

Worldradio

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Reducing TVI and RFI

Norm Brooks, K6FO

"If you go into a contest for 48 hours and run an appreciable amount of power, you're going to meet your neighbors." This was the unhappy prediction of W.E. "Bip" Bachman, W6BIP, as he opened his TVI/RFI seminar at SAROC in Las Vegas, Nevada, 14 January 1984.

Bip is a recognized authority of TVI/RFI reduction, and his talk drew a full house of about 200.

At the outset, Bip makes it clear that the key word is "reducing." He makes no claim to being able to "cure" TVI/RFI. A total "cure" is too unrealistic to attain, but the problem can be reduced to a level satisfactory to your neighbors.

"Most of your problems are within 150 feet of your transmitting antenna," Bip declares. However, you may have cases farther away when the neighbor, for example, long speaker leads resonant to your transmitting frequency.

Bip is constantly upgrading his talk. He added two new slides for this SAROC presentation, and had added two, prior to giving it at the ARRL National Convention in Houston. We reported on Bip's talk about two years ago, and are doing it again because of the high interest in the Amateur Radio community.

The first slide shows the Bachman home, which is on a hill in a built-up residential area of San Francisco. This means narrow lots, with houses close to each other with little or no side yards. There is a 72 ft. Tristao free-standing crank-up tower with a TA-33 tri-band



Elsie Bachman, WA6GQC, and "Bip" Bachman, W6BIP, at SAROC, Las Vegas, Nevada, 14 January 1984. (Photo by Norm Brooks, K6FO)

antenna for 10, 15 and 20; a 2-element 40-meter beam; and a half-wave (130 ft.) Zepp antenna for 75 and 80 meters. Even in this crowded situation, W6BIP is heard in most contests, running a kilowatt input. (This alone makes Bip a TVI/RFI expert!)

How, you ask, do you get a full-sized 80-meter antenna on that narrow city lot? There's a story behind this.

In 1976, following the Guatemalan earthquake, Bip was involved in han-

dling a lot of health and welfare traffic from the stricken area. With the help of his neighbors, they put up the 80-meter antenna from the top of Bip's tower to a city-owned utility pole. The new, high antenna helped him communicate reliably with Guatemala. When it was all over, Bip was complimented by the city for his service. It also brought him a letter from San Francisco's Mayor Alioto, granting him permission to keep (please turn to page 3)

ARRL files 160M petitions

The ARRL filed two petitions concerning the 160-meter band on 02 February. The first petition asks that power restrictions on 1900-2000 kHz be eliminated. The other requests FCC to allow F1 emissions for RTTY on 1800-2000 kHz.

The 160-meter power restrictions were created because of concern over the possibility of interference to LORAN-A radionavigation systems by amateur operations. However, since LORAN-A operation has ceased, it is now appropriate to permit more flexibility for ham operation on this band. Therefore, the League requests that FCC remove, by Order, the power restrictions on 160 meters [FCC Section 97.61(b)(2)].

Increased amateur use of RTTY and other teleprinter codes on the air has created the need for more F1 segments on the HF bands. The present decline in sunspot numbers is making 160 meters more attractive for favorable propagation.

The League suggests the FCC not create a particular F1 subband, but instead, allow the amateurs to formulate their own band plans via "gentleman's agreements." □

More room for RACES

The FCC has amended its rules to provide more of the amateur frequencies for the Radio Amateur Civil Emergency Service (RACES).

New segments for RACES on 2 meters are 144.5-145.71 and 146-148 MHz. New HF RACES segments are 3930-3980 kHz, 7079-7097 kHz, 14331-14350 kHz, 21228-21267 kHz and 29237-29273 kHz. On UHF, the bands 420-450 MHz, 1240-1300 MHz and 2390-2450 MHz are newly authorized for RACES, subject to the usual restrictions that apply to those bands and new restrictions on 420-430 MHz near the Canadian border. □

Looking for a rare one? Dennis Washer, 5V7NG, is a Baptist missionary in Kpalime, Togo. His home call is N4EXB, in Greenville, South Carolina. Look for him Monday and Wednesday at 2100Z on 21.320 or 14.265. On Wednesday at 2200Z on 14.265, he works his QSL manager — Charles Bruington, WB4LFM. After passing his logs, contacts are welcomed. There is also CW capability. (Photo by N6WR)

New Year's Eve in Lima, Peru

Lima, Peru
13 January 1984

Dear Friends,

We concluded our operation here as 4T4WCY today. We made 7,000 QSOs with amateurs in 133 countries. Our special call was a big help in creating pile-ups and working DX. We operated phone and CW on all of the normal high-frequency bands, except 30 meters, which is not yet authorized here.

OA4OS was especially helpful in obtaining the special call sign for us, and OA4BI provided us with a penthouse apartment on a high building from which to operate.

The 4T4WCY stands for "World Communications Year", which was 1983. However, our station, 4T4WCY, as well as VU7WCY and a few other WCY stations, hold licenses which do not expire until some date in 1984.

We spent New Year's Eve here. The

people celebrate the new year by building thousands of small bonfires. At exactly midnight, all of the electricity in this city of some 6,000 people went out, and — from the high building where we are — we viewed the magnificent sight of the dark city with hundreds of small fires burning throughout the entire city and surrounding hills.

It was not until 03 January 1984 that we found out the magnificent sight was not entirely planned: terrorists had placed dynamite around many of the high voltage transmission line towers leading into Lima, and blew up nearly 20 such towers at exactly midnight.

Our next stop will be in the CP6 district of Bolivia.

73 es 88,

LLOYD COLVIN, W6KG
IRIS COLVIN, W6QL □

(See picture on page 4.)



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

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

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

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

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

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

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Second-class postage paid at Sacramento, CA.

ATTN: Denver

Recent updates of emergency preparedness procedures by the Denver (Colorado) Radio Club, ARES and the Mile Hi Chapter (Denver) of the American Red Cross have shown a need for additional ARES members.

Denver Red Cross Communications Chairman Woody Linwood has extended an invitation to area amateurs to contact their local ARES coordinators. He said there is also a need for amateurs who own 4-wheel drive vehicles or recreational vehicles equipped for snow travel.

In the event of a snow crisis, Red Cross officials need two-way communications to support field teams and relief efforts. "We also need some 4x4 clubs to volunteer their members and equipment in such a blizzard," Linwood said. "A ham with 2-meter radio equipment would be assigned to each vehicle to allow Red Cross control operators reliable communications."

During a blizzard crisis, the ARES members would be assigned as foremen over transportation and shelter communications. These individuals might need the support of as many local hams as could be enlisted.

Volunteers are invited to call the disaster services branch of the Mile Hi Red Cross at (303) 399-0550.
— Denver Radio Club, CO

Motorcycle Net

Those who are interested in finding out more about the Motorcycle Net, which was started in November 1982, can do so by sending an SASE to Gary McDuffie, AG0N, Rt. 1, Box 464, Bayard, NE 69334. An update on the net was run on page 10 of Worldradio's March issue, but without an address, and since AG0N's address is printed wrong in the Callbook, we are giving you his address here.

For those who did not see the article last month, the net meets on Thursdays, at 0300Z, on 3.967. A small group in the eastern part of the United States meets at 0200Z. All bikers are welcomed — street, road and dirt riders.

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Third-party list

The United States has arrangements to permit United States Amateur Radio stations to exchange third-party communications with Amateur Radio stations in these countries:

Antigua and Barbuda	Haiti
Argentina	Honduras
Australia	Israel
Bolivia	Jamaica
Brazil	Jordan
Canada	Liberia
Chile	Mexico
Colombia	Nicaragua
Costa Rica	Panama
Cuba	Paraguay
Dominican Republic	Peru
Ecuador	St. Lucia
El Salvador	St. Vincent and the Grenadines
Gambia	Swaziland
Ghana	Trinidad and Tobago
Grenada	Uruguay
Guatemala	Venezuela
Guyana	

The United States also has an agreement with the International Telecommunication Union permitting third-party communications with its station 4U1ITU in Geneva, Switzerland.

International Amateur Radio communications are limited by the International Radio Regulations, which state in part that they shall be made in plain language and shall be limited to messages of a technical nature relating to tests and remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunication service is not justified. Business messages are prohibited.

At the end of an exchange of international third-party communications, each Amateur Radio station must transmit the call sign of the foreign station in addition to its own call sign (see §97.84).

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1984 Midwest ARRL Spring Convention

Brochures were recently received by ARRL members, advertising the Midwest Convention at Kearney, 30 March - 01 April. Sponsored by the Midway ARC of Kearney, Nebraska, the convention program features top-notch speakers and entertainers.

"A Great Convention Weekend for Everyone" is well documented by the quality of the program planned. If you plan to spend the weekend at a motel,

don't use the Holiday Inn 800 reservation telephone number, as you will be told the Inn is filled up. Do call the Holiday Inn or Ramada Inn in Kearney for reservations, and be sure to tell them you are a ham and will be attending the convention.

So get rid of the winter doldrums; start planning now to see all your ham friends at the Midwest Convention!

New HRO store

A new ham store has been opened by Ham Radio Outlet in Phoenix, Arizona at 1702 W. Camelback, Phoenix, AZ 85015; (602) 242-3515. This is the sixth location for Ham Radio Outlet; its other stores are located in California.

The manager is Bob Hatter, K7RDH — a long-time resident of Phoenix and a ham of 30 years. All major lines are on a factory-direct basis, including Kenwood, ICOM and Yaesu. A repair facility is available for repairs of both warranty

and non-warranty items. The store is located within five blocks of I-17 and on the major east/west street in Phoenix in a small shopping center. The numerous antennas can be spotted from most directions.

●●●●●

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Reducing

(continued from page 1)
his antenna on that high pole!

Verticals and slopers

Bip shows a slide of a Hy-Gain sketch illustrating the installation of their 14AVQ vertical antenna on the roof of a building. He points out that Hy-Gain wisely shows it mounted on the roof of a garage. Remember that radials are part of the antenna system, making it — in effect — a vertical bent dipole. If it is mounted above a house, radio frequency energy (RF) is induced into the AC power lines and then into TV's and stereos. All radiating parts of any transmitting antenna (including radials) should be kept at least 25 feet from any house wiring.

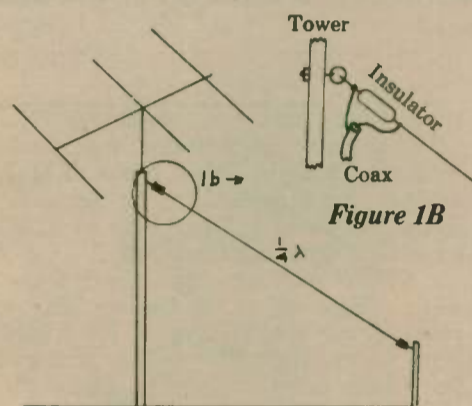


Figure 1A — Quarter-wave sloper antenna

Another widely used antenna is the quarter-wave sloper. (See Figure 1.) Be sure the coaxial cable sheath is connected securely to the tower. Avoid having the quarter-wave section come down over the roof. Like the radials of the vertical antenna, it can induce RF into house wiring. It is best to point the antenna away from the house and away from your neighbors.

Corroded connections

Beware of corroded joints in any part of an antenna system. This includes your antenna and the TV antenna. It also includes your grounding leads. Figure 2 shows the equivalent diagram of a corroded connection. This combination can cause numerous problems because of its ability to rectify and re-radiate your signal. In the case of ground leads, the corroded joint might even be underground.

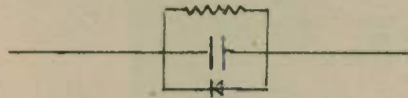


Figure 2 — Equivalent circuit of a corroded antenna or ground connection.

Grounds

What is a good ground? How far is it to your true ground? Bip puts some humor into his talk by showing a picture of a half barrel of dirt with a ground rod in it.

Most city electrical codes state that a ground rod driven into the earth should read less than 25 ohms to ground. How can you measure this? Where is the "perfect" ground you measure to? There are methods of measuring ground resistance and they are not too complicated, but they are beyond the scope of this article. If you want to pursue this, read Robert L. Ruyle's article "What Ground?" on page 60 of the August 1967 Popular Electronics Magazine, which you should be able to find at your local library.

An 8 ft. copper clad ground rod driven fully into moist earth will provide an adequate ground for an amateur station. If you want to improve on an existing ground, drive three more ground rods each 10 feet away from the present ground rod. Connect them all together with #6 copper or heavier wire.

A good ground can be made by burying a 2 ft. square or larger plate of copper or galvanized iron at least 40 inches deep. The plate should be surrounded by a moist charcoal-salt mixture. Bring the ground to the surface with a heavy rod or wire.

The ultimate grounding device is a chemical one, and it is not cheap. It consists of a special copper pipe with breathing holes. Chemicals are inside the pipe. Then the pipe is buried, and chemical "roots" come out of the holes into the soil. The device will last 20 years. In a few months, it "grows" a ground of less than 2 ohms in any soil.

You can get more information on this from LeBlanc and Royle Communications Inc., P.O. Box 880, Oakville, Ontario, CANADA L6J 5C5. (To be continued)

Free orbit charts from NASA

Carl Zelich, AA4MI

FREE satellite orbit prediction charts are available from NASA. The following Amateur Radio satellites are available:

Satellite	NASA ID #
OSCAR-9	1981 100B
RS-3	1981 120A
RS-4	1981 120D
RS-5	1981 120C
RS-6	1981 120F
RS-7	1981 120E
RS-8	1981 120B
OSCAR-10	1983 58B

In order to fully understand the bulletins, ask for the "Format Explanation of the NASA Prediction Bulletin." Also request the "Map Overlay Method of Hand Computing Station Predictions." This will show you how to determine viewing angles and times from your station.

Send your request to: R.V. Tetrick, Head, Project Operations Branch; NASA, Goddard Space Flight Center; Greenbelt, MD 20771.

YLISSB convention

The YL International Single Sideband System's annual convention will be held in Las Vegas, Nevada, 21-24 June, at the Sahara Hotel. Deluxe accommodations and RV parking are available for very reasonable rates.

Planned activities include a tour of Hoover Dam, a Lake Mead cruise, gala stage show, cocktail party, banquet, and a breakfast buffet, in addition to the DX forum and business meetings.

YLRL members are invited to meet Thursday, 21 June, at 8:00 p.m. A convention station will be operating on 14.332 MHz.

For complete details and registration packet, send a business-sized SASE with 37 cents in stamps to: Jan Weaver, N7YL, 2195 East Camero Ave. Las Vegas, NV 89123.

Donations will aid Haitians

Stayner Durocher, HH2SD, of Port-au-Prince, Haiti, has started a project to help pay medical expenses for the underprivileged of HH2-land. Donations can be sent care of: Trans Provincial Net, Toronto Dominion Bank, Stayner, Ontario, CANADA L0M 1S0.

Contact Ron Tannenbaum, VE3LZI, for further information about this project. His address is P.O. Box 1, RR 3, Stayner, Ontario, CANADA L0M 1S0.

QSL card of cheer

April Moell, WA6OPS

DaLee McCormick is working on her ham license. She is confined to a special bed and, except for special hydrotherapy treatments, does not leave her room.

If you would be willing to help encourage her toward her license, please drop her a QSL card or note to Room 268, St. Jude Hospital and Rehabilitation Center, Box 4138, Fullerton, CA 92634. For those interested in making periodic visits to talk Amateur Radio or help with code practice, please contact me at P.O. Box 20 GJ, Fullerton, CA 92633.

— Fullerton RC, CA

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STS-9 space shuttle emergency

Carl Zelich, AA4MI

The Spaceport Amateur Repeater Club planned to transmit NASA commentary for the entire STS-9 mission, and here's how the true spirit of Amateur Radio defeated Murphy's Law.

Our repeater was to be set up in a very different operational manner. It was the first time a single frequency would be occupied by a repeater output and a transmitter output. We could not simply use the AEROCOM "Green Monster" as our repeater output because of the Height Above Average Terrain (HAAT) regulation. We therefore interleaved the outputs.

The NASA commentary actuated a VOX circuit to enable the high-power transmitter and eliminate the repeater from functioning. When the commentary was not incoming, the normal repeater mode was available. This allowed the hundreds of hams visiting the Kennedy Space Center to see the launch of W5LFL and to communicate with each other.

This feature became useful when discussing equipment and schedules in planning to contact W5LFL, while at the same time monitoring Owen's progress in the mission. This unusual Priority Time-Diversity (PTD) method allowed a single frequency to be multi-purposed and still conform to FCC regulations.

The "Green Monster" is an AEROCOM commercial air-traffic control transmitter. It is a 7 ft. rack painted pale green. The transmitter is a Model 10 VI-A, Serial No. 115. This was a 108-154 MHz AM unit which we converted to FM. It has an 829B buffer stage and a pair of 4 X500A final tubes.

John Anderson, K4GCC, purchased this transmitter at a government auction about 25 years ago. He fired it up occasionally and it worked. But it had been a long time since it last operated.

The club began the task of checking it out by cleaning out the spiders, a snake-skin and a dead mouse. After clearing the area, the main power switch was flipped. Panel lights, the air-blower and voltmeters came to life. So far, so good. Next, drive was applied and the process of dipping the finals and increasing the drive began. The glow of these finals would bring joy to the heart of any old-timer. We had done it!

Our Bird SWR meter indicated 400 watts output. The drive was reduced so that the 146.94 MHz output would be 350 watts. We planned to operate conserva-

tively for the 24 hours/day for the nine-day mission.

On 01 December, the RF signal and audio began to distort. Suddenly, Murphy attacked, starting a major logistics operation involving many hams. Our high-powered transmitter had failed! The Green Monster had died! What was wrong?

Our Technical Committee — John K4GCC and Charlie Spencer, K4RXX — found that the filament transformer windings had opened. Where do you find a 20 lb. multi-winding transformer that was manufactured at least 25 years ago?

A review of the schematic showed that AEROCOM was located at 3090 SW 37th Ave. in Miami. Would they still be there? And to make things worse, would anyone help on a Friday, as the workday was ending? Thousands of listeners were out there. How could we possibly get the transformer here before the mission ended? It's 200 miles from Miami to the Kennedy Space Center!

A ham listening in the Florida Keys, call unknown, contacted Lou Venci, KA4EPS, in West Palm Beach. Meanwhile, George Levinston, WA4NBE, of Melbourne, contacted Evelyn Gauzens, W4WYR, by long-distance landline and explained the predicament. Now the wheels began to turn, and contact was made with the transmitter manufacturer.

AEROCOM Sales Representative, L. Deatrick, said she had a transformer in stock and that business closed at 5:00 p.m. However, she would stay there until 6:00 p.m. Also, the cost would be \$200. Gulp! Our small club doesn't have \$2. We operate on a "pay as you go" basis. K4RXX offered to pay for it on condition that the club repay him. Fair enough.

Now the problem of shipment. Let's send the transformer by Greyhound. Someone would then have to carry the transformer from AEROCOM to the bus. Oh, no! Greyhound's on strike! OK. Try another carrier. No luck.

Well, how about Federal Express? They said they wanted \$40. No, that won't do.

Someone suggested an automobile relay system. For 200 miles? KA4EPS began coordinating this, but then he had another idea. He knew of a ham in West Palm Beach who had an airplane. Could it be flown to us? This would be a night flight. Our local airport on Merritt Island is fine for weekend flyers, but it's uncontrolled (no tower), and we didn't know if it had runway lights. An alternate airport



Shown here at the Radio Club in Bogota, Colombia, are (left to right): Fred Laun, KH3NBB; Iris Colvin, W6QL/HK3; Edilberto Rojas, KH3DDD; and Lloyd Colvin, W6QL/HK3. (See story, page 1.)

— TICO (Titusville/County), a controlled airport — was selected.

Meantime, Bob Lyon, K4FXP, came on frequency and offered his assistance. Since we had not heard from KA4EPS for a while, Bob was asked to fire up his 100 watt amplifier and turn his beams toward Miami to re-establish contact with KA4EPS. The 2-meter propagation was dropping out.

By luck, Dale Ulrich, N4BZZ, of Miami, was in our area on a duck-hunting trip. He broke in and referred K4FXP to the repeater most used by KA4EPS. Contact was re-established and Lou KA4EPS announced that they were taking off and to monitor 146.55.

By now, time was running out. Charlotte, K4GCC's XYL, was busy handling

the telephone calls. And they CAME IN!

Two-way communications was made with the plane by Walt Hicks, K4PQ, another club member, and he began assisting by directing the plane to TICO airport via nighttime landmarks.

KA4EPS was arriving aboard a low-wing, single-engine, four-place yellow plane. While approaching at 130 knots, Tony Correa, HK3QB, remotely actuated the runway lights to signal they had us in sight. The plane also carried Henry Felton Jr., WA4HXZ, and a non-ham part-owner of the plane.

As soon as the plane landed, everyone greeted each other with broad smiles and warm handshakes. K4RXX then drove everyone to a local Pizza Hut to become (please turn to page 10)

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Special Events...

Armed Forces Day '84 - 'Meeting the Challenge'

This year's observance of Armed Forces Day — set for Saturday, 19 May — marks the 35th anniversary of communications tests between Amateur Radio operators and military communication systems. Since 1950, this event has been scheduled during the month of May and

has emphasized a continuing climate of mutual assistance and warm esteem.

Featured highlights of the nationwide celebration are the traditional military-to-amateur crossband communication test and a message receiving test. The crossband test will include operations in continuous wave (CW), single-sideband voice (SSB), radioteletype (RTTY), and slow scan television (SSTV). The receiving test consists of two special Armed Forces Day messages from the Secretary of Defense, one transmitted using the CW mode followed by the second transmitted in the RTTY mode.

These tests give both Amateur Radio operators and shortwave listeners (SWL's) the opportunity to demonstrate their individual technical skills. Special commemorative acknowledgement (QSL)

Station	Military frequency	Emission	Amateur band
AIR	4025 kHz	LSB	3800-4000 kHz
2045th Communication Group	6995.5 kHz	CW	7025-7150 kHz
Andrews Air Force Base	7306.5 kHz	RTTY	7080-7100 kHz
Washington, D.C.	7315 kHz	LSB	7225-7300 kHz
	13986.5 kHz	RTTY	14080-14100 kHz
	13997.5 kHz	CW	14000-14150 kHz
	14408 kHz	USB	14150-14350 kHz

NAM	14400 kHz	(see operating schedule below)	
Naval Communication Area Master Station LANT Norfolk, VA			

14400 operating schedule

Emission	Time	Amateur band
CW	1300-1700	14000-14150 kHz
RTTY	1700-2200	14080-14100 kHz
USB	2200-0245	14150-14350 kHz

Station	Military frequency	Emission	Amateur band
NAV	7372.5 kHz	RTTY	7080-7100 kHz
HQ Navy-Marine Corps MARS Radio Station Cheltenham, MD	14389.5 kHz	SSTV	14225-14235 kHz
NMH	4015 kHz	CW	3500-3750 kHz
Coast Guard Radio Station Alexandria, VA	7346.5 kHz	LSB	7225-7300 kHz
	14440 kHz	RTTY	14080-14100 kHz
	20937.5 kHz	USB	21250-21450 kHz
NMN	7393 kHz	CW	7025-7150 kHz
Coast Guard Communication Station Portsmouth, VA			
NPG	4001.5 kHz	LSB	3800-4000 kHz
Naval Communication Station Stockton, CA	4010 kHz	CW	3500-3750 kHz
	6970 kHz	CW	7025-7150 kHz
	7301.5 kHz	LSB	7225-7300 kHz
	7365 kHz	CW	7025-7300 kHz
	9991.5 kHz	CW	10100-10150 kHz*
	13927.5 kHz	RTTY	14080-14100 kHz
	13975.5 kHz	CW	14000-14150 kHz
	14385 kHz	USB	14150-14350 kHz
	20998.5 kHz	CW	21025-21250 kHz
	21460 kHz	USB	21250-21450 kHz

* Except 10109-10115 kHz

Station	Military frequency	Emission	Amateur band
NPL	7380 kHz	RTTY	7080-7100 kHz
Naval Communication Station San Diego, CA	14375 kHz	SSTV	14225-14235 kHz
NZJ	7375 kHz	RTTY	7080-7100 kHz
Marine Corps Air Station El Toro, CA	14480 kHz	USB	14150-14350 kHz
WAR	4028.5 kHz	LSB	3800-4000 kHz
HQ Army MARS Radio Station Fort Meade, MD	6997.5 kHz	CW	7025-7150 kHz
	13992.5 kHz	USB	14150-14350 kHz
	14403.5 kHz	(see operating schedule below)	
	20995.5 kHz	USB	21250-21450 kHz

14403.5 operating schedule

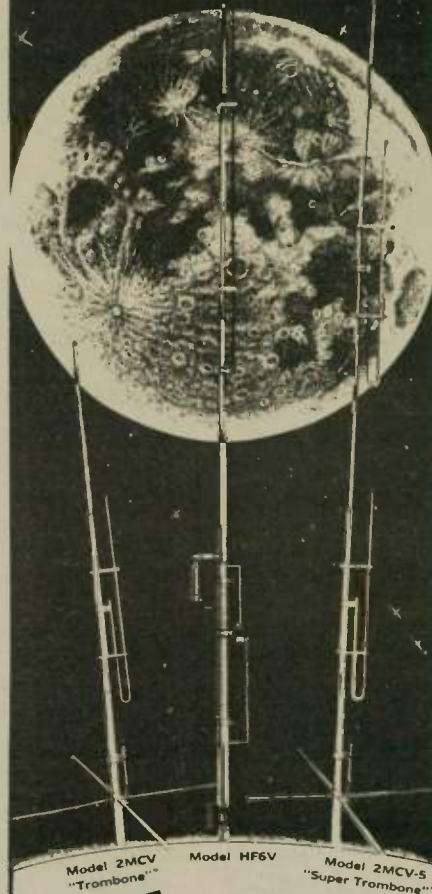
Emission	Time	Amateur band
RTTY	1300-1500, 1800-2200, 0100-0245	14080-14100 kHz
CW	1500-1800, 2200-0100	14000-14150 kHz

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 1300 UTC, 19 May to 0245 UTC, 20 May. East Coast stations commence operations at 1300 UTC, 19 May, and West Coast stations commence operations at 1600 UTC, 19 May 1984. Military stations will transmit on selected military frequencies and listen for Amateur Radio stations on those portions of the amateur bands indicated below. The

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military operator will announce the specific amateur band frequency being monitored. Duration of these contacts should be limited to three minutes.

