Worldradio

Year 12, Issue 7

January 1983 • 80¢

Scenes similar to this occurred all over the country this Christmas season. This one occurred as a result of Ralph Carbone (right), WA3QKM's suggestion that the Conemaugh Valley Memorial Hospital (CVMH) of Johnstown, Pennsylvania join the "Santa Claus Network." Don Rayner, W3CTR (left) helps a young patient of CVMH use the microphone to talk to Santa. The net has been so well received that the cable to the antenna was permanently mounted in the pediatric lobby ceiling, and Ralph and Don have vowed that as long as there are amateurs working at CVMH, the net will be an annual event.

Hurricane Iwa

Hams busy in Hawaii

Dean Manley, KH6B — ARRL Pacific Division Section Emergency Coordinator — has informed **Worldradio** that dozens of radio amateurs have been involved with emergency communications during the aftermath of Hawaii's worst disaster in history.

On 29 November — six days after Hurricane Iwa hit Kauai — Dean said the damage to Kauai had been estimated at $100 million. Oahu's damage was estimated at $40 million. (The hurricane which struck the islands in August 1959 caused damage amounting to $5 million, Dean stated.)

Most amateurs who were assisting, said Dean, were involved in organizing health and welfare nets for the benefit of Kauai residents. The main frequency being used was 7290 kHz — the Hawaii Emergency Net, but several other frequencies were also in use on 15 and 20 meters.

Amateur residents of all the islands have taken part in assistance operations. Some of the most active ones include Bill Baisley, KH6S, Emergency Coordinator for Kauai; Dave Schroeder, AH6K, Hawaii County Emergency Coordinator; Juan Lorenzo Jr., KH6JJC; Robbie Reneau, KH6JIB (Emergency Operations Center, Lihue, Kauai); Bob Ferguson, KH6NP, Honolulu County Emergency Coordinator; Rev. Don Phipps, KH6LO; Bill Heyde, KH6UU; Mel Fukunaga, KH6H, Maui County Emergency Coordinator; R.A. "Army" Curtis, AH6P; Bob Valencia, KH6HG; and Gene Clayton, AH6X.

Virtually all of Kauai's antennas were knocked down during the storm — including those belonging to the island's two broadcast stations. Only two storm-related deaths were reported on Oahu — none on Kauai.

In the hours preceding the hurricane's arrival, said Dean, KH6HG kept other operators informed until antennas were knocked down, after which KH6HG went to 2 meters locally.

Two meters has been used extensively throughout the islands, on repeaters and simplex. One week after the disaster, there were still pocket areas on Kauai and Oahu that were without power, and one of Oahu's major stations was still on generator power.

In addition to organizing health and welfare nets, amateurs assisted with two major phone patches. One was done on 24 November, mobilizing the National Guard. The other was made from Kauai to Hilo, Hawaii, asking for help from appraisers to assess damage costs.

Dean said that the main island of Hawaii had suffered heavy coastal damage from winds. Damage costs were estimated at $150,000. □

FCC issues 10 MHz citations

Amateur Radio operators are turning up on 10 MHz in big numbers, but (unfortunately) not all of them are keeping off of the *prohibited 10.109 to 10.115 MHz protected frequencies.* The Commission authorized 10 MHz (CW/RTTY only, 250 watts input) to the amateur community on a temporary basis effective 28 October (3:00 p.m. EDT), pending Senate approval of the WARC-79 treaty and FCC rulemaking which will determine final 30-meter ham band operation. The U.S. government actively uses a frequency (believed to be 10.112 MHz) on a daily basis and *American amateurs are interfering with this operation.* It is possible that some amateurs may not be aware of the forbidden 6-kHz zone. The intrusion of U.S. amateurs into the protected spectrum has caused the FCC to issue the following Public Notice (on 8 November).

"The Commission wishes to remind Amateur Radio operators who use recently authorized frequencies in the 10.100 to 10.109 MHz and 10.115 to 10.150 MHz bands that *they must stay off frequencies between those bands* to avoid interfering with government operations.

"Although a Commission Order adopted on 28 October 1982 made some frequencies in the 30-meter band — 10.100 - 10.150 MHz — available temporarily to General, Advanced and amateur Extra Class operators, *it exclud-*

(*please turn to page 35*)

Elevator blast brings ham aid

Robert Mitchell, WB0RJJ

At 4:37 p.m., Tuesday, 16 November, a thunderous explosion and fire destroyed the Raymond Co-op Grain Company elevator, taking the lives of four people and critically injuring three others. The Lincoln-Lancaster County Chapter of the American Red Cross (ARC) immediately dispatched trained volunteers to the chapter house and to the town of Raymond (pop. 180) — 15 miles northwest of Lincoln, Nebraska — to provide food, coffee and other disaster services to the residents and to the 200 firefighters, lawmen and Civil Defense workers.

The chapter's Disaster Services Direc-

(*please turn to page 35*)

STAFF
Armond Noble, N6WR
Chris Wilson, KA6TAL
Dianne Dunning
Norm Brooks, K6FO
David Tykol, WA6RVZ
Jack Schwartz, WA6TRZ

TM Worldradio
is published monthly by
Worldradio, Inc.
Offices at 2120 28th Street
Sacramento, CA 95818 USA
Telephone: (916) 457-3655

January 1983 Vol. 12, No.7

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.

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

Subscription rates: $9.00 per year, $17.00 for two years, $24.00 for three years and $90.00 for life; $2.00 extra per year for surface mail delivery outside the U.S. Overseas. Please remit international postal money order. IRCs and local currency will be accepted.

Second-class postage paid at Sacramento, CA.

Cable TV Interference Forum

Norm Brooks, K6FO

Leaking Cable TV cables have been much in the Amateur Radio news of late. Therefore it was no surprise that the ARRL Pacific Division Convention at Santa Cruz, CA should have a CATV Interference Forum 9 October 1982.

San Francisco Section Communications Manager Bob Smith, NA6T moderated the conference. He described the position addressed by FCC's RM-4040 which, if adopted, would deny the cable TV industry the use of amateur frequencies within their cables. He urged that the discussions at the forum address the problem, not personalities, and to keep names of systems out.

Christopher Imlay, N3AKD, Legal Counsel for ARRL, described the technical standards cables must meet. (For details of standards, see **QST** for September 1982, page 37.) They must be tested each year. Although a CATV system is described as a non-radiating system, there always seems to be some leakage. An operator of a CATV system that causes harmful interference shall promptly take measures to eliminate that interference, regardless of levels. But what is harmful interference? If your scanner stops on 145.25 MHz, that's *not* harmful interference. But an amateur repeater held up by a cable-emitted carrier would be harmfully interfered with.

George Sears, W6DFI was one of the CATV respondents. He has been with Gill Cable in San Jose for 17 years and is now Engineering Manager. He said the industry is not arguing with the rules of the FCC as stated by Chris Imlay. He said, "We're paid for complying." He described the system in San Jose. There are 96,000 subscribers. The company has 37 maintenance technicians. Four of these

Bob Smith, NA6T — Section Communications Manager of the San Francisco Section ARRL — moderated the CATV Interference Forum at the Pacific Division Convention, Santa Cruz, California, 9 October 1982.

are "tweakers." Their job is to sweep signals through the cables and adjust amplifiers to keep the system at a flat frequency response. In their work they find a lot of leaking joints.

He showed us a bundle of various kinds of cables used in the industry. Most are 75-ohm. They range in size from the size of your wrist to RG-59/U. They have the same trouble with squirrels chewing the cables that the telephone company has. But they also have trouble with human squirrels. In a recent case of leakage that was difficult to find, they found someone had drilled a hole in the cable, then inserted a pair of rabbit ears.

To find leaks the company has come up with an interesting gimmick. They transmit a carrier on 117 MHz, tone-modulated with touchtone 1 on system A and touchtone 3 on system B. All trucks have 117 MHz receivers on at all times. When they drive down any street, a light comes on if a signal is detected. They know which system it is from the tone. Of course, they do the proof test once a year as required by FCC, but they are really testing every day. The company uses an IBM System 3 computer to log trouble calls. A maintenance tech is dispatched first. If a construction truck is needed, he calls for it.

Amateurs are not the only ones plagued by cable leakage. The TV viewer is, too. For example, TV Channel 3 is on the air and also in the cable. The two signals are not phase-locked. If there is a cable leak, you'd see ghosts on the picture if you're a cable subscriber. You'd see venetian blinds if you are getting the signal off the air near the leak.

Wayne Sheldon — 6th District Director of CATA (Cable TV Assocation), which represents small cable TV operators — spoke. He vowed, "If we're causing interference to anybody, it has to be cleaned up."

Pete Venovich of Viacom Cable was the next representative of the industry. His company has 600,000 subscribers nationwide. He said his company only recently heard of amateur operators for the first time. An amateur in Oregon reported interference to the FCC, blaming the cable company. Investigation by Viacom proved it to be a business computer nearby.

Pete showed the audience the complexity of cable shielding and connectors. Two-way cable drops require shield made up of foil, braid, foil, braid. Where the service is one way, they use double foil and single braid so connector joints will be simpler, therefore better.

Cable companies are now prohibited from using their channels A and B, which

(Continued on page 3)

Christopher Imlay, N3AKD, ARRL Legal Counsel, addresses CATV Interference Forum at Santa Cruz.

CONTENTS

FEATURES

COLUMNS

SUBSCRIBE TO WORLDRADIO; see page 9

Emergency Communications Forum

Norm Brooks, K6FO

"The hams have saved my butt so often that I decided to become a ham." These were the opening words, spoken by a Red Cross official, at the Emergency Communications Forum, ARRL Pacific Division Conference, Santa Cruz, California, 9 October 1982. The Red Cross official was Jim Begansky, N6GWS. He said the flood in Duncan, Arizona clearly brought the value of Amateur Radio home to him. Water broke through the dike and literally wiped out the town. When rebuilt, the town was relocated on higher ground.

Jim played three one-minute segements from a longer tape of amateur communications during the flood. He had sent in a nurse and a shelter manager to set up in a high school, which was the only building left standing out of the water. "Water is only 25 feet from our door," the tape said. "We know there will be another crest. We need blankets and fresh water. What do you suggest? All the roads are out." This was the nurse speaking to the Red Cross in Phoenix via 2 meters.

In another segment, "We need more drivers. We don't have towels or anything," said the nurse. When asked for a number to call, she responded, "Just contact this gentleman (WA5SRO) with the radio — that's all we have."

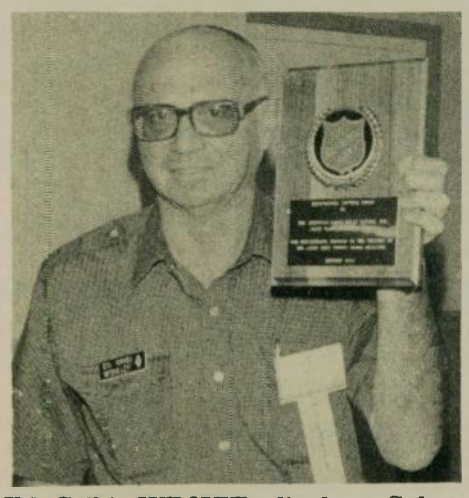
A councilman from Duncan, Arizona spoke to the governor of Arizona via the 2-meter repeater. "Governor, we're in dire need of security. We have had help from neighboring communities, but our law enforcement officers need help." The governor asked for more details. He responded "Governor, we are just worn out. We need help to secure the area, to prevent looting. The only communications system that is operational is the one you are talking over at this time — the system of the Amateur Radio operators. The telephone system is out."

The voices clearly indicated the seriousness of the emergency. The group agreed that portions of the tape should be made available to amateur public relations people to publicize Amateur Radio in its proper light.

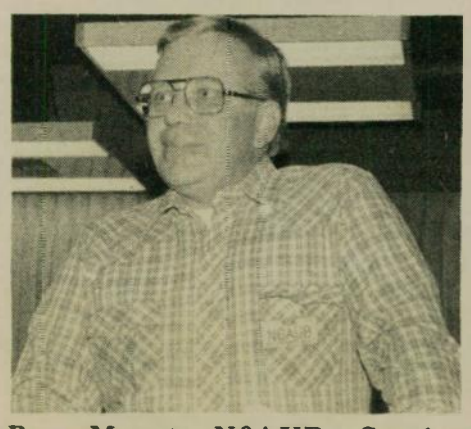
Doc Gmelin, W6ZRJ announced the Northern California Traffic and Emergency Association has been reorganized and is working. There are no dues — just quarterly meetings. Everyone interested can talk about mutual problems through clear channels of communication.

Ron Menet, N6AUB announced a new emergency workbook is on the way. The material is collected. All it needs is writing. Ron feels the work should be done by the paid staff at ARRL Headquarters.

One of the problems faced by emergency communicators is a desire for standardization of microphones and connectors. However, this is really a technical problem.



Ed Gribi, WB6IZF displays Salvation Army Award which reads Meritorious Service Award to The American Radio Relay League, Santa Clara Valley Section for outstanding service to the victims of the Santa Cruz County flood disaster of January 1982.



Ron Menet, N6AUB, Section Emergency Coordinator for the Sacramento Valley Section; Emergency Advisory member of the Pacific Division staff; and a member of the ARRL Technical Advisory Committee for Emergency Communications.

A training program is being discussed for emergency operators. They would review the thousands of emergencies that are taking place all over the United States. A certificate would be given for an Official Emergency Station. Although some questioned the need for a certificate, all agreed some training is necessary.

John Carroll, AB1Z suggested a national emergency alerting frequency be established. 145.695 is being looked at, as it is not being used for anything else. He told about a kit being offered by Metheny Corporation of Madison, Wisconsin. It uses one or two tonepad frequencies to open a speaker. The price is in the vicinity of $15.

Harold Conover Jr., N6BRT — Emergency Coordinator for western Contra Costa County — told how the Salvation Army division headquarters in San Francisco could talk to no one in a recent emergency drill. They are now convinced Amateur Radio is the way to go. Here are cities the Salvation Army would like to have both 2-meter and HF stations (they are willing to pay part of the cost of equipping): Bakersfield, Eureka, Fresno, Monterey, Redding, Redwood City, Stockton, Reno (Nevada), Richmond, Sacramento, San Francisco, San Jose and Santa Rosa. Emergency Coordinators and Section Emergency Coordinators in those areas are asked to get in touch with N6BRT.

Bob Dyruff, W6POU — Section Communications Manager of Santa Barbara Section — would like to see the 5 to 10 percent "doers" in Amateur Radio join one organization rather than be fractionated between MARS, RACES and ARES. He said RACES isn't the answer. In a recent emergency drill, it took RACES three hours to get one HF circuit into Sacramento.

Most agencies want hard copy, and some have purchased Apple computers with printers. They will work on telephone lines and microwave. Will they work on Amateur Radio? Another problem: We want to serve the OES (Office of Emergency Services), which some people have not even heard of.

Don Simon, NI6A, Section Traffic Manager, East Bay Section

Walt Read, W6ASH — at the Emergency Communications Forum, Pacific Division ARRL Convention — described how he set up an emergency communications center in his living room and handled health and welfare traffic during recent Santa Cruz floods.

Don Simon, NI6A — Section Traffic Manager, East Bay — explained that health and welfare traffic does not carry a very high priority in an emergency. He has a net on 3907 kHz at 2000 hours local time on the last Thursday of each month. This is an operational coordination frequency. Don lauded HF operation because transceivers are readily available, they operate off standard 12 volt batteries, and repeaters are not needed. □

ARES merits courtesy

The Amateur Radio Emergency Service (ARES) is an ARRL-sponsored facet of Amateur Radio that is composed of licensed amateurs who have voluntarily registered their qualifications and equipment for communication duty in the public service when disaster strikes.

The radio amateur best justifies his existence by the service rendered to the community in times of disaster and distress when normal communications media are not available, have failed or are badly overburdened. The pleasure derived from the pursuit of this hobby during normal times establishes a debit that the amateur offsets only by his steadfast determination to be prepared and willing to be of assistance when disaster strikes.

Please give your utmost courtesy and cooperation should you find an ARES net while you are operating.

—Interstate Repeater Society, Nashua, NH □

Cable TV

(continued from page 2)

use the same frequencies as Federal Aeronautics Association. In some areas, his company has petitioned the FCC for a waiver to use those frequencies.

Contour maps have been set up to show CATV systems which TV stations must be carried in their system. This would also apply to the upcoming low-power TV stations.

One of the biggest leakage problems is caused by the subscribers themselves. When a subscriber tries to hook up a second TV to the cable, his workmanship on the cables can set up conditions that radiate the cable signals. As the companies go around and monitor, they find this more often than not.

In summary, the CATV industry is saying this: They are making quite an effort in hardware to keep their systems tight. CATV shares frequencies with *somebody*, no matter what channel you're referring to. They are working hard to keep peace with everyone. They want to settle problems locally. Things bog down when they get to the top. Peer pressure within the industry will help get problems solved locally. It's not just CATV; this is now an RFI world. In addition to computers, which radiate RF, how about that Subaru letter in QST? □

Gypsum burns

Ralph Swanson, WB6JBI

Gypsum does burn, at least when the gypsum involved is the Gypsum Canyon area of Southern California, located approximately eight miles northeast of the city of Anaheim. The canyon is a tributary canyon along the main stretch of the Santa Ana Canyon which links the highly populated County of Orange on one end and the County of Riverside on the other.

The conflagration started about 9:00 a.m. on Saturday, fanned by 40 to 60 mph winds which always prevail in Southern California in late September and early October. These winds are aptly named Santa Ana's because they start on the high desert near Victorville, California and travel through Riverside, California on their way to the sea via the Santa Ana Canyon.

