox, W8NDI, 3901 E. Monroe Rd., Midland, MI 48640, by 01 May.

Talk-in on 147.60/00 and 146.52.

For advanced tickets and reservations, contact Raleigh Wert, W8QOI, 309 E. Gordonville Rd., Rt. 12, Midland, MI 48640; (517) 631-5591.

Minnesota

The ARROWHEAD RADIO AMATEUR CLUB proudly announces "SWAFFEST '85" which will be held on Saturday, 11 May, at the Holiday Inn at 207 West Superior Street in downtown Duluth. 11 May has been proclaimed "AMATEUR RADIO DAY" by the mayor of Duluth.

Doors open at 8:00 a.m. for vendors with general admission at 10:00 a.m. Admission this year is \$4 and 4-foot tables are \$5.

There will be plenty of food, free parking in the Holiday Inn Ramp located on 1st Street, and hourly prize drawings with a door prize drawing for an ICOM IC-730 at 3:00 p.m.

Talk-in on 146.3494.

For more information, contact Bill Cossette, N0BKL, 15 Manitou St., Duluth, MN 55808.

The NORTH AREA REPEATER ASSOCIATION will sponsor the state's largest swapfest and exposition for Amateur Radio operators on Saturday, 01 June, at the Minnesota State Fairgrounds in St. Paul. Free overnight parking of self-contained campers on 31 May.

Exhibits, commercial dealers, giant outdoor flea market, and prizes. Amateur license exams will be given. Admission \$4 in advance; \$5 at Amateur Fair.

Talk-in on 25/85 or 16/76.

For more information, dealer inquiries and ticket orders, write: Amateur Fair, P.O. Box 857, Hopkins, MN 55343. Or call: (612) 566-4000.

New Jersey

The TRI-COUNTY RADIO ASSOCIATION will be sponsoring its annual hamfest, rain or shine, on Sunday, 19 May, at the Passaic Valley Community Center off Valley Road, Stirling, New Jersey. Hours will be from 9:00 a.m. to 4:00 p.m.

Indoors, refreshments, rest rooms, free parking. Tables \$10. Registration \$2.50. Restricted tailgating, by reservation only.

For more information or reservations, contact Dick Franklin, W2EUF, P.O. Box 182, Westfield, NJ 07090; phone (201) 232-5955 or 270-3193.

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.

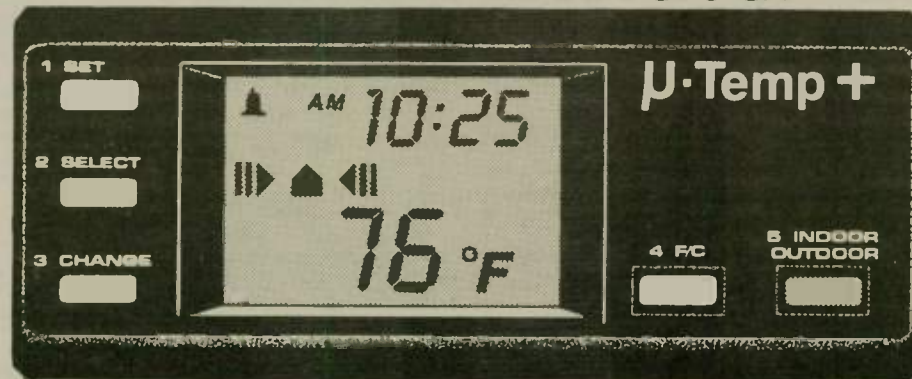
There will be refreshments on the premises and plenty of free parking. General admission is \$2 (wives and children under 12 free).

Indoor sellers' 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

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Tygar, AC2P, 5 Chelmsford Dr., Wheatley Heights, NY 11798; (516) 643-5956 evenings. □

Ohio

The Sandusky County and Ottawa County combined hamfest sponsored by the SANDUSKY VALLEY ARC, will be held 19 May, at Ottawa County Fairgrounds on State Route 163, three miles east of Oak Harbor, Ohio. Advance tickets \$2.50, at the gate \$3. Tables, ample trunk sales space available, and free parking. Food available.

Talk-in on 52 simplex or 147.675/075.

For more information, write Raymond Kruse, K8IDA, 18980 West S.R. 51, Elmore, OH 43416. □

Oregon

The 1985 Oregon State/ARRL Northwestern Division Convention, co-sponsored by the NORTH COAST REPEATER ASSOCIATION and the OREGON TUALATIN VALLEY ARC, will be held at the Seaside Convention Center, Seaside, Oregon, Friday, 31 May through Sunday, 02 June.