CW receiving test

The CW receiving test will be conducted at 25 wpm. The broadcast will be a special Armed Forces Day message from the Secretary of the Defense to any Amateur Radio operator or shortwave listener desiring to participate. A 10-minute call for tuning purposes will begin at 0300 UTC, 20 May. The secre-

Transmitting station	Frequency (kHz)	Transmitting station	Frequency (kHz)
AIR 2045th Communication Group Andrews Air Force Base Washington, D.C.	6995.5, 13997.5	NPG Naval Communication Station Stockton, CA	4010, 7365, 13927.5
NAM Naval Communication Area Master Station LANT Norfolk, VA	4005, 7393, 14400	WAR U.S. Army MARS Radio Station Fort Meade, MD	4028.5, 6997.5, 14403.5
NAV HQ Navy-Marine Corps MARS Station Cheltenham, MD	7372.5, 14389.5		

tary's message will be transmitted at 0310 UTC, 20 May, from the following stations on the listed frequencies:

Radioteletypewriter receiving test

The radioteletypewriter receiving test will be transmitted at 60 wpm using 170 Hz (narrow) shift. A 10-minute call for tuning purposes will begin at 0335 UTC, 20 May. The special Armed Forces Day message from the Secretary of Defense will be transmitted at 0345 UTC, 20 May. Transmission will be from the same stations on the same frequencies as previously listed for the CW receiving test.

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 (including ZIP code) of the individual submitting the entry, must be indicated on the page containing the test message.

Each year, a large number of acceptable entries are received with insufficient information, or the necessary information was attached to the transcription and was separated, thereby precluding the issuance of a certificate.

Entries must be postmarked no later than 26 May 1984 and submitted to the respective military commands as follows:

Stations copying AIR send entries to: Armed Forces Day Test, 2045CG/DONJM, Andrews AFB, D.C. 20331. *Stations copying NAM, NAV or NPG send entries to:* Armed Forces Day Test, HQ Navy-Marine Corps MARS, 4401 Massachusetts Ave., NW, Washington, D.C. 20390. *Stations copying WAR send entries to:* Armed Forces Day Test, Commander, 7th Signal Command, ATTN: CCN-PO-OX, Fort Ritchie, MD 21719. □

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X-WARN event

X-WARN (Xenia Weather Amateur Radio Net) announces the planned operation of special event radio station WB8QZZ on 31 March and 01 April.

Our operation commemorates rebuilding of the Xenia community on the 10th anniversary of the killer tornado of 03 April 1974. This triple twister damaged half the homes and businesses in a city of 25,000, and killed 33 persons. Amateur Radio contributed immensely with emergency communications in the hours and days after the storm.

X-WARN was organized subsequent to the tornado, as a means of providing prompt local weather observations during National Weather Service alerts.

The special event will operate two HF transceivers at 1500-0300 UTC on Saturday and 1500-2300 UTC on Sunday. Frequencies: SSB — 7.275, 14.275 and 21.375 (± 10 kc). We will also have a third rig on 2-meter FM: 146.52 simplex or the X-WARN repeater 147.165/765.

For special commemorative QSL, please send QSL and SASE to Harry Noble, N8CYS, 1124 Old Springfield Pk., Xenia, OH 45385. □

(please turn to page 10)



The FCC is getting quite a number of requests from clubs wanting to be Volunteer Examination Coordinators (VEC's), and is advising the clubs of other interested clubs in adjacent or nearby areas.

Rule Section 97.507 requires that each entity that serves as a VEC must be at least regional in scope. The 10 call sign areas of the contiguous 48 states, Alaska, the Caribbean insular areas and the Pacific insular areas constitute the 13 areas which must have just one VEC. However, one VEC entity can act for several whole areas of the 13 specified examination areas. However, according to *Westlink Report* (12/30/83) "... the Commission says that the designation of a 'National VEC' would be erroneous since this position cannot exist."

It appears that the Anchorage, Alaska radio club might well be the first VEC. In addition to Alaska, proposals to act as a VEC for the 2nd 8th and 9th call areas and for the Caribbean insular area have been received at FCC.

The Commission will soon update their examination syllabus to include Advanced and Extra Class material to be

used by those who would like to create actual questions for those examination elements. While the number of General/Technician Class questions produced by ARRL headquarters has been very good, the number of questions from individuals has been disappointing to the FCC staff concerned. They urge more individual participation!

"Nothing to it" was the comment of an FCC official when asked about a report that the possibility of RTTY in the 160-meter band "was discussed by the FCC." However, the ARRL Board of Directors is known to be considering a petition "... seeking RTTY (F1 emission) privileges in the 1800-2000 kHz band (see Minute 51 of the 1983 Second Meeting of the Board)."

The recent absence of Loran pulses in the 160-meter band was followed by a notification that Canada has terminated their operation of Loran in the band. This should lead to early removal of the power/frequency limits on U.S. amateur use of the 1900-2000 kHz half of the band. The FCC is preparing an Order to do so.

Amateur operation in the 1900-2000 kHz band may eventually be severely limited, to protect the operation of radiolocation systems in the band.

In FCC's Docket 80-739 Second Report and Order implementing the "Final Acts" of the Geneva, 1979, World Administrative Conference (WARC), there is extensive discussion in paragraphs 21-25 of the basis of the allocation of the band. From #24:

"The purpose of allocating this band to the radiolocation service was to provide reaccommodation spectrum for radiolocation users that will have to move out of the 1605-1705 kHz band when AM broadcasting is implemented in that band. ... because this reaccommodation process should take a number of years, we feel that the amateurs can still make some use of the band for the near term ..."

"... it is noted that the proposed amateur allocation is secondary and should provide adequate protection to the radio location service upon commencement of its operations."

One of the radiolocation uses of the present band is for offshore oil exploration.

"The spectrum requirements for this band are currently undefined" writes the FCC about the 220-225 MHz band in paragraph 31 of their 12/08/83 release of the Second Report and Order implementing the WARC '79 frequency allocations. The Order adds the fixed and mobile services to the band on an equal sharing status with the current occupants, the Amateur and the Radiolocation Services.

"However, ... there is an FCC/NTIA working group developing an allocation plan for this band. Therefore, we will maintain all three allocations — amateur, fixed and mobile — pending the results of this effort. It is noted that no assignments will be made to the fixed and mobile services until the allocation and service rules are finalized." NTIA = the National Telecommunications and Information Administration.

Amateur use of the 18 and 24 MHz bands may be delayed until the July 1, 1989 deadline for the current users to leave, contrary to my report in last month's 'Highlights'. Users have advised FCC they will stay until they must move.

Errata issued in Docket 83-27, the

volunteer examiner program:

- 1) Delete language in the Rules mentioning "one minute out of a five-minute test";
- 2) Clarify that retesting procedures established in the Order apply only to grades above Novice;
- 3) Take out references to a code test certificate, since there is now a more-inclusive certificate of partial completion;
- 4) Make it clear that a Regional VEC may not organize testing sessions in other regions, but may accept applicants from anywhere at exams in the region;
- 5) Nevertheless, clarify that any VEC may organize tests for areas not a part of any region, as — for instance — among U.S. Forces in Europe; and
- 6) Correct the rules so that the volunteer examiner has 10 days to send test papers to the VEC after the exam, and the VEC has 10 days to send them on to Gettysburg. (ARRL 01/12/84).

The FCC is having trouble from the precedent of allowing use of "W84..." and "W23..." calls in California during the Olympic period — for example, special call signs for the stations planned for the Olympic villages. However, *Westlink Report* questioned whether any stations would be allowed, reporting that the Olympic security people want to keep access to the villages to a minimum of those who need to be there!

The FCC Commissioners have a system whereby they handle "routine" items by "circulation". For items on which the staff does not anticipate any disagreement, a master copy is sent to

FCC amateur license statistics for October-December 1983 are:

Operator Class	Oct. 28	Nov. 29	Dec. 30
Extra	34,018	34,264	34,511
Advanced	95,478	95,590	95,771
General	118,172	118,191	118,223
Technician	76,548	76,799	77,298
Novice	86,219	86,035	85,823
Total Operators	410,435	410,879	411,626
Stations			
Club	2,464	2,438	2,420
Military			
Recreation	194	196	193
Secondary	*253	*0	*0
RACES	535	535	490
Total Stations	413,881	*414,048	414,729

*All Secondary station licenses should have expired by March 1983, as they were no longer renewable after March 1978. The November change was the result of a belated purge of the record.



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the Chairman with a justification for not going to the regular Commission meeting agenda. If the Chairman agrees it is suitable for circulation, the item is sent to the other four Commissioners, in order of the seniority, for their approval. Copies are sent to all staff members who might have an interest in the matter.

This may not be as fast as the regular meeting procedure. For example, the RACES frequency expansion item "circulated from 22 December 1983 through 16 January 1984.

RACES frequency bands were expanded by FCC order in Docket 83-524 on 01/16/84, effective 26 March 1984. The expanded and added bands and subbands for RACES are: 3930-3980 kHz; 7079-7103 kHz; 14,331-14350 kHz; 21,228-21,267 kHz; 29,237-29,273 kHz; 144.50-145.71; 146.0-148.0 MHz; 420-450 MHz; 1240-1300 MHz; and 2390-2450 MHz.

"Former restrictions to the contiguous continental areas and restrictions to the first 30 days of an emergency have been dropped from the RACES rules . . ." as of 26 March. (ARRL 01/26/84)

At SAROC, FCC's John Johnston stated: "The Department of Defense feels it is important to be able to reactivate RACES on short notice with equipment in place. Thus, in wartime, they want RACES to use the existing amateur 2-meter repeater network." Worldradio, March 1984)

Rulemaking needed to allow recovery of costs in the volunteer examining program was drafted early in February. Regarded as "controversial", it was in the form of a Notice of Proposed Rule-making (NPRM) which provides for comments from interested parties. It had not reached all of the FCC Commissioners for consideration at the time this was written.

Richard Burton, formerly WB6JAC, has been sentenced to a year and a half in jail on four counts of operating a transmitter without a license. Upon release from jail, he will be on probation for five years, during which he "shall not be found in any place in which any kind of broadcast is made by radio or otherwise." (Westlink 01/27/84).

On 20 January, the FCC settled the questions raised about the employee-employee and the by-marriage relationship restrictions on administering Novice examinations. The employer-employee, employee-employee relationship prohibition was omitted from the rules adopted in Docket 83-27 establishing a volunteer exam program for Technician and higher class licenses which also became effective over Novice examining procedures.

"With regard to the second issue, FCC said that as a matter of practice and policy, it has not permitted a father-in-law, mother-in-law, brother-in-law or sister-in-law to administer a Novice examination to a candidate. This policy has not changed and represents the limits of the prohibition toward relatives by marriage." (ARRL Letter 02/02/84).

The possibility of additional temporary amateur third-party communications arrangements for use at the '84 Olympics at Los Angeles is being discussed by the State Department and ARRL personnel. Security concerns of the Olympic Committee may not permit Amateur Radio stations inside the Olympic villages. "Should this happen, it could affect the (continued on next page)

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FAR Scholarships

The Foundation for Amateur Radio, Inc. — a non-profit organization with Headquarters in Washington D.C. — plans to award 15 scholarships for the academic year 1984-85. The Foundation, composed of 50 local area Amateur Radio clubs, fully funds two of these scholarships from the proceeds of its annual hamfest. It administers, without cost to the donors, three scholarships for the QCWA, two for the Dade (Florida) Radio Club, and one each for the Radio Club of America, the Richard G. Chichester Memorial, the Young Ladies' Radio League, the Edmund B. Redington Memorial, the Amateur Radio News Service, the Columbia (Maryland) Amateur Radio Association, the Baltimore (Maryland) ARC and the Lewis G. Wilkinson Memorial.

Licensed radio amateurs may compete for one or more of these awards if they plan to pursue a full-time course of

studies beyond high school and are enrolled or have been accepted for enrollment in an accredited university, college or technical school. Most of the scholarships require the applicant to hold at least an FCC General Class license or equivalent.

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

Additional information and an application form may be requested by a letter or QSL/postcard, postmarked prior to 31 May 1984 from: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740.

The foundation is devoted exclusively to promoting the interests of Amateur Radio and to those scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service.

STS-9 space shuttle

(continued from page 4)

better acquainted, rest and discuss strategy. KA4EPS and company had to get back to West Palm Beach. So a quick drive back to the airport and we waved as they took off and headed south into the clear night sky. The time was 1:30 a.m.

The transformer was driven to the repeater site and installed by 3:00 a.m. The power was switched on, and the warm glow of those finals came back to life once again. Thus, a successful project was

rescued from certain disaster.

Thanks to the many other hams who helped with this problem, among whom were Mike Vecchitto, KB4EIZ; John Milnor, WA4JUP; Bob Anderson, W4PRK; and Charlie Pugh, W4AKE.

The still outstanding problem, however, is the \$200 transformer bill. Anyone who has appreciated our efforts is invited to send donations to: The Spaceport Amateur Repeater Club, c/o Walt Hicks, K4PQ, 2260 Chevalier Pl., Merritt Island, FL 32953. □

FCC

(continued from page 9)

efforts to secure third-party traffic privileges for the Olympic participants."

The FCC will be at the Olympics with three monitoring vehicles to track down any unintentional or intentional interference to the TV coverage of the events. (ARRL Letter 02/19/84).

33,000 persons were examined for amateur and other types of radio operator licenses by the FCC's Field Operations Bureau in 1983, 41,600 in 1982 and 50,900 in 1981. It seems likely that the decline represents lower opportunities for testing rather than a loss of interest. FCC has figures showing it cost at least \$8 to administer each of those examinations. Salaries and long-term leasing of examination rooms form an important part of this sum. (ARRL Letter, 01/19/84)

The rules waiver to permit amateur

stations to re-transmit non-amateur space shuttle transmissions continues and is open-ended, according to FCC's John Johnston. However, these re-transmissions are not to be used by another service. (W3BE, 02/06/84).

Two Technician Class amateur licenses have been fined for willful out-of-band operation and for transmission of false call signs. Dave L. Goodfellow, KA2GWV, Hampton, Virginia, paid \$600. Ronald F. Arsenault, KA2QMX, Clifton Park, New York, paid \$1,100 for the foregoing and for an added rule violation of refusing to allow inspection of his amateur station.

"Both amateurs ... were part of a small group of amateur operators that regularly operated on a frequency several hundred kilohertz outside of the allocated 40-meter band." The action was as a result of a joint investigation by the New York and Norfolk field offices and long-range direction-finding by various FCC monitoring stations. □

Masonic net times

Sun. UTC	kHz		Wed. 2300	3970-80	New Jersey Masonic Radio Club
1200	3930	Boston/Springfield Net			
DT ST 1300-1400	3913	Upper Midwest Shrine Hospital Net	Thurs. 0100 DT	3957	(Marn) — Chicago Unit Shrine Net
1600	21,446	(Marn) Mosaic Amateur Radio Net	2400 ST 0300	7:00 p.m. 14,300	Local time all year Northwest Shrine Radio Club
1700	3925	Northwest Shrine Radio Club	0300	3957	International Shrine Group
2100	14,328	International Shrine Group (W51YW) Houston	2200	7268	Marn
2300	3905	Hospital/Galveston	2300	7268	Marn
			2400	14,328	Philadelphia Hospital
Mon. 1600	Thur-Fri. (*) 14,250	Masonic Fellowship Net (*)	Fri. 1900	3925	Northwest Shrine Radio Club
1700	14,250	Masonic Fellowship Net (*)			Marn
1800	14,250	Elks (*)	2100	3990	New Jersey Masonic Radio Club
2300	14,300	New Jersey Masonic Radio Club	2300	14,300	New Jersey Masonic Radio Club
2400 Simplex	146,535	New Jersey Masonic Radio Club	Sat. 1500	7274	New Jersey Masonic Radio Club
Tues. 2300	3970-80	New Jersey Masonic Radio Club	1700	14,309	International Shrine Net
0200	3930	San Francisco Net			

ST = Standard Time. DT = Daylight Time.

Special Events

(continued from page 7)

'Open House'

The CHICAGO ARC will have an "Open House" on Wednesday, 04 April, 7:00 p.m. to 10:00 p.m., at Edgebrook Golf Course Field House, 6100 N. Central Ave., Chicago.

Everyone is welcome — especially those interested in learning all about Amateur Radio and in how to obtain a license. There will be a film shown and a live demonstration of all aspects of Amateur Radio communications and equipment.

Additional information available by calling (312) 545-3622. □


Historic submarine

Sam Dedonatis, WB2BWL

To commemorate Submarine Day on 08 April, the *USS Becuna* will be on the air from Pennslanding, on the Delaware River, Philadelphia, Pennsylvania. The event will activate other naval shrines on that day and can be contacted on the following frequencies and times. Operating times are 1300Z to 2000Z, 08 April.

Frequencies: SSB — 7235, 14285, 21360, 28600, 2-meter FM; CW — 7050, 14050, 21090, 28150, as well as Novice frequencies.

The call sign used will be the operator on the circuit, as the club has no call of its own. A beautiful certificate is confirmation of contact with the *USS Becuna*. Stateside contacts, send SASE and foreign contacts send 2 IRC's. Address is ORAC, P.O. Box 928, Philadelphia, PA 19105. □



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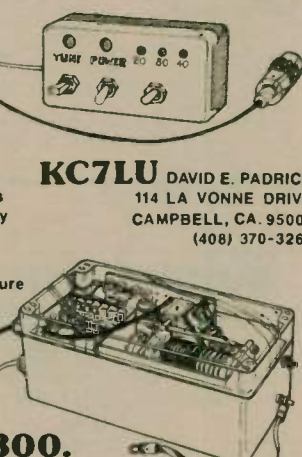
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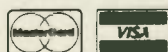


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Coaxial problem

I am having a problem connecting a coaxial relay to my Knight T-60 transmitter. If you could help me with this problem, I would really appreciate it. I earned my license in July 1983, and have not been on the air yet.

KEVIN GILOT, KA1KOJ
486 Norwich Ave.
Taftville, CT 06380

Looking for . . .

. . . Arthur E. Harrison, who got his first ticket in 1928 as W6BMS. In 1940, he worked for Sperry Co. in the San Francisco Bay Area. Anyone with information of his whereabouts, please contact me at the address listed below.

ASHOD HOVSEPIAN, W6EBM
741 Swanston Drive
Sacramento, CA 95818

Runners enjoy Radio

Been subscribing to Worldradio for four years. When I'm finished with my older copies, off they go to a local college near my home, for the radio club in the college. Some 10 or 20 students take advantage of the college Amateur Radio station, located about 600 feet above sea level, 1,000 yards from the Pacific Ocean. A beautiful spot. The name of the college is Point Loma Nazarene College.

We also have a large running group interested in Amateur Radio. These amateurs take part in running events, and quite a few amateurs give their time and equipment to assist the race director on control of 4 or 5,000 runners. They do a real nice service for the community, with very little recognition of any sort.

Received my license in 1929. Still working on getting an Extra license, but need help. The theory is no pushover.

(N6EZF turned 80 in December and is still running to keep fit.)

WILLARD BENTON, N6EZF
San Diego, California

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Accusations not true, says KD8CE

I realize that you have "closed" the correspondence concerning KV4FZ's purge against the pirates. However, I think you should grant me a line or two to defend myself against the libelous remarks that you published in his last letter.

He is correct that I held VP2EL from Anguilla, and currently hold KD8CE from the United States. Also, that I am a British citizen. The rest of the paragraph is untrue. He states that I have not been licensed in England. *This is untrue.* I hold the call G4SGJ.

I used the call VP2EL when living on board an Anguillan registered boat. What other call should I use? I have never "admitted" that VP2EL cannot be used maritime mobile. Of course it can, on an Anguillan registered boat. Since, I no longer live on the Anguillan registered boat, I have not renewed the license. This is different from his statement that I have "stopped pirating" the call sign.

Right now I am living on a U.S. documented vessel, hence the U.S. call sign, KD8CE. This he says I am "exporting across the Caribbean," with the implication that this is illegal. Every island I stop at, where I wish to operate, I show my U.S. and my U.K. licenses,

my passport and the ship's papers. Without exception, the radio officer of each island has granted me permission to operate against my U.S. call, since I am on a U.S. boat.

I most strongly resent reading that I have been pirating a call sign and the inference that my U.S. call is not valid. This is typical of the misinformation that KV4FZ promulgates on the air, and to now read such libelous remarks in print is too much.

I would also like to point out a few other untruths in his letter. Roger White, KH6NW, is *not* an Australian citizen, *nor* is his boat Australian registered. He did live in Australia for quite some time, and did support the Australians in the recent America's Cup races, but he is not an Australian citizen. John Yamasita, J6LMU's boat is *not* called *Oriental Princess*, *nor* is it U.S. registered. And so on and so on.

Hopefully, the subject is now really closed. It is bad enough that we have to hear KV4FZ on the air, without reading his poisonous remarks.

JOHN CAMPBELL, KD8CE/G4SGJ
(ex-VP2EL)
St. Lucia, WEST INDIES

Suspicious echoed

Don Chester, K4KYV, in on track: ". . . who is responsible for initiating these docketts and what their motives are . . ." (February 1984 Worldradio, page 15)

We hams of recent years have only known times of turmoil. It's good to hear there were once placid times.

Do some (many? most?) FCC staffers fear a manpower cutback if they don't have a stream of controversies to resolve? Are equipment vendors pushing for more business, that a no-code ticket would bring? Are amateur periodicals desperate for new events to write about?

Is there a pool of CB'er types who want to change the rules of the game before they come into the field of Amateur Radio? Do computer hobbyists not want to "bother" with learning code to be able to experiment with packet radio?

All of the above? More than that?

Journalists exposed the hanky-panky in Watergate. Could (Worldradio) journalists expose the ". . . who . . ." and the ". . . motives . . ." behind the endless stream of rule changes and docketts?

Here's my vote for the simple General and Novice arrangement of years ago.

ED JONES JR., WB2DVL
Somerset, New Jersey

Mad at Rather, CBS

Columbia Broadcasting System
51 West 52nd St.
New York, NY 10019
ATTN: Office of the President

Dear Sir:

This letter is in reference to the CBS television news program on Thursday evening, 19 January 1984. In this program, your Dan Rather leveled a rather wild accusation against U.S. Amateur Radio operators. In the course of discussing the transportation of atomic warheads by truck convoy, he displayed a picture of an Amateur Radio station. He stated that "hams" listened to convoy frequencies and gave out this information, thus destroying convoy security.

I did not tape the commentary, but that is the gist of his unwarranted broad accusation.

Federal figures, as of 28 October 1983, list some 410,435 FCC licensed radio amateurs in the United States. Add to this 3,446 club, military recreation, RACES and other special stations.

Thousands of these amateur operators devote many hours and the use of their equipment in the public service during floods, tornados, hurricanes and other disasters. Many others devote long hours to handling messages between servicemen and their families . . . from all over the world. Others train and work in search and rescue operations. Through the years, many hams have lost their lives in such services.

Furthermore, radio amateurs are licensed by the FCC and, under FCC powers, would be dealt with very quickly if they did what Rather alleges.

Just recently, the news services benefited from a radio amateur based in Grenada. Also recently, the whole world heard Dr. Owen Garriott, W5LFL, operate from the space shuttle *Columbia*.