The North Orange County Emergency Coordinator — Gordon Cole, WB6GUC — telephoned me the night before to let me know that he and his wife were planning an out-of-town trip. He ironically said, "If anything comes down, call me on the phone." I took the number and assured him that if he was needed, he would get a call. I also assured him that I would mind the store.

At 8:00 a.m. Saturday morning, I attended the monthly breakfast sponsored by the Anaheim Amateur Radio Association. The breakfast is always followed by a T-hunt at 10:00. After breakfast, my T-hunt partner, Lloyd Harwood, WB6ULU and I set up the gear and prepared ourselves for some fun. Before Lloyd and I got into position to start, the first call of disaster came over the club's local repeater, KC6K/R (146.19/79). Mark Hartman, N6BMO called me and urgently asked me to call the local chapter of the American Red Cross in Santa Ana. Mark, fortunately, was at Red Cross attending a meeting and learned that the Orange County Fire Department was Code Red and responding to the fire. They were also requesting Red Cross backup to establish first aid stations and evacuation centers.

When I called the Red Cross Disaster Center, the Disaster Director — Jim Stevenson — filled me in and requested Amateur Radio communications at all sites. He needed operators at the center as well as four sites, immediately. Lloyd jumped in his truck and headed for Red Cross. I secured the DF equipment and headed for the shack. I managed to mobilize six ARES members to Red Cross and the sites by using the telephone.

Then the problem arose of scheduling relief operators in case the fire continued on into the night and Sunday.

I was contacted by Jim Edds, KA6G, who suggested that a recruiting and assignment net be set up on the KC6K/R repeater. We also agreed that the net control *not* be at Red Cross Disaster Center. So, net control was established at my station, at least for the first six hours. Meanwhile, Red Cross set up emergency traffic nets to the sites on the 220 MHz repeater, W6LO/R, and 146.58 simplex. This provided the isolation needed to conduct the Red Cross traffic without interruption by check-ins.

Ted Kramer, NB6N took this picture of the three-county brushfire that occurred 9-11 October. The photo was taken from NB6N's home in Yorba Linda, California, looking across Interstate 91 toward Gypsum Canyon.

At about 4:00 p.m., I was relieved as net control by Karl Pagel, N6BVU, who carried on scheduling until 7:00 p.m. The net was picked up by Bill Moody, WB6JJS until midnight. He was then relieved by Gordon Davison, W6SGI who minded the store until 7:00 a.m., Sunday. Mike Springer, K6TWK picked it up from Gordon and continued until 1:00 p.m. Jim KE6LX went from 1:00 p.m. until midnight.

We had received word at this time that containment of the fire was very close and that we would not need to schedule any more operators beyond midnight. What a welcome bit of news!

We received many offers of help and usage of repeaters from the Rio Hondo Amateur Club (W6GNS/R), South Orange Amateur Radio Association (WD6AWP/R), Western Amateur Radio Association (N6ME/R), Disneyland Amateur Radio Club (WA6BIZ/R), and Keller Peak Radio Group (WB6RSD/R), to name but a few. When we had trouble filling schedules for the last night hours, we received help from the Associated Radio Amateurs of Long Beach, under the direction of Ron Boan, AK6Y; the Fullerton Radio Club with Joe Moell, KØOV; the South Orange Amateur Radio Club under Tim Sawyer, WD6AWP; Orange County Amateur Radio Associated under the guidance of Al Watts, W6IBR; Western Amateur Radio Association with Emergency Coordinator Mike KE6IU; the Disneyland Club under Rick NN6M; the Interstate Electronics Corporation Radio Club under Jim Edds, KA6G; and Anaheim Amateur Radio Association with Walt LeBlanc, WB6RQT.

Another group that was activated was the United States Marine Corps at El Toro Marine Facility with their heavy equipment battalion of bulldozers and other equipment. In support of them, the local RACES group was activated under the direction of Chuck Hansen, WA6GPF.

Out of the many groups came the operators that manned the station at Red Cross Disaster Center under the direction of Fred Pfadt, K6KMC, Jim KA6G and Alex Alexander, W6RE. Alex is the Emergency Coordinator Liaison to Red Cross from Orange County ARES. They were Lloyd WB6ULU; Betty KA6ITT; Clyde Johnson, WB6DLR; Jim Thill, WD6EGS; Bob WB6GXV; Joanne KA6UMX; Mark White, KA6MKT; John Valeriote, WB2GXV; Dick Ertman, W1NMZ; Ben Anlage, N6EIV; Craig KA6RWL; and Don Van Hyning, AK6F.

Disasters such as floods and fires are dreaded by everyone, but it is reassuring to know that amateurs are ready, willing to help whenever disaster strikes, and many thanks go out to them. □

Orbital predictions

Project OSCAR Inc. is preparing a new set of orbital predictions for the period covering the calendar year 1983. The predictions will provide the UTC times and longitudes for all south to north equatorial crossings of AMSAT/OSCAR-8 (AO8) and the four Russian satellites carrying transponders (RS5, RS6, RS7 and RS8). This document will allow the user to determine the access times to all the presently available Amateur Radio satellites carrying communication transponders. With the sky figuratively full of Mode A transponders, don't miss this opportunity to personally take your giant step into the space age.

The large expense incurred to produce and disseminate a calendar of this magnitude necessitates a request for a minimum donation of $10 for mailings to the United States, Canada and Mexico ($12 overseas). To receive your copy of this set of orbital predictions, fill out a mailing label and send it along with a check or money order payable to Project OSCAR Inc. The donation covers the cost of first class mailing within the United States, Canada and Mexico, and airmail printed matter to overseas destinations. The mailing of the orbital predictions was to begin during the final weeks of December 1982.

Please show your support for this effort now so that we can continue this service in the future. Write to Project OSCAR Inc., P.O. Box 1136, Los Altos, CA 94022.

Beacon frequency

On page 7 of our December issue, we ran an article entitled "New signal from Honolulu college," which listed several beacons, but without the frequencies. All are operating on 14.100 MHz. □

Introducing Corsair

A New No-Compromise HF Transceiver

The CORSAIR is an extraordinary new HF transceiver. Every function operates without compromise. New unique features make it a delight to operate.

A new front end provides extreme sensitivity, low internal noise and high dynamic range to bring weak signals to life. For even greater overload prevention, the integral rf preamplifier can be switched out. More effective than the usual rf attenuator.

The filtering system, a TEN-TEC exclusive, virtually switches to privacy. It starts with a superb 2.4 kHz 12-pole ladder sideband filter system, standard. It provides variable bandwidth for ssb, great for today's crowded phone bands. A novel pass band tuning circuit allows a received signal to be moved within the pass band to its optimum position with respect to QRM. Optional narrow band filters are available for ssb, cw and RTTY, all switched from the front panel. The ultimate in QRM reduction.

Full cw break-in opens a window on the band while transmitting, turning monologues into conversation. Or, if conditions dictate, just switch to semi-break-in. And no VOX adjustment when changing modes.

A versatile offset tuning system allows the receiver and transmitter to be tuned separately with a ± 1 kHz range for fine tuning or ± 4 kHz for working off frequency. For net operation, both can be moved simultaneously.

Reliability is designed in. The CORSAIR system is so rugged it will operate into infinite SWR. And we guarantee it unconditionally (except for lightning) for one year. The CORSAIR is designed for 100% duty cycle, ideal for RTTY, SSTV and of course, contests.

Beauty is more than skin deep. The contemporary styling with the blackout LED frequency display (last digit in green), the baked-on textured bronze/black finish with aluminum trim will retain its handsome appearance permanently. Beneath its sleek exterior is a carefully crafted chassis packed with performance.

There are many other features, each with superb performance. An effective speech processor, notch filter, adjustable noise blanker, signal spotter, three position AGC, threshold ALC, simplified VOX, all controlled from the front panel. In addition, the CORSAIR has a compression loaded speaker, less than 2% audio distortion, and full accessory connections including remote bandswitch output. It even has a volume equalizing headphone output.

The CORSAIR is a total system of pure operating pleasure—it really must be put through its paces to be fully appreciated. Its smooth controls, comfortable and logically spaced, give it the feel of a superlative transceiver. One that will be a faithful companion for the years ahead.

All TEN-TEC products are completely manufactured in the U.S.A., in the foothills of the Great Smoky Mountains.

Model 560, CORSAIR transceiver . . . . . $1169.
See your TEN-TEC dealer or write for full information.

TEN-TEC, INC.
SEVIERVILLE, TENNESSEE 37862

Periodical for the visually handicapped

William Gerrey

Although many textbooks have been translated into braille and onto recorded media, blind technicians and scientists are faced with the continual frustration of obtaining current supplemental materials.

We propose to publish a newsletter quarterly — in braille, large print and recorded form — which will serve as a guide to the current technology as applied to the needs of blind and low-vision people. We anticipate this will narrow the existing gaps and allow technically-minded visually impaired people to pursue their interests.

This journal — the *Smith-Kettlewell Technical File* — will include electronics information such as materials already transcribed, catalog abstracts, data on integrated circuits, manufacturers' application notes, and when possible, construction details on devices for the blind using this current technology. Mechanical information will be similar: manufacturers' data, plus articles describing blueprints and techniques for the construction of the devices.

General interest "do-it-yourself" descriptions of such processes as soldering, project layout and the use of power tools will focus directly on techniques used by the blind. Articles will be solicited from readers, training facility personnel and other interested professionals and non-professionals.

For more information, contact Editor, William A. Gerrey, Smith-Kettlewell Institute of Visual Sciences, 2232 Webster St., San Francisco, CA 94115; (415) 561-1619. The first issue is free. □

Active ham's book is still popular

Alvin Grover, WB8YDO

Helen Schmock, W8GJX — who has been an amateur for 53 years — recently received a letter from the State of Michigan Department of Education, State Library to ask permission to record on magnetic tape her book, *Isle Royale Calling*. Listed as one of the "Best Books of 1957" by the Library Journal, the book is about a forest ranger and his three sons living on an island, one of whom is a radio amateur.

The transcription will be made available, free of charge, to the blind and physically handicapped who are unable to read or use printed material.

Helen is very active in the QCWA (Quarter Century Wireless Association) and keeps many schedules on CW. Her husband — John W8VHQ — became a Silent Key this past spring. □

●●●●●

People reaching people.
Amateur Radio is what
Worldradio is all about.

Ten years with MARCO

This is the last installment in a series of five articles that we have run on the history of MARCO (Medical Amateur Radio Council, Ltd.), as written by Joseph J. Boris, honorary member of the organization.

Recollections

It is good to look back to my correspondence and meetings with members of MARCO over the years. Other than those I mention in these memoirs, they are: Arthur Fern, D.D.S., WA1AAN, who — together with Richard Bagnall, M.D., N1BMC — formed a coordinating committee of local members when we held the 12th annual meeting of MARCO at the Sheraton-Hartford Hotel on 16 November 1976 in Hartford, Connecticut; Ronald Levy, D.D.S., K2AIO; Alfred Greenwald, M.D., WA2CBA; Alan Dorhoffer, K2EEK, editor of CQ; Rev. Michael Mullen, C.M., WB2GQW, editor of IMRA's newsletter; John W. Banzer, Jr., M.D., W2KDI, treasurer of MARCO in the early days; William A. Joy, M.D. K2VVK, chairman of the local committee that took care of local arrangements when we held the first meeting in Atlantic City, 22 June 1967; Russell J. Fields, M.D., WA3DZB, chairman of the Publication Committee for many years; Jacques Lang, YS4JL; Richard J. Brown, D.V.M., W4VN; Henry M. Stern, M.D., WB4IHM; Robert L. Kurth, M.D., W5IRP; Sigurd Meng, M.D., DL2HI; Frederic Faust, M.D., K5SZPN.

Esli Daniels, M.D., W6HZZ; Albert Lee, M.D., WA7NEW; Maurice Richter, M.D., K7UWP; Jose Hauser, M.D., OA4HJ — formerly in Lima, Peru and now in Newaygo, Michigan; and Dr. Harold Miller, director of Clinica Rural, Guatemala City, whose firsthand report on the earthquake in Guatemala was published in the *MARCO Journal*.

Silent Keys — 1966-1976

WA1NDJ	Chester A. Weed, M.D.
W2BW	A.L. Walsh, D.D.S.
W2ULO	William L. Wheeler Jr., M.D.
WB2SNM	William C. Eucker, M.D.
W2VW	Paul Z. Haus, D.D.S.
	Joseph F. Montague, M.D.
WN3KGJ	Edward Martin, M.D.
K3MK	Harland D. Hotham, M.D.
WA4EFX	Fred Williams, M.D.
WB4INU	Ben F. Dennis, M.D.
WA5FLE	Mark DeGroff
W6NKP	Harold L. Graham, M.D.
WA6PYK	Harry F. Talbot, Jr., M.D.
WA7CKZ	Davis I. Arrow, M.D.
W7HST	Otto A. Moellmer, M.D.
WA7KAH	Frank P. Matthews, M.D.
W8DVM	Russell H. Barnes, M.D.
WA8HCD	Benjamin Morris, D.O.
K8CY	Frank B. Sprague, D.O.
W8MB	Julian Stern, M.D.
WB9CBX	Arthur Baptisti Jr., M.D.
W9ETZ	Elmer J. Emanuel, D.D.S.
K9KGF	Samuel S. Sorkin, M.D.
W8WBT	Alvin Russell, M.D.
W0HKC	Charles R. Nickson Jr., M.D.
WA0JRH	John I. Waller, M.D.
WA0NSA	Tom W. Stivers, M.D.
G3WFR	Ronald G. Ross, M.D.
H1LPN	Nelson Lazala, M.D.
VK2AEA	R.W. Allison, M.D.

To be honest, to be kind — to earn a little and to spend a little less, to make upon the whole a family happier for his presence, to renounce when that shall be necessary and not be embittered, to keep a few friends, but these without capitulation — above all, on the same grim condition, to keep friends with himself — here is a task for all that a man has of fortitude and delicacy.

—Robert Louis Stevenson □

USQS-KM7Z

Laryl Berry, KM7Z

U.S. QSL Service, Inc. would like to wish you a very happy new year! USQS is a *FREE* QSL service that offers both incoming and outgoing QSL handling for amateurs in the USA. After almost three years of operation, the system is getting very large but still is in need of help and support. Run by Laryl Berry, KM7Z (XYL of Pat KN7B), USQS handles hundreds of cards weekly. There are *NO* charges, fees or dues of any kind except a request that everyone keep SASEs on file so that QSLs may be forwarded. Expenses that do occur are those of sending out unclaimed cards with flyers to introduce the service to amateurs who may not know about USQS, purchasing envelopes and stamps, and having flyers printed. All expenses are paid by donations. The work, supplies and equipment are all at the expense of Laryl and Pat. Donations are badly needed and are much appreciated.

The system is well thought out and is complemented by the personal computer in the ham shack/office. The computer tells us that at this time (1 November), there are over 13,000 amateurs who have QSLs awaiting SASEs! There are over 3,000 calls that are covered by SASEs on file. Won't you please help USQS by getting those unclaimed cards delivered and the number of SASEs increased in 1983?

To send your outgoing QSLs, all that is needed is to have the call sign of the ham to receive the card; no postage or address needed. If you would like to provide the postage, we will mail the card out immediately along with any cards on file and a flyer for USQS. If you have notes or any attachments to send, just clip them onto the card and we will see it gets through.

USQS has the latest info on addresses to help get cards delivered to those new amateurs or upgraded amateurs not yet in your Callbook. Please sort your outgoing QSLs into call area 0-9, then sort each of the 10 groups alphabetically, by suffix, to speed our filing demands. Please watch your printing; we aren't used to it!

To receive your cards via USQS-KM7Z, keep several SASEs (self-addressed stamped envelopes) on file. You can either address the envelopes to yourself and send them, or you can simply send $1 for each four SASEs you wish, along with your *CALL*, name and address. It helps us to know if you prefer to have your cards sent when the envelope is full or with, say, four or five cards or whatever. Do you belong to a radio club? If so, you can have all the cards that come in for club members sent to the club in one envelope. Send a list of calls to cross-reference. Your incoming QSLs only may be either from USA stations or *DX*. Tell your contacts to QSL via KM7Z.

A special thanks to all who helped make 1982 a growing year. The donations, notes of thanks and encouragement have made it a good year for us, as have the hams who have given us the chance to handle their QSLs. We promise an even better service in the future as the system grows, and we look forward to serving more and more fellow amateurs. Our only gain in operating this service is the feeling of doing something that helps hams enjoy the exchange of QSL cards and fellowship. Following is a list of a few who need to claim cards. 73/88 Laryl Berry, KM7Z, USQS, P.O. Box 814, Mulino, OR 97042.