Hours are 5:00 p.m. to 8:00 p.m., Friday; 8:00 a.m. to 5:00 p.m., Saturday; and 9:00 a.m. to 2:00 p.m., Sunday. Pre-registration is \$5 per single (\$7 at the door). \$2 for teens with parents. Children 12 and under free.

Those who pre-register before 01 May will receive a special ticket for an "Early Bird" drawing for a Regency MX3000 Scanner, or an Astron 35 amp power supply, or a Mirage B108 2-meter amplifier, plus an extra ticket for the grand prize drawing. Registrations between 02 May and 18 May will receive one extra ticket for the main prize drawing.

Seminars will be held on antennas, DXpedition, packet radio, computers and Amateur Radio, power supplies, Ni-Cad batteries, and many more. Banquet speaker will be Dave Bell, W6AQ.

Bell was 1934 Dayton "Ham of the Year" and an ARRL film producer. Topic will be "The King & I", about his visit with JY1, King Hussein of Jordan. Master of Ceremonies is Rush Drake, W7RM, Northwest Division Vice Director.

Talk-in on 146.52 (simplex) and local repeater 145.45 (-600).

For more information and/or reservations, write to: Doc McLendon, W7GWC, P.O. Box 920, Seaside, OR 97132. □

♦♦♦♦

Contact Worldradio for hamfest prizes.

Pennsylvania

The first Tri-State Hamfest sponsored by the BEAVER VALLEY AMATEUR RADIO ASSOCIATION will be held at Brady's Run Park, Beaver County on 12 May. The park is located on PA Route 51, three miles north of PA Route 60.

Forums, walk-in license testing and refreshments will be available. A large, outdoor tailgate area is available free of charge. Gates open at 7:00 a.m. Admission \$3 per person, children under 12 free. Overnight camping and hotel accommodations available in the immediate area.

Talk-in on 145.31, W3SGJ repeater.

For more information on advance tickets, contact Don Washburne, WB3HWB, 207 Hall Road, Aliquippa, PA 15001; (412) 774-7079. □

The WARMINSTER ARC Hamfest will be held 19 May, at the Middletown Grange Fair Grounds, Penns Park Road, Wrightstown, Pennsylvania (about 15 miles north of Philadelphia).

This is an indoor/outdoor event, with food and drinks available. Prizes, etc. Admission is \$3 per person; XYL's and children free. Indoor spaces with table and electric outlets \$5 each space; outdoor vendors tailgating \$5 each space. Gates open at 7:00 a.m. Computer hardware and software vendors welcome.

Talk-in on 147.69/09 and 147.52.

For info, call or write: Bill Cusick, W3GJC, Apt. 706-Garner House, Hatboro, PA 19040; (215) 441-8048. □

The 31st Annual BREEZE SHOOTERS HAMFEST will be Sunday, 02 June, from 9:00 a.m. to 5:00 p.m., at the White Swan Amusement Park, PA Rt. 60 (Parkway West), near the Greater Pittsburgh International Airport.

Free admission and flea market, family amusement park. Prizes awarded for youngest and oldest ham and 10-meter mobile check-in. Registration is \$2, three for \$5 or seven for \$10. Under-roof tables for vendors by advance registration.

Mobile talk-in on 146.28/88 MHz or 29.000 MHz.

For further information, contact John Colbert K3SDL, 1831 Highland Ave., Irwin, PA 15642; (412) 863-5167. Call evenings only. □

South Carolina

The BLUE RIDGE AMATEUR RADIO SOCIETY proudly sponsors the 46th Annual Greenville Hamfest and Electronic Flea Market, 04-05 May, at the American Legion Fairgrounds in Greenville, South Carolina.

VEC walk-in exams, Wouff Hong ceremony, ARRL South Carolina State Convention, Saturday night banquet, South Carolina SSB Net, ARES, QCWA, 25,000 sq. ft. indoor dealer displays, indoor/outdoor electronic and computer flea market, food, beverages, snacks, camping.

Admission is \$3 in advance; \$4 at the gate.

For advance tickets and VEC exam information, write to Mrs. Sue Chism, N4ENX, P.O. Box 6751, Greenville, SC 29606. For additional information, write to Randy Rice, WD4ADK, 1401 W. Parker Rd., Greenville, SC 29611. □

Washington

The INLAND EMPIRE RADIO AMATEUR CLUBS are sponsoring an Amateur Radio Swapfest on Saturday, 27 April, at the Spokane Interstate Fairgrounds, Floral Building. Doors open at 9:00 a.m.

Admission will be \$2, which includes door prize ticket. Other features will be auction, contests, rare exhibits, new gear and old gear, flea market, raffles, YL craft sales and snack bar. Tables can be reserved for \$7 per full table (4'x8'). RV parking without electrical hookups available — free.