Out of the millions of unlicensed and (please turn to page 14)

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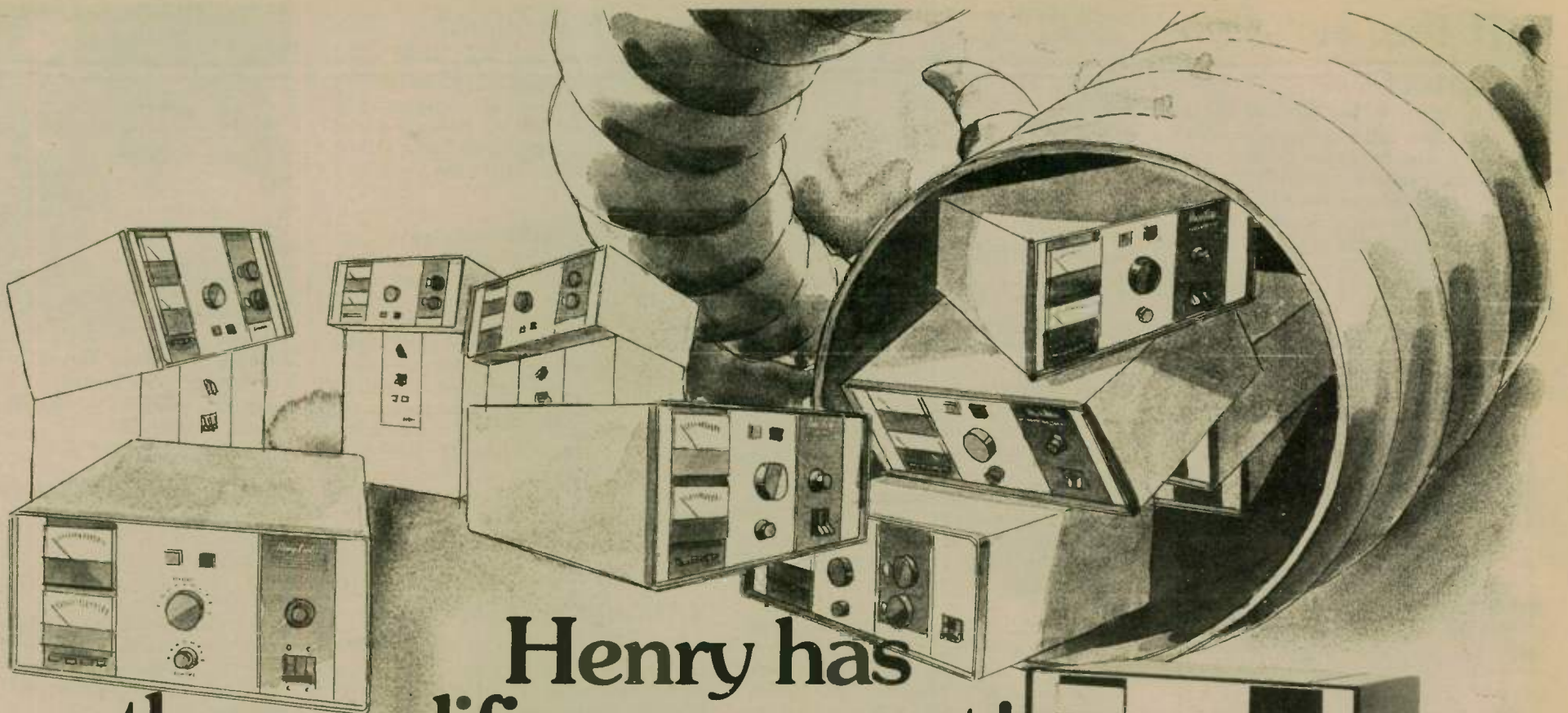
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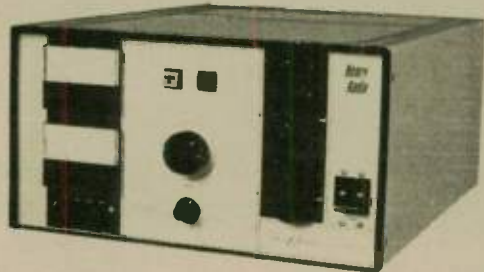
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Off the Air

(continued from page 12)

uncontrolled shortwave listeners who use CB's, scanners and shortwave receivers, why did Rather pick the licensed radio amateur operators to tar with his broad brush? I think Rather owes the amateur community an apology. So does CBS.

I realize that out of 410,000 amateurs there are bound to be a few bad apples, just like there are bad apples in newscasters. However, is it fair to throw a blanket bucket of tar?

The next time I am called upon to

prowl the desert all night looking for a lost child, or plow through the snow in the mountains looking for a missing aircraft, I'm going to remember what CBS thinks of me and wonder why I didn't stay in bed!

FRANK BERBERICH, W7JZC
Williams, Arizona

Guantanamo Bay ham activity

Reading through *Worldradio* I came across an article about the Guantanamo Bay operators here. This is an up-to-date report of the operators at the base.

Mike KG4AH and Wes KG4WS, the only RTTY operators, are now stateside looking for DX. Gary Neal, KG4GN, who was pretty active on 20 meters and also ran some phone patches now and then for Gitmo, is somewhere on the East Coast. Tim Miller, KG4TM/ mobile, has gotten out of the Navy, but reports say he's coming back to work with a better mobile.

Charlie Campbell, KG4CC, has slowed down on operating. He's moved to a different location and can't get on much any more. Garry Murphy, KG4DX, is always around for a rare DX station, as you might guess by his call sign, but his new computers are getting a lot of his time.

And myself, KG4AW, operating from 7:30 to 4:30 from my office running phone patches — mostly from the 14.313 net. I also monitor 15 meters between 21.300 and 21.350 daily, where I can be found chewing the rag any time. 10 meters between 28.5 and 28.6 on week-ends; 75 meters 3850 to 3910 and 40 meters anywhere there is an open space.

I hope this information helps those needing Guantanamo Bay, Cuba. As you can see, Cuba is back down to the nearly no-activity list. 73's and Good DX'ing.

TONY WEATHERS, KG4AW/KE6ST
S/SGT., USMC
FPBO Norfolk, Virginia

Net pals in 6-land

Enclosed is a photo of myself as I met with Bud MacLaughlin, KD6WD. We met years ago on the old maritime net at 21,425. So, after having come to 6-land to visit my two sons, gave Bud a yell on the headline and we've gotten together a few times.

Bud, however, will be surprised to hear that I have received confirmation from the ARRL that I was one of only a few hundred (approx. 290) hams to have worked Owen W5LFL. I had worked him prior to my trip to California, and at the time Bud and I were together, we talked about it but I never dreamed I would be one that was confirmed. According to the tape playback, I was loud and clear for about 20 seconds without QRM, and to top it off, I was using an ICOM 2AT HT 2 watts with a VOCOM 5/8- antenna. So much for the hi-power guys. Hi.



Joseph Rubino, WA4MMD (left), visits his radio friend — Bud MacLaughlin, KD6WD — in Huntington Beach, California.

JOSEPH RUBINO, WA4MMD
Cocoa Beach, Florida

Training nets needed

With the demise of the National Novice Net on 15 meters, Novices and Technicians alike are again pretty much left out in the cold when it comes to learning how to handle traffic.

There are Novices and Techs, I think, who would like to learn to handle traffic, but the large traffic nets appear to generally ignore this pool of prospective traffic handlers, for some reason.

Problems with Novice training nets are many: net controls who lack a decent signal to be heard over a wide area; NCS's who go faster than the net stations can copy; having the net frequency in heavily used parts of a band; lack of net controls experienced in handling traffic; lack of stations able to hear the NCS that can relay for him, etc.

It's a shame there's so little support for training nets. If there isn't going to be any interest in training Novices and Techs to handle traffic, it would appear

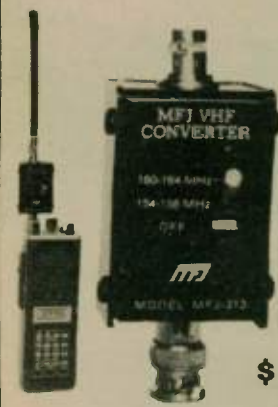
that CW traffic nets may become extinct, and one of our hobby's greatest traditions will end. Hopefully, people will come to recognize this, and will begin helping to train new traffic men and women.

Three cheers to the FCC for their vote on the "no-code" license.
GARY PAYNE, KE6CZ
Fresno, California



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MFJ-312
\$59⁹⁵

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Ham searches out the disabled

"There is no physical disability that can prevent a person from learning the techniques of Amateur Radio," says Clif Brown, KA8HNE, an Amateur Radio enthusiast who has made it his business to go in search of disabled people interested in sharing his hobby.

"If a person has a physical disability, a visual loss, a hearing impairment, or has never spoken a word, we can teach him," Clif says. There are countless examples of success to prove him right.

Clif got his Novice license in 1979. He became interested in working with handicapped people about two-and-a-half years ago, while fishing in Minnesota. While communicating over his hand-held during his fishing trip, Clif discovered HANDI-HAMS — a network of ham



Clif Brown, KA8HNE, and Patricia O'Brien, KA8HKL, hit the books. The answers don't all come easy.



Clif Brown, KA8HNE; John Brickweg, KA8SVZ; and Norm Keissler, KB4GHS, working on receiving code.

operators trained by Courage HANDI-HAMS, a satellite program of the Courage Rehabilitation Center in Golden Valley, Minnesota. Inspired by the Minnesota HANDI-HAMS, Clif returned to Cincinnati with an enthusiasm which has only increased with time.

His first Cincinnati student was Patricia O'Brien, a quadriplegic whose special needs were in the realm of equipment. "She had no difficulty with reading print," Clif recalls, so studying the material presented no particular problem. She has severe motor limitations, however, caused by a nervous system disorder, which makes it impossible for her to grasp small objects such as knobs and switches.

Clif and another volunteer ham designed for Patricia a remote-control panel consisting of switches which require pushing, and a digital read-out which can inform her at a glance of the frequency presently being used, rather than the conventional dials which must be carefully grasped and rotated.

Patricia now holds a Technician license.

Each disability is unique, of course. Clif has taped a complete set of tapes for the Novice course that is designed specifically for the visually impaired. Along with this set of tapes is a system he designed and built to teach students how to read a schematic diagram.

"It is my belief that any amateur should be able to recognize the various parts of a diagram, and my students can, even if they can't see," says Clif.

Two of Clif's students — both of them blind — have received their Novice licenses: John Brickweg, KA8SVZ, and Norm Keissler, KB4GHS.

Since December 1982, Clif has introduced more than 25 handicapped people to Amateur Radio. "I worked with Norm and recruited another ham — Bob Steinman, NC8A — to help me with John," says Clif. "Bob and I use different methods to teach, but that doesn't seem to matter to the person who gets

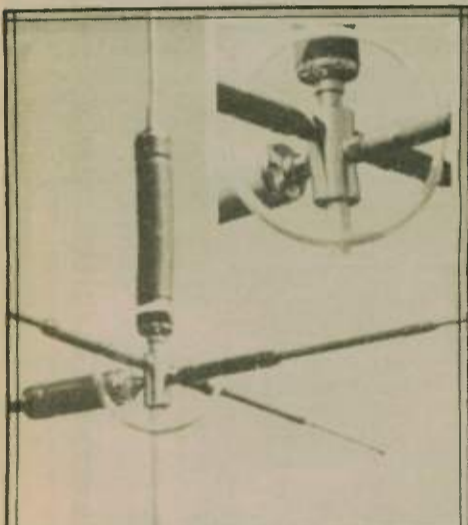
the license."

Of the 25 or so people he has worked with — not counting the three who are licensed, there are 10 who are actively seeking a Novice license. These include quadriplegic, paraplegic, blind and deaf individuals.

"As in all things," Clif states, "there are some who feel Amateur Radio is not their bag, and I have a few that want to learn, but this is not their highest priority. I am constantly looking for new people and am now trying to work out the details of getting Amateur Radio into a group for the blind.

"I have one student there, and if this works out, the authorities at the home will consider purchasing a transceiver, and I will then be able to teach anyone in the home," says Clif. "For this endeavor, I have another amateur helping me. Her name is Jane McIver, WA4JXJ. Jane holds a General Class license and understands the problems of teaching the blind because she is also blind."

Amateur Radio clubs in the Cincinnati, Ohio area have been very supportive of



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KA8HNE's activities. One club has provided 10 code practice oscillators, and another club provided the funds to purchase 120 blank cassette tapes.

"My need now is a cassette tape duplicator," says Clif. "The cost of a duplicator is beyond my means, and I can't afford to have the tapes duplicated commercially, either. If there is any individual or group that would like to help me obtain a duplicator, my students and I would greatly appreciate it."

For those interested in helping, Clif's address is: 32 Hartwell Ct., Cincinnati, OH 45216.

— Information from Clif Brown, KA8HNE, and COURAGE Unlimited (article by Deborah Kendrick) □



John Brickweg, KA8SVZ, and Clif Brown, KA8HNE, build a schematic diagram.

Was it a success?

Robbie Ruggieri, N4CHK

January 1, 1984 was an exciting beginning for a New Year for Larry Ruggieri, W5MCH, of Albuquerque, New Mexico.

He was keeping his weekly schedule with two friends in Tennessee — John Brown, NO4Q, and Tom Moseley, KB4ZX — on 14.198 kHz when he heard a faint "Mayday, Mayday, Mayday" during a transmission by John. He told the station to stand by until NO4Q turned it back to him.

The Mayday station was only about Q3-4 in Albuquerque, and they were not able to copy him at all in Tennessee. After several attempts, he finally determined the station was a four-star vessel called the *Blue Eagle*. They were afloat without power and operating the radio from a nearly run-down battery. Their location was given using satellite coordinates. The location was approximately 0

degrees, 25 minutes north of the Fiji Islands.

W5MCH passed this information to NO4Q and asked him to QSY to the Maritime Mobile Net on 14.213 kHz and to try and get word to the Navy station in San Diego. Meanwhile, he called the emergency office at Kirtland AFB here in Albuquerque, to ask their assistance in relaying the message to San Diego. The RCC in Honolulu called W5MCH within a few minutes, to verify the information and tell him it had been forwarded to the Fiji Islands.

Neither Larry nor John have received any report about the success of the rescue mission. They would appreciate getting any information on this rescue attempt. It would be a good finish to the exciting beginning of 1984 on Amateur Radio for them. □

Inside look at an ARES group

Warren Taylor, W7GHI

I am Emergency Coordinator for our county (Island County, Washington) and would like to give a brief rundown on how we function as ARES.

First, we have obtained 17 Plectron receivers (declared surplus) from our fire department. We reworked them and replaced the crystals to our local repeater (147.22 MHz). I have a tone-alert unit which I can activate and literally "wake up" 17 ARES hams on Whidbey and Camano Islands. I can then inform them of either an emergency situation or a test.

We have 40 ARES members in this

county who all have battery-powered gear, a great percentage of it mobile, ready at a moment's alert to rally into action. We have had occasion to use them for tidal flooding, lost hunters, and power and telephone outages, to name just a few. Living on an island is all the more reason to have a strong, well-equipped and faithful crew.

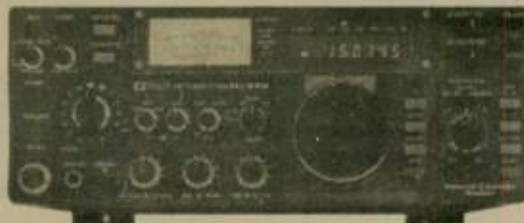
All of our emergency calls are monitored by the Director of Emergency Services, John O'Brien, at the county courthouse. In this way, he is immediately and fully informed so he may alert the American Red Cross, Navy helicopters or other agencies, as needed.

At present, our group is conducting code classes each week and will be administering license exams for all class levels. We are proud to say we are truly giving of ourselves as a public service. □

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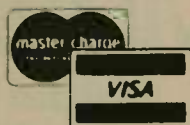
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STATION APPEARANCE

This month's Station Appearance winner wrote: "My name is Dale E. Johnson, KC7YM, of Green River, Wyoming. My XYL, Marlene, is KC7YH.

"My equipment is Drake T-4XC, R-4C, W-4, MS-4, Eico 5-inch oscilloscope,



E-Teki frequency/counter/readout, L-4B, 6-element Yagi, 160 vertical, 40-meter dipole, two PCS-3000 Azden 2-meter rigs, MFJ electronic keyer, Vibroplex iambic paddles, Kenwood PC-1 phone patch and Dentron super tuner. The computer equipment is a VIC-20, which I am just now getting into.

"My console is made from 3/4" plywood and the face panels are masonite and bolted to the base. It is powered by 220V incoming power, and has forced air-cooling, which keeps everything from getting hot.

"My XYL and I started hamming in March of 1975. Really enjoy it. Some of our awards are: WAS - CW, 5BWAS, AJD, RCC, WAC, Bicentennial WAS."

Dale will be receiving a free year's extension of his subscription to *Worldradio*. □

The Sport of Contesting



Yuri Blanarovich, VE3BMV

Classes of contesters

As with anything else, we can find different classes or types of contesters and contest stations. One can classify them by various criteria - equipment, contest selection or category, mode of operation, etc. Let's have a look at one of them.

Contest super stations

These are usually in the multi-operator/multi-transmitter category in the contests, or they are used by some hired gun in the single-operator category.

These stations usually have quite a collection of heavy artillery assembled on their real estate, which translates to monoband towers with high-performance antennas for each band. There is also an assortment of more, fixed antennas to complement the hardware. Those who are proud owners could still be active

operators, or over-the-hill, but with some spare cash, or they work year-round to keep things going. Or all of the above.

This is, without question, the most demanding category and requires tremendous amount of effort and a good group behind it. Without the "software" (good operators), the hardware would be just a pile of aluminum. Some put a tremendous amount of hardware up on the air - like 24 towers or so; some are trying to make up for it by clever design and efficient placement of antennas on, say, three or four towers. It is not unusual that they beat the former one in the contest.

If you get in a pile-up with a super station, you will usually find that they get in, make one or two calls, and go away, while the poor tribander-type keeps calling and calling. Many don't realize what hit them, but it is quite standard for the super station to have a pair of stacked 6 or 8-elements, and that speaks for itself.

There are some special considerations for the station design. The equipment has to be of good quality and quite an elaborate switching system with filtering, for prevention of interference to the neighboring bands. All the radios have to operate simultaneously on all bands, without receivers being overloaded by the sheer field strength or harmonics.

Perhaps the most outstanding DXer, contesteer and true ham was the late Jim Lawson, W2PV. With "only" three towers, but careful and efficient design of antenna system and switching, he man-

Yaesu FT-102 CW circuit modification

Carl Zelich, AA4MI

PROBLEM: When using VOX for CW operation, the VOX circuit is held OFF for a few microseconds. It is enabled as the first part of the first character is sent. When the VOX is then activated, a rising tone chirp or 'YOOP' can be heard.

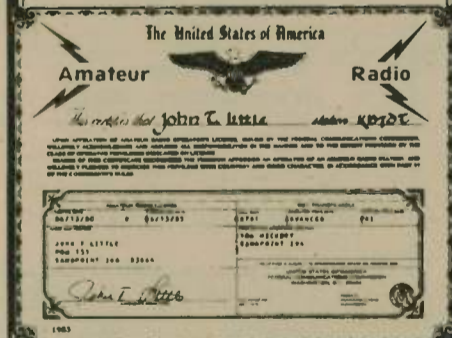
CIRCUIT CORRECTION: The chirp is caused by capacitor C153, a 3.3mfd capacitor on Local Unit Board 2345. Remove the bottom cover of the FT-102 and locate C153. It is a tubular capacitor standing on-end. Using a pair of dikes, cut 1 lead of the capacitor. It is OK to leave it in place or it may be removed, as desired.

RESULTS: You now have a clean beautiful CW signal. This capacitor has

been eliminated recently by the manufacturer, but *all units should be checked*.

Assistance rendered by Walt Hicks, K4PQ, and Lee Aurick, W1SE. □

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aged to put together a station and crew that was on the top most of the time.

John Dorr, K1AR, and Bill Myers, K1GQ — frequent operators at W2PV — summarized it very nicely in the following article published in the Yankee Clipper Contest Club (YCCC) newsletter, *The Scuttlebutt*:

This article describes one of the most extraordinary Amateur Radio stations in the world. You may be thinking to yourself, "who cares, I can never build a station like that." True, but you should read on anyway, because there are lessons to be learned by all of us from the approach Jim chose for the demanding arena of multi-operator/multi-transmitter contesting.

The most obvious feature of any Amateur Radio station is, of course, the antennas. Here is a list of the HF antennas at W2PV:

- 160 meters — inverted Vee at 170 ft.
- 80 meters — 2-el quad at 160 ft.
 - low and high dipoles
- 40 meters — 3/3-el Yagis at 180/90 ft.
 - 3-el at 85 ft.
- 20 meters — 7/5/5-el Yagis at 150/100/50 ft.
 - 6/6-el Yagis at 106/42 ft.
- 15 meters — 8/8-el Yagis at 99/49 ft.
 - 4/4-el Yagis fixed south
- 10 meters — 10/10-el Yagis at 91/57 ft.
 - 6/6-el Yagis at 70/40 ft.
 - Beverages for 160/80 meters

There are several stations with more antennas than listed here, but as will be seen, the PV system is engineered for maximum effectiveness in the contest environment. Furthermore, each antenna was carefully evaluated after installation to be sure that it was performing as expected. For example, the commercially-designed 3-element 40-meter Yagis required drastic adjustments of the element lengths to achieve proper operation.

Inside, the operating positions for the six bands are divided between two rooms. The 40-meter and 15-meter positions are upstairs in the den, while the other four bands are downstairs in a large room which also serves as an electronics lab and operations center. The modus operandi for these positions is best explained one band at a time.

The 160-meter position is least complex, since the only transmitting antenna is the inverted Vee. The Beverage receiving antennas are shared with the 80-meter position through separate matching networks.

Jim found that the commonly-used toroidal transformer matching systems could not be used at his QTH because nearby broadcast stations generated enough voltage on the Beverages to saturate the cores and cause severe intermodulation. So, his Beverage matching networks look like low-power antenna tuners.

In addition, a filter is installed in the receive antenna line to eliminate interference from the BC stations. The rig at the 160-meter position is a Signal One CX7A with an ETO Alpha 76 amplifier.

The 80-meter position has a choice of two transmitting antennas — the quad and the dipole at about 140 feet. The quad fires toward Europe or southwest at the flip of a switch, while the dipole is broadside to South America. The low dipole (60 ft.) is available for SS by swapping some transmission lines.

Each of the 80-meter antennas has a remotely-controlled network at the feed-point to tune for either the Phone or CW

end of the band. The rig at this position is a CX11 and Alpha 77.

In addition, there is a 75S3 spotting receiver which has its own antenna switch to allow listening on any antenna, independent of the one selected by the primary rig. Each receiver has an 80-meter bandpass filter, and the output of the amplifier passes through another bandpass filter. Every band has similar bandpass filtering, which reduces inter-station interference to nil.

The 40-meter position includes a pri-

mary station with CX7A/Alpha 77 and a 75S3C spotting receiver. The antennas are the 3-element Yagi on the Bertha, and the two Yagis on the 180 ft. tower. The latter two antennas can be selected separately, or driven together in-phase or out-of-phase.

The lower antenna of the stack is fixed toward Europe: in addition to the usual application of stacking to control wave angle, the "both" mode with the top antenna toward VE3 is effective for digging out daytime QSOs in the CQ

WW by spraying RF toward VE1, 2 and 3, all at the same time. The rotator control box for the Bertha is located where either the 40-meter or 15-meter position can reach it, so the 40-meter operator can position the Bertha after the 15-meter position shuts down at night.

The 20-meter position has two complete stations. The primary rig is another CX7A/Alpha 77 combination, and the secondary rig is a CX7A and Alpha 76. The primary station has a selection of

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the stacked 6's on the Bertha, stacked 5's (KLM) fixed toward Europe, and the 7-element at 150 feet.

The stacked 5's and the 7-element Yagi can be driven together, which allows CQ'ing toward both Europe and Japan during the morning opening. The antenna switching is interlocked so that the secondary station automatically transmits on the antenna system not in use by the primary op (i.e., Bertha or stacked 7/5/5).

In addition to the rotor control box for the 7-el Yagi, the 20-meter position has a remote readout showing the direction of the Bertha arrays. Using the intercom discussed below, the 20-meter position can easily ask 40/15 to turn the Bertha if needed.

The 15-meter position upstairs uses either the stacked 8's on the Bertha or the stacked 4's fixed south. This position is the boss of the Bertha rotor, and with some changes of in-coax connections, it serves as the focus for single-operator activities. Like 20 meters, 15 has two complete stations, a CX11 and Alpha 77 primary rig, and a Drake TR-7/Alpha 76 secondary station.

Finally, the 10-meter position has the side-mounted 6's as the primary antenna system, and can also use the pair of 10's on the Bertha. (There is another remote Bertha position indicator at the 10-meter position.) The gear on 10 is a CX7A and Alpha 77.

You may have noticed the recurrence of "CX7/11" and "Alpha" in the description above. In addition to those listed, there is a backup Alpha 77, a backup Alpha 76 and a TS830. All of the gear is modified for the particular rigors of multi-multi. For example, the Signal One radios normally operate in full break-in mode on CW which quickly uses up the limited lifetime (number of cycles) of the expensive vacuum relays in the Alpha 77's. So, the PV CX7/11s are modified to operate in the typical semi-break-in mode.

Another example: the Alpha 77's have RF detectors which are used to prevent hot-switching of the relays. In the multi-multi environment, these detectors can sense the signal from another rig and incorrectly lock out the amplifier. The PV Alphas are modified to prevent this effect.

A key component of the multi-op set-up is the use of CB radios at each position for inter-position communica-

tions. Each band is assigned its own channel; for example, 80 meters = 1, 40 meters = 2, etc. Thus the 40-meter position can talk directly to the 80-meter operator (perhaps to pass a multiplier) without bothering any other position, merely by dialing up channel 1. In addition, the operations center mentioned above monitors channel 0 and the 2-meter spotting nets.

Multipliers are passed out on the net from any position by announcing it on channel 0 (again without bothering other positions), while multipliers extracted from 2 meters are piped directly to the appropriate position on its private CB channel.

The audio from the CB set is mixed with the audio from the primary receiver, along with the audio from a CQ tape deck, with switches to cut out any source momentarily when necessary. This audio box and another for the second receiver also include switching, which allows either operator to listen to the other operator's audio. This is especially helpful when two pairs are needed to dig out an inaudible signal, or when the spotting receiver has found a multiplier operating split-frequency.