AC1D	WB1DBR	AC2D	N2DBQ
AG1D	K1DD	AJ2D	N2DBS
AI1D	KA1BDD	KE2D	WA2BCC
KA1D	WB1DDT	KI2D	N2DCH
W1DA	K1DDY	KT2D	N2DCP
KA1DAS	W1DEO	K2DB	KB2DE
WB1DAT	WA1DER	N2DBD	KC2DE
K1DBP	WB1DEV	W2DBQ	N2DE

AB3D	AG4D	AK5D	AD6D
KB3D	NA4D	KF5D	KA6D
KD3D	NP4D	KK5D	KC6D
KA3DAG	NU4D	KR5D	NA6D
KA3DAH	KA4D	KZ5D	NI6D
KA3DAK	KC4D	KA5DAD	NJ6D
WB3DBC	KT4D	K5DAH	WB6DAP
KA3DBT	KZ4D	KA5DAV	WB6DAW
N3DC	WA4DAN	N5DBC	W6DBA
KA3DDB	WA4DAU	KA5DBU	N6DBA
KA3DDG	WA4DAX	WD5DBY	WA6DBC
WB3DEB	WA4DAZ	N5DCE	WD6DBH
WA3DEQ	WB4DBK	N5DCO	N6DBL
N3DF	N4DBR	KA5DCT	K6DC
WD3DGE	K4DBZ	N5DCU	AA6DC
W3DHD	KA4DCD	WD5DCY	N6DCO

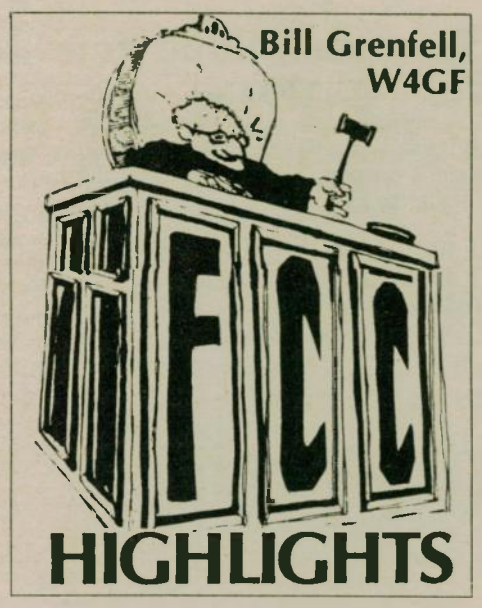
N6DCT	KA7DBS	N8DBX	N9DD
KE6DD	K7DBV	WA8DBY	N9DDE
WD6DDD	W7DC	W8DC	K9DDM
N6DDT	KA7DCG	N8DCH	K9DED
AC7D	AF8D	AA9D	KC0D
KG7D	AI8D	KD9D	KF0D
KK7D	KA8D	KE9D	KN0D
KL7D	KC8D	KF9D	KQ0D
N7DAD	KK8D	KG9D	NJ0D
N7DAK	KT8D	WA9DAE	WD0DAI
W7DAZ	K8DAA	WD9DAZ	KA0DCC
WA7DAZ	K8DAC	WD9DBL	WA0DCJ
N7DB	KA8DAO	WD9DBQ	KA0DCP
KC7DB	W8DAT	N9DBV	K0DD
K7DBR	KB8DB	W9DC	WD0DDU
KA7DBR	N8DBB	KA9DCN	N0DDY

Same call, three times

John Majka, K9AAN

I noticed that in a few places in your August issue, there appeared some comments on people with similar calls happening to talk to each other by chance.

Well, I have another. K9AAN and UK9AAN, three times and each contact completely by chance — no skeds! □



Most of the new 30-meter band is now temporarily available to General and higher class amateur licensees of the FCC. By Commission action taken at their meeting on Thursday, 28 October, 10.100-10.109 and 10.115-10.150 MHz was made available at 3:00 p.m. EDT on that date. Power is limited to not more than 250 watts input and emissions to A1 and F1 (including A2J).

The 10.109-10.115 MHz segment is in use by a U.S. government operation in the Fixed Service to which the entire band is allocated. The amateur allocation is on a secondary, non-interference basis, and *U.S.* amateurs must therefore avoid any operation between 10.109-10.115 MHz.

Unfortunately, some operators apparently were not aware of the 6 kHz restriction during the first few days after the band was open! In its Order, FCC " . . . cautioned that the amendment may be effective for only a brief period, and that official action by the United States and the Commission regarding the Final Acts of WARC-79 will ultimately determine the parameters within which we may act in relation to use of the 30-meter band in the Amateur Radio Service. 5/" "5/ Therefore, Amateur Radio operators in the United States would, at this time, be ill-advised to invest heavily in equipment which can only be used for this frequency band." (From FCC 82-469 PR)

•

Code test credit for any class of amateur license is now available to commercial radiotelegraph licensees of the FCC. This applies to First, Second and Third Class Radiotelegraph licensees and those with an aircraft radiotelegraph endorsement. Each of the foregoing requires passing a code test at 16 (five-letter) code groups per minute and 20 wpm plain language for the Third and Second Class. 25 wpm plain language is required for the First Class and the Aircraft endorsement.

This Section 97.25 rule change was adopted on 21 October and became effective on the 27 October 1982 release date.

•

The report of a $6,000 fine of a cable TV company in California by FCC was not correct as it was reported in some amateur publications and bulletins. The company was issued a Notice of Apparent Liability (NAL), adopted by the FCC on 6 October and released 15 October. Section 1.80(f)(3) of FCC's General Rules of Practice and Procedure require that a response shall be made to an NAL within a reasonable period, usually within 30 days. The recipient of such a notice has several actions which may meet the Commission's requirements. In addition to paying the whole amount of the fine or completely denying any liability, the recipient may request reduction of the amount of the forfeiture.

As this was written, the 30-day period had not elapsed, and thus the amount of the penalty (if any) had not been determined. Over a period of almost an entire year, the matter of excessive radiation on 145.25 and 147.45 MHz from the cable system causing interference to California amateurs has been under investigation by FCC. Repeated attempts by FCC to get the cable company to clean up their system had been fruitless.

•

FCC has adopted a rule-making notice to hand the entire task of determining who is qualified for a Novice license to amateur licensees! As this was written, the Docket number (and text) of the NPRM resulting from the Commission's 21 October action was not available. I should have details of the Notice in next month's 'Highlights.'

I understand that reduction of mail time delay, FCC budget savings and improvement in the caliber of the examinations are among the reasons cited in the Notice in support of the Commission's proposal.

•

Consolidation of rules concerning remote control of amateur stations may be expected soon. Elimination of logging requirements for other types of amateur stations will make it necessary to preserve the remote control requirements now in the Logs rule, Section 97.103. Also, the manner of "control" of beacon stations is expected to be the subject of FCC consideration in the near future, according to ARRL's Chris Imlay, N3AKD.

•

The proposed PEP transmitter power output measurement rule would permit 1500 watts CW and RTTY output, whereas the current 1000 watt final amplifier input power limit permits only " . . . approximately 750 watts of PEP output for FM and CW emission modes, . . ." (See footnote 9/, FCC's PR Docket No. 82-624; Notice of Proposed Rule Making; Adopted: 1 September 1982; Released: 1 October 1982.) The same footnote evaluates the *present* power input limiting rule as permitting development of " . . . approximately 1300 watts of PEP output for SSB emissions and approximately 3000 watts for AM DSB emissions."

In paragraph 16, FCC states that its choice of proposing 1500 watts " . . . as the maximum PEP output . . . " " . . . would result in no decrease in the actual authorized power for the popular emission modes." (particularly voice SSB — Grenfell) Instead of requiring amateurs operating at or near the maximum power limit to " . . . provide a means for measuring transmitter power," FCC would leave it up to each operator to " . . . determine individually the best means for ensuring compliance with the power limitations."

A proposed new rule Section, 97.68 titled "Transmitting power measurements," states that during an FCC inspection "(a) Transmitter power will be measured using a calibrated, peak-reading radio frequency power meter attached to the antenna terminals of the transmitter." The Commission specifically invites comments on: 1) what audio input standard should be used for voice transmitters when measuring SSB power output; 2) " . . . A standard impedance which could be used to simplify power measurements for operators as well as Commission personnel."; 3) " . . . whether some exception to the PEP output definition should be made for pulse transmissions (type P emissions)."

Further details on this rule-making proposal should be in the December and January issues of the amateur magazines. Remember to file your original comments with FCC (Washington, D.C. 20554) by 1 February and reply comments by 1 March 1983.

•

The recent Communications Act amendments included several interesting changes other than those directly concerning amateur licensees.

Section 103 now permits the FCC to accept, under certain conditions, direct reimbursement for the expenses of participation and attendance at meetings, conferences or conventions by commissioners or employees of the Commission. Section 110 adds to Section 303(M)(1)(A) the provision that causing, aiding or abetting a violation of treaties or any regulations the Commission is authorized to enforce can be the cause for the suspension of the license of any operator (authorized by the Commission). Section 117 amends Section 312 of the Act of 1934 to define the meaning of the terms "Willful or repeated" used in describing several conditions, actions or failure of required action, which are the basis for which the Commission may revoke a station license. Section 128 amends Section 1114 of Title

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each radio district, as of 1 October 1982.

Radio District	Group A	Group B	Group C	Group D
0	KU0X	KC0XE	N0EEO	KA0PBH
1	KK1Y	KB1DU	N1CJW	KA1JKY
2	KX2G	KC2TH	N2DWB	KA2QMY
3	KK3L	KC3DY	N3DBR	KA3JYU
4	WF4G	KF4HH	N4HVD	KB4CNL
5	NB5X	KD5SD	N5FGP	KA5PHT
6	NO6B	KF6EC	N6HLT	KA6WGZ
7	KW7F	KD7BL	N7ENU	KA7OLH
8	KX8Z	KC8ZQ	N8EJI	KA8QVU
9	KQ9M	KC9UJ	N9DNI	KA9OJS
HI	WH6B	AH6EM	KH6UF	WH6AUY
AK	WL7Q	AL7EJ	KL7XF	WL7AXN

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

18 of the U.S. Code to include sanctions against individuals who interfere with or harm FCC employees who may be assaulted, intimidated or interfered with in the performance of their duties. Commission employees were not specifically entitled to protection offered under this statute.

•

Ratification of the 1979 World Administrative Radio Conference radio regulations has been approved by the Senate Foreign Regulations Committee. At the time this was written, there was some hope that action by the full Senate could take place before the adjournment for Christmas. □

W11 better than W0?

Bob Kuehn, W0HKF

W1 and W0 are the only call districts where you have to worry about the numbers spelling some kind of a word with the letters, like W1TCH and W0RM (or as retired club member Bob Cannefax, W0RKS says — his call tells what he no longer does: works). But here in Zero-land, we labor under the double handicap of being saddled with a 0 (known as a slashed zero, military zero, or cipher), which is used practically nowhere else in the language.

Whenever a newspaper comes face to face with a 0 call in a press release or public relations story, they usually solve the problem by leaving out the call entirely because they just don't have any ciphers in their repertoire, or they will print a "Q".

Our *Ground Wave* editor — Marv Mahre, W0MGI, who also prints QSL cards — says that when he buys type, no ciphers are ever included either, so he has to have some specially made up for each style of type he uses on QSL cards.

Maybe it would have been better back in 1946 if the FCC had just skipped the 10th district entirely and made us all W11's!

Editor's notes: I even find some Amateur Radio newsletters which are typewritten by licensed amateurs who do not know how to make the 0 on a typewriter! I have seen some use ¢ as the cipher. The very simple way to type a cipher is to type the number zero, back space and overtype with the slash mark, and you have a fancy 10th district call sign number (0).

— *St. Paul RC, MN* □

First call on the moon

Walter Bickmeyer, K4NI had the call of W2NI when he moved to Florida in 1966. He requested K4NI on the transfer and got it. Little did he realize that the new call had been made famous in 1928 on the Island of Navassa by Russ Dunaja, W3BBF (as described in QST, December 1969). Now for Walt's contribution to the established fame of K4NI:

Before the first moon landing of July 1969, NASA arranged to photograph on microfilm all of the signatures of those connected with the Apollo Project and send the film to the moon. When Walter signed his name, he added his call K4NI. Checking all the signatures later showed that he was the only amateur on the list who had also signed his call with it. Walt now claims that he is the only Amateur Radio operator with his call on the moon.

— *Spark Gap Times* □

Subscription form

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

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

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

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

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

(SOURCE) ☐☐☐☐ 1

(59-60)

Name _____

Call _____

Address _____

City _____

State _____ **Zip** _____

☐ NEW	☐ Renewal	☐ Gift
12 issues	(75¢ per issue)	$9.00
24 issues	(71¢ per issue save $1)	$17.00
36 issues	(67¢ per issue • save $3)	$24.00
Lifetime	(Be a WR super booster)	$90.00

Overseas Readers! Prices quoted are U.S. funds. Please include $2.00 extra/year for surface mail delivery outside the U.S. Subscriptions may be paid in U.S. funds drawn on U.S. banks, by International Money Order, VISA or MasterCard. Canadian Postal Money Orders (in U.S. funds) are also acceptable.

☐ **Check enclosed** ☐ **MasterCard** ☐ **VISA**

Card # _____ **Exp. date** _____

Signature _____

Please clip and mail to . . .

Worldradio™

2120 28th Street • Sacramento, CA 95818

Thank you!

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

Tell us something:

So we may better serve you, this space is for your comments, suggestions and even criticisms. If you have any news and information, you are invited to share it. Tell us and we tell the world.

Tell us of your interests and what type of news, articles, features and columns you would like to see. Tell us of your activities. The more we know about you, the better we can tailor this publication to serve you.

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

_____

_____

It pays to be alert

Waiting in a steamship office to be interviewed for a job as wireless operator, a group of applicants filled the room with such a buzz of conversation that they were oblivious to the dots and dashes which began coming over a loudspeaker.

About that time, another man entered and sat down quietly by himself. Suddenly he snapped to attention, walked into the private office, and a few minutes later, came out smiling.

"Say," one of the group called out, "how'd you get in ahead of us? We were here first."

"One of you would have gotten the job," he replied, "if you'd listened to the message from the loudspeaker."

"What message?" they asked in surprise.

"Why, the code," the man answered. "It said: 'The man I need must always be on the alert. The first man who gets this message and comes directly into my private office will be placed on one of my ships as operator.' "

— *San Diego Repeater Assn., CA* □

Special Events...

National ski jump/ Nordic championship

The Eau Claire, Wisconsin Amateur Radio Club will operate K9EC/9 during the National 70 Meter Ski Jumping and Nordic Combined Championship on 29 and 30 January, 1400Z to 2300Z. *Frequencies:* CW — 52 kHz up from bottom edge. Phone — 3980, 7277, 14282, 21382 and 28620.

For an 8½" × 11" certificate, send SASE to Claude Schilling, N9AIX, P.O. Box 201, Altoona, WI 54720. □

'Freeze Your Arctic'

The fifth annual "Freeze Your Arctic Off" event will take place the weekend of 29-30 January. The Ford Tin Lizzy Club will be out on the ice from 1700Z to 1700Z on 7.275, 21.380 and 146.58 MHz with the call AD8R/8.

For a certificate, QSL to Box 545, Sterling Heights, MI 48077. No SASE is required. □

Blizzard of '77

The Buffalo Area DX Club will operate a special event station, WB2YQH from 1800Z, 29 January 1983 to 2200Z, 30 January to commemorate the sixth anniversary of the great blizzard of 1977 — the worst blizzard on record in western New York. Frequencies will be: 7.245, 14.290 and 21.360.

Certificate for QSL and large SASE plus 25 cents. Send to: BADXC, 55 Randy Wy., Buffalo, NY 14227. □

Groundhog Day

The Punxsutawney Amateur Radio Club (PARC) will operate on 14.290 and 7.230 from 9:00 a.m. to 5:00 p.m. EST, 30 January 1983, in commemoration of Groundhog Day 1983. We will also operate on 7.230 on 2 February 1983 (Groundhog Day).

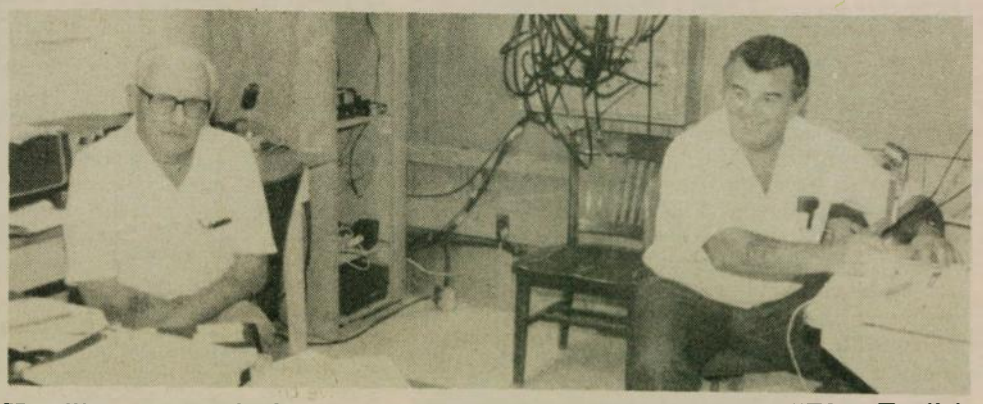
This special event station will operate from Gobblers Knob, the home of the groundhog. Certificate for SASE and QSL card sent to Art Sweeney, K3HWJ, RD #1, Box 371, Punxsutawney, PA 15767. □

Bing Crosby Pro-Am Golf Championship

The Naval Postgraduate School Amateur Radio Club in Monterey, California will operate a special event station, K6LY, during the 42nd Bing Crosby National Pro-Am Golf Championship.

The station will be located near the 18th green at Pebble Beach. Operating hours will be 1800-2400Z daily, 3-6 February 1983. K6LY will operate on the lower part of the General Class phone band on 15 and 40 meters.

Stations contacting K6LY and wishing to receive a commemorative Crosby Pro-Am QSL card should send their QSL card to Patrick Barthelow, WB6ZSB, 831 Avalon Pl., Monterey, CA 93940. SASE is not required. □



Handling the RACES radio communications during exercise "Blow-Top" in Carson City, Nevada's Emergency Operations Center. Curly Silva, K7HRW (right), taking care of HF communications and Carl Chaplin, W7QO handling VHF. This operational portion of EOC is conveniently set up for the RACES operation during any and all types of emergencies.

Operation Blow-Top

Curly Silva, K7HRW;
Frank Folmer, KC7JF

Another St. Helens-type volcanic eruption in the Mammoth Lake area? California earth scientists have issued a real-life "hazard warning" for that area, so this possible event was adopted by the Nevada State Civil Defense and Disaster Assistance Division as the scenario for the annual Civil Air Patrol and various county RACES units for an emergency training exercise on 21 August.