Talk-in on 146.34/94 and 146.52 simplex.

For more information or reservations, contact Swap Fest, c/o Jan Meyer, KA7DDU, 2201 N. Craig Rd., #79, Spokane, WA 99204. □

Wisconsin

The OZAUKEE RADIO CLUB, Inc. will sponsor its 7th Annual Swapfest on Saturday, 04 May, 8:00 a.m. to 1:00 p.m., at the Circle B Recreation Center, Highway 60, Cedarburg, Wisconsin (located 20 miles north of Milwaukee).

Admission is \$2 in advance, \$3 at the door. Four-foot tables are \$2 each, in advance only. Door prizes, food and refreshments will be featured. Sellers will be admitted at 7:00 a.m. for table set-up.

For tickets, tables, maps or more information, send a business-sized SASE to 1985 ORC Swapfest, 101 E. Clay St., Saukville, WI 53080. □

YLRL Convention

The Young Ladies Relay League's (YLRL) 10th International Convention will be held in

Las Vegas, Nevada, 20-23 June 1985, at the Sahara Hotel. Deluxe accommodations and RV parking are available for very reasonable rates.

Planned activities include a Hoover Dam tour and Lake Mead cruise, a breathtaking desert tour, a gala stage show, a cocktail party, a luncheon buffet and awards banquet, in addition to a DX YL show, slide shows and business meetings. A convention station will be operating on 14,288 kHz and other frequencies. Registration forms may be found in most recent issues of YLRL's publication, *the Harmonics*.

For complete details and information packet, send a business-sized SASE with 2 oz. of postage on it to: Jan Weaver, N7YL, 2195 East Camero Ave., Las Vegas, NV 89123. □

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10-10 Net Spring QSO Party

The Spring 10-10 Net QSO party will begin at 2000Z, 04 May and end 2400Z on 05 May. 10-10 QSO Parties are open to all amateurs, but only 10-10 members with paid-up dues are eligible for awards. 10-10 contests are conducted to encourage 10-meter operation and keep 10 active. Non-10-10 members may use numbers collected to qualify for 10-10 membership (only 10 numbers required), and members use numbers collected to qualify for bar awards.

All contacts must take place between 28.0 and 28.2Mhz. Exchange: call sign, name, city, state and 10-10 number (or "no 10-10 number"). Single operator stations only allowed, and stations may only be worked once. CW and RTTY modes only. QRP is a separate class and dupe awards for QRP class; QRP power limit 10 watts output. Logs must be in UTC (Zulu time) and dupe sheets are required.

Scoring: 2 pts. for contact with 10-10 number exchange; 1 pt. for contacts without 10-10 number exchange.

Awards: First place certificates and first place QRP certificates to all U.S. call areas; EL7 included with 7th area. Also Canada, South America, Central America, Caribbean (including Bermuda), Europe, Africa, Asia and the Pacific (including KH6, all Pacific Islands, New Zealand and Australia).

Logs: Accepted from 10-10 members only with a cover sheet showing your name, call sign, QTH, 10-10 number, membership expiration date, chapter assignment (if any), total contacts and total points claimed. If QRP, so indicate and list power out. Logs to be post-marked no later than 01 June 1985 and mailed to Nor'easters, c/o Milt Ahrende, K1CKD, 6 Edith Ave., Nashua, NH 03060.

Helvetia Contest

The Helvetia Contest will be held from 1300 UTC, Saturday, 27 April to 1300 UTC, Sunday, 28 April.

Frequencies: Bands between 160 and 10 meters, less WARC bands.

Modes: CW and phone

Exchange: Send RS(T) plus a three-figure serial starting with 001. Swiss stations will send an additional two-letter designation of their canton. Example: 57(9) 001 BL. The abbreviations of the cantons are as follows: ZH, BE, LU, UR, SZ, OW, NW, GL, ZG, FR, SO, BS, BL, SH, AR, AI, SG, GR, AG, TG, TI, VD, VS, NE, GE, JU.

Scoring: Each contact with an HB-station counts 3 pts. A station can be worked once per band (either CW or phone). The multiplier is the sum of Swiss cantons per band (a possible multiplier of 26 per band). Final score will be the sum of QSO points multiplied by the sum of cantons.

Awards: Awards will be given to the highest entry from each country. USA and Canada call areas are considered as separate countries.

Logs: Logs postmarked not later than 30 days after contest should be sent to: Walter Schmutz, Gantrischweg 1, CH-3114 Oberwiltach, HB9AGA Traffic Manager, SWITZERLAND.