Often, an operator will bring his own transceiver to use in place of an existing rig, for one reason or another. The interfacing problems are minimal because every position uses exactly the same connectors, and because each cable is thoroughly documented. The importance of documentation cannot be overstressed. A station of this complexity involves considerable maintenance, which is enormously compounded if the systems being maintained are not well-described on paper.

For example, last fall, the 160-meter inverted Vee was found to exhibit unusually high SWR. With time-domain reflectometry, Jim was able to localize the problem to near the feedpoint, at the top of the 180 ft. tower. From his notebooks, he determined the length of the jumper cable from the feedline to the balun, the type of connectors on the jumper, and the type of balun. With the proper

jumper and balun on hand, only one trip up the tower was needed to repair the problem (a connector frazzled by a lightning hit).

Just before the next contest, the 80-meter quad failed to switch to CW, which made the antenna useless due to high SWR. The documentation of the control wiring included resistance between each pair in the cable, so that it was possible — by measurements at the station — to determine that a particular wire was broken, and that the broken wire was between the station and the tower base. Again, one trip up the tower to connect a temporary jumper at the quad switchbox solved the problem.

There is much more to be said concerning attention to detail, ranging from extensive spare parts and test gear, to a diesel generator capable of powering the entire operation in case of power outages. Beyond the technical, however, Jim pursued another means for increasing contest scores: he was very active in DX'ing all year round.

This activity over the years built up a circle of friends both locally and around the world. The local hams enjoyed spending the contest weekend searching the bands for multipliers to pass on 2 meters, or helping out with the less glamorous operating chores at W2PV, such as manning 75 during the day. And the DX acquaintances searched the bands looking especially for PV, often volunteering to band-hop for additional points and multipliers.

In summary, the strong point at W2PV is the lack of weak points. The only problem area is the occasional line noise. The QTH is located on a major highway, complete with high-voltage power lines, in a well-developed residential neighborhood. Although the property is more than three acres, there remains enough nearby man-made noise to sometimes degrade signal-to-noise ratio.

One final note about W2PV has nothing to do with the station at all. A contributing factor to the success at

W2PV over the years was Jim's wife, Mollie. Anyone who has ever operated from W2PV can attest that Mollie was one of the nicest people you could ever meet. She became famous among the W2PV contest crew for her "contest stew" and never-empty icebox. Even more significant than "feeding the boys" was her smiling face, and her willingness to be a part of a group of crazy people who were the best at what they do and doing it at the best place in the world.

In all, W2PV won an incredible number of awards, finishing his contest career by placing first in the world in the 1981 CQ WW CW contest in the multi-multi category! A fitting end to a station built on technical excellence, superb operating and integrity. □



Roy Kilgore, N7BXI, is right at home atop this 75 ft. antenna. The TH-3 (old model in new condition) was installed at the QTH of Bill Shine, W7NTM. Bill says, "It was a gratifying project as the SWR was low and the first few contacts produced three DLs and one OH. A job well done, Roy." Roy is a member of the Radio Club of Tacoma, Washington. Just across the Narrows Bridge from Tacoma lies the quiet fishing village of Gig Harbor, where you see Roy at work.

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Antarctic

From this frigid part of the world, look for Michael KC4AAA, on 14.265 MHz at 0215 UTC, and Tom KC4USX, on 14.214 MHz at 0230 UTC.

Nationals of a few other countries are also active down there, including AT0A, operated by VU2IF. *The DX Bulletin* reports that this station is authorized to work Indian stations only in their designated band segments, but may work others anywhere and can use a full kilowatt of power. He has been reported on 14.231 MHz from 0400 UTC.

On 14.030 MHz from 1100 UTC, CW-type FB8YK has been a regular

visitor, with Y83ANT on 14.008 MHz, and 4K1ANO and 4K1QAV near 14.035 MHz. Unfortunately, all these stations only count as one DXCC country — if you are only interested in working a new country and nothing else.

Brunei (VS5)

The last weekend in February saw much activity in celebration of Brunei's independence. Stations signing VS5I, VS5IB and VS5IC were busy on all bands, both modes. A special award is available for contacting at least one of these special calls, plus one additional Brunei station in 1984. The cost for this award is \$2 (or 6 IRC's), from VS5-

BARTS, P.O. Box 222, B.S.B., BRUNEI.

That other Brunei station might be VS5TT, who has been reported worked on 40 meters on 7.001 MHz around 1400 UTC.

Cocos Island (TI9)

A station signing N1CWH/TI9, operated by a YL named Tracy, has been reported on 14.235 MHz at 0001 UTC, at the end of January. She says she is part of a team performing scientific studies on the island, from Dartmouth. One report says she should be there until next January.

As of this writing, the DXpedition to

Activities Calendar

- 17-18 March Bermuda Contest
- 17-18 March YL SSB QSO Party (CW)
- 24-25 March CQ World Wide WPX Contest (SSB)

W-100-N

Most applications for Worldradio's Worked 100 Nations Award are from stateside stations, with very few applications from abroad. This month, all that changed with the following new members listed:

- 223. JA2EVO Kenji Yamada
- 224. JJ3FOZ Akira Uesugi
- 225. JA3CJL Kazuo Okiebisu
- 226. JA6CBY Masaaki Kono

News of our award must have hit the Japanese DX circles with the run on this month's application. Previous applications from that country include Naoki Akiyama, JH1VRQ, who received certificate #4 in 1979, plus the plaque for being the first Asian station to apply for the award; Jiro Iseya, JH4PRU, #65 issued in 1980; Tom Kommo, JR7ICN, #202 issued last summer; and Shigeo Kanehira, JA1VDJ, with #215 issued a few months later.

Anyone interested in the W-100-N award should send an SASE for details, as the award is not a copy of DXCC. QSL cards are no longer required and the fee has been reduced to \$5. You must have the QSL cards in your possession, with a signed statement by two other amateurs certifying such.

Cook Islands (ZK1)

Look for Victor Rivera, ZK1CG, who has been active from the South Cook Islands and has been found on various times. On 75 meters he has been worked on 3.800 MHz at 0730 UTC, and on 20 meters on 14.324 MHz at 0400 UTC or 14.227 MHz at 1600 UTC. Victor has no specific operating pattern.

Also active from Rarotonga is Allan Dobson, ZK1DA, who has been found on 10 meters and ZK1XR who has been worked on 80 meters on 3.505 MHz after 0600 UTC.


Victor also reports the DXpedition to Penrhyn Atoll (North Cook Islands) was to be on schedule for one month from 18 February. The DXpedition, consisting of the team of Tuatai Tupou, ZK1MA, and Ron ZK1XL, was to be an all-band affair, 160 through 10 meters, mostly CW. Also, the first RTTY operation from the North Cook Islands is planned.

Victor wished he could have gone too, but he and XYL Masha just had a new baby girl, Heather. Victor says, "... but baby comes before DX and more costly too. Hi"


All QSL cards for this DXpedition go to Victor Rivera, ZK1CG, P.O. Box 618, Rarotonga, Cook Islands, SOUTH PACIFIC via New Zealand.

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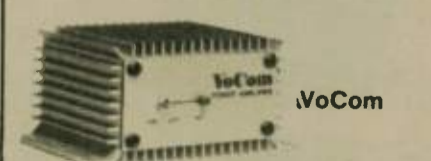
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Cocos Island has been delayed from the original departure date to 15 February. This was due to the weather conditions in the area. Operation should have been for one week, with a team of eight amateurs led by TI2CF. They were to be signing with their own suffixes with the calls TI9CC, TI9CCC, TI9CF, TI9CRM, TI9DJT, TI9J, TI9JVA and TI9WI.

All QSL cards for this operation go to Ing. Carlos Fonseca, TI2CF, P.O. Box 4300, San Jose, COSTA RICA.

Laccadive Islands (VU7)

The latter group of Indian DXers had a better signal than the former, using the same call — VU7WCY. And, for those who missed this one, there will be a third one coming up.

QSL cards for the December operation go to Andhra Pradesh Radio Society, VU2APR, 5 BPS Nagar, Hyderabad 500457, INDIA. For the January operation, cards go to G.D. Gopal, VU2GDG, 233 Gopal Bagh, Avanashi RD, Coimbatore 641018, INDIA. Send only IRC's, not green stamps, and indicate the operator's suffix, if possible. There have been rumors that the cards will not be accepted if no operator's suffix is included, but this doesn't sound reasonable, especially since most of the time VU7WCY wasn't even signing their call.

160 meters

The following is a selection of DX stations worked here in North America. Frequencies are in kHz and times are UTC.

CT2DV	1837	2400
CX8DT	1836	0600
EA3VY	1829	0100
EA6NB	1834	0600
EI8H	1823	2400
FC9VN	1850	0600
FG7AN	1823	0400
FM7WS	1834	0400
GI3OQR	1826	0300
GM3YOR	1825	0300
GU3HFN	1838	0300
HB9AMO	1826	0300
HI8DAF	1827	0300
HK4BKB	1838	0300
J37XC	1803	0500
JA3ONB	1911	1200
JW5NH	1836	0600
KH6DX	1816	1200
LU8DQ	1827	0400
LX1PD	1827	0300
LZ2CJ	1824	0300
OE5CK	1835	0500
OH3VV	1822	0600
OH0BH	1825	0600
OK1ATP	1829	0500
SM6EHY	1831	0200
SP9DH	1831	0400
SV1JG	1841	0500
TF3KG	1836	0600
TG9NX	1825	0700
TU2NW	1828	2400
UK2AAG	1855	0500
UQ2QD	1851	0500
UK9CAA	1848	2100
UB5UKW	1851	0500
VK9NS	1835	0700
VP2KBZ	1825	0200
YU3EF	1824	2300
ZB2EO	1825	2200
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5N1ARY	1833	2300
9M2AX	1800	2300
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Allan Dodson, ZK1DA, relaxes to share ice cream cones with his children (left to right): Bronwyn, Christopher and Jennifer. Allan is a technician at Rarotonga Airport and has been there for three years. Allan reports that his DX'ing is done usually between 0500 and 0800 UTC. He also collects antique bottles — a bit hard in the Cook Islands. Look for Allan on the bands, and you had better work him soon as he will return to New Zealand in September. (Photo courtesy of ZK1DA)



The ZK1DA antenna system at Rarotonga. The mast now has a 3-element tri-bander on it, which was swapped for a case of beer, (ex-ZK1WL from North Cook Islands). (ZK1DA photo)

Clipperton DXpedition (FO0X)

Kip Edwards, W6SZN, reports that the Clipperton DXpedition is on schedule and was due to depart from Acapulco for six days of operation upon arrival on Clipperton Island, on or about 05 March. Travel time should be about four or five days.

Several call signs have been issued and one call per band will be used. The calls

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issued will be FO0XU through FO0XZ. Operators will be those whose calls include W6SZN, W6OAT, W6RGG, W6TPH, N6GJ, K3NA, N7NG, FO0IW, DJ9ZB, and several others whose participation is still uncertain.

All QSL cards should be sent via the Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546, (and don't forget the SASE). Contributions are welcomed and should be sent to the Northern California DX Foundation, c/o Rusty Epps, W6OAT, 948-H Kiely Blvd, Santa Clara, CA 95051.

W6GO/K6HHD Polynesia trip

Jan O'Brien, K6HHD, reports all QSL requests have been answered for their November/December 1983 operation from French Polynesia, signing FO0JO and FO0OJ. In case you don't already know who the O'Briens are, they are the ones who print the W6GO/K6HHD List — a list of QSL managers and the stations they handle cards for. You may obtain a sample copy by sending a large SASE to W6GO/K6HHD, P.O. Box 700, Rio Linda, CA 95673.

USSR tidbits

Interested in working for those Soviet awards? Tom Frenaye, K1KI, P.O. Box 62, Unionville, CT 06085, puts out a newsheet called *USSR Tidbits* that not only includes Amateur Radio information, but has insights into Soviet life and times. Include \$1 for a sample copy or two.

Berlenga Island

João Paulo, CT4UW, and Luis Teixeira, CT4NH, announce their DXpedition to Berlenga Island for three days of operation, 16-18 March. The island is located at 39°24'N, 9°30'W and is inhabited by seagulls and rabbits. Island hunters can count this one as IOTA reference number EU-40.

The special call sign of CT0BI has been assigned for this DXpedition by the Portuguese authorities, and it is reported that this is the first time this call has been issued. The operation will take place from the existing lighthouse. Transportation is to be provided by the Portuguese Navy. All QSL cards will be handled by the individual operators via their home calls.

Four from Forty-Four Award

This award is offered by the Solomon Islands Radio Society for contacts with Solomon Island Amateur Radio stations,

(those calls with the H44 prefix), on or after 07 July 1978, the Solomon Islands' Independence Day. To qualify for this award, you must have contacted at least four stations located in the Solomon Islands.

Any mode or band may be used, and endorsements are available for single band or single mode. Satellite contacts also count, and for these contacts and 50 MHz and above, multiple contacts with the same station will be acceptable provided they are separated by not less than 12 hours.

To apply for this award, send your log extracts, certified by two other amateurs, showing date, time (UTC), band, mode and the stations worked. Do not send your QSL cards, (unless you have included extra postage for their return). The fee for this award is U.S. \$2, and should be sent to: The Awards Manager, SIRS, P.O. Box 418, Honiara, SOLOMON ISLANDS.

Solomon Islands Amateur Radio

A postage stamp featuring Amateur Radio has been issued by the Solomon Islands as part of their World Communications Year set released on 19 December 1983.

The stamp — featuring the Solomon Islands Radio Society Amateur Radio station, H44SI — is available on a special commemorative cover. The price of this cover is \$1 (U.S.), 5 IRC's, or equivalent, which includes postage.

The complete World Communications Year set of three covers featuring a total of six stamps is also available at a cost of \$6, or equivalent.

All orders for the stamps should be sent to: Solomon Islands Radio Society, P.O. Box 81, Honiara, SOLOMON ISLANDS. Note that the post office box numbers for the award and the stamps differ. Perhaps it was meant to be this way.

The above information was sent to us by George Adkins, AD1S. George reports that from his recent AD1S/KH5 DXpedition to Jarvis Island, the cards have been received from the printers and should be in the mails. They made 16,800 contacts in 88 hours.

Old DX editor

Old-time DXers might take a look at page 34 of the February 1984 issue of *QST*, (see 'Strays'), where Rod Newkirk, W9BRD, was recognized for receiving the Department of Law Enforcement Civilian Award for 25 years of service with the State Police. What Newington

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really failed to do was to acknowledge that Rod was DX editor of 'How's DX' for many, many years.

Thirty years ago, this column of Rod's was about the only source of what was happening DX-wise. (In fact, Cass WA6AUD, of the *West Coast DX Bulletin*, wasn't even an amateur yet.) I can remember when I was a green DXer and contributing to Rod's column made me feel good.

Northwest DX Convention

The Willamette Valley DX Club announces the 1984 Pacific Northwest DX Convention the last weekend in July. The convention will be at the Greenwood Inn at Beaverton, Oregon. Further details are available from Bob Herndon, W7XN, 607 Andover Place, Portland, OR 97202, or phone (503) 232-2740.

Visalia update

Frank Cuevas, W6AOA, has assumed the role of Grand Chairman for this annual event. Neil Kaltman, K6SMF, is resigning that position due to pressing business and home commitments. Frank will be assisted by Dan Davitt, N6CGB.

A prepared list of speakers are those whose calls include: 1A0KM, K7NW, JA1BK, VE7BC, TT8BC, K3ZO and 3B8CW.

Early Bird Convention pre-registration is \$38 and must be postmarked by 15 March. Late registrations will be accepted at the door at \$42 each. Make all checks out to West Coast DX Convention 84, and mail to: Nick M. Winter, WB6DXU, 1426 N. Avon Street, Burbank, CA 91505.

Attention DX clubs

Father Moran, 9N1MM, is coming to the United States, arriving 04 September. This will be his 60th year as a Jesuit missionary.

Ed Konop, W3WGS, is in charge of scheduling his trip all over the United States and is looking for DX clubs in the larger cities who would like to have him as a guest for two to three days. All inquiries and donations should be sent to Ed at 125 Wetzell Road, Pittsburgh, PA 15209.

The Kansas DX Association has already responded and will be one of the host clubs this fall. I'm sure most active DX clubs will respond favorably.

DX clubs

The Southeastern DX Club (W4NT) have selected their officers for 1984 with Carl Henson, WB4ZNH, president; Grover Meinert, KC4BX, vice president; Carol Shrader, WI4K, treasurer; and Joel Levine, WA4HNL, secretary. Jim Streible, K4DLI, is responsible for the club's activities. This active DX club is headquartered in Atlanta, Georgia. DXers interested in this club may contact the secretary at 3101 Lassiter Rd., Marietta, GA 30062; phone (404) 993-1767.

In the neighboring state of South Carolina, the Carolina DX Association has also come up with the 1984 slate of officers. Ted Goldthorpe, WA4VCC, has been re-elected president, with Roger Burt, N4ZC, vice president; Gary Bader, KD4RH, secretary/treasurer; Murph Rateriee, W4WMQ, bulletin editor; and Larry Sassoman, K4CEB, Net Manager.

The Carolina DX Association consists of over 100 members residing in Georgia, South and North Carolina and Virginia. Regular meetings are held in the Charlotte area. The association maintains two repeaters: 144.57/145.17 MHz which covers most of North Carolina, and 147.78/147.18 MHz in the Charlotte area.

Further details are available from Gary Bader, KD4RH, 2326 Marett Blvd., Rock Hill, SC 29730.

In California, the Southern California DX Club elected its 1984 officers with Joe Locascio, K5KT, president; Fried Heyn, WA6WZO, vice president; Esther Wolf, KB6HW, treasurer; and Dan Davitt, N6CGB, secretary. The new bulletin editors are Stan Brokl, N2YQ, and George Morris, W6ABW, replacing Mike Hudgens, W6YQ, who is retiring from bulletin editor after a terrific job.

New officers for the Kansas City DX Club include John Chass, W0JLC, president; Bill Henderson, K0VBU, vice president; Steve Gecewicz, K0CS, secretary;

and Tom Bishop, K0TLM, treasurer. This club meets the last Monday of each month. Additional information regarding the club is available from the president.

World-Wide Sunrise/Sunset Tables

We received a copy of *World-Wide Sunrise/Sunset Tables* from John A. Devoldere, ON4UN. The book is made up of tables that show the sunrise and sunset from the various DXCC countries around the world for the first and 15th day of each month. Where the DXCC country is large, it will include several cities for that particular country. An example would be Pennsylvania, for which he lists Philadelphia, Harrisburg

and Pittsburgh. Included with the computer printed tables are three pages of instructions.

John says it is his intention to sell the book to individual DXers for \$10, which includes postage worldwide. In addition to the book, everyone will receive a personalized computer printout giving beam headings and distances to 502 locations over the whole world.

To receive your copy of *World-Wide Sunrise/Sunset Tables*, send \$10 (bank-note or international money order, no personal checks) to: John Devoldere, ON4UN, P.O. Box 41, B9000 Ghent, BELGIUM.

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I'm sure you have all heard of John and his accomplishments as a DXer. It was ON4UN who came in as number one on Five-Band WAZ, (working all 40 "CQ" zones on five bands, 10 through 80 meters). As of 01 October 1983, only 66 DXers had accomplished this feat. John has also worked all of the United States counties, receiving USA-CA number 417. See story on ON4UN in the January 1984 issue of CQ, page 74.

RTTY DXer

Giuseppe Loreti, I0AOF, recently received his USA-CA, endorsed all RTTY. Joe reports that he received a letter from Dorothy Johnson, WB9RCY, the USA-CA custodian, stating that he was the first ever to have this award endorsed all RTTY. In case you are wondering what USA-CA is, it is CQ Magazine's United States of America-County Award, for working and confirming U.S. counties in steps of 500 counties each. The award was created many years ago by the late Clif Evans, K6BX.

Joe also received Worldradio's Worked 100 Nations Award #191 endorsed all RTTY in February 1983.

Anno Santo

Joe I0AOF also sends information on the Anno Santo (Holy Year) Award, which is available for working at least 10 Amateur Radio stations in Rome, or seven stations in Rome, plus one contact with a Vatican City station. All modes and bands count, and the contacts must take place between 25 March 1983 and 30 April 1984. Check your logs to see how many contacts you have made with Rome in the last year. European stations must work 15 stations in Rome or 10 in Rome plus one in the Vatican.

To apply for the award, send your certified list with a fee of \$8 (or 20 IRC's) to: A.R.I. Sezione di Roma, P.O. Box 361, 00100 Rome, ITALY.

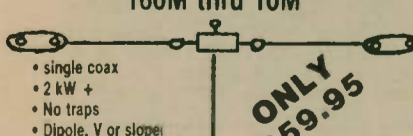
WAC

One popular award to brand new DXers is the IARU Worked All Continents, handled in this country by the ARRL. To qualify for this award, you must have proof of contacts with each of the six continents. The ARRL reports that for the 13-month period of 23 November 1982 to 31 December 1983, the following WAC certificates were issued:

Mixed Mode	1034	50 MHz	11
SSB - Phone	1092	50 MHz SSB	18
SSTV	0	144 MHz	20
RTTY	37	432 MHz	15
1.8 MHz	22	5-Band	123
3.5 MHz	38	6-Band	11
3.5 MHz SSB	37		

In other IARU matters, the union has welcomed a 119th member-society, the

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Belize Amateur Radio Club, with 70 affirmative votes and no against votes.

W5LFL QSL cards

No doubt, QSL cards for Dr. Owen Gariott's first Amateur Radio station in space should have been mailed by now. In early February, ARRL reported that 8,000 envelopes were ready to be stuffed with requested cards. The appropriate cards will be sent, SWL; for the approximately 300 lucky ones who got into the log, two-way QSL cards will be sent.

Last month, we read about one amateur complaining that he could not work W5LFL with his hand-held radio, only to be beat out by those with high-powered

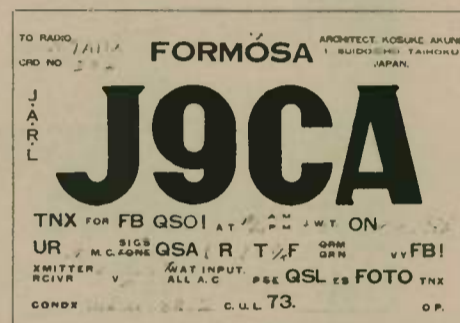
amps and fancy antennas. Well, anything is high-powered compared to a hand-held and a rubber ducky! We know of one local in the area who sneaked through with a little Azden ACS-2000 and a Ringo Ranger.

Antique QSL Department

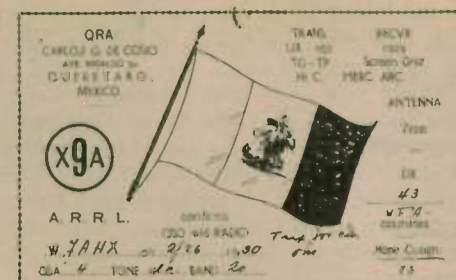
Here are some more oldies from George Heitzman, W7AHX. They date back a few years, and long before most of us were into Amateur Radio.

Back in 1936, Formosa was part of the Japanese Empire and was then the 9th call area for Japan. At that time, the whole block of "J" was assigned to Japan. The card shown below was for a 20-meter CW contact George made with J9CA on 07 February 1936. The operator was listed as Kosuke Akune. As to whatever happened to this operator, we do not know. Perhaps one of our Japanese readers can help us with that one.

After World War II, Formosa went back to China and is now the island of Taiwan. In the past, we have shown several pre-war Japanese cards, including a 1939 J8CA card for Korea.



In the March 1980 issue of Worldradio, we ran the card for X9A for a contact made back in 1931. Here is another one



for a contact George made with that station on 26 February 1930. The flag shown was printed in green and red. This contact was made on 20 meters.

There was an error in last month's column in regard to the CX1FB QSL card. Otto Geyer, W8EA, was given credit as the artist. The call W8EA was correct, but I doubt it was Otto, as W8EA is a reissued call. In 1954, this call was assigned to Samuel Zaayer, of Columbus, Ohio. Perhaps this was the same gentleman who held the call in 1931.

It is a policy at Worldradio to attach a name (if in the Callbook) to all calls listed in submitted articles and columns. Chris, our editor, automatically added Otto's name to the call of W8EA.

QSL information

Wal Briden, ZL1PN, writes that he was recently QSL manager for ZL6WCY, and says that the lack of enough postage with SASE's was amazing. Wal says that air-mail rates from New Zealand to the United States, Hawaii, Canada, Central America, Japan and India is 58 cents, and to South America, Middle East, Europe and Africa, 70 cents. He suggests that the SAE be 16cm by 11.5cm, which they call metric size.

Remember, although 1 IRC is enough

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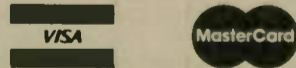
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2.5" H

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• Henry Radio
Los Angeles & Anaheim, CA
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• F & M Electronics
Greensboro, NC (919) 299-3437

for the return of one standard-size envelope, this applies for surface mail only. Air mail requires more, and is not the same for all countries.