In operation "Blow-Top 1982," several RACES mobile units and 72 members of the Nevada wing of the Civil Air Patrol ranging from Truckee, California to Las Vegas, Nevada and 20 of their aircraft dispatched to various locations throughout the state of Nevada. Each of the units carried sealed envelopes to specific areas. Once they were in location, they were instructed to open the envelopes, which contained written descriptions of about 24 "field problems."

Drill organizers relied heavily on information from the U.S. Geological Survey and the research work of those who studied Mount St. Helens in Washington. The simulated scene was described as a "moderate explosive eruption" occurring in the Mammoth Lake area. Large clouds of volcanic ash, visible from various locations in southwest Nevada, drifted toward the Reno, Carson City and Lake Tahoe areas. The eruption spewed up to inches of fine volcanic ash over an area with an estimated 50-mile radius.

Three major earthquakes, believed triggered by the volcanic event, shook the Genoa and Pinenut areas and Washoe Valley. Heavy damage was reported in Yerington, Virginia City, southwest Reno and parts of Douglas County. No deaths were reported.

The combination of the eruption and seismic activity triggered a series of other emergencies, including downed aircraft, broken gas lines, fires and health problems related to drifting ash.

Numerous state agencies and public utilities participated in the exercise. Nevada State RACES Officer — Curly Silva, K7HRW — reports that several RACES members provided emergency communications and message handling plus liaison communications during the exercise. Several mobile operators were used to assist aircraft in location problem areas. Once located, ground crews were sent in to investigate and assist the problem areas. Silva states that several areas of liaison communications between RACES and other emergency services groups need considerable work. Namely, a standard format should be developed for message handling. All in all, Silva concludes, our portion of the exercise was quite successful.

The entire exercise was awarded an "outstanding" rating by the visiting U.S. Air Force evaluation team — an accolade rarely given by them during their year 'round tour of evaluations.

(Frank Follmer (KC7JF) is net manager for the Nevada RACES Net, which meets every Monday night at 1900 local time on 3996.5 MHz.) □

Mount Baden-Powell rededication

Bud Hefner, KA6JDT

A significant event occurred in the San Gabriel Mountains in Los Angeles County, California on 25 September. It was the 75th anniversary of Boy Scouting and the 125th anniversary of the birth of Lord Baden-Powell, who was the founder of Scouting.

Five Amateur Radio operators were a part of this important occasion: Ron Boan, AK6Y; Chuck Arnold, KD6BX Rose Martin, WD6ERM; Mike Hochman KE6IU; and Bud Hefner, KA6JDT KE6IU and KA6JDT climbed Mount Baden-Powell, which was dedicated in 1931.

It is a steep four-mile trail that goes from 6,300 to 9,400 feet. A six-ton concrete and steel monument to Scouting sits at the crest. Materials were carried up the trail by 400-500 Scouts with 20-30 pounds on each trip in 1957.

A ceremony was held at Inspiration Point, seven miles west of Wrightwood, California (northeast of Los Angeles) and three miles from the mountain.

The typical sunny California weather did not prevail as the edge of a hurricane moved into the Southern California area. A complete cloud system covered the peak and ceremony site and reduced visibility to 50-75 feet with a light rainfall. On the peak, it was 35 degrees with a 40 mph wind.

However, the spirit of Scouting was prevalent as 38 boys and their leaders of Palos Verdes Troop 276 made it to the top and participated in the ceremony via Amateur Radio. Over 500 Scouts and leaders gathered at the point to listen to several speakers and the grandson of Lord Baden-Powell, who all gave stirring and inspirational messages. A simultaneous flag-raising was held at the point and the peak as the American and British flags were hoisted, even though they were not visible between the two locations as planned.

Amateur Radio assisted in the activities and provided a safety communications link with the Scouts on the peak. Ham operators were proud to be a part of this function as three of us are or have been involved in Scouting. □

SCN/SB first anniversary

Fred Gartzke, K6YD

On 1 November 1982, the Southern California Traffic Net's Santa Barbara Section (SCN/SB) completed its first year of operation. During this period, daily check-ins averaged 11. Total traffic handled into and out of the Santa Barbara section was 1,150.

Over 60 different stations have taken advantage of the net's capability, originating traffic to their friends and relatives. For the first time in their ham career, many have learned how to write, deliver and receive formal written traffic. The WB6RDV 2-meter repeater, 144.58/145.18 provides excellent coverage for most all of Ventura, Santa Barbara and San Luis Obispo counties.

The net meets daily, including holidays, at 9:00 p.m. John Singer, KA6JWK is the Net Manager and invites all stations within the range of the repeater to participate. The Southern California Net (SCN) also meets on 3598 kHz at 7:00 p.m. and 8:15 p.m. The 8:15 p.m. session operates at 13 wpm or less. SCN/V is the other 2-meter FM Southern California net which meets at 9:00 p.m. on the WD6AWP repeater, 147.045/.645. Coverage of this repeater (located on Laguna Peak) is from San Diego to Riverside, and — of course — Orange and Los Angeles Counties.

All stations are welcome to join in the activities of any or all of these nets. □

WANTED: Station Appearance entries

If you think you have a station that is worth showing off, why not take a picture of it and send it to **Worldradio** as a Station Appearance entry? You just might win a free year's subscription. All photos are returned, whether or not they're used.

AMATEUR RADIO IN PUBLIC SERVICE

Savannah amateurs work triathalon

Richard Smith, WB4APG

Even though it was warmer this year, by about 60 degrees, a medium thick fog hung on the surface of the Forest River as 160 contestants (up from 56 last year) jumped from a barge anchored in the river to start the first leg of the 4th Annual Steve Lynn Triathalon held on Sunday, 3 October.

The starting time was relayed up the river by Kim Clough, WB4ZBV, who also shared time with Sarah Smith, KA4MXJ in the course safety car. The swimmers were escorted during their 1.25-mile swim leg by a 14-foot safety craft. As the contestants came dripping up the bank at the Lotts Island landing, they were met by their respective crews who helped feed them fruits and liquids while at the same time, helping them change into their cycling togs for a fast-paced 53.5-mile ride.

Following close behind the first cyclists was the course safety car from which Sarah kept the officials and other net operators informed of conditions on the track. Shortly into the riding event, a cyclist lost a tire and thanks to Amateur Radio was able to be back in the running quickly when word of the plight was radioed to his pit crew.

Amateurs who worked the fluid and aid stations, Gred N4DBS, Gill Kearns, W4NNB; Tom KA4RKX and Becky Langenfeld, KA4VSC; Dale Brown, KA4NGE; and Lee Torriente, KA4CHN were kept busy relaying data to officials and supply people. As the temp went into the low 80's, fluids became a critical factor.

Things got hectic for a while at the start/finish line — location of Richard Smith, WB4APG — as the contestants came off the cycle phase and prepared for the last leg, a brisk 13.5-mile run.

Other than the flat tire and a runner collapsing at the finish (nothing serious), everything went very well. In addition to passing triathalon traffic, we were able to give Amateur Radio assistance by alerting the state police about a disabled motorist and help a tourist ham by giving road directions and information.

The seven-hour Amateur Radio safety net took place on the Savannah 146.10/70 repeater. We got many thanks from triathalon officials as well as many contestants who could appreciate the advantage offered by instantaneous radio communications.

How long does it take to complete the Tin-Man endurance event? The winner and first man to cross the tape did so in 4:10:22, the first woman and 21st finisher stopped the clock at 4:50:31. These times include the stops to change equipment between the swim and cycle segments. □

Practice storm devastates Northern CA

A series of severe winter fronts wreaked havoc on northern California in mid-October, triggering wide-scale flooding, power outages, disruption of telephone services, and forcing thousands from their homes. Some earthfill dams are starting to show signs of seepage, and all disaster service agencies including the State Office of Emergency Services, American Red Cross and the Amateur Radio Emergency Services are operating at full alert.

You probably haven't heard much about this serious emergency which affected nearly two-thirds of the state of California. That is because these events were part of a scenario scheduled for 16 October as a drill for the 1982 Simulated Emergency Test (SET) — an exercise conducted annually to test the many aspects of disaster preparedness in this country.

Key participants this year include offices of the National Communications System (NCS), Federal Emergency Management Agency (FEMA), California Office of Emergency Services (OES), National Weather Service (NWS) and the Amateur Radio Emergency Service (ARES). Tulare County ARES members — under the direction of Emergency Coordinator Scott Thompson, KB6CC — are participating in this wide-area drill to insure that vital communication links can be provided *directly* between our area and Sacramento, Washington, D.C., and other important government centers in the event of a real disaster. □

Operation Child Watch

Dave Schneider, WD0ENR

The Fairfield, Iowa Amateur Radio Club's first attempt of Operation Child Watch on Halloween night was a major success.

Organized by Jim Love, N0CBB, with cooperation of Fairfield police chief Frank Johnson, the city of around 9,000 people was divided into four sections with one or two cars in each area, one amateur on foot, and one acting as net control at the Law Center. The operators were to observe the activities of those on the streets and report anything that could lead to harm to the trick-or-treaters or vandalism.

Communications were carried out on the 147.33 K0BPR repeater.

The amateurs from Fairfield and nearby Mount Pleasant who participated besides N0CBB were Dave Luckman, K0HYH; Lowell Knapp, K0LK; Dick Ward, KA0NSW; Roy Lewis, WA0KLD; Jack Ritz, WA0YOC; Dave Schneider, WD0ENR; Dick Jewell, K0IQV; Curt Hanson, KA0NZH; and Jack Wright, AD0E. □

Speedy cooperation

Harry Billings, WA6UOR

Fresno County ARES proved its effectiveness in handling Amateur Radio communication during the recent Auberry, California fire. When request for help was made, the response was immediate. In fact, many amateurs were monitoring before the emergency was declared. Tony Ragnetti, N6DYJ in Auberry was sent to Sierra High School to provide communication at the evacuation headquarters. One hundred fifty-eight patients of Wish-I-Ah Sanitarium were moved to the school, which was away from the smoke and fire hazard.

Harold Crown, WA6OYR and his wife, Lucille WB6TSH handled all the communications at the Fresno County Red Cross headquarters. We were in perfect contact at all times, using the Fresno Amateur Radio Club repeater 146-34-94. The club president — Tom Akin, KU6A — cancelled the Sunday evening check-in and news net, at my request. Relief operators included Bob Hardwick, KB6DG, who also carried supplies in his personal car to the evacuation site. Ed Kraft, KA6ACE assisted as relief operator. Valuable information was supplied by Don McIntire, N6DYL.

It was a long and suspenseful night as the fire was burning out of control. John Nace, NF6K worked as my relief from 2:00 a.m. to 6:00 a.m. Many amateurs checked in offering their help. This reinforced our ability to assist the many groups and agencies working during this emergency. Alec Brown, W6BWM — Madera County Emergency Coordinator — was in contact with me as the fire jumped the river into Madera County.

Among those who volunteered were Tracy Ramer, WB0DPH; Glen Caine, KA6GDS; N6SKW; Lester Gilpin, K6ZLU; Frank Jones, W6VDX; Walter Rauch, W6NR; K6VWS; Bert Cornick, K6BWF; Richard Stepanian, W6TKF; and others. Help was offered from the San Jose Club, which is 150 miles from the emergency site. This was the real thing. I'm proud to report it was a smooth operation.

— *Fresno ARC, CA* □

VIP unit goes into action near Redding

Jack Littleton, KE6NO

On 24 August 1982, the Shasta-Cascade Amateur Radio Society Volunteers in Prevention (VIP) unit had its first chance to assist with communications for the California Department of Forestry (CDF), due to an uncontrolled wildland fire 65 miles northeast of Redding.

Sue Elsemore, N6EZN and Jack Littleton, KE6NO were on patrols to the west and south of Redding that afternoon for the CDF. At about 1400 PDT, we were advised by our base station — Joe Alcox, K6PJF — to return to the CDF headquarters for possible communication assistance on a fire out of control near Fall River Mills, a small town on State Highway 299 East. After making sure the fire required a fire camp, the Fire Information Officer (FIO) for the Shasta-Trinity ranger unit — Ernie Loveless — instructed N6EZN to set up at the fire camp which was being held at the McArthur Fairgrounds. On her way to the fire, she met with Sam Holder, WA6KKH, who would assist Sue at the fire camp.

Sue and Sam arrived at about midnight and set up a station immediately. At this time, we were faced with a problem. Our original plans were to work through the 04/64 WA6IEO repeater; however, they were out of range. Another attempt was made to go through the 22/82 W6NQA repeater, but once again, no luck. It was decided by Kenna Pine, KR6M to use 52 simplex. The copy was a little rough, but would work for relaying fire information back to the Redding CDF office.

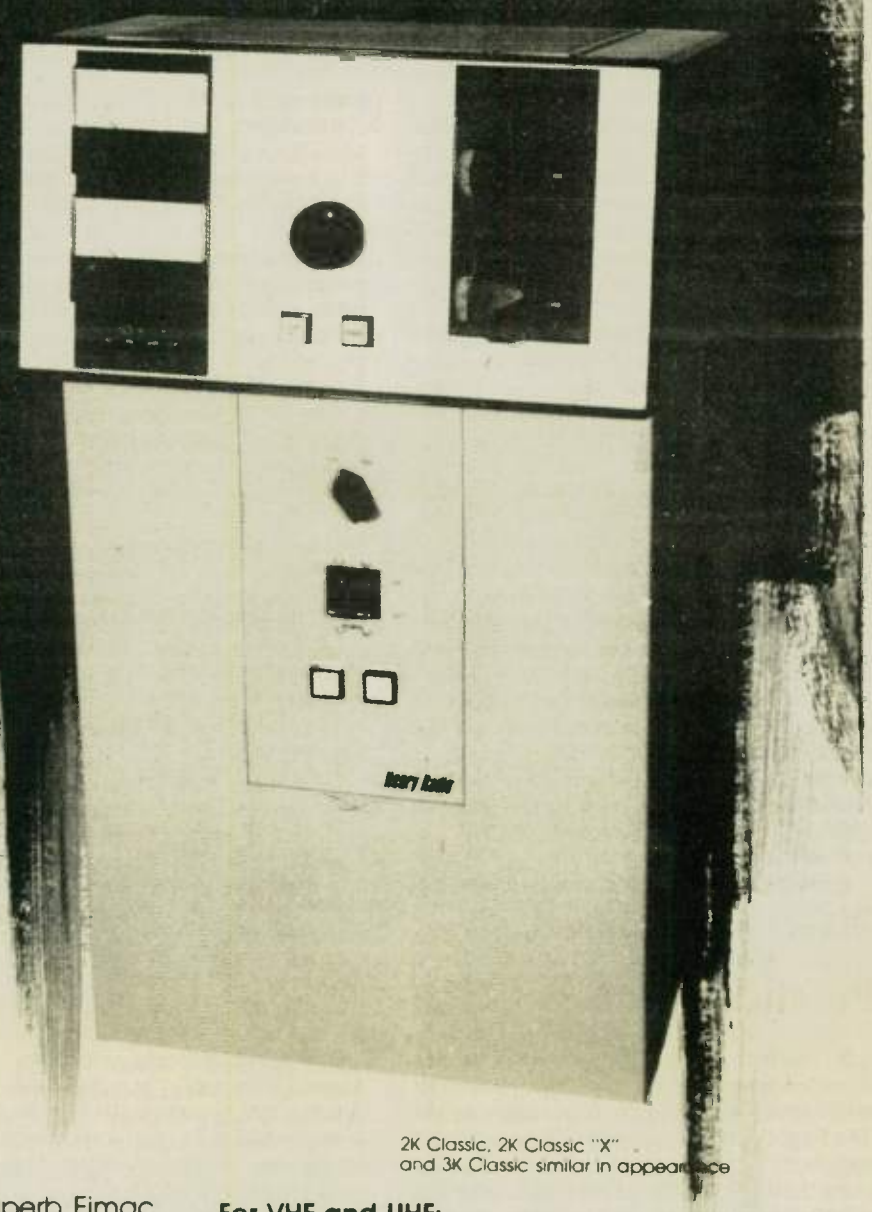
Once communications were set up, it was learned that the CDF repeater covering the fire area was out of service becuase an air tanker dropped fire retardant on it. This meant that all CDF traffic had to go via the amateur circuits. Also, the fire had downed the long-distance phone lines between Fall River Mills and Burney (and Redding), so plans were made to handle emergency traffic from Fall River Mills.

The fire was still out of control the morning of the 25th, but containment was expected at 1800 that evening. Joining the crew at the fire camp at this time was Dale Wonder, WA6NVY to relieve N6EZN and to let WA6KKH go to work. Kenna Pine, KR6M and her OM, John N6AUR kept communications all morning; I took over for a few hours in the late morning and afternoon. Also, Brewer Cox, WB6PHZ and Dick Truitt, N6GEK were ready to assist with backup communications. During that afternoon, FIO Loveless complimented us by telling us that our communications were working so well, the CDF's emergency portable radio equipment wouldn't be used.

The fire had burned 3,800 acres, including one structure worth $100,000. Fortunately, all injuries were very minor. There were over 400 firefighters with three-hand crews, one smoke jumper crew, three air tankers and two helicopters fighting the blaze.