County Hunters SSB Contest

The Mobile Amateur Radio Awards Club (MARAC) announces the 14th Annual County Hunters SSB Contest, to be held 04-05 May. Operating hours will be from 0001Z, Saturday, through 2400Z, Sunday. All contestants must observe two four-hour rest periods (0800Z-1200Z each day). The object of the contest is to work as many stations in as many counties within the United States as possible.

Frequencies: Suggested frequencies — 3920-3940, 7220-7240, 14270-14300, 21365-21385, 28570-28600. There will be a "mobile window" of 10 kHz on the following frequencies: 3925-3935, 7220-7230 and 4275-4285. Mobiles will be calling in this 10 kHz segment and fixed stations are asked to refrain from calling "CQ Contest" in the "mobile window". After working mobiles in the window, fixed stations are requested to QSY outside the window to work fixed stations or call "CQ Contest". This will allow the mobiles running lower power a chance to be heard and worked in the contest.

Contact rules: (1) Mobile and Portable stations may be worked each time they change counties or bands. When worked again from the same county on a different band, these stations count for point credit only. (2) Mobile/portable stations contacted on a county line count as one contact and two multipliers. (3) Mobile teams count as two contacts if both participate in the exchange. (4) Fixed stations may work other fixed stations only once during the contest. Repeat QSOs between fixed stations on other bands are not permitted. Fixed stations may be worked by mobiles each time the mobile changes counties or bands.

Repeat contacts between mobiles are permitted provided they are on a different band or county. Mobiles and portable stations must

clearly identify themselves as such at the time of the contact. Contacts made on net frequencies will not be allowed for scoring purposes.

Exchange: Signal report, county and state (country for DX). Mixed mode contacts are permitted provided that one station is on SSB.

Scoring: Contact with Fixed U.S. or Canadian station — 1 pt.; contact with a DX station (including KH6 and KL7) — 5 pts.; contact with a U.S. portable station — 5 pts.; contact with a U.S. mobile station — 15 pts.; contact with a mobile team station (both ops participating) — 30 pts.

Multiplier: Total number of U.S. counties + Canadian stations worked × number of QSO points = final score.

Log data reporting: Date, time(Z), station worked, reports exchanged, county, state, band and claimed points (1, 5, 15, 30) for each contact. Number each new multiplier as it appears

Florida QSO Party

Florida Skip announces the 19th Annual Florida QSO. All amateurs worldwide are eligible and are invited to participate. Party, to be held 04-05 May. Operating times will be: 1400Z-1900Z, Saturday, and 0001Z-0500Z and 1500Z-2300Z, Sunday.

Conditions of entry: Each entrant agrees to be bound by the provisions of this announcement, the regulations of the applicable licensing authority and the decision of the Florida Skip Contest Committee, which is final.

Valid contacts: All amateur bands 160 through 2 meters may be used. All stations will use separate logs for phone and CW. Phone and CW are separate contests. A station may be worked once on each band and once on each mode. Neither crossband nor crossmode contacts will count. No repeater contacts may be counted for contest credit. Florida stations may work other Florida stations but for contest points only (no multiplier credit). Out-of-state stations may not work each other for contest credit.

Entry classes: Florida stations are divided into two classes. Class "A" stations are those operating portable (under Field Day rules) or mobile on emergency power and running 100 watts or less output inside Florida but outside their home counties. Class "B" stations are all other stations operating in Florida. Entrants may be single-operator or multi-operator, and this must be indicated on the summary sheet.

Exchange: Florida stations send a signal report and county of operation. Out-of-state stations send signal report and U.S. state, Cana-

in the log. Log and summary sheets are free for a #10 SASE. Write to: Barry Brewer, WA5DTK, P.O. Box 65, Randolph AFB, TX 78148.

Awards: MARAC plaques to the first and second place U.S. mobiles and to highest scoring fixed U.S./Canadian station, portable station operating outside of its home county, DX station and mobile team. Certificates will be awarded to the top 10 mobiles, top 10 fixed in the U.S./Canada, top five portables operating outside of their home county, and to the highest scoring station in each DX country.

Deadline: All entries must be received by 03 June 1985, to be eligible for awards. DX entries should use air mail. Winners will be announced at the 1985 Independent County Hunters Convention in July and in the MARAC Newsletter.

dian province or DX country.

Suggested frequencies: CW — 3.555, 7.055, 14.055, 21.055, and 28.055 MHz; Phone — 3.945, 7.279, 14.279, 21.379 and 28.579 MHz.

Scoring: Florida stations count 1 pt. per QSO with out-of-state stations and other Florida stations. Multiplier is the total of states (49 maximum), provinces (12 maximum), and DX countries up to 27 (27 maximum) actually worked. Maximum multiplier is 88. Out of state count 2 pts. per QSO with each Florida station. Multiplier is the total number of different Florida counties worked (67 maximum). The score is the product of QSO points and multiplier. Florida Class "A" stations only multiply final score by 1.5 to obtain total score.