QSL routes

A92NH	-W8LU	T2YKC	-JA2VUP
AH8/DL1VU	-DB5UJ	T26FE	-DL4BC
CT2DL	-KE4OC	TL8TX	-K0VZR
CY6SAB	-VE1AJH	TR0AB	-F6AJA
DL7NS/HB0	-DL7NS	VP8KF	-G3VPV
DL8YR/LX	-DL8YR	VU7WCY	-VU2GDG (See Note 3)
DU6RH	-W7HPI	WB5LBJ/DU6	-W7HPI
FB8WJ	-W4FRU	WL7E	-KL7GNP
	(See Note 1)	XE2SI	-K6VNX
FG0HLI/FS	-N6DX	Y1COP	-UW1BJ
FM7CD	-F5VU	YB0ARA	-K6DLV
G8GRN/5X	-G4CTQ	ZD9CC	-ZS2DK
GD0WCY	-GD3KHE	ZK1MA	-ZK1CG
JW1UW	-LA1UW		(See Note 4)
KA4EIN/TI4	-N5BQR	ZK1XL	-ZK1CG
KA6NOR/KP2	-KA6NOR		(See Note 4)
KG4AW	-WA4TAY	ZP5XDW	-N4DW
KH0AC	-KTZA	ZS1CT	-DL2MY
K6LNP/DU2	-W7HPI	ZS3N	-DK2DZ
KD7QU/DU6	-W7HPI	4K1QAV	-UA1QAV
KG4DX	-WB2CPV	4N4CA	-YU4CA
	(See Note 2)	5J5LR	-HK3SO
KP2A/KP1	-K8CW	5T5RY	-F6FNU
T2ADX	-JA2VUP	5W1ET	-VE3XG
T2RAA	-JA2VUP	6Y5DA	-VE4JK
T2RTY	-JA2VUP	9U5JB	-ON5NT

AH9AB	-P.O. Box 248, WAKE ISLAND 96898
AT0A	-P.O. Box 4015, New Delhi, INDIA
BY4AA	-P.O. Box 205, Shanghai, PEOPLE'S REPUBLIC OF CHINA
CR9CT	-P.O. Box 12727, HONG KONG
EA90I	-P.O. Box 260, Melilla, SPAIN
EC9HE	-P.O. Box 755, Melilla, SPAIN
HC2AIR	-P.O. Box 3285, Guayaquil, ECUADOR
HK3NBB	-P.O. Box 3831, Bogota, COLOMBIA
K5C/KH2	-P.O. Box 445, Agana, GUAM 96910
KX6DS	-Northern Alabama DX Club, P.O. Box 4563, Huntsville, AL 35815-4563
LU1ZX	-P.O. Box 201, Catamarca, 4700 ARGENTINA
N1CWH/TI9	-P.O. Box 81, Escazi, COSTA RICA (See Note 5)
OY8R	-P.O. Box 343, Torshavn, FAROE ISLANDS 3800
TF3SZ	-P.O. Box 1058, Reykjavik, ICELAND
TR8JLD	-P.O. Box 484, Libreville, GABON

VP2KX -P.O. Box 158, ST. KITTS
VS6CT -P.O. Box 180, Harrow, Middlesex, ENGLAND
XT2BR -P.O. Box 116, Ouagadougou, VOLTAIC REPUBLIC
XX9AN -P.O. Box 468, MACAU
XX9WW -P.O. Box 933, MACAU
YN5JAR -P.O. Box 22, Jino Tepe, NICARAGUA
YS9CAT -P.O. Box 0515, San Salvador, EL SALVADOR
ZK2RS -P.O. Box 37, Niue Island, SOUTH PACIFIC
ZS4AE -P.O. Box 1902, Wekom, 9460 SOUTH AFRICA
3D6AL -P.O. Box 64, Manzini, SWAZILAND
8Q7BW -P.O. Box 700862, Munich WEST GERMANY

Notes
1) In the February issue, F8RV was given as manager for this station. John Parrott, W4FRU, states that he handles QSL cards for FB8WJ worldwide, except for France where F8RV handles the cards.
2) Use the 1983 Callbook address for this manager.
3) This applies for the second DXpedition to the Laccadives after 09 January.
4) This applies for the North Cook Islands DXpedition only.

5) The address given here is for TI2SLC. At present, no more information is available for this operation.

Thanks to the following contributors: AD1S, W3WGS, W4FRU, K6HHD, N6AW, W7AHX, W7HPI, W7XN, W9LNQ, CT4NH, CT4UW, I0AOF, T2ADX, ZK1DA, ZK1CG, ZL1PN, Carolina DX Association, Southeastern DX Club, Kansas DX Association, Kansas City DX Club, Southern California DX Club, Northern California DX Club, Western Washington DX Club, The ARRL Newsletter, Westlink Report, The DX Bulletin, The Long Island DX Bulletin and DX News Sheet.

As I prepare this column, the Winter Olympics are underway and it is refreshing to watch these young people go

for it. Have you noticed the expression on their faces when they were awarded the medals? After all the hard work these years, they've earned it. And those who didn't make the top three should have pride too, as they did make it to the Olympics. Too bad many of our DX types today are not of that type — they want it all with little or no effort at all. Maybe they should have watched the Olympics to learn what pride of accomplishment is. Very 73 de John, N6JM. □

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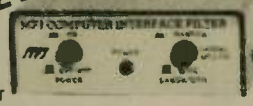
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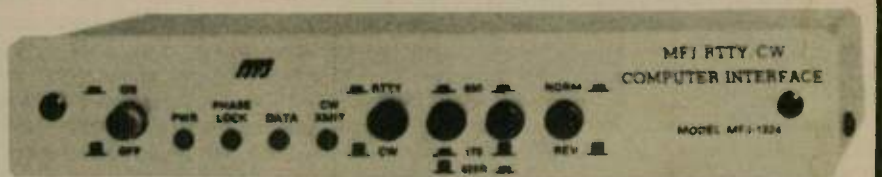
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Easy, positive tuning with twin LED indicators.
Copy any shift (170, 425, 850 Hz and all other shifts) and any speed (5-100 WPM RTTY/CW and up to 300 baud ASCII).
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FSK keying output. Plus and minus CW keying. CW transmit LED. External CW key jack.
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Exclusive general purpose socket allows interfacing to nearly any personal computer with most appropriate software. Available TTL lines: RTTY demod out, CW demod out, CW-ID Input, +5 VDC, ground. All signal lines are buffered and can be inverted using an internal DIP switch.
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Plus and minus CW keying. Audio in, speaker out jacks. Powered by computer.
Includes Basic listing of CW transmit/receive program. Available on cassette tape, MFJ-1252 (VIC-20) or MFJ-1253 (C-64), \$4.95 and on software cartridge, MFJ-1254 (VIC-20) or MFJ-1255 (C-64), \$19.95.
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Plugs between receiver and VIC-20, Apple, TRS-80C, Atari, TI-99, Commodore 64 and most other personal computers. Requires appropriate software.
Use MFJ (see this ad), Kantronics, AEA and most other RTTY/ASCII/AMTOR/CW software.
Copies all shifts and all speeds. Twin LED indicators makes tuning easy, positive. Normal/Reverse switch eliminates tuning for inverted RTTY. Speaker out jack. Includes cable to interface MFJ-1224 to VIC-20 or Commodore 64. 4 1/2x1 1/4x4 1/4 inches. 12-15 VDC or 110 VAC with optional adapter, MFJ-1312, \$9.95.

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0200	17.2	23.6	29.9	14.0	23.9
0300	16.3	23.7	30.3	13.8	22.7
0400	19.1	22.5	30.5	14.3	21.2
0500	17.0	20.7	28.0	14.9	19.9
0600	15.2	19.4	25.2	15.8	17.7
0700	13.4	18.9	23.6	14.6	14.5
0800	11.8	18.5	20.2	13.5	12.0
0900	10.9	17.7	17.5	12.6	12.7
1000	11.0	16.5	16.1	12.3	16.8
1100	11.8	15.1	15.6	12.6	16.0
1200	13.3	14.5	15.3	13.8	16.3
1300	15.2	15.0	15.1	15.7	18.2
1400	16.9	16.6	15.3	17.8	20.6
1500	17.7	18.2	15.6	18.9	21.6
1600	17.9	17.6	15.2	19.1	21.4
1700	18.1	17.4	13.7	19.2	21.9
1800	18.8	17.6	12.7	19.8	23.9
1900	19.5	18.8	14.0	20.3	26.3
2000	19.8	21.2	18.3	19.9	27.7
2100	20.0	23.3	23.5	19.0	27.7
2200	20.6	23.6	27.3	17.7	26.6
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The conference coordinator was Billy Joe Farley, AFF6NM/AFA6HC, who did an outstanding job in providing a program to assure the good turnout. —Paul Turkheimer, AFF6P/AFA6YJ □

Region VI conference

The conference was held 09-11 September at the Ramada Inn in Tucson, Arizona. Among the attending VIP's were the honorable Lewis Murphy, mayor of Tucson and banquet speaker, and Chief Master Sergeant Ray Collins, who attended this conference as one of his final acts as Command MARS Director before leaving the service.

During the banquet on Saturday evening, a number of region members were recognized for their dedication, contribution and performance to the MARS program. Recipients of the special plaque were: Mildred O'Brian, AFA6QT; Allen Mills, AFA6PD; and Marvin S. Krause, AFA6RC.

The coveted MARS cup award was given to Billy Joe Farley, AFA6HC, and Joe St. Orange, AFA6WT.

Certificates were presented to: Laura Rodriguez, AFB6AP; Lawrence A. Gourd, AFA6OH; Harry Sandal, AFA6PQ; Harry Ridge, AFA6TK; Peter T. Smith, AFA6WD; William Stogers, AFA6WR; Stanley Wernick, AFA6ZK; James S. Brown, AFA6QJ; George W. Falter, AFA6HA; David G. Stultz, AFA6XC;

New coordinator in Region VI

Interservice traffic transfer on the air is now managed by Mike Pollock, AFB6LC. Presently, only the states of California and Nevada are involved in Region VI.

Mike is a former Army MARS member and also has many contacts within the Navy MARS organization. His primary assignment is with the Los Angeles Air Force Station Base Support Team. He is like many other reliable enthusiastic members, participating in several functions simultaneously. He actively solicits other stations to contact him to cover the frequencies during the times he is engaged in personal business, and he requests that interested parties contact him through their State MARS Directors. —Paul Turkheimer, AFF6P/AFA6YJ □

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

Better than the real thing

Dick AAR4PP

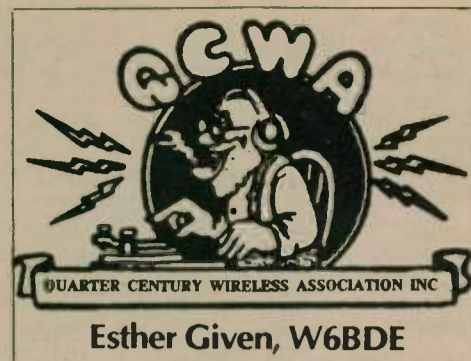
Last July, one of the TV channels carried a report on the Air National Guard, which revealed an amazing comparison: the Guard's competence, from pilots to mechs, is superior to that of the regular USAF. Even Senator Proxmire, old "golden fleece award" himself, said, "The Guard is not the second-best Air Force in the world. It's Number One!"

Army MARS members will not be too surprised by this example of the superiority of part-time irregulars to full-time warriors: compare civilian MARS operators to their regular Army counterparts and you find the same situation. Listen to any net where Fort Famous General is net control, and what do you find? You find civilian MARS stations sticking pretty close to proper procedure, while the regular Army operator frequently sounds like a novice.

The reason for this is that s/he often is a novice, possibly a green private, placed there to do something useful while learning what the Army is all about. You can't blame the C.O. for that; the unit doesn't normally have so many trained communications specialists that it can spare any to run morale- and emergency-oriented facilities. Recognize, too, that some of the European phone-patch operators are volunteering their own time (and often chipping in to buy equipment), and we see that we have no reason to complain about them.

We do have reason to set a good example, though, and to use patience and diplomacy while doing so. And we also have reason to be proud of what we are within the MARS organization — which is to say, the very best they've got!

— Florida Skip □



Esther Given, W6BDE

Wallpaper for the shack has always been a popular fringe benefit of Amateur Radio participation. When the ham license is new, QSL cards become an immediate adornment, with perhaps the inclusion of a group photograph of the operator, third row fifth from the left, at the annual club picnic, or operating 40 CW on Field Day. Next come certificates awarded for proficiency in the art of amateur communication.

In due time, it becomes obvious that space is at a premium, and QSL cards along with many certificates find a new home in file drawers releasing shack walls for a new look. This decorative innovation allows the operator to be more selective, displaying the most important or memorable achievements. Here are some to consider:

QCWA has an excellent awards program covering three major Amateur Radio accomplishments — honor awards, operating award certificates and license longevity certificates.

The QCWA Hall of Fame Award may be given to any QCWA member who has made a substantial, continuing contribution of outstanding nature to QCWA,

Are you radioACTIVE?



Dean LeMon, KRØV sure is! Dean got active in Amateur Radio when he was 16 years old and earned his Extra Class license in less than four years! "It's a fascinating hobby and a great way to meet all kinds of new people from all over the world."

Dean has cerebral palsy and got started in Amateur Radio with help from the Courage HANDI-HAM System. The HANDI-HAM System is an international organization of able-bodied and disabled hams who help people with physical disabilities ex-

pand their world through Amateur Radio. The System matches students with one-to-one helpers, provides instruction material and support, and loans radio equipment.

Isn't it time you got radioACTIVE with the Courage HANDI-HAM System?



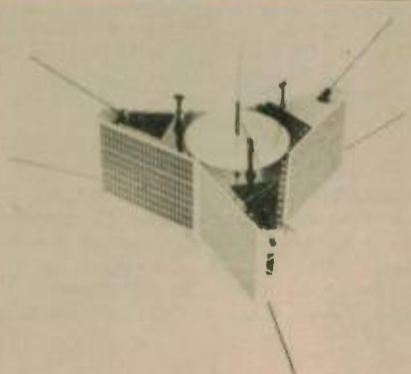
Call or write the Courage HANDI-HAM System WØZSW at Courage Center, 3915 Golden Valley Road, Golden Valley, Minnesota 55422, phone (612) 588-0811.



AMSAT

Radio Amateur Satellite Corp.

P.O. Box 27, Washington, DC 20044
Telephone: 301-589-6062



Dear Fellow Radio Amateur:

Do you know that the AMSAT Phase III Program is designed to bring you a new worldwide DX/local amateur band via communications satellite? This new band will be scarcely affected by the ionosphere, so that unlike the current hf bands or the three new bands we gained at WARC-79, propagation via this band will be 100 percent predictable. For the first time, the technology used to provide the reliability, predictability and ease of use of a two-meter repeater will be applied to provide worldwide coverage. The AMSAT Phase IIIB satellite will be capable of providing reliable communications among all stations within its range, be they local to you or DX up to half way around the world. There will be no skip zones in this new satellite communications band. At times, stations in New York, New Jersey, London, Paris, Tel Aviv, Moscow and Tokyo will be able to hold a round table QSO. The potential for multi-language bulletin transmissions, RTTY, computer, emergency, and public service communications is tremendous.

You owe it to yourself to be informed about this new band. The new band almost happened in May, 1980 but the launch vehicle malfunctioned and the Phase IIIA satellite did not achieve orbit. Our replacement Phase IIIB satellite is a million dollar undertaking. We are going full steam ahead secure in the knowledge that we can do our part to make the new band happen following the successful launch of Phase IIIB. Why don't you join the AMSAT Team and receive regular news as to the status of the Phase IIIB Program.

73,
The AMSAT Team

Yes, I want to be a member of the AMSAT Team and receive ORBIT Magazine. Enclosed are my dues of \$24 (\$26 overseas) for 1983 (\$600 for Life Membership).

AMATEUR Satellite Report (Bi-weekly, \$18 in N.America, \$26 overseas)
 New Member Renewal Life Member Donation (tax deductible)

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City _____ State _____ Zip _____

Amateur Radio in general, or in matters affecting communications which benefit the general public. The candidate's consideration may be for a single event or a series of contributions which have earned substantially favorable recognition at the national or international level.

QCWA Roll of Honor may be given to any QCWA member who has made significantly substantial and documented contribution(s) to QCWA, Amateur Radio or the field of communications, benefiting the general public on a long-term basis.

QCWA Member of the Year Award honors the QCWA member who has made the greatest contribution to QCWA or Amateur Radio during the preceding year. The nominee may qualify through a single act of noteworthy service to QCWA, to Amateur Radio, or a combination of the two. Qualification may also be based on sustained service during the year, recognition by fellow QCWA members, other radio amateurs, or — when appropriate — by the general public.

QCWA Distinguished Service Plaque is given in recognition of outstanding service of an individual member of QCWA.

The foregoing honorary awards are the results of candidate nominations submitted by QCWA members, chapters, other Amateur Radio organizations or, in rare cases, the general public. The QCWA Honor Awards Committee screens the nominees and tenders its recommendation to the QCWA Board of Directors for final selection.

QCWA Meritorious Service Awards are issued by the general manager of QCWA Inc., upon request of a QCWA chapter wishing to recognize outstanding service of a chapter member. Only one such award may be issued to a chapter each year.

QCWA Operating Award Certificates issued by QCWA to its members include working other QCWA members in 50 states, working 100 members, working members of 60 different QCWA chapters and working 500 QCWA members.

The **QCWA QSO Party Plaque** is issued to the high-scoring winners in both CW and SSB modes of operation on this annual event.

Proof of accomplishment must accompany all applications for operating award certificates.

QCWA Membership Certificates are issued to each new member and are numbered in serial order. They certify that the holder has submitted evidence that he is currently a licensed Amateur Radio operator and received his first license 25 or more years ago.

QCWA Golden Certificates are issued upon application and proof of eligibility.

These begin with the operator's 50th anniversary as a licensed amateur and are reissued in five-year increments thereafter.

Today there are a few QCWA members who hold the 70th Anniversary Golden Certificate, which means they were in the hobby from the beginning, as the first Amateur Radio licenses were issued in 1912.

QCWA Century Club Certificate combines the recipient's age plus his years in good standing in QCWA added together to make 100 or more.

Application blanks for QCWA membership, operating achievement and lon-

gevity certificates are available from local chapter secretaries or QCWA Headquarters. All candidate nominations for honorary awards and requests for any QCWA certificates should be mailed to QCWA Headquarters, 1409 Cooper Drive, Irving, TX 75061. This office maintains a complete Callbook reference library to assist in furnishing verification of licensing over the years.

Quarter Century Wireless Women (QCWW) was established as a chapter of QCWA in 1979. Ethel Smith, K4LMB, who generated the spark that created YLRL in 1939, did it again 40 years later with the help of Blanche Randles,

W4GXZ, and Onie Woodward, W1ZEN. In a short two months, word of fist, mike and mail had brought in 104 charter members to QCWW. This is the first QCWA chapter of international scope.

Although 90 percent of the membership is YL's, OM's who wish to participate are welcomed. The organization publishes a quarterly newsletter *Silver Sparks*, conducts a weekly net on Tuesdays at 1900Z on 14295 kHz, and issues a certificate to anyone who works 20 of its members.

For further information, write Marge Moore, WB6JVL, Secretary, 1006 North Barbara, Santa Maria, CA 93454. □

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- **RECEIVE ON YOUR STANDARD TV SET** tuned to channel 3 or 4. Sensitive varicap tuned downconverter covers simplex and repeater freq over the whole 420-450 MHz 70 cm amateur band. Low noise NE64535 preamp stage.
- **VIDEO MONITOR OUTPUT** of your transmitted picture makes video gain, lighting, etc. adjustments easy & accurate.
- **ATTRACTIVE 10½ x 3 x 9 CABINET.**

SO WHAT ELSE DOES IT TAKE TO GET ON ATV?

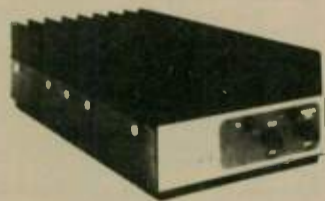
Its really quite simple to have your own TV station capable of sending and receiving video 15 to 100 miles and more. DX with this set up is similar to 2 meter FM with omni antennas.

Any standard TV set is used as the receiver. The TC-1+ downconverts the 70 cm ham band down to channel 3 or 4. Just connect a short coax from the TC-1+ to the TV sets antenna input.

Any source of standard 1 volt composite video such as is found in portable color or black and white cameras, VCRs, or computers can be plugged into the TC-1+ and transmitted to another station. Repeat SSTV to local ATVers. Audio can be from a low Z dynamic mic, or line level from cameras, VCRs, computers, etc.

The antenna is really the secret to success with ATV. We suggest the MBM 48/70 J Beam antenna with its high 14 dbd gain and wide bandwidth, and some of our Saxton 8285 low loss coax between it and the TC-1+. Antenna height at or above the tree tops makes a big difference.

THATS IT! It's easy!



ACCESSORIES:

48 Element MBM 48/70 J Beam antenna	\$79 del.	Mirage D1010N 100 watt pep all mode amp	\$289 del.
450 AEA Isopole omni antenna	\$59 del.	Hitachi HV62U black and white TV camera	\$179 del.
Saxton 8285 low loss 50 ohm coax, 100 ft.	\$41 del.	Hitachi GP-8 8 1 zoom color camera	\$749 del.

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1-84

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Address requests to:

Dave Tykol, WA6RVZ
Worldradio
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Sacramento, CA 95818



The Surgeon General has determined that reading this column may be dangerous to your health.

The Dark Sink Theory

For years it has been believed that light was emitted from an electric light bulb. This has now been proven wrong. This paper proves, without a doubt, that dark sinks into the bulb, giving that we thought was light. The bulb is a dark sink.

There are many types and sizes of dark sinks. The largest manufacturers are GE and Sylvania. Some modern dark sinks utilize solid power to operate properly. These power units can be purchased from Eveready, Exide and Mallory.

The Dark Sink Theory proves the existence of dark sinks, and that dark is heavier and faster than light. Some examples follow:

Electric bulbs

There is less dark near the electric bulb than at a distance of 100 feet when it is operating. Therefore, it is sinking dark and can be classified as a dark sink. The larger the dark sink, the greater the distance it can sink dark. The larger the dark sink, the greater its capacity of dark. The dark sink capabilities are evident when the dark sink has reached its capacity and will no longer sink dark. Notice the dark area on the inside portion of the dark sink. The larger the dark sink, the larger the area of dark found within.

Dark sinks can be made directional by placing a shield around a portion of the unit or behind it. This will prevent dark from entering the dark sink from that side, thereby extending the range of the

dark sink on the unprotected/unshielded side.

Candles — primitive dark sinks

There is more dark 30 feet from a lit candle than there is at a distance of 3 feet. Proof of its dark sinking capabilities is relatively simple. Examine a new, unused candle. Notice that the center core is not dark. Ignite the center core and allow it to burn for about five minutes. Notice the lack of dark around the candle. Extinguish the candle flame. Notice that the center core of the candle is now dark.

The center core is a dark sink protected by a soft insulator to extend its life expectancy and to maintain rigidity. To verify this, ignite the center core again. Pass a clean pencil over the top, left to right, approximately 3 inches above the center core. Notice there is no dark on the pencil. Do this again approximately 1/2 inch above the center core. Notice that the pencil now has a darkened area. This proves the pencil blocked the path of the dark being drawn to the core of the dark sink.

Dark is heavier than light

Dark always settles to the bottom of a lake or river. Submerge just below the surface of a lake and you will notice an absence of dark. Lower yourself to 15 feet below the surface and you will notice a degree of darkness even on a sunny, bright day. Lower yourself to 50 feet or more below the surface, and you are in total dark. The dark has settled to the bottom; therefore it is heavier than light.

Modern technology has allowed us to utilize the dark that has settled to the bottom of large rivers. The dark is passed through turbines which push it down river to the ocean, which has a larger holding capacity for dark and is a common, safe storage location. As the dark is passed through the turbine, a percentage of solid power is removed and transmitted to various short-term storage plants for many uses.

Prior to turbines, it was difficult to move the dark from rivers to storage areas such as the deep lakes or ocean. The Indians would paddle their canoes very little and not very deeply if they were going in the direction of flow of the dark, so as not to slow it down. If they

VISIT YOUR LOCAL RADIO CLUB.

ALASKA

Borealis Amateur Radio Club
Mission Road
P.O. Box O
North Pole, AK 99705

ARIZONA

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

The Amateur Radio Club of El Cajon, Inc.
Parkway Jr. High School
La Mesa, California
2nd Thursday/monthly — 7:30 p.m.

Conejo Valley Amateur Radio Club
Home Federal Savings and Loan
164 W. Hillcrest Drive
Thousand Oaks, CA
1st Thursday/monthly — 8:00 p.m.

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.

MT. Wilson Repeater Association
P.O. Box 977
Yorba Linda, CA 92686
WA6KOS Repeater — input 146.40 output 147.43
Amateur Radio QST Net — Monday at 7:00 p.m.

North Hills Radio Club
P.O. Box 41635, Sacramento, CA 95841
Meets: Gethsemane Lutheran Church
4706 Arden Way, Carmichael, CA 95608
3rd Tuesday/monthly

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.