Later in the afternoon of the 25th, the fire was contained, and at 1700 the phone lines were restored. Since the phones were operational again and fire information had dwindled, the VIP crew was released and returned home at 2030. □

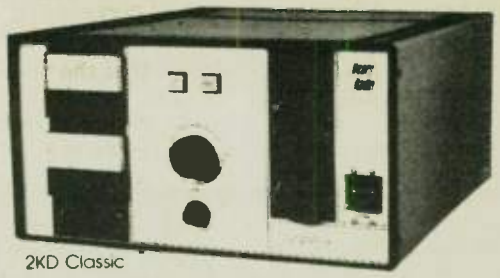
The world's broadest line of linears now boasts... four new amplifiers



2K Classic, 2K Classic "X" and 3K Classic similar in appearance

Now you have a choice of ten superb amplifiers spanning the spectrum from 3.5 mHz to 450 mHz. The most dazzling display of value and performance the amateur world has ever known.

Here they are! Treat yourself to the kind of amplifier you have always dreamed of owning.



2KD Classic

HF amplifiers..80 through 15 meters (10 meters included on export models)

The 1KD-5...1200 watt desk model $695

New!

The 2KD CLASSIC..2000 watt desk model. We challenge you to find a better desk model for even a thousand dollars more. $980

The 2K CLASSIC The latest and best version of the console that made the name "2-K" famous around the world. $1295

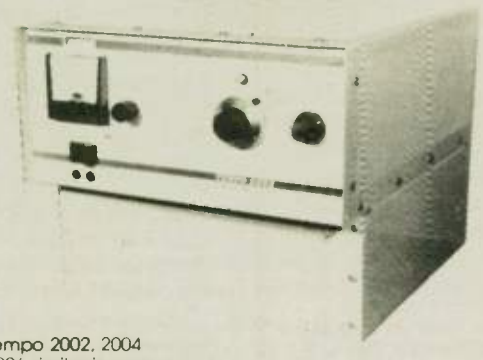
New!

The 2K CLASSIC "X" We can't think of any way to make this magnificent 2000 watt amplifier better. Rugged...durable...the last amplifier you may ever need to buy. $1790

The 3K CLASSIC uses the superb Eimac 8877 tube. More than 13 db gain. We believe the 3K to be the finest amateur linear available anywhere. $2695

The 3K CLASSIC "X" version available for export and military customers only. $2895

The 4K ULTRA A general coverage, general purpose amplifier for commercial, military, scientific and export customers. Not for sale to amateurs in the U.S.A. $4500



Tempo 2002, 2004
2006 similar in appearance

For VHF and UHF:

The TEMPO 2002 for 144-148 mHz. The 2000 watt workhorse of the 2 meter band. $1095

New!

The new TEMPO 2004 offers 2000 watts input at 440 mHz. Few amateurs have ever seen an amplifier capable of full powered UHF. $1295

New!

The TEMPO 2006. The same reliable design for 50-54 mHz. (For export only) $1095

All three models: 2002, 2004 and 2006 are also available on frequencies outside the amateur bands and are part of a unique line of high power commercial, industrial and scientific amplifiers and transmitters for communications, plasma-generation; nuclear magnetic resonance, heating and other special applications. Let us know what your requirements are. We're here to help both in the U.S.A. and throughout the world.

HENRY RADIO 54 YEARS OF SERVICE

Henry Radio

2050 S. Bundy Dr., Los Angeles, CA 90025 (213) 820-1234
931 N. Euclid, Anaheim, CA 92801 (714) 772-9200
Butler, Missouri 64730 (816) 679-3127

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

Run To The Sun

Melvin Fukunaga, KH6H

On Sunday, 25 July, 159 runners are gathered in the predawn darkness at Kanaha Beach Park next to the Kahului Airport to await the 5:00 a.m. start of the Valley Isle Road Runner's 6th annual Run To The Sun.

The Run To The Sun is a 37.5-mile ultra-marathon that winds its way from sea level to the finish line at the 10,025-foot peak of Maui's Mount Haleakala.

Maui County Amateur Radio Emergency Service members provided public safety communications between 11 of the 22 aid stations along the winding race course and three-course marshall vehicles. Manning the aid stations were Les Hieda, AH6AM; Clarence Matsumoto, KH6BYS; Wesley Herr, AH6DV; David Clothier, AH6EE; Charles Aki, KH6EXR; Melvin Fukunaga, KH6H; David Judd, NH6H; Stanley Yamato, KH6HHG; George Newcomer, KH6JVD; Michael Morris, WA6KWV; Randall Sherman, KH6MD; Donald Epler, KH6MQ; and Courtland Trist, KH6MX. Gary Fuchikami, WH6ACM; Bruce Hughes, KH6HA; and Terrence Clayton, KH6SQ rode with course marshalls and made sure that no major problems developed on the race course.

The KH6HHG repeater, 146.16/.76 in Wailuku was used for the bulk of race communications, with 146.52 simplex and 147.63/.03, KH6H repeater, used as secondary frequencies.

Howell Ching, KH6IJS and Wilmer Hew, KH6NO were stationed at the Maui Mall Shopping Center race headquarters, where an Apple computer was set up to receive race information. Split times and finishing times were relayed to the computer operators by KH6IJS and KH6NO. This allowed officials to have comprehensive race information available to the press about one hour after the end of the run.

Beautiful, sunny Hawaiian weather prevailed as winner Steve Sobaje crossed the finish line in a record time of 4:50:56.9.

There were no major problems during the race, and 147 runners had crossed the finish line when the race course was officially closed at 3:30 p.m. □

Oregon events get ham help

Roger Peister, KA0CRI

The recently formed ARES group of Scottsbluff, Nebraska sprang into action this summer, providing radio communications for two local public service activities.

On 15 July 1982, the Don Childs Memorial Five-Mile Run kicked off events of the Annual Oregon Trail Days at Gering, Nebraska. The Oregon Trail Days Parade was held on 16 July 1982. For both activities, amateur operators provided communications, relaying information to officials and working with the state patrol and local police departments to keep things safe and moving.

Scottsbluff ARES repeater WD0BQM (144.87, 145.47 and 146.52 simplex) was used. □

Boat, plane races get amateur help

Elvis Allen, W8CYO

Northern Michigan teamwork provided "public service via Amateur Radio" on 14-15 August. The Straits Area Amateur Radio Club was assisted by amateurs from the Top of Michigan Repeater Association and the Cherry Land Amateur Radio Club in providing communications for the American Powerboat Association's "National Top-O-Michigan's Marathon" — a stock outboard race through the upper chain of lakes in northern lower Michigan. A total of 80 miles of lakes and rivers were covered by Amateur Radio operators during this two-day race, providing all communications necessary for this operation.

On 11 September, the Cherry Land Amateur Radio Club enlisted the aid of the Top of Michigan Repeater Association, the Rogers City Radio Club and the Straits Area Amateur Radio Club to provide communications for the 27th annual small race, sponsored by the Ninety-Nines of Michigan and the Michigan Aeronautics Commission. This stock airplane race covered the entire top of Michigan's lower peninsula — over 200 miles from Traverse City to Rogers City to Mackinaw City and back to the Cherry Land Capitol Airport in Traverse City.

These groups of amateurs provided professional quality communications for both the boat and airplane races. They proved that teamwork and Amateur Radio go hand in hand when providing public service communications. □

WV amateurs help others

Ted Wolfe, WD4KHL

Southern West Virginia amateurs were active in several public service activities this past summer.

The Kanawha County ARES was activated on 17 July, following the discovery of a leak in a railroad tank car carrying liquid hydrogen chloride on a rail siding near the Union Carbide Technical Center at South Charleston.

The Red Cross requested operators to man radios at its Charleston headquarters and at two evacuation centers set up during the emergency; South Charleston city police requested amateurs to patrol residential neighborhoods while they were engaged at the emergency site and on roadblock duty. A Charleston repeater was used to coordinate Red Cross traffic while the amateur Security Patrol traffic was handled on the St. Albans repeater.

•

Putnam County lost its emergency communications on 9 August when telephone lines tying the system together failed. The County ARES net was activated and a command center set up at the courthouse at Winfield. Amateurs were then dispatched to police, fire and ambulance stations around the county.

The county system was restored sooner than expected, but the incident again demonstrated the ability of the amateur fraternity to respond to an emergency when called upon.

•

A Clay County ginseng hunter failed to meet his companions at the end of the day on 10 August. A massive search was organized during the following week, including at times the National Guard, Civil Air Patrol units, family, friends and other volunteers. But the search in a remote area of Kanawha County failed to locate the man. His body was finally discovered 24 August by another ginseng hunter. During the search phase, 13 amateurs took part in the effort — many of them spending several days providing communications support. □

Warbird Rally gets amateur aid

Bruce Woodland, W9UMH

The Hancock County Amateur Radio Club provided communications for the Indiana Warbird Rally, an air show of World War II airplanes. There were over 50 aircraft. On 3 July, there were over 30,000 in attendance, with a larger crowd on 4 July. Amateur Radio support was provided for several medical aid teams and a field hospital. The major effort was to provide communications around the parking aprons and the taxiing runways. Amateurs provided the necessary communications to control the clearing of spectators from around the aircraft for safety reasons prior to taking off and while taxiing in after landing. Several medical emergencies were handled, with the major medical needs occurring on 4 July.

Over 68 individual amateurs participated, representing 10 separate amateur clubs and 10 central Indiana counties. The Hancock County Amateur Radio Club provided the organization, the communications tent staffing, the power generator and the radios in the communications tent, as well as individual amateurs in the other areas. The communications tent provided a link with the Hancock County Sheriff, Indiana State Police, fire fighters and the Confederate Air Force communications. The Muncie Area Amateur Radio Club provided a portable 2-meter antenna and individual amateur participants.

Other clubs represented included the following: East Central Indiana Repeater Association; Pendleton Amateur Radio; Henry County Amateur Radio Club; Marion County RACES; Indianapolis Repeater Association; Indianapolis American Red Cross Amateur Radio Club; Indiana Navy-Marine Corps MARS; and Hancock County REACT.

It was rough work, but the job was well done and received official recognition from the Confederate Air Force Officials and the Federal Aviation Agency. □

Junior Olympics get amateur assistance

Reynolds Davis, K0GND

Members of the Lincoln (Nebraska) Amateur Radio Club provided necessary communications to help the Lincoln Jaycees coordinate the National Junior Olympics Track and Field Championships, on 30 July 1982.

Over 1,100 high school-aged athletes participated in the ceremonies, which included the traditional parade of athletes, welcoming remarks by dignitaries, music and a gymnastics display. The ceremonies were climaxed by the release of 1,000 pigeons and balloons. The event took place at the Ed Weir track at the University of Nebraska in Lincoln.

Amateurs who participated included Steve May, WA0ASM; Albert Polite, N0BAA; John Edson, N0COO; N0DMX; Jackson Clift, KA0ERQ; Dianna May, WD0FGV; Reynolds Davis, K0GND; and John Hauner, WA0YPY. □

Double duty for Savannah amateurs

Richard Smith, WB4APG

Saturday, 19 June 1982 started early for our group. The Great Ogeechee Raft Race Net, which was directed by Greg Dickerson, N4DBS, had to be at the river by 7:30 a.m. so they could be set up for the 8:00 a.m. start of the raft race. The launch point control — Tom Langenfeld, KA4RKX — radioed that the first of almost 100 rafts and canoes was launched about 8:00 a.m. The launching continued for about two hours. Water safety rules and regulations were enforced by several boats from the Department of Natural Resources.

Don Collins, KA4BLS was stationed aboard a DNR boat to keep them advised of trouble spots reported from along the river by Philip Neidlinger, KA4KOE; Lee Torriente, KA4CHN; and Demetria White, N4EXD, who were stationed aboard marine rescue boats from a local squadron. Norman Dennis, WA4EJA was stationed with the Red Cross van in case the need for medical assistance should arise.

Meanwhile, making their way slowly toward Savannah from Statesboro, Georgia were 283 bike riders who were taking part in the 3rd Georgia Annual State Bike Event (GASBE). The annual across Georgia Bicycle Tour started on the morning of 14 June from West Point, Georgia, 320 miles west of Savannah. Each night the tour would stop in a different town. Amateurs from across the state would furnish a radio safety net as the tour passed through their area and then passed the duty on when the bikers left the next morning. □

Communications van assists during flood

Marshall Reece, N0BLD

The afternoon of 9 June 1982, the Shawnee County, Kansas sheriff's office requested activation of the Kaw Valley Amateur Radio Club's amateur communications van, *AM-COM 1*, due to serious flood conditions. The initial mission of *AM-COM 1* was to assist with information coordination at Rossville, a community of less than 2,000 located northwest of Topeka.

The flooding has been referred to as the worst flood in the area since 1951, when much of northeast Kansas and northwest Missouri — including Kansas City — were victims of flood waters.

Very little information was available as to the need for amateur assistance or local services and utilities affected by the flood. Upon reaching the edge of the flood waters, *AM-COM 1* was led by Kansas Highway Patrol escort toward Rossville. Although the original attempt was aborted due to excessive railroad ties and other debris (including jumping fish) floating across the highway, another route successfully led to Rossville.

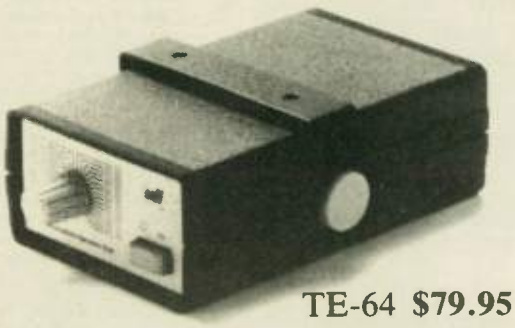
AM-COM 1 was established at the command post, and communication was begun immediately with the Topeka Police Department helicopter, Shawnee County Sheriff and Civil Defense. All communications on the commercial frequencies from the van were conducted by Amateur Radio operators staffing the communications van.

In all, over 10 amateurs were present at Rossville with about another 10 helping at the Red Cross and Civil Defense, and others running errands around the Topeka area. The total operational time was 10 hours from call-up to the return of *AM-COM 1* from Rossville.

A special "thank you" is extended to all who assisted or stood ready to assist in this emergency, which occurred on the heels of other public service work in weather watches over the two weeks preceding the flood. The civic-mindedness and dedication to public service by local amateurs demonstrated by this total is certainly one of which we may be very proud. □

Food for thought.

Our new Universal Tone Encoder lends its versatility to all tastes. The menu includes all CTCSS, as well as Burst Tones, Touch Tones, and Test Tones. No counter or test equipment required to set frequency-just dial it in. While traveling, use it on your Amateur transceiver to access tone operated systems, or in your service van to check out your customers repeaters; also, as a piece of test equipment to modulate your Service Monitor or signal generator. It can even operate off an internal nine volt battery, and is available for one day delivery, backed by our one year warranty.

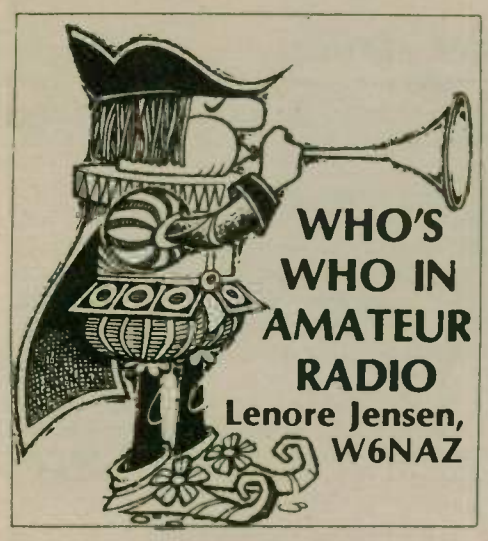


TE-64 **$79.95**

COMMUNICATIONS SPECIALISTS

426 West Taft Avenue, Orange, California 92667
(800) 854-0547/ California: (714) 998-3021

MasterCard VISA



Jay Holladay, W6EJJ *(Photo by Bob Jensen, W6VGQ)*

When the IRAS satellite goes up on 27 January, Jay Holladay, W6EJJ will see (we fervently hope) the happy culmination of his past six years' work. In fact, he's been "deep in space" during working hours since 1960.

Jay is also dedicated to Amateur Radio, now serving his third full term as Director of ARRL's huge Southwestern Division.

At the Jet Propulsion Laboratory, (JPL) in Pasadena, California, Jay's fancy title is End-to-End Information System Engineer for IRAS (infrared astronomical satellite). Astronomers and scientists worldwide are eagerly awaiting this small Earth-orbiter.

"It's to carry an infrared telescope," Jay explains, "which will enable them to make a sort of star catalogue from characteristics and positions as seen by infrared sensors in the telescope, rather than visible light.

"As you know, down here, the Earth's atmosphere strongly attenuates the infrared. Best we've been able to do, up to now, is to climb mountaintops or send up high-flying planes, balloons or rockets. Obviously, the ideal way is to fly a telescope around Earth.

"The information system should provide a reasonably optimized flow of data from the sensors on the telescope which are actually seeing the stars, via the telemetry and radio system back down to Earth, then through the computers so we can present this valuable data to the scientists."

When Jay arrives at work in Pasadena at 8:00 a.m., he's immediately on overseas telephone to engineers in England. It's almost their going-home hour, so they send each other a good deal of "electronic mail" as well. He's made many a flying trip to England and Holland, too.

IRAS is a cooperative project: the Dutch built the "bus" (the basic spacecraft) and will do overall testing; the United States provides the telescope and the Delta Rocket for launch; the British will have the primary tracking and control center.

The useful life of IRAS should be seven to eight months, "or until the helium boils away," Jay explains. "You see, the sensors must be cooled to the temperature of liquid helium — about four degrees above absolute."

He's been fascinated with "pioneering in this last frontier" as long as he can remember. Early, he had read everything by Von Braun, Ley and other experts; he definitely wanted to be part of space exploration some day.

Jay graduated from MIT (Massachusetts Institute of Technology), Boston in 1957 and soon had his first job — with the field engineering department of Collins Radio, out of Dallas. "Imagine how lucky for a ham," he recalls. "They sent me to school on the KWS 1 and 75A4!"