Awards: Certificates on phone and CW will be awarded for the top single-operator score in each state, province and DX country. Also, the top scorer in each Florida county will be awarded a certificate. Multi-operator winners will receive certificates as activity justifies. There will be five plaques awarded to: High Single Operator Florida CW, High Single Operator Florida Phone, High Single Operator Out-of-State Phone and to the Florida club with the highest aggregate score. There is no minimum number of contacts to be eligible for a certificate.

Disqualification: The ARRL Contest Disqualification Criteria will be used in deciding upon disqualifications. Among reasons for disqualifications are improper reporting, excessive dupes, errors in multipliers, late logs and cheating.

Reporting: Phone and CW entries are to be separated with separate logs for each. Along



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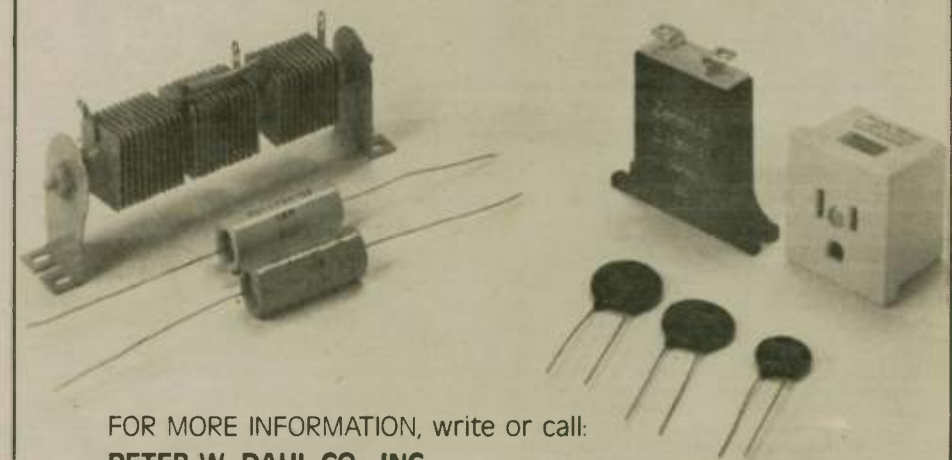
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with legible logs in chronological order, a summary sheet is required with each entry. Those with 200 QSOs or more must supply a dupe sheet. The summary sheet must contain claimed score, Florida county or state operated from, number of QSOs, multiplier total, station call sign, entry class, power source for Class "A" entries and complete address.

The name of the Florida club for which aggregate total credit is being assigned must also be on the summary sheet. A signed declaration that rules and regulations have been observed must be included. A sample summary and log sheet are available for an SASE from the QTH below.

Deadline for entries: All entries must be post-marked on or before 03 June 1985. Mail all entries to: Florida Skip Contest Committee, c/o North Florida Amateur Radio Society, P.O. Box 9673, Jacksonville, FL 32208. □

Alessandro Volta RTTY DX Contest

The SSB and RTTY Club of Como and the Associazione Radioamatori Italiani have pleasure in announcing details of the 19th Alessandro Volta RTTY DX Contest. This contest is organized in order to increase interest in the RTTY mode as used by radio amateurs and to honour the Italian discoverer of electricity, Alessandro Volta.

Test Period: Saturday, 11 May, 1200 GMT to Sunday, 12 May 1985, 1200 GMT (in the future it will be held every weekend of May).

Bands: 3, 5, 7, 14, 21, 28 MHz Amateur bands.

Classes: 1) single operator/all bands; 2) single operator/single band; 3) multi-operator/single transmitter (list the name and call of all operators involved); 4) SWL.

Exchange points: Contacts between stations of the same Country are not valid (count for zero exchange points, zero multiplier and zero QSO; example: W2... can work W3-4-5-1-etc. but not other W2 stations). All two-way RTTY contacts will count for points in accordance with the exchange points table. The two-way RTTY contacts, with stations outside one's own continent, made on 3, 5 or 28 MHz, are worth the double.

Contacts: Stations may not be worked more than once on any band. Additional contacts may be made with same station if a different band is used.

Multipliers: A multiplier of one is given for each country contacted. The same country may be claimed for extra multiplier if a different band is used. An additional multiplier for each intercontinental country worked at least in four bands. Contact with a station which would count as a multiplier must be found in at least four other logs, or contest log from the multiplier station must be received in order to be valid.

Scoring: Total exchange points times the total number of multipliers times the total number of QSOs.