Santa Cruz County ARC
PO Box 238, Santa Cruz, CA 95061
Last Friday/monthly — 7:30 p.m.
San Fran. Fed. Savings, 1995 41st Ave., Capitola
K6BJ repeater 146.19/146.79

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 Jean Carter, KA6HJK, (714) 523-9519

Sierra Foothills ARC
PO Box 3262, Auburn, CA 95604
Office of Education Bldg.
360 Nevada St., Auburn CA 95603
2nd Friday/monthly — 1930

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

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. rpter 146.13/73

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 Thurs./monthly 7:30 p.m.
145.39 MHz W6EJF

Stockton Amateur Radio Club
U. of Pacific, Rm. 122
Kensington & Mendocino Sts.
2nd Wednesday/monthly - 7:30 p.m.
Rptr. roll call: Wed. 8 p.m. - 147.165/765

Ukiah Amateur Radio Club
P.O. Box 1373, Ukiah, CA 95482
Meets: Carpenters Union Hall
2nd Monday/Monthly 7:30 p.m.
President: Bob Rowe - KA6CXM (707) 485-7147

Valley of The Moon Amateur Radio Club
358 Patten St., Sonoma, CA 95476
Darrel Jones, WD6BOR (707) 938-8086 For Info.
Meets: odd months, 2nd Tuesday, 7:30 p.m., Sonoma
Police Dept.; even mo., 2nd Sun., 11 a.m., bkfst.

West Coast Amateur Radio Club
Fun Meetings — No Business
Fountain Valley Recreation Center
Visitors welcome — call in 144.330 simplex
Call KA6RRR (714) 636-8661 for dates

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

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
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.

Indian River Amateur Radio Club
PO Box Five, Cocoa, FL 32922
1st National Bank, Merritt Island
Cor. SR 3 and SR 520, Merritt Island
4th Tuesday/monthly - 7:30 p.m.

HAWAII
Big Island Amateur Radio Club
Helco Auditorium
1200 Kilauea Avenue, Hilo
Call in 146.28/88
2nd Tuesday/monthly - 7:30 p.m.

ILLINOIS
Bolingbrook Amateur Radio Society
Fountaindale Library
300 W. Briarcliff Rd., Bolingbrook
(312) 739-0045 / 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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For information on how to get your club listed in this column, plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

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.

Six Meter Club of Chicago, Inc. - K9ONA
Land of Lincoln Savings & Loan
6655 W. Cermak Rd.
Berwyn, IL 60402
2nd Friday/monthly 8:00 p.m. Rptr. 146.37/97

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
PO Box 10342, Ft. Wayne, IN 46851
Allen-Wells Chapter House • Amer. Red Cross
1212 E. California Rd., Ft. Wayne, IN 46825
3rd Tuesday/monthly - 7:30 p.m.

Fort Wayne Radio Club
Ron Koczor, K9TUS
PO Box 15127, Fort Wayne, IN 46885
The Salem Church
3rd Friday/monthly - 7:30 p.m.

Indianapolis Repeater Assoc.
4th Monday/odd numbered months
Carson Manufacturing
5154 N. Rural St., Indianapolis
146.10/70 147.72/12 146.625/025

Northeastern Indiana ARC
John E. Zumbaugh, WD9CVI
507 E. Quincy St., Garrett, IN 46738
Daily 6 p.m. net on 147.96/36
2nd Tuesday/monthly - 7:30 p.m.

IOWA

RSCB (Radio Society of Council Bluffs)
Richard Swig, WA0ZQG, Secretary
104A Jennings Road
Council Bluffs, IA 51501
2nd Tuesday/monthly - 7:30 p.m.

MARYLAND

Frederick Amateur Radio Club
Old Frederick Court House
Rick Ogden, N3RO
(301) 845-2670
Meets: 2nd Tuesday/monthly - 8 p.m.

MICHIGAN

The Metropolitan A.R.C.
Harper Woods City Hall
I-94 & Eastwood (Between Vernier & Moross)
Repeater - 448.55T/443.55R.
1st Sunday/monthly - 2:00 p.m.

South Eastern Michigan A.R.A.
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15
Grosse Pointe North High School
Building C, Cafeteria Commons
Info. Contact WB5YKO (313) 774-2531

MASSACHUSETTS

Q.R.A. (Quannapowitt Radio Assoc.)
Masonic Hall — Salem Street
Wakefield, MA 01880
2nd Friday/monthly Sept-May 8:00 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 ARC, W2MMD
PO Box 370, Pitman, NJ 08071
VFW Post #2117, Woodbury, NJ
1st Wednesday/monthly - 8:00 p.m.

NEW YORK

Amateur Radio Assoc. of the Tonawandas
City Hall, Community Room
200 Niagara Street
City of Tonawanda, NY 14150
3rd Tuesday/monthly - 8:00 p.m.

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

Long Island Mobile Amateur Radio Club (LIMARC)
146.25/85, 147.975/375, 223.22/224.82, 444.125/449.125
Membership: Woody Gerstner, WB2IAP, 42 Mohawk Ave.,
E. Atlantic Bch., NY 11561. Net Mon. 8:30 p.m. 146.25/85
Meets 1st Tues/8 p.m., H.B. Thompson, JHS, Syosset

Staten Island Amateur Radio Assn. (SIARA)
P.O. Box 495
Staten Island, New York 10314
Third Friday/monthly — 8:00 p.m.
Rm. B-127, College of S.I. — Sunnyside

Suffolk County Radio Club
Meets 1st Tues. monthly, 8 p.m.
Bohemia Recreation Center
Smithtown Ave., Bohemia, Long Island
More info! Dave Potter, W2GZD, (516) 472-2394

OHIO

Ashtabula County ARC
Ken Stenback, A18S (964-7316)
County Justice Center
Jefferson, OH
3rd Tuesday/monthly-7:30 p.m.

C.A.R.S. (The Clyde Amateur Radio Society)
Ervin Remaley, K8BCAS, Secretary
2nd Tuesday/monthly - 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 144.75/145.35

Findlay Radio Club
1333 W. Sandusky St./Box 587
Findlay, OH 45840
Repeater 147.75/15
1st and 3rd Thursday/monthly - 7:30 p.m.

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.

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/R
Salvation Army Community Center (Big Bethel Rd.)
Hampton, VA
1st and 3rd Tuesday/monthly - 7:30 p.m.

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
Bob Morris, WA8CTO, Sec. Treas.
308 Edgewood Cir., Ripley, WV 25271
First National Bank of Ripley, WV
1st Thursday/monthly - 7:30 p.m.

WISCONSIN

Racine Megacycle Club
Red Cross Building
4521 Taylor Avenue
Racine, WI 53405
2nd Monday/monthly - 7:30 p.m.

were traveling opposite the natural flow of dark, they would dig in their paddles very deeply and rapidly to assist the flow of dark to its ocean storage place.

Dark is faster than light

If you would open a drawer very slowly, you will notice that the light goes into the drawer. This you can see happen. You cannot see the dark leave the drawer. Continue to open the drawer and the light will continue to enter the drawer; however, you will not see any dark leave the drawer. Therefore dark is faster than light.

Go into a closet, close the door and turn off the dark sink. Have a friend open the door about one inch. Your friend will not see any dark leave the closet, nor will you. Have your friend open the door until half the closet is dark and half light. Since two objects cannot occupy the same space at the same time, and you do not feel any change in pressure, by compressing the dark it is logical to assume that dark is faster than light.

From the *Capacitor*, Pike County ARC, Inc., Winslow, Indiana:

The following is a partial list of the items carried in stock by B&M Electronics.

1) For those who have trouble blowing fuses, we have 30 amp fuses marked 3 amps.

2) *Antenna tower holes* — We have these in assorted sizes and depths. Why dig when you can buy a ready-made hole? NOTICE: We have improved the design on some of these by threading them. Now if you have to move, you can unscrew them and take them along. Millions of small holes have been sold to golf courses.

3) *Antenna grease* — One application is all that is needed. Standing waves are lucky if they can hang on laying down.

4) *Everett Dirksen Lozenges* — A fine product that makes SSB sound like AM. These lozenges provide a golden voice, compared to the silver voice of William Jennings Bryan Lozenges sold by our competitors.

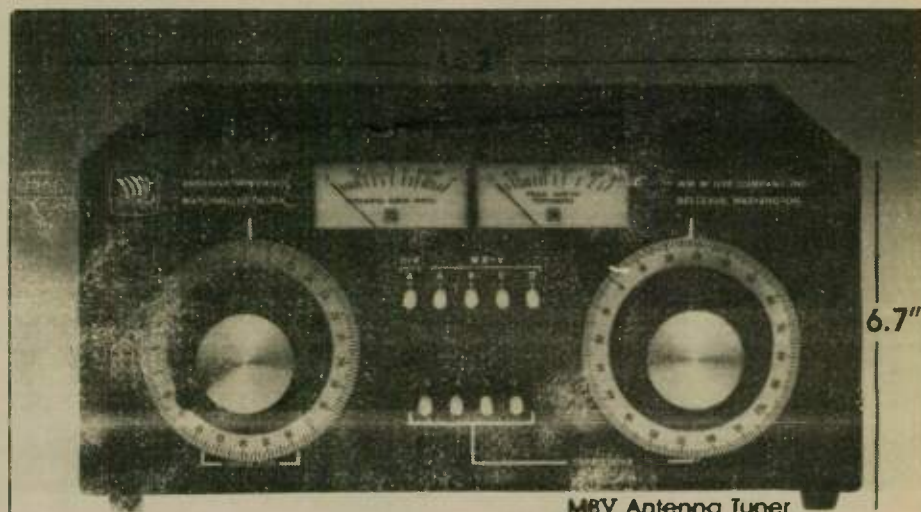
5) *Smoke signal kit* — This kit will modify any transceiver so it will send smoke signals. Herschel Russell Jr., WA9ABE, used one of these on Field Day, loading his Drake TR3 on 40 meters into a 20-meter antenna.

No trade-ins. Cash on the barrel head. Call for prices. □

Happy April Fool's Day!

●●●●●

If you are involved in any emergency communications incident, send story and photos to *Worldradio*, 2120-28th St., Sacramento, CA 95818.



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Gordon West,
WB6NOA

More on tuners

I think we hit a hot spot a few months ago when I wrote about that automatic Maxcom antenna tuner. We received over 200 inquiries about the technical specifications on this product, and the letters are still coming in today!

As you recall, the Maxcom offers automatic tuning between 1 MHz and 70 MHz in a dipole configuration or into a long-wire with a good ground source. It requires no external voltages, and nothing moves on the inside.



An "inside" mystery on what's inside!

Repeated requests to their distributor for more information on what's on the inside proved futile. I can only assume that there is some sort of broad-banded transformer affair that lets the radio always see a perfect match, yet provides a decent transfer of energy into your antenna system.

Our additional tests indicate that the efficiency is more like 60 to 70 percent — certainly not the 80 percent as claimed in the technical specification sheet.

Regardless of what is on the inside, we did receive several letters from very satisfied users of the Maxcom automatic tuner. Some were using the tuner in their homes, tuning up dipoles and long-wires with a good ground. Others indicate good results when used on backstays with a good ground system. Several bush pilots wrote in from Alaska, indicating that they use the tuner in their aircraft on a myriad of frequencies.

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Tuner facts

Any antenna tuner will exhibit some loss when connected up in between your random-length wire antenna and the transceiver. Manual tuners and the fully automatic microprocessor marine tuners have the least losses of them all. The fully automatic marine tuners require about one amp at 12 volts when actually running. These marine tuners use an intricate microprocessor circuit combined with miniature reed relays that quickly optimize the proper inductance and capacitance circuits within the tuner for your type of antenna system. The tuner is mounted at the antenna feedpoint, which further minimizes losses. It also keeps the RF inside a piece of coax cable when it leaves the transceiver back aft to the automatic tuner.

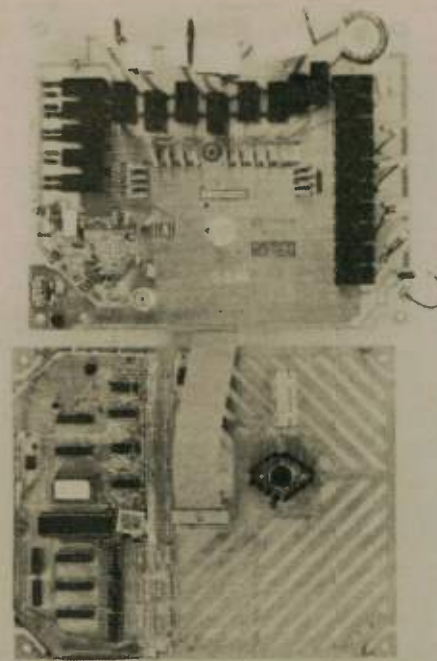
The microprocessor marine tuner needs about 10 watts to quickly resonate itself. It will tune any frequency between 1 MHz and 30 MHz, ham or marine. They sell for approximately \$1,200 and can easily be installed by any ham operator who is good with small tools and a voltmeter.

Relative efficiency of the marine tuner depends on the type of ground system you have and the length of the long-wire antenna. Generally, one will probably find 95 watts out with 100 watts in — 95 percent efficiency, which is just great.

With the Maxcom tuner, all you need is a good long-wire in the clear and a good ground system aboard your boat. Providing you meet their recommended minimum antenna lengths, you could get up to between 60 and 70 watts out with 100 watts in — 30 watts lost within the tuner itself as heat.

On some frequencies, the Maxcom may have better efficiency, and on other frequencies, less efficiency. It seems to vary with installations. However, the beauty of the Maxcom — even with its higher losses — is that it works quite nicely and quite predictably in almost any type of installation.

Manual tuners are those you need to tweak and adjust each time you change bands. The manual tuner is located by



The insides of a \$1,500 automatic marine tuner.

the transceiver, and offers good efficiency when it is adjusted properly and precisely to your operating frequency. However, if it's not adjusted smack-dab to resonance, you will find performance miserable and you may lose more than half of your power output into the mismatched tuner.

The hardest part of the manual tuner setup is simply finding the right spot where maximum energy is transferred. This often takes the assistance of a well-seasoned ham who uses these tuners routinely. Although the settings seldom change, they are extremely critical. Like opening a safe, only one combination of three different dials will allow the energy to transfer over to your antenna system.

The manual antenna tuners, priced under \$200, can offer up to 95 percent efficiency when critically tuned to resonance. We normally run coaxial cable

from the back of the tuner to your antenna feedpoint. This coax keeps the energy inside the line, which will help eliminate stray RF from floating around the inside of your boat. Although most manual tuners have a porcelain lug output for long-wires, it's generally not a good way to feed a backstay antenna because the RF goes just about everywhere and into just about anything below decks.

Yes, it is a bit harder to tune a coax run from your manual tuner, but nonetheless, it's the best way to go. Also, the braid of the coax as it terminates to your antenna feedpoint must have a good foil ground in order for this system to work. Failing to hook up the braid will cause RF to travel back down the outside of the coax feedline, and your set simply won't tune.

If you want to avoid an antenna tuner altogether, you may wish to use whip antennas or hoist-aloft inverted Vees. The most popular whips are the all-fiber-glass Anixter Mark whips that are 6 feet long and have no corrosive elements. The whips, like any whips, only work when there is a good groundplane directly beneath them. You can make small tuning changes in the Anixter Mark whips by unraveling a few turns of wire underneath the red tip. They usually cut them about 200 kHz low in frequency so tuning is usually required in every installation.

If you find that your whips back aft don't tune at all, don't blame the whip manufacturer — you simply don't have the proper groundplane beneath them.

We have also found that certain whips work great on some installations, and others won't. Same thing for mobile homes and vehicles — in some cases, one high-frequency type of whip works great, but in other cases, it doesn't work worth a darn where another brand will. Your best bet is to find a dealer who sells several different varieties of high-frequency whip antennas and allow him to

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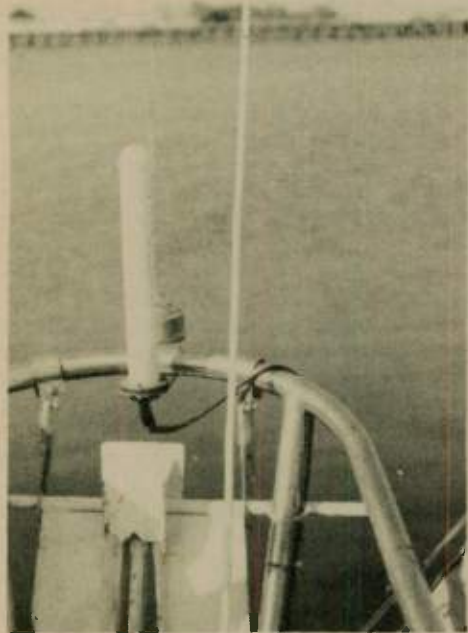
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Mobile Anixter whip on stern

let you screw them in, one by one, to find the best combination.

The big bonus of the whip is that it eliminates any automatic or manual tuner. The big minus is that you need to change whips each time you change bands. (Yes, they also have whips by Anixter Mark for marine frequencies — special order.)

Hoisting a dipole aloft in an inverted Vee configuration is also a good performer. Once again, like whips, you need to switch antennas each time you switch bands (although sometimes on 15 meters you can get a 40-meter inverted Vee to load up halfway decent). Any antenna hoisted aloft needs to be clear of other rigging. Since most rigging is grounded in a sailboat, you will need to hoist up your inverted Vee "in the clear."

For powerboats, putting up all-aluminum, 5-band trap verticals seems a little unsound. These antennas are great for homes, but really can't stand up well to the rigors of a marine environment. They also need that good groundplane. I have seen some mariners encapsulate the B&W 4-band trap vertical antenna within a white PVC pipe, and it seems to hold up well. Nonetheless, I am not really convinced that home-style, 5-band trap verticals are rugged enough for marine use aboard a powerboat.

There are manufacturers of 4-band trap verticals expressly designed for marine service, but these antennas are incredibly expensive. They are also even more expensive when "special ordered" on ham frequencies. Morad Corporation, out of Seattle, makes 4-band marine trap verticals for either ham or marine applications.

Another interesting antenna concept for power and sailboats is the "Cat Whiskers" antenna system produced by a good friend of mine, Butch Mason. You may have seen these before, high atop masts — a pair of four fiberglass, helically wound whips, end to end, fanned out looking like vertical whiskers. They offered exceptionally good performance because they were mounted high and in the clear of all metal riggings. Four whips gives 4-band operation. No tuner required.

Although expensive — just under \$1,000 — these antennas have worked extremely well in commercial and pleasure boat installations. Unfortunately, a change in suppliers may mean that these antennas won't be available until late this summer once again.

Now let's get down to the most

often-asked question — which worldwide antenna performs the best for marine applications? Is a backstay always a better performer than mobile whips?

Most of the time, a properly tuned backstay antenna with either a manual or a fully automatic \$1,200 marine tuner will work better and give higher signal strength readings than small mobile whips off the stern. Occasionally, Spider® Multi-Band and single mobile whips — off the stern and in the clear, mounted on metal steering vanes — turn out to be equal or better performers to the longer backstay — plus no tuner required for the mobile whip.

Sometimes, hoisted inverted Vees work as well as a backstay, and also require no tuner — but sometimes inverted Vees don't work well at all because they are too close to surrounding grounded rigging.

Yes, sometimes backstays don't perform as well as whips or inverted Vees — probably because they run close to a lot of other standing rigging or were improperly tuned up.

Finally, performance of mobile whips, tuned backstays, white fiberglass all-frequency whips, and other quarter-wave antennas all depend on a good ground system beneath the feedpoint or adjacent to the feedpoint. No good ground, no good signal!

Next month

Due to the response of many of you who own motorhomes, we will talk about high-frequency installations for motorhomes as well as equipment considerations for your motorhomes as well as your waterhome.

Gordon West is on the air Monday through Friday, 10:00 to 11:00 a.m., local Pacific time, on 14.340 MHz. Gordon is available to discuss technical matters on the air, but **CANNOT** and **WILL NOT** make commercial equipment recommendations. Call for a QSL!

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Net of the month

This month, we salute the Baja Net, which meets on 7235 kHz from 0730 local Pacific time. They help mariners in Baja California with traffic and weather messages. Here's an account of their latest assist via Amateur Radio and facsimile, as told by Warren Hodges, W6DHX, a hard-working net controller for the well-run Baja Net.

Four PARS members recently teamed together to aid the stricken vessel, *Teak Lady*, in a novel but practical solution to a problem involving failure of a deck anchor-winch part.

The Lapworth-designed 52 ft. yacht, *Teak Lady* — owned and skippered by Jack Schafer — sustained a broken anchor-winch pawl while at anchor in Magdalena Bay during a heavy blow this past spring. PARS member Charles McKenna, KB6ZT, was a guest crewman aboard and doubled as radioman, which permitted the *Teak Lady* to maintain daily contact with her Coronado home port via the 40-meter 8:00 a.m. California-Baja Maritime Net.

With the *Teak Lady* anchored in "Mag" Bay — a remote harbor 575 miles south of San Diego, and no Federal Express deliveries

scheduled in the area, in spite of their ads — the problem of how to replace the broken pawl appeared to have no easy answers.

Enter: a bright idea by skipper Jack Schafer, which — when coupled with Amateur Radio and an event on the East Coast — resolved the whole problem.

Jack came up with the idea of transmitting a pattern of the pawl via Amateur Radio, using coordinates laid out on X-Y axis on $\frac{1}{4}$ " graph paper. In short, a drawing by the numbers.

The *Teak Lady* checked into the maritime net the next morning and Charles KB6ZT fed the system and the layout to Warren Hodges, W6DHX, who, in turn, armed with the numbers, found it to be a simple matter to duplicate the layout and metal pattern of the pawl. PARS member Chuck Haynes, WB6AZQ, who is also an active yachtsman and a net member, fabricated the pawl from $\frac{3}{4}$ " carbon steel. The delivery was made by another PARS member — Peter Maudlin, WB6OUV — through another coincidence of fate.

Concurrent with the problem aboard the *Teak Lady*, there was a death of an elderly member of the McKenna family on the East Coast, which subsequently required Charles KB6ZT's presence in connection with estate and legal matters. Here again, through the services of the Ham Radio Net, and Peter Maudlin's kind help, arrangements were made for Peter to fly his Cessna down to "Mag" Bay, deliver the new pawl, and bring Charles back to San Diego, where he could make his trip to the East Coast.

It is of further interest to note that Peter and Charles were able to put their 2-meter gear to good use in coordinating their rendezvous at the remote air strip a few miles from the anchorage.

Yes, the pawl — developed by facsimile SSB Ham Radio — did fit the anchorwinch! □

RTTY pirate station

An unlicensed RTTY station operating every evening on 20 meters from a ship in the Caribbean signing EL4YY M/M is an admitted pirate. The operator's name is "Pascal". Spread the word and do not work him. — Jules Freundlich, W2JGR □

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Acting as Net Control

Most nets designate one station to direct the operations. It's not always necessary, but because we're used to it, things run more smoothly that way. Some nets, however, work very well without a net control, where the operators are accustomed to the procedure.

The net frequency is used as a calling frequency, and stations with traffic simply give a net call and announce their traffic. Any station able to handle it replies, the two operators arrange a frequency between themselves, and move off and clear the traffic.

This system works best where a net is in session for an extended period, and where there are not too many stations active in the net at any given time. The exact figure varies, but 10 or so stations should be able to operate this way without confusion. It's a good procedure to follow when a net is on stand-by alert because of a possible need for communications, as in the case of a threatening emergency.

When a traffic load is light, there's no need to call the net into formal, directed session (QND), but if the need actually develops, the net control station can take charge immediately, and will know at once who is available.

The free net is similar to the procedure followed by the Maritime Mobile Service, while the directed net is the system used by the military, and for two reasons: first, control is the purpose for which the military exists and control of communications is an important element in its function of control; and second, the large number of stations in a military net requires a net control to avert chaos.

As most amateur nets are directed nets, however, they need net control stations, usually designated by the net manager. Typically, there is one appointed for each day of the week. Where does the manager find them? Are they sent from Washington or Newington? No, the manager has to beat the bushes

and stir up amateurs to volunteer to take the job.

Some nets are fortunate enough to have a waiting list, and two net controls designated for each day of the week — either a primary and an alternate or alternating with each other on a two-week cycle. Most net managers have the opposite problem: unfilled slots, with some operators doing double duty, often the manager carrying two or three net control chores per week, hoping the extra load won't cause overworked net controls to burn out. If that's the case in your net, learn how to function as net control, then offer your services. You will be received with open arms.

The question is, how do you learn to be net control? Not merely by reading books. You won't find a course on the subject in any college catalog. Mainly it's a skill we pick up along the way, learning by doing. And learning by observing. You won't become a proficient net control operator simply by reading books on the subject, but reading is helpful.

Probably the most helpful means of preparing to be net control, however, is practice. When you check into a net, don't just sit silently by, maybe watching TV or mending socks. Get yourself a piece of scratch paper and record all the activity of the net, the

stations checking in, their traffic, who is sent off to do what and where, just as you would if you were actually net control. Try to anticipate what net control will do.

If it doesn't work out that way, ask yourself why things were done differently. Which way was better, yours or the one actually chosen? You may have had a better idea than the net control operator. Or the two may have been equally good; sometimes it doesn't matter much which way it goes.

Note the operating style of the various net controls. Which ones get things moving and keep things from bogging down? What do they do that's different from the way others act and find things hopelessly confused? How would you handle it?

After a few practice runs like this, you ought to be ready to try the real thing. Tell the manager you would like to try your hand at net control. Jump right in. Remember the timid soul who didn't want to go near the water until he knew how to swim.

A few suggestions: first, when you are net control, you are in charge. Your frequency is the net frequency. You don't tune off to pick up stations that are off frequency; tell them to come to you (QNZ). Nobody is supposed to transmit except to you or at your direction. But some will. Unless it gets too disorderly. However, it's usually best not to insist too strongly on the air on this point, while the net is busy handling traffic. It's something to discuss in the bulletin or in ragchew sessions before or after clearing the traffic.