However, because he had done work in school in meteor scatter, Jay was soon assigned to tropospheric scatter studies, in Tucson.

The dream came true when he was sent to South Africa to work on the installation of a tracking station. He'd been trained and had experience in phase lock receiver equipment.

Jay and his wife, Sally, flew to "Joburg" (affectionate nickname for Johannesburg) for a short trip which extended to two-and-a-half years. Their daughter, Beth, was born there.

Originally, the station was part of a worldwide network for tracking the moon probe, *Ranger*. Naturally, pioneering activity in such sophisticated efforts was bound to have heartbreaks, "but our station worked okay, glad to say!"

Successive and more complicated probes led to the "big thrill" when *Mariner II* flew by Venus — an event so important even Time magazine put JPL Director Dr. Pickering on its cover. (By the way, *he* had been an amateur, too.)

With negotiations underway for an upcoming tracking station to be situated in Spain, Jay transferred to the JPL in California. (On one of his return periods in the southland, he took eight advanced courses in computers — knowledge which would prove invaluable in time to come.)

Before being sent to Madrid, he was asked to return to South Africa in the summer of '64 to help prepare for the trips of *Mariners III* and *IV* to Mars. "Because it's in the other hemisphere, I experienced four winters in a row!"

But by April '65, Jay found himself in Madrid, putting in equipment for a Deep Space Communications complex. He reflects, "It worked out that I was in Joburg for the launch of *Mariner IV*, flew home for work at JPL and returned to Spain in time to receive the first pictures from the bird. I was lucky to be in on the whole thing.

"I suppose everyone knows that the network uses three tracking stations at three different meridians of longitude, about equidistant. Thus, as Earth turns, a deep space probe is always in view of one of them. At present, we have Goldstone (California), Madrid and Canberra."

After sufficient travel to equal several circles of the globe, the Holladays were glad to settle down "in a home of our own" near JPL where he was to work as a Deep Space Network project engineer for our first lunar lander, *Surveyor*.

"My job was to coordinate all the tracking and support activities," he mentions. "You may remember there was much speculation whether the upcoming *Apollos* would disappear into moon dust and never be seen again. *Surveyor* proved the surface wasn't that much different from our desert here."

"His long-time desire to be a spacecraft controller gave way, because of his wide experience in ground systems, to the enticing offer to become Ground Data System Engineer for *Mariner IX*. "No," Jay laughs, "we weren't going to grind up data; we were to look out for all facilities on the ground — including tracking stations, communications lines and computers in the control center."

The aim was to map all of Mars in preparation for the Mars lander, the *Viking* project. After doing all the studies, he was needed for several interesting projects, which included work on the shuttle. A year of working with Houston gave him insight into the other world — *manned* space travel.

And now, with IRAS, Jay Holladay has accumulated even more exceptional experience in the current "frontier."

Meanwhile, Amateur Radio had filled in with "hardware and operating" whenever system design activities kept him deep in paper and computers.

Jay discovered our hobby via QST on a newsstand at age 13, learned code from W1AW, and has been addicted ever since. Even though his ARRL Director responsibilities get most of his non-work hours, Jay's managed to reach within four of the top DX Countries list. He has 5-Band DXCC plus a trophy from AMSAT attesting he was the first amateur on the West Coast to earn WAS via OSCAR.

He served conscientiously on the Long-Range Planning Committee, and is proud of the recent advances the League and its good friends have achieved in legislative matters.

Yes, his Amateur Radio history has been of inestimable value to his career. "Did you know," he says, "that we have at least 150 hams in the JPL club?" That must tell us something about engineers-for-space and the Amateur Service.

As for exploration itself? "Just look at the famous photos of Earth, snapped from space. We see one fragile planet — and the part which makes life possible, the atmosphere, is a small, tenuous part."

He became very thoughtful. "You know, if we don't take care of Earth, it may not be here to take care of our future generations." □

OFF THE AIR

Plans under way for Intrepid station

Early in July, I read of the plans for the *Intrepid* museum here in New York, and I sent a clipping to Peter O'Dell, Public Information Officer of the ARRL. Your readers will be interested to know that plans have been under way for some time to get a station on the carrier. Problem has been, "Who will sponsor it *AND* maintain it?"

I recently saw Steve Mendelsohn, a CBS engineer, and he tells me lots of people are working on the idea. They have contact with Navy organizations and, hopefully, something will get done soon.

HARRY TREDE, WA2KNF
Setauket, New York □

Ruth Moser now in California

On 15 November, we were informed by Dr. "Mert" Moser, W6HS — via phone patch of Len Bell, KH6AFG in Honolulu — that Ruth Moser is scheduled to be air-evacuated in a stretcher, on board United Airlines Flight 294, which is scheduled to arrive at LAX (Los Angeles International) at 11:25 p.m. on 20 November.

A waiting ambulance will take Ruth to the Holy Cross Hospital in Mission Hills, California, where she will continue her long battle to recover from the devastating damage of the cardiac arrest she suffered on 20 September, the night before her scheduled hip operation.

Fortunately, her broken hip mended itself during the eight weeks she was bedridden in the Coronary Care Unit of Straub Hospital in Honolulu.

Howard F. Maxson, K6PGG of Carmichael, California has been meeting most schedules and allowing Mert's son, Warren, to talk to his father. Friday, 19 November, Mert was on at 7:00 p.m. local time, on 21358 kHz, for our last radio schedule prior to his leaving Honolulu with Ruth on Flight 294.

RALPH CABANILLAS JR., W6IL
Hollywood, California □

He's looking for field-strength meter

Now for the $64 question. Where can I find a top-quality field-strength meter for the ham bands? Been searching the want ads fruitlessly. Have one arm, no tools, no shop and have been retired aviation radio electronic maintenance technician for the past 60 years.

ERNEST ADLMANN, WB6UEB
735 Taylor Street
San Francisco, CA 94108 □

CA club honors Senator Goldwater

Leisure World is a senior citizens community located in Seal Beach, California. There are some 6,400 apartments with some 8,500 residents. There are many clubs here. One of such is the Radio Club. It has members of long-standing in radio. One member worked for NBC at its inception.

The club has a 2-meter and CB station in a public building and another station in the Seal Beach police station. The club is set up for relief or disaster situations, such as fire, earthquakes and other emergencies.

Following is an article from the community newspaper telling about a recent action.

Radio club honors Goldwater

Senator Barry Goldwater was voted an honorary life member of the Leisure World Radio Club at their last meeting.

The reason?

For the last few years, he has worked toward improving the performance of audio and visual home electronic equipment. His latest accomplishment was being instrumental in enacting legislation permitting the FCC to improve standards for the rejection of radio frequency interference.

All club members were eager to sign his card, says club spokesman Bev Fredendall, and congratulate the Senator.

They also would be honored, says Fredendall, if he ever donned his new name tag, engraved: "BARRY . . . W7UGA" and paid them a surprise visit.

DONALD JOHNSON, WA6OWL
Seal Beach, California □

Club receives OK on carrier station

With respect to the comments of Ian MacDonald, W1GMC (October) and Charles Ellis (November) calling for amateur operations aboard the carrier *Intrepid*, please be advised that the Teaneck (New Jersey) PAL ARC has received tentative verbal permission toward that end. By the time this reaches you, some members of the club will have met with the directors of the *Intrepid* Air-Sea Museum to establish the date and details of the operation, which we hope to schedule prior to the year's end.

We are considering a one-day "special event"-type station operating on 20 through 2 meters. The call to be used has not been decided upon. One forseeable problem is that of publicity; if the date of the event does not allow sufficient lead time to make the various publications, we'll simply have to talk it up over the air!

The concept of a permanent resident station on the ship is a good one, but probably a bit premature; the museum is far from being completed, with much work to be done on exhibits and opening up new public areas. Nonetheless, the subject will be raised and pursued.

In the interim, we are hoping for a successful day so that other clubs in the New York metro area might be tempted to mount their own "DXpeditions" to the ship.

It's a helluva groundplane!

BUD WEISBERG, K2YOF
Bergenfield, New Jersey □

Code test weeds out the unwilling

I recently received my copy of the November issue of **Worldradio**, and I would like to add my 2 cents worth to the great code debate.

One prolific editorial writer known to us all has long been espousing the peculiar thesis that if we only eliminated the 5 wpm code requirements we would get an enormous influx of young amateurs from the ranks of idle dropouts and hubcap thieves who would, through Amateur Radio, become electronics technicians and put the United States back into the lead in the race with Japan. Let's face it: Japan has pulled into the world lead because of good business management, a comprehensive national development plan which makes quality control a matter of patriotism, and the lack of a large armaments industry to divert the best engineers away from work in mundane consumer goods. A no-code ham license will not change this.

Why all the fuss over 5 wpm? A person of average intelligence can learn 5 wpm in about three hours divided up into 15 minute daily sessions. Speaking to fellow amateurs, I would compare the code requirement to the system used by a college professor of my acquaintance. He always used the first class session to harangue his students about how difficult the class was and how strict he was. The weak of heart transferred to another class, but those who remained found his class to be no more difficult than any other and found him to be affable and easygoing. His purpose was simply to weed out those who are not willing to face a challenge. Those who attack the challenge find that it is no barrier after all.

Now I ask you: Are we really going to find the bright engineers capable of putting the United States back into the lead of world electronics in people who are not willing to face the challenge of learning code? No. The challenge of electrical engineering is far more imposing than the challenge of 5 wpm. Whoever cringes from the latter will never master the former.

What harm would a no-code license do? There is not much CW emergency traffic on VHF and UHF. The problem is that it is a foot in the door. It will produce a large number of hams who, never having learned the code, will lobby ever more vigorously for a no-code HF license. And if they got their way would then lobby for more incursion of phone bands into the CW bands. This is exactly what some single-minded people would like, including the editorial writer mentioned above.

The great thing about CW is that in this day of crowded phone bands, you can almost always find elbow room for a QSO in the code bands. And you don't need a

TH6DX with a kilowatt to hold a frequency for a leisurely chat.

Even the 20 wpm for the Extra is no real obstacle for anyone who regularly uses the code. It always amuses me when a ham tells me he is afraid of the 20 wpm test, and all the while he is copying my 20 wpm without difficulty. This brings me back to my original point: The code does not weed out the incompetent or the stupid or the anti-social; the code weeds out those who are not willing to make an effort against an *apparent* obstacle.

There should be a no-code license for UHF digital experimentation, but it should not be a ham license. There is plenty of spectrum space up there for lots of wide-bandwidth channels for high speed digital work. But if you want a new UHF digital band to be used, you had better not have a written test for it. Anyone unwilling to spend two or three hours to learn the code will never spend the tens or hundreds of hours necessary to learn digital electronics and radio theory.

On the ham bands, above 144 MHz, there should be a more liberal policy for allowing the use of digital computer codes, such as machine language, at speeds consistent with narrow bandwidth. That would do much more to further digital experimentation than a no-code license would.

DAN SCHECHTER, AKØS
Amenia, North Dakota ☐

Against third-party traffic regulations

We have lost enough privileges.

In the old days, there were no regulations on third-party traffic to foreign countries (except during wartime or with certain "unfriendly countries"). Over the years, with the powerful lobbies of AT&T, IT&T and other influential financial concerns, the International Telecommunications Union (ITU) has outlawed third-party traffic between radio amateurs of foreign countries. However, it is up to the host government to enact and enforce such ITU regulations, and our FCC has allowed us (exceptions) permission to handle third-party traffic with certain countries that have entered in agreement with the United States. These countries are listed in QST every other month. They cover most of South and Central America, Canada, Australia, Israel, Jordan and a few other countries.

The main arguments against third-party traffic agreements seem to be very light compared to the desirability of having the FCC deregulate all restrictions and penalties against U.S. amateurs from handling third-party traffic with any foreign country, as long as the foreign station is willing and, of course, as long as the traffic does not include monetary reimbursement nor be in relationship to a commercial or business transaction or activity.

The argument for the present government regulation usually says that AT&T and IT&T will go broke if the FCC allows such traffic. This is highly unlikely, nor should one think that it will have any adverse impact upon the telephone or telegraph services. Another argument is that many foreign countries will lose out on additional tax revenues charged on foreign calls. This may or may not be true, but certainly this is not an FCC concern. If foreign countries want to regulate and punish their populace for communicating third-party traffic, that is their concern and their right, but the FCC should not be the enforcer of such an obviously detrimental law as will be demonstrated below.

The reasons for third-party traffic are manifold. As you know, DX QSOs really do little for good will between countries, as anyone who witnesses the pileups on 20 meters knows (except for non-rare DX like Canada or Australia, etc.). However, third-party traffic in the form of Christmas greetings via Amateur Radio, notices of birth, reestablishing old acquaintances, handling messages free of charge for traveling tourists, etc. can go a long way in making our hobby more relevant in providing a public service and establishing international good will, as well as providing positive publicity for Amateur Radio, which is badly needed today.

Witness the recent third-party agreement with Australia. 20 meters is not overloaded with phone patches into Australia, nor are Australian telephone companies collapsing. But we are handling much more tourist traffic, friendship traffic, and trading more information on the National Traffic System from the United States and Australia and back, and I am sure it has made many new friends for Amateur Radio.

Certainly it is frustrating when I talk to a friend of mine in Scotland, not being able to ask of him info on my brother-in-law living in the same town. This and other situations make the current FCC regulations against international third-party traffic irritating. One may ask if it is any of the FCC's business to take away this ability to so communicate. Has government gone too far in telling us that previous rights enjoyed and taken for granted in yesteryear are now privileges, or worse, no longer privileges? In a day when the FCC cannot clear its frequencies of malicious interferers or stations running excessive illegal power, nor provide their more essential basic

services in a reasonable time, aren't we better off not having to be encumbered with yet another unenforced regulation which just further creates disrespect for our legal system? I will not welcome the day when we as amateurs start making up our own laws as we go, nor conversely, when we acquiesce to poor ones which create apathy and disgust.

I remember the recent earthquake in Italy where stations on the East Coast and in Italy were standing by for more than a day, ready to pass priority and health and welfare traffic overseas on behalf of loved ones and relatives, until the state department was able to work out a temporary agreement with the Italian government. How much priority and emergency traffic has been refused by American amateurs from foreign countries just because of the fear of having their licenses taken away?

I am convinced that the present law serves Amateur Radio and the general citizen of the country adversely and should be deregulated and removed. Of course, what the foreign country institutes in their amateur laws is their own matter and their own right, and I do not presume to tell them what they should do. My view is not the official ARRL view, but then again, if the League were a bunch of unthinking yes men, where would real progress be today?

I realize my views may not coincide with yours, and I welcome your views, input, comments, etc. As a radio operator, I am a communicator and love to do so, and it seems to me that if I can build a station that can work around the world, I should be permitted to send a message to that station for a mutual friend or fellow townsperson without our government threatening to take away my license to operate. Meanwhile, I obey the present law but encourage others to attempt to change our bad laws by writing the FCC and the ARRL about their views on this or any other topic wherein our governmental structure may better enable our citizenry to function and develop.

DONALD SIMON, NI6A
Section Traffic Manager, East Bay
El Cerrito, California □

American Radio Relay League

J.A. "Doc" Gmelin, W6ZRJ

Past Director, Pacific Division
ARRL Honorary Vice-President

While I have discussed the election of ARRL directors and vice directors in past columns, it is worth repeating this important aspect of our national Amateur Radio organization again, particularly at this time of year when votes are counted at Headquarters.

There are 16 directors of the League who are elected by the membership in the divisions they will represent, with 15 divisions in the United States and one for all of Canada. Directors are elected for two-year terms, with an election for eight directors on alternate years. Thus, each year, eight directors start a new term, with the other eight the following year.

Candidates for the office of director or vice director are nominated by a petition of at least 10 full members of the ARRL. In order to qualify, candidates must be full members of the League and and hold at least a General Class license in the United States or a Canadian Amateur Advanced Certificate in Canada. Candidates must be at least 21 years of age.

In addition, candidates must have been a full member of the ARRL for at least four continuous years at the time of the election.

One other important qualification is that the candidates cannot be commercially engaged in the publication of radio literature — in whole or in part — for radio amateurs, and must be free from commercial or governmental connections of such a nature that his or her influence in the affairs of the League could be used for his or her private benefit. Nor is a person eligible who is engaged in frequency-allocation planning or implementation.

Since the last time I discussed ARRL elections in this column, there have been a number of changes to the procedure.

First, the time length for the circulation and receipt of petitions has been lengthened. The first notice now appears and calls for nominations in the July issue of QST. However, nominating petitions must now be received at ARRL Headquarters no later than noon on 1 September of each election year.

The ARRL Executive Committee then meets to qualify candidates, and where there is only one valid nomination, the candidate is declared elected. Where there are two or more candidates, ballots are ordered to be sent to the full members of that division. Ballots go out no later than 1 October.

A new procedure was started in 1981, giving each candidate the right to submit, in camera-ready form, a statement of no more than 300 words to be included with the ballots sent to the members of that division.

Candidates may write what they wish, with no editing on the part of Headquarters. However, they must sign the statement, and the submitted information must be true to the best of the candidate's knowledge and belief.

In addition, no candidate is allowed to make any derogatory statement about any person or entity. Each candidate for office is required to execute and be bound by covenant not to sue the League.

This procedure was instituted by the ARRL Board of Directors after the idea was first presented some years ago by now First Vice President Carl Smith, WØBWJ, then Director of the Rocky Mountain Division.

The proposal was studied for some time, and several suggestions on procedures were made before the final procedure was adopted.

The idea is to give each candidate a fair chance to present his or her qualifications in writing to the members of his or her division.