Country List: ARRL Country List plus each USA, Canada and Australia call area (1 through 10) will be considered as separate country.

Message: RST - QSO # - Zone #.
SWL's: The same rules for scoring, but based on stations and message copied.
Awards: Trophy to the top stations in each class; certificates to all contestants.

Logs and score sheets: Use one log per band. Logs must be received by 16 July 1985 to qualify. The logs must contain: band/date/time GMT/call sign/message sent/message received/points/multipliers. Enclose a summary score sheet with a list of multipliers worked. Comments will be very much appreciated.

Send logs to the contest manager: 12DMI Francesco Di Michele, P.O. Box 55, 22063 Cantu, ITALY. □

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International SW Contest

The object of the International Shortwave (SW) Communication Contest is to strengthen friendly relations among radio amateurs of the world, increase their sportsmanship and provide possibilities to fulfill, within a short period, the requirements for the diplomas offered by the Radio Sport Federation of the USSR and the Krenkel Radio Club of the USSR. Sponsor of the contest is the Radio Sport Federation of the USSR.

The contest will be held from 2100 UTC, 11 May to 2100 UTC, 12 May, and is open to licensed amateurs and SWLs worldwide.

Categories: single-operator, single band; single-operator, all band; multi-operator, all bands, single transmitter; and SWLs. (Club stations are all Category C.)

Bands and modes: Phone (SSB) and CW on 3.5, 7, 14, 21 and 28 MHz, as well as through satellites "RS" and "OSCAR" with downlinks on 28 MHz from 144 MHz. The last mentioned count as a separate additional band. No cross-mode QSOs allowed.

Contest call: CQ-M (Peace to all)
Frequencies: CW — 3505-3600, 7005-7100, 14010-14100, 21010-21160 and 28010-28200 kHz; SSB — 3600-3650, 7040-7100, 14150-

14350, 21200-21450 and 28400-29100 kHz.

Exchange: RS/RST and serial QSO number. USSR stations send RS/RST and oblast number (e.g., 579021 or 57021).

Scoring:
a) Each QSO made within a continent scores 1 pt. and QSOs between continents 3 pts.

b) Listeners — one-way receiving score 1 pt.; two-way QSO receiving scores 3 pts. One-way is receiving both call signs plus the check number of one station; two-way receiving both check numbers.

c) Stations may be worked on each band on either mode, but not both.

d) QSOs in contestant's own country count only for multiplier.

e) USSR stations receive no points for QSOs within the USSR.

Multipliers: a) The number of countries is determined by the "R-150-S" list. b) One multiplier on each band for each country worked. c) Total multiplier is the sum of countries/territories worked on all bands.

Final score: Sum of QSO points from all bands multiplied by total of multipliers from all bands. (Only countries and territories confirmed by contestants' log sheets shall be taken

into consideration as multipliers.)

Winners and awards: a) Winners among foreign contestants and those among Soviet contestants are determined separately. b) Foreign contestants in each group A, B, C and D (in Group A in each band) shall be awarded as follows:

1) first place in own country — diploma; 2) first through third places in continent — diploma and medals, and first overall in each class — prizes (donated by "Radio") and medals; second and third overall — diplomas and medals; fourth to sixth — diplomas. All foreign stations who work at least 10 USSR stations will be awarded commemorative badges.

The judging shall be conducted by a panel of judges appointed by RSF of the USSR.

Logs: Contestants must submit log sheets containing proof of having satisfied the requirements for "R-150-S", "R-100-D", "W-100-U", "R-15-R", "R-10-R" and "R-6-K" shall be entitled to obtain diplomas without submitting applications and QSL cards.

Irrespective of the number of points obtained, log sheets are kindly asked to be sent by 01 July 1985 to: CQ-M Contest Committee, P.O. Box 88, Moscow, USSR. □

ARI International Contest

The ARI International Contest will last from 1600 GMT, Saturday, 18 May to 1600 GMT, Sunday, 19 May. Amateur Radio operators worldwide must contact Italian stations including San Marino, Vatican City and SMOM.

Classes: Single operator CW, single operator SSB, single operator RTTY, single operator mixed mode, multi-operator single TX, SWL. Multi-operator station can use all modes (CW, SSB, RTTY).

Bands: 28, 21, 14, 7, 3.5, 1.8 MHz.
Exchange: RS(T)+ QSO number starting with 001. Italian stations will send RS(T)+ QSO number+ two letter (province).

QSO points: For European station 2 pts. every QSO with an Italian station. For Extra-European: 4 pts. every QSO with an I station. Multipliers: 1 multiplier every "province" per band. San Marino, SMOM, Vatican City and the memorial Marconi stations IY1TTM and IY4FGM are additional multipliers.