Most important: listen. Some net controls keep talking or sending continuously, leaving no opportunity for anyone to break in. Pause after each transmission and listen. Give a net call when nobody breaks in during that pause. If you came out immediately with a net call, the station wishing to check in would have to wait until you finished before calling you, thereby slowing things down a bit.

And don't get into the habit of talking to yourself on the air, "Well, let's see now. How are we going to do this? Hmm. Let's try it this way. W4XYZ is down 5 sending his Eastern Area traffic, so Joe, you go down 5 and catch him after he clears it." No, make up your mind what you're going to do before you push the mike button, and then push the button and give clear, concise directions. The easy-going way is not too bad ordinarily, but it could cause trouble if the net were in session during an emergency.

Which traffic moves first? Give priority to stations with a lot of traffic going to many destinations, or stations that will receive a number of messages from different sources. On a section net, that means liaison stations should be cleared first, both those bringing traffic from the region net and those designated to take messages to the region net. And if any station checks in from the Transcontinental Corps (TCC), clear the traffic at once. TCC stations bring traffic from other NTS areas and in some cases are directed to place it in nets below the area level.

Both liaison and TCC stations have schedules to meet, and so must be cleared without delay. And often they have been working in various nets, shuffling traffic for several hours, and would appreciate having their traffic cleared so they can pull the switch and go to bed.

Sometimes other stations will check in with long lists too. If the messages are

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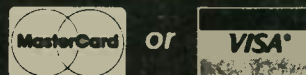
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6BN8	5.08	SK406 Chimney for 3-500Z, 4-400A-C			52.00
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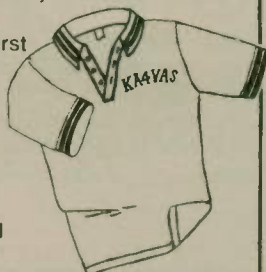
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going to various stations, begin clearing them at once. If they are all going to the same station, wait until both stations have cleared other traffic, then put them together somewhere off the net frequency. In that way, nobody will have a long wait for them to finish.

It's usually best to begin moving the traffic as soon as you can pair up two stations and move them off the net frequency. Then continue to take check-ins. On the other hand, when the traffic load is light, you might do better to finish the roll call first and then move the messages on the net frequency. It seems that the latter procedure is more common on voice nets at section level and below, as most of the time there are a half dozen or fewer messages to be handled, and it's often hard to find a clear spot anywhere in the phone bands these days.

On CW nets, you'll have to excuse stations as soon as you're sure there is no further business with them on the net. Voice net controls are usually spared this duty, as most nets seem to have the understanding that any operator may leave the net whenever that operator decides there is no further need to stay.

When all the traffic has been handled, or when closing time comes if there is an established closing time, you adjourn the net, and don't forget to sign your call.

This has had to remain rather general, for two reasons. First, space prevents giving a more detailed treatment of acting as net control, and second, procedures vary considerably among the nets. To go into more detail, for example, would require practically two entirely different articles to cover a CW net of the National Traffic System and one of the 20-meter international phone nets.

Each net has its own way of doing things. Whether one is better than another could be argued. But a given net operates more efficiently when familiar procedures are followed. When the net manager tells you that you may try your hand at net control, you will usually be given some pointers on how the net operates, often a set form to be used to open and close the net, and an established order of business while the net is in session. Of course, you should follow it, just as the net members should follow your directions while you are net control.

Reporting

When you have closed the net, or in some instances turned the control function over to another station, you still have one job to do — prepare a report for the net manager. Exactly what the report is to contain is up to the manager.

As a minimum, the manager will want to know how many stations checked into the net and how much traffic was handled. Sometimes you have to list the calls of the individual stations; sometimes you have to indicate liaison with other nets; sometimes the manager also wants the number of minutes the net was in session. And you may be asked how much traffic was listed for which there was no outlet. This report is usually sent to the manager as a formal radiogram (and in some nets these reports provide half the message traffic handled).

Again, learn by listening. Listen to the reports given by other net controls. And ask the manager what is needed on your net.

Above all, don't let anything discourage you. Being net control does require some expertise, but you get it only by practice. So jump in and try it. Your help is needed.

Commercial traffic?

"How much do I owe you for the duct tape?" Someone suggested that this was an improper message to send via Amateur Radio recently; it sounds commercial, like the business traffic amateurs are not permitted to handle.

In this instance, it was perfectly legal. The sender of the message was acknowledging receipt of a package received in the mail, a package which was closed and sealed by what seemed to be miles of tape of the type used to secure the insulation on air-conditioning ducts.

The moral is, don't refuse traffic you receive on the air simply because it sounds to you like business communica-

tions. It's best to assume the originating station has verified that the traffic is not commercial and is not prohibited. After all, the originating operator is best situated to make this decision.

My own policy is to pass it on unless it is clearly and obviously illegal, sending a service message to the originator if I suspect it may be prohibited traffic.

Bear in mind that the FCC made these rules to protect us, not to disturb us. There are some who would like our frequencies to be allocated to them, and they file petitions for that purpose at international conferences and with the FCC. There are others who don't even bother with the formalities; they just

move in. The broadcasters on the lower 100 kHz of 40 meters are one example.

The FCC is concerned that if no ban on business traffic in the amateur bands existed, we would soon be invaded by many non-amateur users. In former years, this was less of a problem, but now suitable gear for any amateur band is available over the counter, and at lower cost than comparable commercial gear in many instances.

CW nets

The recent hassle over the FCC's no-code proposal certainly brought a lot of phone operators out of the woodwork (please turn to page 40)



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Kurt N. Sterba

Many amateurs living in apartments or other antenna restricted quarters have a rather tough go regarding the radiating of a signal.

Here is one solution. From the ceiling, hang a square loop of wire about 8' 3" on a side. Cut in the middle of one side and feed with coax. Exactly opposite from where the feed is, cut the wire and separate it with a couple of inches between the ends. What you have is half a quad loop, or a dipole made into a square.

The impedance will be quite close to 50 ohms, and the slight loss of signal strength — compared to a regular dipole at the same spot — won't be enough to notice. The dimensions above are for the 20-meter band. You may scale up or down to the frequency of your choice.

If you have enough room, you could make the loop one full-wavelength (closed loop), but remember — if the loop is horizontal, the radiation will be straight upward. Speaking of signals going in the direction we don't want ... with the sunspots going into hiding, many operators are going to the lower bands (which get better when higher bands get poorer).

A chap with an 80-meter dipole up about 65 feet thinks he has something. What he really has is the same radiation angle as he would have with a 20-meter antenna 16 feet high. And you know what that will do for you! Or put another way, think about how competitive you'd be with your 10-meter antenna up a whole 8 feet above ground. Such is only for masochists.

So, what is the solution, you may be asking. If you already have a 135 ft. flat-top, from each end add 76 feet of wire. Bring them together and solder. You now have a triangle. Feed the loop

at one end of the top with the shield going to the horizontal wire. The center conductor goes to the descending wire. Now your main lobe will be at 20 degrees instead of 90 degrees.

If the above should be impossible for you, turn the whole thing upside down. For example, if you have an inverted V up, keep going and turn it into a full-wave loop.

Feed it at one corner. To find the length, take the number 1005 and divide that by the frequency in MHz. You will have (in feet) the loop dimension. It is not totally necessary that it be a perfect triangle. Run the different sides in whatever manner that fits. You'll find a

lower noise level, and as so many who have loops say, you'll work 'em before and after others can't.

For the 160 buffs who don't have the room to put up a full-wave loop, put up the 80-meter dimensions and add loading coils in each leg. Use the largest diameter that is practical. A starting point is, for every foot you are compensating for, it takes two feet of wire in the coil.

The imaginative will realize that 40-meter dimensions could be "loaded" to radiate on 80.

Also, in a pinch, you can get on 80 by placing coil at the end of your 40-meter dipole with a couple of feet of wire coming out each end for trimming.

To another subject: Have you ever noticed that if you work an old-timer who has a flat-top fed with open wire, he always has a good signal?

If you would like to emulate him but don't care to tear off part of your roof so the open wire can come into the shack, here's what you do. Run the open wire to a convenient spot and put a 4 to 1 balun on the line. Then run your coax to the one side. If you have a tuner, you can dispense with the balun.

Lots of excitement about talking to the astronaut. Good publicity, but it was rather a technical yawn. Actually, all things considered and put into perspective, it was kind of a copy of a trick used 40 years ago. Yes, I said 40 years ago.

During the unpleasant time when the DLs were not our friends, Allied radio operators were parachuted into rather hostile territory. (Talk about a tough DXpedition!) Using HF radio was, due to outstanding triangulation and tracking, highly dangerous.

The solution was a very low-powered VHF transmitter that wouldn't go very far on the ground but would go a long way UP. A swift airplane, made of wood (so it wouldn't show up on radar), would fly many miles up above the agent.

Contact would be made and then the radio operator would feed his message which would be taken down on a wire recorder aboard the aircraft.

One might say, the more things change, the more they stay the same. Forty years later, same thing.

The little transmitter, not much bigger than today's hand-helds, was called the "Joan-Elinor" after the English girlfriends of the two Americans that worked out the idea.

Back to today. Should you have hostile neighbors, but a bit of room in your yard, a one-wavelength wire end-fed and snaked around your fence will radiate better than you might think.

Over this last month, we had several readers write in with questions; all received a personal reply. Please be patient as the letters are forwarded to me, and then I send them back to California for mailing.

We're pleased to answer any questions you may have. I must again thank all those who are still writing in about our return. To say I'm touched would be an understatement. And it was with great pleasure we heard from WB5IIR. There's a guy who really knows his onions ... and his antennas, too.

(KNS goes by his disguise in order to protect the true identity of Lil Paddle, which is done to protect people who might argue with her at a club meeting. A little old lady with tennis shoes she is not. The spiked shoes of the Ninja are more her style.)

For those who write in with their guesses, you are all wrong. KNS is not Lou McCoy, Bob Heil, Bill Orr, Dennis Wholly, Hashafisti Scratchi or Al Gaetano.)

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The newly elected secretary of the World QRP Federation (WQF) has called for closer cooperation and coordination among the member-clubs.

David B. Farris, K5NT, of Austin, Texas, says he wants improved communications among QRP organizations in the various nations as one means of bolstering low-power activities and increasing participation in operating events.

Dave pointed to the weekend of 21-22 January as an example of the need for better coordination among WQF member-clubs. There were two QRP contests that weekend operating independently of each other, he notes, and participants in one found themselves working contesters from the other with a resulting confusion over exchanges and power levels.

"I want to see a maximum of one (QRP) contest in any given weekend," Dave says.

First licensed in 1952, Dave succeeds Colin Turner, G3VTT, who served in an interim capacity after Jack Swiney, VK6JS, was forced to resign as secretary for personal reasons last year.

QRP groups in Australia, England, Belgium, the Netherlands, Yugoslavia, Germany, Italy, Spain, Brazil, the Canary Islands, Japan and the United States are WQF members.

The miles-per-watt record has been shattered again, according to Leo Delaney, KC5EV, awards chairman of QRP ARCI, which keeps track of those events.

Kyle Chavis, WA4PGM, has claimed a record of 46,336,000 miles per watt for the November 20, 1983, contact he had with Charles Cullian, KØRF on 10 meters.

Kyle was running a carefully measured 31 microwatts between his Farmville, Virginia home and Charles' home in Longmont, Colorado — a distance of about 1,450 miles.

The resulting claim broke the previous mark of 21.6 million miles per watt set in January 1983 by the late Dan Lewis, N6HY, and Charlie Ebert, KD5OB (see *Worldradio*, July 1983).

Australian QRPers have bounded back after the untimely demise of the VK CW QRP Club (see *Worldradio*, January 1984), with a new organization and a promise of continued interest and activity from Down Under.

Len O'Donnell, VK5ZF, has announced formation of the CW Operators QRP Club.

"We are starting from scratch, so it

will take a little time to build the membership up," Len says. "This is not an attempt to revive the VK CW QRP Club, that club has been disbanded."

Len says there will be a full program of awards, contests and a bulletin. Membership fee is \$4 Australian, and members worldwide are welcome. His address is: 33 Lucas Street, Richmond, South Australia 5033, AUSTRALIA.

NET NOTES: The Michigan QRP Club has rejuvenated its 80-meter net and welcomes check-ins. The net meets at 9:00 p.m. Eastern Time, Tuesdays, on 3535 kHz.

QRP ARCI has moved the time of its transcontinental CW net (QRP TCN) to 2300Z Sundays on 14,060 kHz. The net formerly met at 0001Z Mondays on the same frequency, but was moved because of poor conditions at the later hour. NCS is Roger Rose, W5LXS, of Midland, Texas.

The club also has organized a QRP net for the upper portions of the 7th U.S. call district, Western Canada and Alaska. It's the Northwest Net (QRP NWN), and it meets at 1800Z Saturdays on 7040 kHz. NCS is Bob Brown, N7DGZ, of Anacortes, Washington.

Latest word is that the Heath Co. has discontinued production of the venerable HW-8 QRP transceiver and is soon to replace it with the HW-9.

Several amateurs who have ordered the HW-8 had their checks returned by the company with word that the HW-9 will be announced in the next Heath catalogue, which should be released soon after this appears.

No details about the HW-9 were available (bands, modes, power, price tag, etc.), but the company did say the rig should be ready to be shipped in April.

It is expected to be a dark, flat color (rather than the HW-8's well-known two-tone green finish) to match the QRP antenna tuner and QRP SWR/wattmeter introduced last year. The company also advises it is not accepting reservations on the new model. □

Ohm-Brew

The winner of the "Ohm-Brew" contest this month is David H. Atkins, W6VX, of Los Angeles, California. (For the answer turn to page 42)



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My friend Murphy was sitting at the table with his family having a nice, leisurely dinner when he suddenly looked up at the clock. "Oh my goodness," he cried. "What's up?" asked his wife and kids.

"I promised Dick I'd take the net tonight and it's time to start in three minutes. I almost forgot," Murphy said as he hastily jumped up from the table and catapulted toward the basement stairs.

"Do you have to go down there, Dad?"

his daughter asked. "I made a special dessert for you. I kind of thought we'd celebrate your promotion."

"Sorry, honey," Murphy replied from the depths of the basement stairs where he hurried toward the station. He hated to alienate his family, especially on a night like this, but he'd made a promise, and the guys on the net had done so many favors for him in the past.

He glanced at his watch, realizing he still had two minutes to go. Flipping on the power switch, he eagerly waited to hear the pulsing sounds of CW . . . but nothing. He glanced down at the rig and realized that not only was there no audio, there was also no visual. No lights showing on the front panel, no hum of the muffin fan — nothing. He checked to see if both the power supply and rig switches were turned on. They were.

"What in the world," he mumbled. Then he remembered his wife having mentioned that she had unplugged the rig the day before to use the outlet for something else.

Once the rig was plugged in, things would be all set, he thought. But alas, he was on the wrong band and had his mode switch set to SSB and was going to have to move and retune. He changed frequencies and found the spot where the other net members were gathering waiting for the net to begin. He glanced at the meters as he loaded the rig. But some-



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thing was wrong. Needles did not behave as they had all the other times he had tuned up and each time he tried, he grew more hurried and frustrated. A glance at the SWR bridge in the line showed an astronomical SWR. Then, sheepishly, Murphy remembered he had forgotten to switch antennas.

Finally, he was able to begin the net a bit late, but not too bad, considering. It would probably be a light traffic night, with not terribly many check-ins, he thought as he settled back in his chair to at last sip the coffee he'd brought down with him. He wrote check-ins with one hand and used the other, when not holding the cup, to work the key. Such was not the case. Check-ins were numerous. There were not only the usuals — those folks who always made the net, but there were several new folks who did not know net procedures and who, by their questions, had apparently not passed traffic before, either. And then there were a few guys he hadn't heard for a coon's age. Since things were getting kind of hectic, Murphy reached for his tape recorder to catch what he couldn't write down. When traffic was passed to him or when others were passing traffic on frequency, it was a good backup.

Some folks had checked in with traffic for him, so it wouldn't hurt to have the recorder on standby. But when he pushed it, he got the same results as he had when he first turned on the rig. Nothing. This had obviously been unplugged, too. Oh well, there were batteries. But they were upstairs in the junk drawer. His wife had bought a bunch of batteries for various gadgets around the house, and he'd never gotten around to putting them in the recorder. Oh well, he'd have to write.

He grabbed the pencil and hurriedly began writing down an address of a net regular who had just moved as it was being transmitted. Sure enough, the lead snapped. Murphy fumbled in his desk for a spare. Finally, he was settled and starting to relax.

As he began giving one of the new check-ins information, he heard the phone ring and his wife shouted down to him shortly thereafter, "Can you take a phone call?"

"No!" he thundered back. "But it's long distance," came the reply.

"Just find out who it is, and I'll call back later." Murphy apologized to the net for his seemingly sloppy first.

His daughter then appeared and sweetly presented him with a piece of the special dessert she had made for him. "Thanks, honey," he said, and in one breath he hollered at her to "get this out

of here" as his hand found itself buried in mounds of creamy chocolate goo.

He wiped as much of the sticky concoction as he could on his good trousers, not having a rag handy, and reached for the key to continue the net, hoping that nothing would permanently get stuck to the key, since his fist was still a mite sticky.

Things rolled along smoothly until it was time for him to close the net. Then Ralph, the family cat who had shown no interest in either Murphy or the ham radio for five years, decided it was time to play. Murphy tried to shoo the cat away from the rig and out of his lap where the cat was using Murphy's body

as a step ladder, only to bump the VFO and send a series of uncoordinated dits and knock over his cup of cold coffee, still sitting on the desk, so that its contents spilled over his notebook.

He quickly got back on frequency and gave a hasty 73 call to all. As he was getting up to grab something to soak up his spilled coffee and move his papers to drier terrain, his wife hollered down the steps, "Is something burning down there?" He sniffed and did detect a slight odor. There was nothing amiss with the rig until he realized that a cigarette he had lit and forgotten about had slipped into the wastebasket where it was beginning to smolder. After the fire had been

successfully quenched and the desk cleaned up, Murphy realized someone was calling him. Sitting down at the key he was told, "Thanks a lot for taking the net tonight. I got a slightly late start and you picked it up for me. That's great." It was Dick.

"I thought you were going to be gone tonight," said Murphy.

"No, that's tomorrow."

We at the Courage HANDI-HAM System like to keep in mind that you never know what the guy at the other end of the net or QSO is doing, and that every ham is — at one time or another — what you might call handicapped! □



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Ron Flynn, KB8LU

Beginning on 01 January 1984, I agreed to take on some additional responsibilities and serve as the managing editor for the new magazine **SSTV TODAY**. As most of you know, I am semi-retired and have a lot of free time. My work for **SSTV TODAY** is strictly voluntary and I'll receive no pay or other compensation. By the way, I do get paid for writing this column. I will continue writing this column on a regular monthly basis.

I had another topic which I was going to write about in this month's column, but a couple things came up during the last week of January which I thought were more important and needed to be addressed here.

The color computer

I got a call from Bill Jorgenson in Florida, who regularly reads this column. We talked for nearly an hour, on his nickel, about all the various SSTV

systems. Bill has an old P-7 and copies 8-second B&W SSTV. He's as confused and cautious as I suspect many of you are about all the new SSTV formats and systems. He wants to upgrade to color, but doesn't know which way to go. Sound familiar? We had a nice talk, and I made no specific recommendations to him; we just discussed the pros and cons of everything.

We talked about the several dedicated scan converters that are commercially available for either B&W or B&W/color SSTV. We agreed that scan converters were convenient and of excellent quality. You can just about take them home, plug them in and be on SSTV. The dedicated scan converter is limited, however, to the specific SSTV formats which are built into it, unless modifications can be performed.

Next, we started talking about what he really wanted to discuss — the TRS-80C computer for SSTV use. We recounted the promises and developments that have occurred over the past two years in regards to the TRS-80C.

The developments and progress toward a complete SSTV system have come very slowly. The quality of the displayed color picture with a TRS-80C system still does not equal that of early experimental color SSTV of three years ago.

Finally, a year and a half after the supposed introduction of a camera interface for the TRS-80C, none is yet available. It is still not a complete stand-alone SSTV system.

There is the versatility of computer SSTV systems to change the software to copy the various SSTV formats being sent. Unless you are pretty good at programming, you must rely on the software developers to do this. The Magnum system, described in last month's column, supports virtually all popular SSTV modes, including the new Robot color. The K6AEP software, as yet, does not include the Robot color format.

Aside from the new Magnum system, which is basically a dedicated SSTV system for the TRS-80C, Bill wanted to know if I had heard from anyone at all who has put together, from the various interfaces and boards available, a stand-alone SSTV system for the TRS-80C without any hassles, problems, or faulty material or documentation, and have it work perfectly without seeking any help or assistance. You see, Bill listens a lot on the air and knows pretty much what is going on.

In answer to his question, I told him I had not. I don't think Bill had realized that most of the SSTVers running the

TRS-80C are using another scan converter along with it, to have a complete system. To be fair, however, people don't take the time to write me or call about something when everything is rosy and going great. They want me to know what problems they are having and why, and if anyone else has encountered the same problems.

I promised Bill I would mention this in my next column. If you have put together a stand-alone SSTV system for the TRS-80C without problems or difficulties and without seeking help, please write and let me know. I'll pass it along to Bill and to everyone else via this column.

SSTV contest

An SSTV contest was held on the amateur bands the weekend of 21-22 January 1984, sponsored by A-5 Magazine. I was aware there would be a contest because the various SSTV nets which meet on the weekend had been cancelled. I personally don't think very much of any contests on the amateur bands, and have never worked one. Have you ever tried to keep a schedule, pass traffic or just work some SSTV on a weekend with a contest going on?

Anyway, during SSTV contests there isn't usually too much contest activity. After the first few hours, you can usually just send video and ragchew with your non-contester friends with no difficulty.

Contests, especially SSTV ones, are supposed to be fun and enjoyable. I got on 14.230 during that contest weekend and found chaos. SSTVers were climbing all over each other, clamoring for contacts. It was like a no-holds-barred DX pileup. Several SSTVers asked me if I copied their video. The video I saw, I acknowledged seeing, but made no two-way contacts. Several said that didn't matter, they'd put me down anyway.

What was all the commotion about? It

didn't take long to determine that the first prize in this contest was a \$100 piece of SSTV equipment. During and after the contest, several people on 20 and 75 meters questioned this large valued first prize. What about compensation for use of your Amateur Radio station, contest or otherwise? Should SSTVers be lured and induced into pulling all the dirty tricks of a DX pileup to earn a \$100 first prize in a contest? The fun of the contest goes out the window. Besides a little ill will and frustration that developed, might not a \$100 prize create a temptation to cheat a little?

A couple of days after the contest, I decided to call the FCC and see what the official story was in this regard. I called the FCC's Private Radio Bureau in Washington, D.C. This agency interprets the rules and regulations of the Amateur Radio Service. The switchboard girl said mine was not the first call on this matter and routed me to John Johnston, W3BE. We discussed rule 97.112, no remuneration for use of station.

As this rule applies to contests and was interpreted by Johnston, any prize for a contest more than simply a certificate and/or your name and picture in the sponsoring magazine, would be considered material compensation and a violation of this FCC rule. Therefore, prizes of Amateur Radio equipment or even subscriptions to magazines would be interpreted as remuneration and an illegal use of your Amateur Radio station.

This is a bad precedent, especially for SSTV, and should not be allowed to happen again. The SSTV community has enough confusion and turmoil without bringing the rest of the Amateur Radio community and FCC down on us. The sponsor of this contest made a mistake in offering prizes of value. The prizes should be withdrawn immediately.

73s, Ron Flynn, KB8LU, Rt. 2 Box 204, 67th St., Bangor, MI 49013.

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SSTV magazine

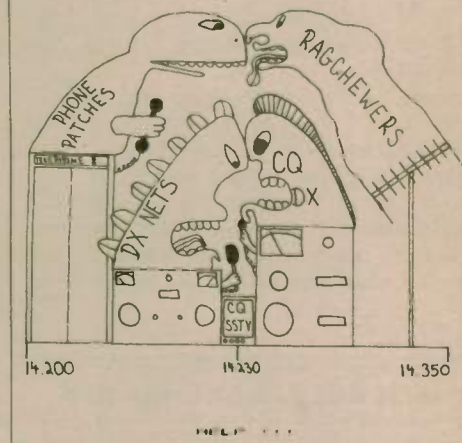
SSTV TODAY is the name of a new magazine now being published. **SSTV TODAY** is the first magazine devoted entirely to slow scan television (SSTV). It was founded by active interested SSTVers at the 1983 Dayton Hamvention. The first issue was published in August 1983.

Regular features in each issue include "SSTV News" and "On The Air" columns and a "Who's Who in SSTV" feature. SSTV mods are regularly published. Each issue has feature articles written by today's most active SSTVers.

SSTV TODAY is published monthly (12 issues per year). Subscriptions are \$8 per year in the United States, \$12 per year for Canada and Mexico, and \$26 per year for all other countries. A sample copy of **SSTV TODAY** can be obtained for \$1 by writing to **SSTV TODAY**, P.O. Box 39, Bangor, MI 49013.

SSTV TODAY

VOLUME 1 NUMBER 4 NOVEMBER, 1983



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Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Replacement plug-in tone cards

Communications Specialists introduces the TS-32MSTII, a plug-in encoder-decoder which directly replaces the factory tone board in GE Mastr II mobiles. Use of this board cuts installation and service time to a minimum, thereby reducing down time and service costs.