In past years, many candidates would mail election campaign material to members, or perhaps radio clubs, in their divisions. As printing and mailing costs increased with inflation over the years, many well-qualified members who became candidates were unable to afford this campaign technique.

The new procedure is designed to at least give each candidate some chance to make known his or her qualifications. The new procedure does not, however, stop candidates from campaigning by whatever means are fair and legal.

There have been some slight problems with the new procedure, mostly involving length of the material and what candidates wanted to have printed. Procedures now in effect at Headquarters should have any problems at a minimum, if not totally eliminated.

In order to be valid, ballots must be received by Headquarters no later than noon on 20 November.

Counting of the ballots is done by a "Committee of Tellers," selected by the Executive Committee from officers and directors. Of course, no director who is up for election can be on the "Committee of Tellers." Those on the Committee are sometime honorary officers or retired Headquarters personnel in the Newington area.

In order to make absolutely sure there is no room for error or cheating of any kind, there is also a certified public accountant present who is neither a member of the League nor a radio amateur. Thus, ballot counts are all legally certified by the public accountant.

In recent years, there have been less charges made on the part of amateurs and League members that votes are rigged and that Headquarters or others select the directors of the League.

Having seen the ballot counting myself, I know there is no chance for anything that is not "above board" in League elections. The last time I attended the counting of the ballots in a director election was the year my replacement was elected. So that there could be no question that the director could in any way influence the counting, I was excluded (and I wanted to be excluded) when the ballots for the Pacific Division for that year were counted. (I was not a candidate.)

Members of the League can be present at the counting of ballots if they wish, but can only do so if they have a petition of request signed by at least 20 full members of the League.

Both the winning and losing candidates are notified of the results of contested elections. League members are notified by a write-up in QST in the 'Happenings' column. In addition, a bulletin transmitted by W1AW and ARRL Official Bulletin Stations lists the results of ballot counting with a number for each candidate listed.

In my experience, League elections are run fairly and efficiently, notwithstanding some of the statements made by individuals who occasionally attack the League. Every effort is made to make the director and vice director election fair in all ways.

With the section structure being changed to make the office of section manager more involved with the policy-making of the League, these elections may become more contested. The election procedures were created to ensure that these elections are kept at the high level of the League's election procedures in past years. □

Two-way communication for the third time

Katashi Nose, KH6IJ

The 2-meter repeater in Hawaii was used on 10 October for a two-way communication with Texas. Bob Terry, KH6CIZ was in Texas and set up the schedule, using the 147.09 repeater. Control operator in Hawaii was Dr. Arthur Sprague, KH6GPI. A few of the local operators who talked to the repeater of Terry were Dennis Morisada, KH6NJ; Hart Akagi, KH6BIO; Steve Kim, WH6AMA; Dale Ott, AH6AC; and Chris Harison, KH6EJZ.

This was the third time Hawaii amateurs tried anything like this. The first two-way communication was made with Gettysburg, Pennsylvania about five years ago via trans-Pacific telephone, and the second time was with Texas.

— Honolulu Star-Bulletin, HI □

DX WORLD

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

Activities Calendar

15 January	PVRC World Communications Year Contest
28-30 January	CQ World Wide 160-Meter Contest (CW)
19-20 February	ARRL International DX Contest (CW)
05-06 March	ARRL International DX Contest (SSB)
26-27 March	CQ World Wide WPX Contest (SSB)
26-27 March	PPC Rio QSO Party (CW)

W-100-N

Applications for this award continue to be slow, and again this month only one was received. Our congratulations go to:

187. N5AFH William M. Sullivan III

Tom Wong, VE7BC relaxes in the shack of his Burnaby QTH. Tom has a Signal One flanked by Collins equipment. ***(Photo by N6JM)***

China

BY1PK continues to keep the DXers happy on 20 and 15 meters, CW only. There was a report that this station would be operating in the CQ World Wide DX Contest at the end of November. The station was to be operated by a guest operator from Japan. If you were active in the contest and worked BY1PK, you worked JA1BK. The QSL cards for this operation still go the normal channel — P.O. Box 6106, Beijing, PEOPLE'S REPUBLIC OF CHINA.

A station signing BY8AA showed recently on 15 meters, as reported in *The DX Bulletin*. The signal had a tremendous chirp, which leads to skeptical thinking, because of all the commercial equipment that has been shipped there. Also, operation from BY8 has not been scheduled yet. The call areas designate the province. Canton province, BY7 and Hunan province, BY4 are scheduled to be activated next.

Tom Wong, VE7BC did get back to China in early October and was operating BY1BC, but had problems with TVI, thus restricting him to operation on CW.

Things should improve over there. A good time to look for a BY type would be in February, as the whole world will be listening for VK0HI on Heard Island to show, maybe even BY1PK. Now, there is an interesting QSO — BY1PK and VK0HI!

FLASH!

DX Newssheet received a postcard from BY1PK that BY8AA is active on 15 meters as of 4 November. The station is in Szechuan Province.

Heard Island (VK0HI)

At the time of this writing it is mid-November, and both groups are still planning their Heard Island DXpedition. This includes the WIA (Wireless Institute of Australia) group (with substantial financial assistance from both the IDXF and NCDXF), who will be signing VK0HI, and Jim Smith and his group, who will be signing VK0JS and VK0NL. There has been no word of the two groups working together, and neither has made mention of the other. It would be very interesting if both groups arrived on Heard Island.

Jim Smith, VK9NS writes that he has already informed the DXCC desk at Newington of his intent to land and operate from Heard Island with the necessary documentation to ensure prompt acceptance of VK0JS and VK0NL QSL cards. The call VK0NL will be used by Jim's XYL Kirsti, only, and will result in a brand new YL country being available.

Cards for VK0JS and VK0NL must be requested separately from HIDXA, Norfolk Island, AUSTRALIA 2899. Return postage and an SSE is a must! Jim requests that, during the first week of operation, limit your contacts to one CW and one SSB QSO. And no duplicate contacts, please.

Dan Handelsman, N2DT — our North American coordinator for the WIA operation — also keeps up to date. Worldradio has a photocopy of the VK0HI license, issued to a Mr. D.J. Shaw in Heathmont, Victoria. It was issued mid-October and is valid for one year. Dan writes that if the U.S. DX community is not forthcoming with their support, the expedition will *NOT GO!* The total cost of the expedition will be $150,000, with the International DX Foundation and the Northern California DX Foundation each donating $10,000.

There will be two routes for contributions. Individuals are encouraged to contribute to the IDXF and/or the NCDXF to support their present and future activities. Other clubs and organizations should contribute to the WIA, Heard Island Trust Account. This is an escrow account where all monies are to be protected and where they will be transferred only when the WIA feels the expedition is ready to go. In case of difficulty, the monies will be refunded. The funds, made out to the WIA, can be sent directly to the WIA, Federal Executive, P.O. Box 150, Toorak, Victoria 3142, AUSTRALIA, or to Dan Handelsman, 16 Attitash, Chappaque, NY 10514. Dan will ship them to the WIA in batches.

Clipperton Island (FO8)

In early November, a French military group was to have landed on Clipperton Island. The group was to have included Amateur Radio operators, who would be signing FO8GW from the island for three weeks, beginning 8 November. Nothing had been heard by mid-November, so perhaps this was just another one of those rumors floating around.

Incidentally, for you W-100-N applicants, Clipperton Island does not count as part of French Polynesia. No one lives there, so it does not qualify as a "nation."

Oman (A4X)

At least three stations have been reported active from Oman. On 10 meters, A4XJN has been working into the East Coast on 28.675 MHz from 1700 UTC, or A4XYF on 28.598 MHz at 1300 UTC.

If you prefer CW contacts, look for A4XYC, who has been found on 28.035 MHz around 1300 UTC.

During the end of November, special event station A4XX was scheduled for simultaneous operation of 10, 15 and 20 meters. The operation was to celebrate the 10th anniversary of the Royal Omani Amateur Radio Society. There is a special award for working A4XX on all three bands. Send your QSL card to ROARS, P.O. Box 981, Muscat, OMAN.

Qatar (A71)

On 15 meters SSB, A71AD has been reported near 21.275 MHz after 1830 UTC. This station has also been on 20 meters working the deserving about an hour later on 14.207 MHz.

Another multiband station that has been reported is A71BJ, who has been found on 21.316 MHz from 1600 UTC working the East Coast and on 28.540 MHz after 1200 UTC, working Europeans.

A third station, A71AE, has been busy working CW on 28.015 MHz from 1200 UTC for those who need a CW contact from Qatar.

Bahrein (A92)

If you need a contact with Bahrein on CW, look for A92CE, who has been busy on 20 meters at various times. One report of this station had him working after 0400 UTC on 14.054 MHz and later at 1200 UTC on 14.030 MHz.

A new station, A92DQ, is reported active daily from 1800 UTC between 14.205 and 14.215 MHz. This station also plans both SSB and CW operation on 10, 15 and 20 meters.

For 5BDXCC types, look for A92P, who has been found between 1600 and 1900 UTC on 3.795, 7.070 and 21.295 MHz, depending upon the propagation.

Montserrat (VP2M)

Alex Kasevich, VP2MM writes from Plymouth, Montserrat, in the West Indies, "I have been living on Montserrat going into my second year. I've moved from my previous apartment in Plymouth, where my antennas were very poor, to Spanish Pointe, where I have a larger antenna farm enabling me to operate on more bands. I am very QRV most every day on 15, 20, 40 and 80 meters, low ends. Also QRV on OSCAR 8 mode A and the RS satellites. All QSLs go via my manager only, along with SASE, to Rick Casey, AB1U, 85 Hacienda Cir., Plantsville, CT 06579."

Montserrat is not considered one of the rare types of DX, and as a result, reports of the activity of these stations are not listed in the DX newsletters. Of course, this doesn't help the new DXer very much. So if you need Montserrat, look for VP2MM.

Lebanon (OD5)

One active station from Lebanon is George Chalouhy, OD5FB, who frequents SSB on 14.210 MHz most days from 0200 UTC. This station appears to be quite active, as he has been reported in several of the newsletters.

Another station from Lebanon is Ted Truszkowski, OD5LX, who has been active for many years. I have never heard Ted on SSB and don't believe that he does work SSB. Look for OD5LX near 14.030 MHz from 0200 UTC. He has also been reported on 7.001 MHz after 1930 UTC working Europeans.

OD5KV seems to enjoy SSB as he has been found on 15 meters operating near 21.281 MHz from 1730 UTC.

Prefixes

When you have worked just about everything on the bands, it's time to hunt prefixes. CQ Magazine offers such an award for working the various Amateur Radio prefixes throughout the world. Details of the WPX award are available from Norman Koch, K6ZDL, P.O. Box 1351, Torrance, CA 90505. Be sure to include an SASE with your request.

The big DX contests uncover some of the rarely used prefixes. During the CQ World Wide DX Contest, the UK2PCR club operated EW6V from Georgia, with the UK2BAS club in there with RG6G from Armenia. This RG6G call is not to be confused with RG8U.

The call 4U37UN is the same as 4U1UN, United Nations headquarters in New York City.

In Nigeria, amateurs will be signing with the 5N22 prefix to celebrate the 22nd anniversary of Nigerian independence, while in Zambia, amateurs will be using the 9I prefix to celebrate the 18th anniversary of their independence.

French Antarctic (FB8)

A few more FB8 types will be making the scene from the French Antarctic. F6BFH reports through the *DX News Sheet* that FB8XAB will soon be on, and probably is on now. QSL manager for this station will be F6GXB, who also will manage the next two, FB8ZQ and FB3ZR. These two stations are also due to appear.

FB8WH, who still has no QSL manager, and FB8WI, whose QSL manager is F6ICA, are due to operate from the Antarctic area.

The DXCC list shows that FB8W is the prefix for Crozet Island, FB8X is the prefix for Kerguelen Island, and FB8Z is the prefix for Amsterdam and St. Paul Islands. Let's hope that is where they will be. The prefix FB8Y is just plain Antarctica.

DXCC

Three countries have now been deleted from the DXCC list. This includes Serrana Bank (HKØ, KP3, KS4), Bajo Nuevo (HKØ) and the former Saudi Arabia/Iraq Neutral Zone (8Z4). This brings the current number of DXCC countries down to 315. Any new contacts with Serrana Bank and Bajo Nuevo will count as San Andreas Island (HKØ). Of course, if you had worked these countries prior to the deletion, they will count for your DXCC but not the Honor Roll.

There is talk of having another DXCC country added to the current listing, that one being Rotuma Island. This would be under Rule 2b, the separation of at least 500 miles of open water between the two areas in question.

Rotuma Island (3D2)

This is the island in question regarding DXCC status. This was activated by the team of DK6XR and DK7XL the last week in October during their Pacific tour. Here they operated as 3D2XR and were found giving out contacts during the CQ World Wide DX Contest. Presently, all 3D2XR would count as DXCC status is Fiji. Island hunters can count Rotuma Island as OC60 for Geoff Watts' IOTA Award (Islands-on-the-Air). Although Geoff no longer edits the *DX News Sheet*, he still handles his IOTA awards program.

Clubs

Sooner or later, the deserving DXer becomes involved with a local DX club. The one thing in common with members of such a club is their lust for DX. The local club is also a source of distributing information on DX activity and what is being worked in the local area, which is usually announced on the local DX repeater. In past issues of Worldradio, various DX-orientated clubs have been included in this column, usually with the latest slate of officers who have been elected.

A list of the active DX clubs in the United States and Canada has been compiled. If the mailing address is known, we have included it, but only if it is a post office box, as that is a permanent address. This list is by call area.

Southern New England DX Association
Buffalo Area DX Club
Long Island DX Association
North Jersey DX Association — P.O. Box 505, Ridgewood, NJ 07451
Rochester DX Association
Dauberville DX Association
Frankford Radio Club
National Capitol DX Association
Potomac Valley Radio Club
Western Pennsylvania DX Association
Central Florida DX Association
North Alabama DX Club
South Florida DX Association
Southeastern DX Club
Tri-State International DX Association
Acadiana DX Association
Alamo DX Amigos
Albuquerque DX Association
Arkansas DX Association — P.O. Box 3323, Little Rock, AR 72207
Delta DX Association — P.O. Box 73, Metairie, LA 70004
Red Stick DX Association
Richardson Wireless Klub
Texas DX Society
Central California DX Club
Northern California DX Club — P.O. Box 608, Menlo Park, CA 94025
Redwood Empire DX Club — P.O. Box 4881, Santa Rosa, CA 95402
San Diego DX Club — P.O. Box 6029, San Diego, CA 92106
Southern California DX Club
Central Arizona DX Association
Southern Arizona DX Association
Southern Oregon DX Club
Western Washington DX Club
Willamette Valley DX Club — P.O. Box 555. Portland, OR 97207
Michigan DX Association
Northern Ohio DX Association
Southwest Ohio DX Association
Stark DX Association
Greater Milwaukee DX Association
Fort Wayne DX Association
Northern Illinois DX Association
Sheboygan County DX Association
Eastern Iowa DX Association
Kansas City DX Club
Kansas DX Association — P.O. Box 454, Salina, KS 67401
Mile Hi DX Association
Twin Cities DX Association
Western Kansas DX Society — P.O. Box 813, Garden City, KS 67846
Canadian DX Association — P.O. Box 717, Toronto, Ont.
British Columbia DX Club
Fraser Valley DX Club

If your club is not listed above, or the address is incorrect or missing, drop us a note. This, of course, is for DX-orientated clubs only, as general-interest clubs are listed elsewhere in this issue of Worldradio.

The T31/KH1 situation

Prior to the formation and independence of Kiribati, part of the group of islands were classified as the American Phoenix Islands and the British Phoenix Islands — two separate DXCC countries. American stations used the KB6 prefix ('B' for Baker Island), and the British stations used the VR1 prefix. As the island group was administered by two different

(*please turn to page 24*)

Why I Love My Alpha 78.

It's just incredible.

I want lots of rugged, dependable power without sacrificing simple, no-tune-up operation. My ALPHA 78 gives me maximum legal power in any mode with a big margin of safety—and with no duty cycle or time limit. Even a rough 48-hour contest doesn't get it hot and bothered. Yet I can change bands instantly with just the flick of a switch. Nothing but an ALPHA can do that!