Final score: The sum of QSO points from all bands times the sum of the multipliers from all bands.

Log: Must contain date, time GMT, band, mode, call, sent, received, score and new multiplier. Use separate logs for each band.

Include a summary sheet with your call sign, class of participation, QSO points and multipliers on each band, final score.

Don't forget your full address, your rig description and your comments. Log must be

mailed within 40 days from the end of contest to: Giorgio Beretta, I2VXJ, via Sciesa 24, 20135 Milano, ITALY; or Contest Manager, c/o ARI, via Scarlatti 31, 20124 Milano, ITALY.

Penalty: Log without a summary sheet and a declared score will be used as control log. A declared score 5% more than the actual score means disqualification.

Award: A special award will be issued to the top five of every class of participation. A certificate will be awarded to the top scoring operators in each country and for each category.

WAIP: The Worked All Italian Provinces is issued to all amateurs for contacts with 60 different provinces. This will be issued upon a written application in the log, and a separated list of QSO for the award. Only for Contest QSOs; QSL cards are not required. Thank you for your participation. □

Michigan QSO Party

The 1985 Michigan QSO Party will be sponsored by the Oak Park ARC. Phone and CW are combined into one contest. Michigan stations can work Michigan counties for multipliers. A station may be contacted once on each band/mode. Portable/mobiles may be counted as new contacts each time the county changes.

Operating times: 1800Z, Saturday, 18 May,

to 0300Z, Sunday, 19 May, and 1100Z, Sunday, 19 May, to 0200Z, Monday, 20 May.

Exchange: RS(T), QSO#, QTH, county for Michigan; state or country for others.

Scoring: Multipliers are counted only once. Michigan stations — 1 pt. per QSO × (states + countries + Michigan counties) on phone. Each CW contact is 2 pts. per QSO. Alaska and Hawaii count as states. VE counts as a country. Maximum multiplier is 85. 5 pts. for each W8MB contact. Non-Michigan stations — QSO points × Michigan counties. 1 pt. for each Michigan phone QSO and 2 pts. for each CW contact. 5 pts. for each club station contact with W8MB/W8MB/mobile. Maximum multiplier is 83. VHF only entries — Same as above except multipliers per VHF band are added together for total multipliers. No repeater contacts are allowed.

Suggested frequencies: CW — 1810, 3540, 3725, 7035, 7125, 14035, 21035, 21125, 28035, 28125; Phone — 1815, 3905, 7280, 14280, 21380, 28580; VHF — 50.125, 145.025, 146.52.

Awards: Michigan (Plaques) — High Multi-operator/single transmitter score, High Michigan score, High Michigan (Upper Peninsula) score, High aggregate club score and high VHF only entry (minimum of 100 QSO's), and High Michigan Mobile score. (Certificate) — High score for each county (minimum 50 QSO's). Out-state: High out-state plaque and certificates for high score each state and country.

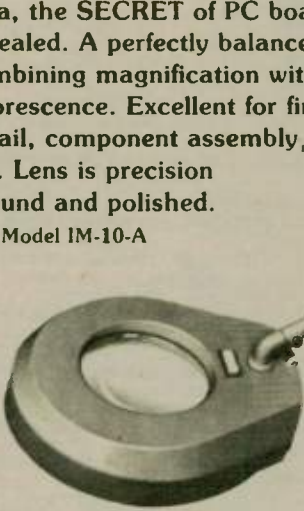

A log and summary sheet is requested showing the scoring and other pertinent information, name and address in block letters, and a signed declaration that all rules and regulations have been observed.

Michigan stations include club name for combined club score. Party contacts do not count toward the Michigan Achievement Award unless one fact about Michigan is communicated. Members of the Michigan QSO Party Committee are not eligible for individual awards.

Decisions of the Contest Committee are final. Results will be final on 30 July 1985 and will be mailed to all entries that have sent in SASEs. Mailing deadline is 01 July 1985. Send logs to: Mark Shaw, K8ED, 3810 Woodman, Troy, MI 48084. □