The TS-32MSTII uses a TSU-32 on a plug-in "mother" board which mates with the existing tone socket in the radio. At \$68.95, the TS-32MSTII is much lower in cost than the original factory tone board.

Communications Specialists introduces the TS-32MCR, a plug-in encoder-decoder which

directly replaces the factory tone board in Motorola Micor mobiles. Use of this board cuts installation and service time to a minimum, thereby reducing down time and service costs.

The TS-32MCR uses a TSU-32 on a plug-in "mother" board which mates with the existing tone socket in the radio. At \$68.90, the TS-32MCR is much lower in cost than the original factory tone board.

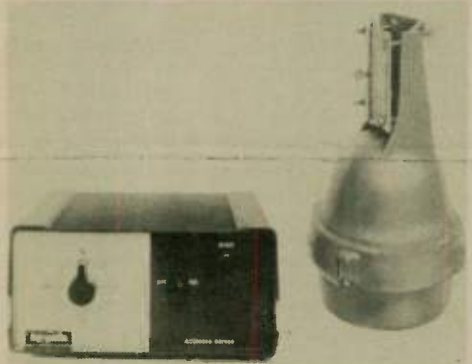
For more information on these and other direct plug-in boards, contact Communications Specialists, Inc., 426 West Taft Ave., Orange, CA 92665. Call (800) 854-0547 or (714) 998-3021 outside continental United States.

Microphone elements

In response to the serious DX and contest operators, the engineers at Heil Sound introduce the HC-4, "The DX Dream Machine" microphone element.

This new "Key Element" has a 10dB peak at 2000 Hz and the low-end response is rolled off sharply at 12dB per octave under 500 Hz. The HC-4 provides excellent clarity and articulation for getting through the noise and pile-ups.

The size is a bit smaller than the original HC-3 and will match most low-impedance inputs. Frequency response: 500-3800 Hz; Sensitivity: -66dB; Impedance: 2,000 ohms; Polar pattern: cardioid pattern forward; Price: \$22.95.



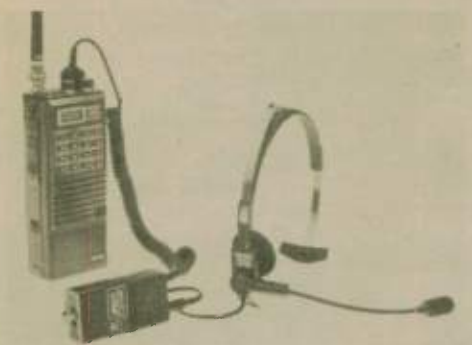
Antenna rotator

Telex/Hy-Gain introduced the HAM-SP rotator designed for visually impaired Amateur Radio operators.

The control unit functions are marked in both braille and conventional lettering. The unit also emits a high frequency tone to indicate rotator action. Since the brake release as well as delayed brake engagement is automatic, operation of the rotator is a simple one-hand, one-touch operation to aid the blind.

When mounted inside a tower, the new HAM-SP rotator is designed to operate large antenna arrays up to 15 square feet (1.4 m²) wind load area. The HAM-SP (Catalog No. 307) carries a suggested list price of \$337 and is available at Amateur Radio dealers.

For more information, write to Telex Communications, Inc., 9600 Aldrich Ave. So., Minneapolis, MN 55420.



Headset, switchbox

ICOM introduces the IC-HS10 Headset and IC-HS10SB PTT Switchbox, which can be used with all ICOM hand-held transceivers: the IC-2A and 2AT; IC-3A and 3AT; IC-4A and 4AT; IC-02A and 02AT; and IC-04A and 04AT.

The easy-to-use system has the following features:

IC-HS10 Headset — crystal-clear reception; pivoting microphone; lightweight; adjustable boom; folds up for safe and compact storage; adjustable for comfortable fit.

IC-HS10SB PTT Switchbox — compact size (3"H x 1.5"W x .75"D); belt clip; provides transmit-receive switching control; mic gain control; molded plastic connector for speaker/mic connection to hand-held.

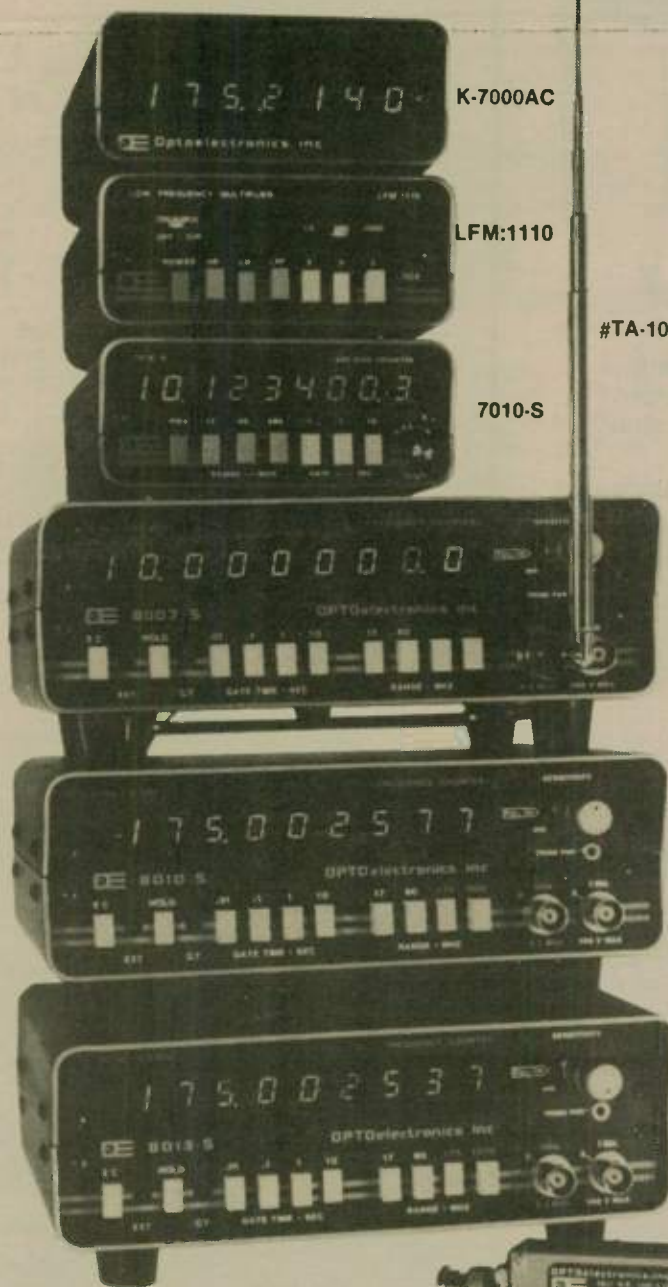
The IC-HS10 Headset and IC-HS10SB PTT Switchbox are available immediately and may be purchased separately. The suggested retail price for each is \$19.50, or \$39 for the set.

Order from ICOM AMERICA, INC., 2112-116th Ave., NE, Bellevue, WA 98004; (206) 454-8155; TELEX: 152210.

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#K-7000-AC counter assembled 115VAC/12VDC \$150.
#K-7000-ACK counter kit form 120.
#Ni-Cad-70S internal Ni-Cad battery pack 25.

MODEL LFM:1110 Low frequency multiplier. A frequency counter accessory enabling tone frequencies to be counted faster and more accurately. Has low pass filter for off-the-air. Tone-squelch measurements. BNC input/output.

#LFM:1110 115VAC/12VDC \$150.

MODEL 7010-S 10 Hz to 600 MHz counter. 50 Ohm & 1 megohm inputs via BNC type connectors on rear panel. ±1 PPM TCXO standard ±0.1 PPM TCXO time base optional for greater accuracy. 10 mV average sensitivity. Very compact 6 1/2 digit counter: Size 2" H x 4" W x 5" D, 1 lb.

#7010-S 600 MHz counter 115 V AC/12 V DC \$235.
#TCXO-80 ±0.1 PPM TCXO time base 75.
#Ni-Cad-76 Internal Ni-Cad Battery Pack 25.

MODELS 8007-S, 8010-S, 8013-S Deluxe series with frequency ranges of 10 Hz to 700 MHz, 1 GHz and 1.3 GHz. Standard features include: external clock input/output, excellent sensitivity, sealed ±1 PPM 10 MHz TCXO time base, 4 gate times, 9 digit resolution to 175 MHz, front panel power jack for optional Broadband Preamp accessory, 115 V AC or 12 V DC operation, high quality compact construction housed in rugged aluminum cabinet. Optional features: internal Ni-Cad rechargeable battery operation, precision ±0.1 PPM TCXO or ±0.05 PPM proportional oven (OCXO) time base. All time base oscillators, including the standard TCXO, have 10 turn calibration adjustment accessible from rear panel. Size 3" H x 7 1/2" W x 6 1/2 D. 2 3/4 lbs.

#8007-S 700 MHz counter \$350.
#8010-S 1 GHz counter 425.
#8013-S 1.3 GHz counter 495.

OPTIONS:
#TCXO-80 ±0.1 PPM TCXO time base 75.
#OCXO-80 ±0.05 PPM (prop. oven) OCXO time base 125.
#Ni-Cad-86 Internal Ni-Cad battery pack 60.

MODEL AP-8015-A Broadband Preamp with 25 dB nominal gain from 1 MHz to 1 GHz, 10 dB gain at 1.3 GHz. Noise Figure less than 5.5 dB. supplied with AC adaptor or may be powered from power jack on 80XX-S series counters.

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		FREQ	STAB-DESIGN	BELOW 500 MHz	ABOVE 500 MHz		12 MHz	17 MHz	60 MHz	175 MHz	MAX FREQ				
K-7000-AC	550 MHz	5.24288	±1 PPM-RTXO	15 mV -24 DBM	N/A	(2) .1, 1 SEC	10 Hz					No	No	Yes	No
7010-S	600 MHz	10.0 MHz	±1 PPM-TCXO	10 mV -27 DBM	20 mV -21 DBM	(3) .1, 1, 10 SEC	.1 Hz	1 Hz	10 Hz			Yes	No	Yes	No
8007-S	700 MHz	10.0 MHz	±1 PPM-TCXO	10 mV -27 DBM	20 mV -21 DBM	(4) .01, .1, 1, 10 SEC	.1 Hz	1 Hz	10 Hz	10 Hz	Yes	Yes	Yes	Yes	
8010-S	1 GHz		±0.1 PPM-TCXO												
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The newly designed HC-5 "Key Element" from Heil, Ltd. is a special element designed small enough to fit right inside of the ICOM SM-5 and SM-6 desk microphone.

The HC-5 has been designed to have maximum speech articulation for getting through the noise and pile-ups and adds tremendous clarity to the new series of ICOM transceivers.

Traffic

(continued from page 33)

to sing the praises of CW! Is it this proposal that is responsible for more activity in our CW bands too? Or maybe it's just that there are more amateurs on the air. Anyway, the CW bands sound more congested of late. And many CW nets are hearing new calls, new stations checking in. Or sometimes old-timers returning to the traffic game.

They are welcome, no doubt about that, and we don't hesitate to tell them so. One way to show our appreciation of the newcomers, however, should not be forgotten. Many are still marginal CW operators, for whom 20 or 25 wpm is an unintelligible blur of code. And yet some nets, while expressing a welcome to new members, tell them (because of their high-speed code) members are unwelcome, and soon find that the new check-ins depart in discouragement.

There is seldom any need on most CW nets for carrying on the net business, such as check-ins and dispatching traffic, faster than say 15 wpm. Stations actually passing traffic, particularly if sent off the net frequency, operate at any speed comfortable to the operators. But on the net frequency, the net control station should set the example; and send slowly enough so that all the net members can follow.

Sure, Joe is an old-timer and will understand you if you send him instructions at 30 wpm, but the slower operators would like to know what you're saying too. And what time did you save? Enough to make two more net calls that nobody answered? If you want to save time, don't send fast; rather, have things organized so that people don't have to wait for you to make up your mind what you're going to do next.

The pre-amp section of the original ICOM microphone is used as normal. The dynamic HC-5 just replaces the original electret cartridge in the SM-5. Very easy to install.

Frequency response: 350 - 4000 Hz; Sensitivity: -68dB; Impedance: 2,000 ohms; Polar pattern: cardioid pattern forward; Price: \$22.95.

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For your free copy of this attractive new catalog, call 716-392-9430 or write to Hamtronics, Inc., 65F Moul Rd, Hilton, NY 14468. (For overseas mailing, please send \$2 or 4 IRCs.)

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DX-YL to North American YL

All licensed women radio amateurs throughout the world are invited to participate in the upcoming DX-YL to North American YL contest. The CW portion begins Saturday, 07 April, 1800 UTC and ends Sunday, 08 April, 1800 UTC. The Phone portion lasts from 1800 UTC, Saturday, 14 April to 1800 UTC, Sunday, 15 April.

Procedure: DX YL's call "CW North American YL", and North American YL's call, "CQ DX YL".

Operation: All bands may be used. No crossband operation. Net contacts, repeater contacts and contacts with OM's do not count. Stations may be worked and counted once on each band and mode.

Exchange: Station worked, QSO number, RS or RST, state or country. Entries in log must also show time, band, date and transmitter power.

Scoring:

A) Phone and CW will be scored as separate contests. Submit separate logs for each contest.

B) DX YL's, including Hawaii and Alaska, may contact all the North American continent, which includes the 48 contiguous states and Canadian provinces.

C) Contestants on the North American

continent (including the 48 contiguous states and Canadian provinces) may contact DX YL stations, including Hawaii and Alaska.

D) A station may be counted once on each band for credit, and 1 pt. is earned for each station worked once on each band.

E) Multiply the number of QSO's by the number of different states and provinces or countries worked. A multiplier is counted only once in the contest. It is not counted on each band.

F) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of (E) by 1.25 (low-power multiplier).

Logs: All logs must show state or country to qualify for awards. Do not send carbon copies of logs. Please print or type. Logs must be signed by the operator, and no logs will be returned. Remember to file separate logs for each contest. Logs must show claimed score and be postmarked by 29 April 1984 and received no later than 24 May 1984, or they will be disqualified.

Please send logs to: Marilyn Backys, WB9TDR, 3930 N. Firestone Dr., Hoffman Estates, IL 60195.

Duplicates: For each duplicate contact that is removed from the log by the vice president, a penalty of 3 additional and equal contacts will be exacted.

Awards: Cup to 1st place DX Phone; Cup to 1st place N.A. Phone; Cup to 1st place DX CW; Cup to 1st place N.A. CW. Plaque to highest combined CW and Phone DX score; Plaque to highest combined CW and Phone N.A. score. 2nd and 3rd place DX and N.A. winners in each contest will receive certificates.

Suggested contest frequencies

Several members have requested that spotter frequencies be designated to make it easier to find participants in YLRL contests. The following list of frequencies has been compiled. Factors considered were Nov-

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ice/Technician availability, avoidance of known interference to other activities (i.e., RTTY and SSTV calling frequencies), and similar frequency spreads on the different bands.

Please study the list and make any recommendations for change or suggestions to the YLRL Vice President, Marty Silver, NY4H, 3118 Eton Rd., Raleigh, NC 27608. Contest contacts would not be limited to these frequencies; they would be listed only to help contest participants locate other contesters.

CW: 80 — 3.540 - 3.570, 40 — 7.040 - 7.070, 20 — 14.040 - 14.070, 15 — 21.180 - 21.210, 10 — 28.180 - 28.210. SSB: 80 — 3.940 - 3.970, 40 — 7.240 - 7.270, 20 — 14.280 - 14.310, 15 — 21.280 - 21.310, 10 — 28.580 - 28.610. □

QRP ARCI April QSO Party

The QRP Amateur Radio Club, International (QRP ARCI) announces its annual April QSO Party, to be held the third weekend of April — 21-22 April.

This will be a CW contest, running from 1200 UTC, 21 April until 2400 UTC, 22 April, with a total operating time of 24 hours allowed. The contest is open to all amateurs worldwide, and membership in QRP ARCI is not required either for entry or for the winning of any contest awards.

The only eligibility requirement for awards purposes is that all entries be from stations operating a power level which does not exceed 5 watts output. Stations operating more than 5 watts output will not be scored; however, they may participate and their logs, if submitted, will be used as check logs.

Exchanges: Members give RST, state/province/county and QRP ARCI membership number. Non-members give RST, state/province/country and power output.

Stations may be worked once per band for QSO multiplier credits. Each member contact 5 pts. regardless of location. Each non-member U.S. or Canadian contact 2 pts. Each non-member contact other than W/VE counts 4 pts.

Multipliers: 4 to 5 watts output × 2; 3 to 4 watts output × 4; 2 to 3 watts output × 6; 1 to 2 watts output × 8; less than 1 watt output × 10; more than 5 watts output counted as check logs only.

Bonus multipliers: If 100 percent natural power (solar, wind, etc.) with no storage, × 2. If 100 percent battery power, × 1.5.

Scoring: QSO points (total all bands) × total number of states/provinces/countries (an s/p/c may be worked on more than one band) × power multiplier × bonus multiplier (if any) = claimed score. Send a large SASE or IRC's to contest chairman for scoring summary sheet in advance of contest.

Suggested frequencies: 1810, 3560, 7040, 14060, 28060 and 50,360 kHz; *Novices and Technicians* — 3710, 7110, 21110 and 28110. No 30-meter (10.1 MHz) contacts will be counted.

Calling method: CQ CQ QRP DE (call sign). **Awards:** Certificates to highest scoring station in each state/province/country with two or more entries. All entries are automatically considered for the Triple Crowns of QRP Award.

In addition, Adrian Weiss, W0RSP, is sponsoring a special MILLIWATT certificate to be awarded to the highest scoring station in the less than 1 watt category, provided that there are two or more entries in that power category.

Logs: Suggest use of separate log sheets for each band for ease of scoring. Send full log data plus separate worksheet showing details and time(s) off the air. No log copies will be returned. All entrants desiring results and scores please include a large SASE or IRC's.

It is a condition of entry that the decision of the QRP ARCI contest chairman is final in case of dispute.

Deadline: Logs must be received by 21 May 1984; logs received after that date or missing information will be used as check logs. *Make sure your call sign is written on the top margin of every page (logsheets, summary sheet, time-off worksheet, etc.). You submit just in case they should become separated during scoring!*

Send all material to: QRP ARCI Contest Chairman Eugene C. Smith Jr., KA5NLY, 16 Fairmont Dr., Little Rock, AR 72204. □



Colorado

The ROCKY MOUNTAIN DIVISION ARRL Hamvention and conference will be held 25-27 May 1984, at the Holiday Convention Center (I-70 and Chambers Road), Denver-Aurora, Colorado.

Conferences on subjects such as propagation, UHF-VHF, ARES, DX'ing, antennas, awards, mobile installation, packet radio, HF and trouble-shooting will be held. An indoor-outdoor swapmeet will be held Friday through Sunday; dealer showroom all three days. Also featured will be a Saturday banquet, Sunday brunch and prizes galore.

Registration fee is \$5 in advance, \$7 at door. For registration info, contact Colorado Section Manager Bill Sheffield, KQ0J, 1444 Roslyn St., Denver, CO 80220; (303) 355-6400 or 355-2488. □

Illinois

The 18th Annual ROCK RIVER ARC Hamfest will be held on Sunday, 08 April, at the Lee County 4-H Center, one mile east of junction 52 and 30. Camping space available at nominal charge. Tables available (8 ft.) at \$5. Advance ticket donation \$2, at the gate \$3. Lots of prizes, and there will be an auction for amateur-related gear.

Doors open at 8:00 a.m. for the general public, main drawing at 3:00 p.m. Breakfast and lunch will be served.

Talk-in on 37/97 repeater. For more information or advance tickets or tables, write to or call Shirley Webb, KA9HGZ, 618 Orchard St., Dixon, IL 61021; phone (815) 284-3811. Advance tickets available until 01 April 1984. □

Massachusetts

The WELLESLEY AMATEUR RADIO SOCIETY is conducting its annual auction on Saturday, 14 April, at the First Congregational Church of Wellesley Hills, 207 Washington Street, at the intersection of Routes 9 and 16, Wellesley, Massachusetts.

Talk-in on 63-03, 04-64 and 52.

Door open at 10:00 a.m. and the auction begins at 11:00 a.m. Contact Kevin P. Kelly, WA1YHV, 7 Lawnwood Place, Charlestown, MA 02129. □

Michigan

The SOUTH EASTERN MICHIGAN AMATEUR RADIO ASSOCIATION (SEMARA) will hold its 26th annual hamfest swap-and-shop on 08 April, 8:00 a.m. to 3:00 p.m., at the Grosse Pointe North High School. The school is located at Vernier Road between Mack and Lakeshore.

There will be ample parking and plenty of good food. Door prize, cash prize and grand prize drawings will be held. Advance admission \$1; \$2 at the door.

Talk-in on the SEMARA repeater, 147.75/15.

For further information, please send SASE to: SEMARA Swap and Shop, P.O. Box 646, St. Clair Shores, MI 48083. Or phone Pat Ninness, WD8QVL, at (313) 445-8651. □

Mississippi

The Capital City Hamfest/ARRL Mississippi State Convention, again sponsored by the JACKSON ARC, will be held at the Communications Workers of America Building (I-220 at Country Club Drive) from 9:00 a.m. to 5:00 p.m., Saturday and 8:00 a.m. to 1:30 p.m., Sunday, 14-15 April.

Top attractions include commercial dealer exhibits; a large indoor flea market; concessions; free parking (including self-contained RV's); as well as ARRL, MARS, VHF/UHF, Mississippi Sideband Net and other forums. Among featured participants will be ARRL Counsel Christopher D. Imlay, N3AKD; Delta Division Director Clyde Hurlbert, W5CH; and Mississippi Section Manager Tom Hammack, W4WLF.

Admission is free; flea market tables are available at \$5 each. Special hamfest rates are available at the Holiday Inn Southwest; contact hotel directly for reservations.

Talk-in on 146.16/76. For further information, contact Hamfest Chairman Carol Kemp, NA5Y, 3581 Beaumont Dr., Pearl, MS 39208; (601) 939-7612. □

New Hampshire

Springfest '84 — the 4th annual hamfest-flea market sponsored by the GREAT BAY RADIO ASSOCIATION — will be held on Saturday, 07 April, from 9:00 a.m. to 3:00 p.m. at the Rochester VFW Post 1772 Hall, Pickering Road, Rochester (Gonic), New Hampshire. Plenty of free parking. Food and refreshments available. Admission is \$1.

Talk-in on 147.57.

For advanced table reservations and further information, write Great Bay Radio Association, P.O. Box 911, Dover, NH 03820. □

North Carolina

The RALEIGH AMATEUR RADIO SOCIETY will hold its 12th Annual Hamfest and Fleamarket on Sunday, 15 April, at the Crabtree Valley Shopping Mall located at the intersection of US 70 West and US 1 and 64. Action starts at 8:00 a.m. Admission is \$4 at the gate, no extra charge for tailgaters. Tables will be available for rent. The entire shebang is covered. WX never a problem. Prizes galore plus special interest meetings, CW contest and homebrew contest. Lots of hotels, etc. nearby.

Talk-in on W4DW 146.04/146.64 and K4ITL 146.28/146.88 on Sunday, and on Saturday for early arrivals.

For more information, contact Pete Thacher, N4HQZ, (919) 876-4073, or Jim Bradley, WA4A00, (919) 851-2437, 6:00 to 8:00 p.m. weekdays or weekends; or write to RARS, P.O. Box 17124, Raleigh, NC 27619. □

Washington

The 5th Annual Inland Empire Swap Fest will be held Saturday, 28 April, at the Spokane Interstate Fairgrounds. The AMATEUR RADIO CLUBS OF THE INLAND EMPIRE are sponsoring the swapfest with the purpose of raising funds to continue our public service operations and to help make the general public more aware of the many facets of Amateur Radio.

There will be commercial and non-commercial displays, swap tables, contests, raffles, auctions, public service displays, collectors' displays, working amateur stations, slow-scan TV, a snack bar and much more. Admission is \$2, which includes a special door prize raffle ticket.

Talk-in on 146.34/94 and 52 simplex. For more information, contact Jan Thiemann, KA7DDU, 2201 N. Craig Rd., Spokane, WA 99204. □

Wisconsin

The MADISON AREA REPEATER ASSOCIATION, Inc. (MARA) is pleased to announce its 12th Annual Madison Swapfest, which will be held on Sunday, 08 April, at the Dane County Exposition Center Forum Building in Madison, Wisconsin. Doors will open at 5:00 a.m. for commercial exhibitors, 8:00 a.m. for flea market sellers, and at 9:00 a.m. for the general public.

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Admission is \$2.50 per person in advance and \$3 at the door. Children 12 and under are admitted free. Flea market tables are \$4 each in advance and \$5 at the door. Be sure to reserve early, as tables were sold out last year.

Talk-in on WB9AER/R, 146.16/76.
For reservations or more information, write to MARA, P.O. Box 3403, Madison, WI 53704. □

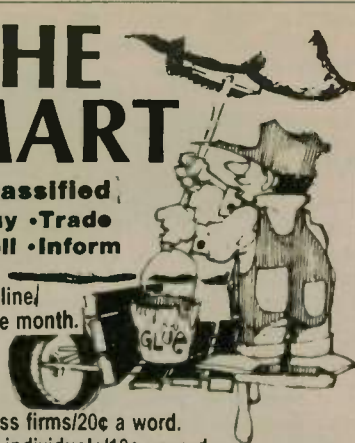
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