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




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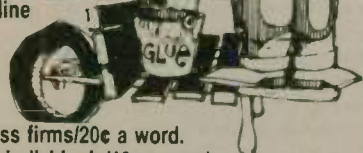
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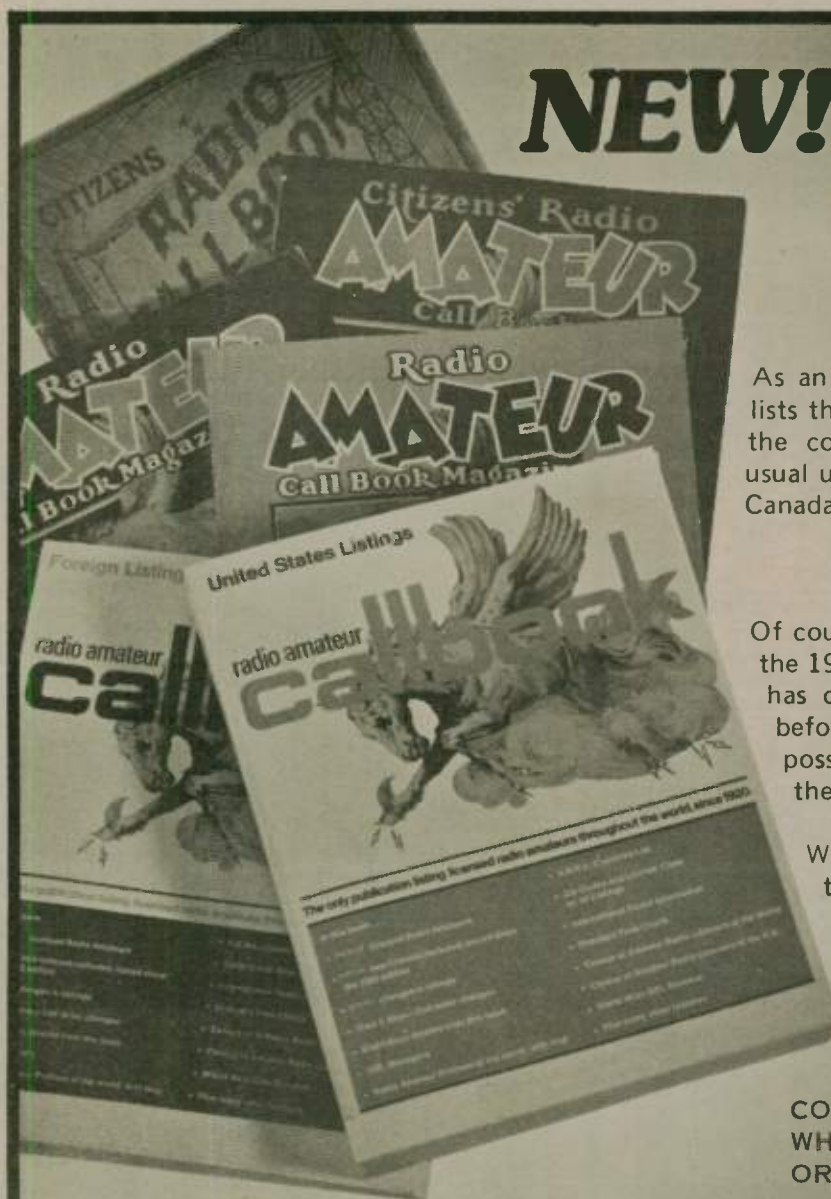
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Hugh Turnbull, W3ABC (left), Director of ARRL's Atlantic Division and ARRL Board member, paid a visit to a recent club breakfast held by the Indiana County Amateur Radio Club. In the center is club president Larry Perry, KA3JGN, and secretary/treasurer Sheldon Davis, W3FVU.



The largest Amateur Radio store in Akihabara is the Rocket store. It is comprised of three stories, with Amateur Radio gear on the first floor, test equipment on the second floor and computers on the third floor. (K6WK photo)



Here is a shot of some of the shops in Akihabara — the electronic district of Tokyo, Japan. Akihabara is an extension of the "Ginza", which is a shopping district in Tokyo. (K6WK photo)

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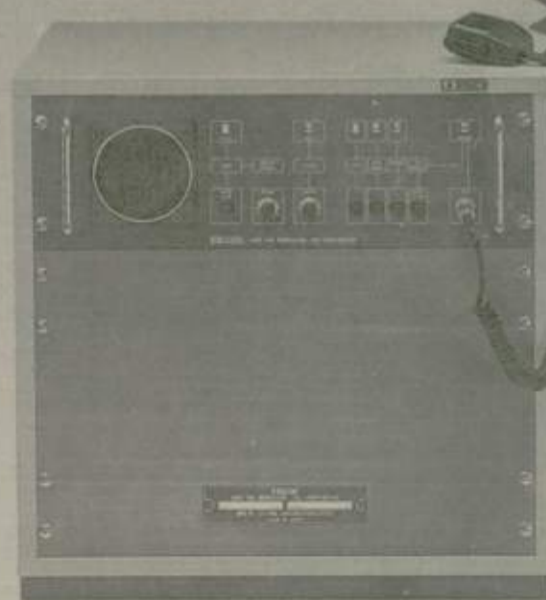
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