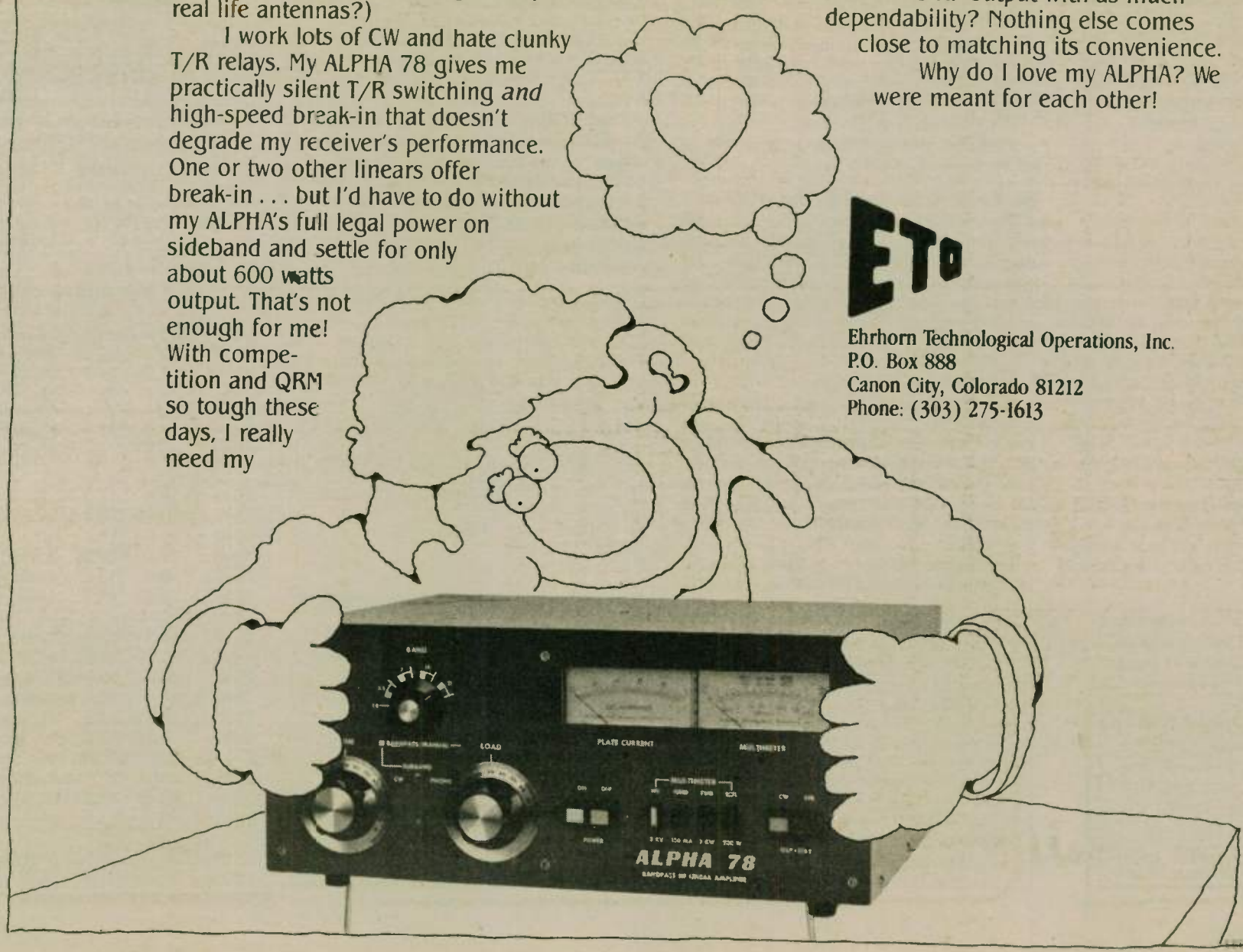
I insist on full power, even on a few favorite frequencies where my antenna SWR isn't too good. My ALPHA 78's auxiliary manual controls let me get full output even into a 2:1 SWR. I don't know of any other no-tune-up linear that has the ability to deliver full power into that kind of a mismatch. And with no antenna tuner! (After all, what's the point of having a "no-tune-up" linear if I have to clutter up my station with another box and tune *it* to get full power into real life antennas?)

I work lots of CW and hate clunky T/R relays. My ALPHA 78 gives me practically silent T/R switching *and* high-speed break-in that doesn't degrade my receiver's performance. One or two other linears offer break-in . . . but I'd have to do without my ALPHA's full legal power on sideband and settle for only about 600 watts output. That's not enough for me! With competition and QRM so tough these days, I really need my ALPHA's "full gallon" on all modes—*especially* sideband!

I'm not an electronics engineer, so I need an amplifier that works—and keeps on working. And if something should go wrong, I'd really hate to have a big hassle getting it fixed. My ALPHA's three year (limited) warranty protects me twelve times as long as the 90 days that's the industry standard. That says *everything* about how the ALPHA is built and how it stands up to hard use!

Finally, it'd be a real pain to have to collect a gang of gorillas with a hand truck whenever I want to move my linear. My ALPHA 78 takes up only about one cubic foot of space and I can easily handle its 50 pound weight. In fact, I never have to lift more than 35 pounds if I remove the plug-in transformer first. How many other amplifiers . . . even those weighing far more than my ALPHA . . . can deliver as much continuous RF output with as much dependability? Nothing else comes close to matching its convenience.

Why do I love my ALPHA? We were meant for each other!



ETO

Ehrhorn Technological Operations, Inc.
P.O. Box 888
Canon City, Colorado 81212
Phone: (303) 275-1613

DX World

(*continued from page 22*)

governments, often an Amateur Radio operator had both a KB6 and a VR1 call, using both of them simultaneously to give the deserving DXer two different DXCC countries with one contact. The old VR1 prefix has been replaced with the T31 prefix, and for DXCC purposes, is called Central Kiribati, with no change in DXCC status.

You cannot be credited for British Phoenix Islands (VR1) and Central Kiribati (T31) as two DXCC countries, since they are still the same. Recently, Eric Sjolund, SM0AGD has been making a Pacific Tour and operated from Central Kiribati as T31AE and from the same location as SM0AGD/KH1. The KH1 prefix is part of the recent FCC reassignment of prefixes and replaced the KB6. This may have created some confusion with some of the deserving. *DX News Sheet* explains the operation by Eric from Canton Island:

"There seems to be some confusion over the ability of stations operating from this island to use both T31 and KH1 calls. The position is as follows (from the 1981 Pacific Islands Yearbook). 'Canton and Enderbury Islands were jointly administered by the USA and Britain until Kiribati independence when they became part of Kiribati; the USA relinquishing all claims to them. The USA now has an agreement with Kiribati to maintain a spacetracking station on Canton Island and share administration and future development of the island with Kiribati.' Baker and Howland Islands are still U.S. possessions and exclusively KH1, and the other Phoenix Islands are Kiribati and exclusively T31."

160 meters

There is not much to report this month about the top band. There are only two reports for DX stations worked on 160 meters, and both of these were made by Europeans.

OY2J	1844	2150
5N8ARY	1852	2215

The frequency, of course, is in kilohertz with the time UTC. Unfortunately, the time is no good for North America.

If any of you are 160-meter buffs and would like to see information on DX printed in this column, how about some input?

Brazilian Islands

A new call sign scheme is now operating for the Brazilian Islands (PY0). For class A and B licenses, the first letter after the prefix identifies the island, such as PY0F for Fernando de Noronha, PY0R for Atoll de Rocas, PY0M for Martin Vaz, PY0S for St. Peter and St. Paul Rocks, and PY0T for Trindade. For Class C licenses, the first letter of the suffix is W, X or Y, with the second letter as the island identifier. Thanks to the *DX News Sheet* for this bit of information.

For DXCC purposes, Trindade (PY0T) and Martin Vaz (PY0M) count as the same island group. We are not sure which group Atoll de Rocas (PY0R) is included with.

Pacific Northwest DX Convention

Next summer is still a long way off, but if your plans include Seattle at the end of July, why not attend the 31st Annual Pacific Northwest DX Convention, 29-31 July? The convention is to be hosted by the Western Washington DX Club and will be held at the Double Tree Plaza Hotel at 16500 South Center Parkway. Further details are available from Roy Foote, N7AIF, 3029-48th Ave. SW, Seattle, WA 98116.

Last year's convention was hosted by the Fraser Valley DX Club and was held in Richmond, B.C. In 1983 the convention will be in the Portland area and will be hosted by the Willamette Valley DX Club.

The team of the International DX Foundation DXpedition to Navassa Island last March poses for their photo. From left to right (sitting): KP2A, W0DX, W2IJB, K0OO, K8CW, N2OO and K1MEM; (standing): N6CW. This is the group that signed KP2A/KP1. ***(Photo by WA2MOE via IDXF)***

IRC sale

The Kansas DX Association recently received a note from Rick Dorsch, HC1MD, who is now back in the states after nine years in Ecuador. Rick says that he has about 6,000 IRCs for sale at 40 cents each. The minimum order is 100, and he will pay the postage to send them. If interested, send your personal check or money order to: Rick Dorsch, WB8ABN, 1745 Oakstone Dr., Rochester, MI 48063. Remember, the minimum order is 100 at 40 cents each ($40).

St. Peter & St. Paul Rocks (PY0S)

The recent DXpedition to St. Peter and St. Paul Rocks made 14,600 contacts, despite all the difficulties they encountered. The group apparently had numerous disagreements with the skipper of the boat, and found operating and living conditions on the rocks absolutely terrible.

It is reported that all contacts will be entered onto a computer, and those who made more than one contact with the expedition will have their QSL cards held back for several months. All QSL cards for PY0SP are to be routed to Terry Baxter, N6CW, 4639 Katherine Pl., La Mesa, CA 92041.

The assignment of calls for that recent DXpedition included PY0SP to PY2CPU, PY0SJ to PY2BZD, PY0ZSA to WA2MOE, PY0ZSB to K8CW and PY0ZSC to N4BQW. All calls are to be handled by N6CW for QSL requests.

The Great Siberian zone muddle

This item was gleaned from *The Totem Tabloid*, the official newsletter of the Western Washington DX Club, Jack Bock, Editor.

While the Asiatic RFSFR counts as one DXCC country, it includes all or parts of five of the CQ Magazine radio zones. This can be especially confusing to those trying to collar 5-Band WAZ on 40 and 80 meters. It's not easy to tell which UA9 or UA0 is where. The list below should solve the problem once and for all:

Zone 16 — UA9S-T-W
Zone 17 — UA9A-B-C-D-F-G-J-K-L-M-N-Q-X
Zone 18 — UA9H-I-O-U-V-Y-Z; UA0A-B-O-S-T-U-V-W
Zone 19 — UA0C-D-F-H-I-J-K-L-N-Q-R-X-Z
Zone 23 — UA0Y

Incidentally, those are all different oblasts. The first letter in the suffix of a Soviet Amateur Radio call determines the oblast where the station is located. An award is available from their radio society for working and confirming at least 100 different oblasts. This is a difficult award to complete and is a very interesting challenge.

Boost you image as a cool, worldly-wise DXer

This is also from the pages of *The Totem Tabloid*. If you want to impress your DX contacts with your knowledge, try sprinkling these well-wishes at the end of your CW contacts as appropriate:

Soviet contacts — DSW (Doswidaniya)
German contacts — AW (Auf Wiedersehn)
Italian contacts — CIAO (works with most all Latin countries)
LA/SM contacts — SKAL (send the 'A' as a double 'A')
Japanese contacts — SAYONARA (-.-.- - -. ... in Katakana Morse)

Did you know that

There are currently 165 independent countries and 49 other colonies and territories known as dependencies. An independent country has its own government, while dependencies are governed by another nation. Independent countries range in size from the 8.5 million square mile Soviet Union — the largest, to the Sovereign Military Order of Malta (SMOM), the smallest, which is one-half the size of a football field. The United States is the third largest with China the second, about 3.7 million square miles.

Now back to little SMOM. This country is *NOT* in Malta! It is a walled area, located in central Rome at the top of the Aventine Hill, and it is the only nation small enough to merit a street address. It began in the year 1048 as the Knights Hospitalers, an order of monks who tended the hospital used for pilgrims in Jerusalem. During the first crusade, the hospitalers cared for the wounded and accepted big donations from the wealthier crusaders. As the assets grew, the military might of SMOM also increased so that the hospitalers dedicated themselves to killing Moslems as much as healing the sick.

Between 1219 and 1798, the order had a variety of names and locations but finally settled in Rome in 1834. Although it remains independent, it isn't all that powerful anymore. Its population consists of 80 residents, governed by a Grand Master.

Propagation

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

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

You can get a free *complete* set of these predictions for both high and low angle antennas, Maximum Usable Freqency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (28¢) envelope at least 9″ × 11½″.

FEBRUARY 1983

UTC	AFRI	ASIA	OCEA	EURO	SOAM
0100	22.3	29.2	30.2	11.4	25.7
0200	17.3	27.7	31.4	11.2	22.2
0300	12.7	23.5	28.2	11.0	19.3
0400	14.2	19.9	24.8	9.4	17.1
0500	12.8	17.1	21.7	8.4	15.8
0600	12.2	14.9	19.3	9.4	15.5
0700	12.3	13.3	17.8	11.6	15.8
0800	12.4	12.4	16.8	12.2	16.3
0900	11.9	12.4	15.7	12.5	15.9
1000	11.0	13.2	14.8	12.2	15.5
1100	9.9	13.9	14.9	11.1	13.0
1200	9.6	13.4	14.6	10.2	11.6
1300	11.5	12.1	12.8	11.0	14.1
1400	15.7	11.5	11.8	14.6	20.1
1500	20.4	13.9	15.2	19.5	26.2
1600	24.1	14.5	19.5	23.8	29.6
1700	26.9	13.5	18.0	22.9	30.7
1800	29.2	12.7	17.5	19.6	31.2
1900	30.6	13.2	19.2	16.4	31.7
2000	30.4	16.2	22.9	13.8	31.9
2100	30.7	21.7	26.2	12.2	32.0
2200	29.9	25.9	27.3	11.5	32.2
2300	27.7	29.9	27.4	11.3	31.6
2400	25.4	31.1	28.3	11.4	29.2

As in 1048, its principal business is running hospitals, clinics and leper colonies around the world.

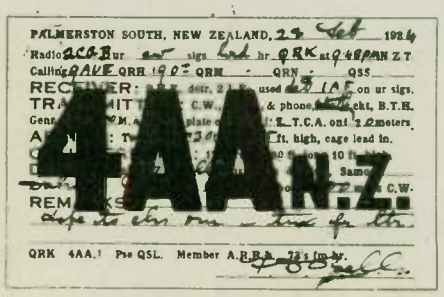
It is so small you can look through the keyhole of the main gate and see a grand view of the Basilica of St. Peters and the rest of an Italian view. That amounts to three countries — SMOM, The Vatican and Italy — all through one keyhole!

Our thanks go to KC8PX, who prepared the above article for *The Beam*, the newsletter of the Stark DX Association of Canton, Ohio.

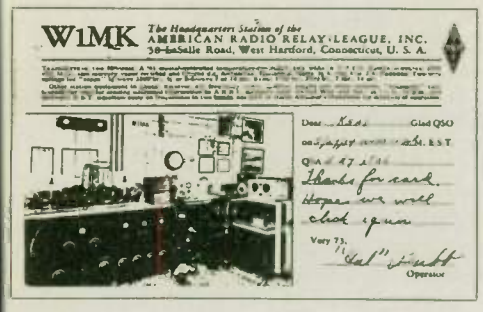
Antique QSL department

Most DXers have received SWL cards at one time or another and most of us have never figured out what to do with the card other than acknowledging the report with a return QSL card of our own. Maybe some group will design an award where only SWL cards will count.

But back in the old days when there were not that many amateurs on the air, an SWL card was of some value. This following card is one of those SWL cards that was submitted by Frank Tukey, KA2EIO. F.B. Bell of Palmerston South, New Zealand, copied Frank (who was 2CGB at the time) the evening of 23 February 1924. Frank was calling 9AVE at the time. The card (4AA N.Z.) had the call letters in red.



The second card should be of interest to the Newington Radio Club, which was submitted by Fred Willett, KA1GOF (ex-W1DFB). The card is from W1MK, confirming a contact with K5AI at Fort Amador in the Canal Zone on 29 May 1934. Fred was an operator there at the time — this in the days prior to the KZ5 prefix. Canal Zone is now a deleted DXCC country.



What is so unusual about a W1MK? Take another look. The operator was Hall Bubb. Notice that comment: "Hope we will click again." I sure hope my signal doesn't click.

QSL information

Jerry Dewalt, W3BL has informed Worldradio that he is not a QSL manager for any station. He has been listed as manager for FP0DD, VU2RS and 8R4DX. As for a manager for those stations, none is listed. Perhaps they are pirated calls.

John R. Mantell, K3BYV informs us of an error in one of the recent QSL routes. The route for PZ5JR is in error. The fastest route is to his home call in Maryland (and be sure to include an SASE). He says the slowest way (months and months) is to: J.R. Mantell, Postbus 1919 — SIL, Paramaribo — ZUID, SURINAM, SOUTH AMERICA. The tough part is getting mail to the jungle village and out again.

In the October issue, I made comment of a QSL manager holding requests for cards from A4XJO worked by members of the Northern California DX Club until he received his cards for a DXpedition to the Pacific by a few NCDXC members. He claimed that he would send the A4XJO cards as soon as he received his cards in return. I received a note from a reader in Nebraska who had already received his A4XJO contact and wonders if the card is valid. Somehow, I must have presented a wrong impression. My comments had nothing to do with A4XJO contacts or if his cards were good or not. My gripe was the actions of the QSL manager with members of the NCDXC.

QSL routes

A6XJA	—PA0LP	FO0JO	—W6GO
A35TN	—VK3VU	FP0FSZ	—VO1FB
AH0B	—JA2VUP	FR7BP	—W0AX
AH8A	—WB6FBN	FW0XN	—DK6XR
C6AES	—N4AFG	FW0XR	—DK6XR
C6AEY	—WB7HAK	GD5BJN	—DK2ZO
C31LX	—EA3AON	GD5EPE	—DJ5PE
C31PB	—HB9AQL	HB0BOE	—DJ9ZB
C31YS	—DK8VO	HG5BNV	—HA5KDB
CE9AT	—WB6WOD	HH2WW	—N4WW
CN8AT	—OE3NH	HK0BKX	—WB4QFH
CN8CY	—GW3IEQ	HL1CX	—JJ1FSK
CR9T	—JA4IKZ	HL9AZ	—AD8R
CS4UA	—W3HNK	HL9TP	—N5TP
CT8JAM	—CT2AK	J6LB	—KO2A
CU1UA	—W3HNK	J20DU	—Yasme
CU5UA	—W3HNK	JD1AFL	—JA1NVG
DF9XP/3B9	—DL0LH	JY8JP	—K1JPQ
DL9EAJ/3B9	—DL0LH	JY8YD	—K8PYD
ED6MDX	—EA6BE	KC4AAA	—WB9RRT
FB8WI	—F6ICA	KC6YA	—W9GW
FB8XAB	—F6GXB	KE6RD/KH0	—JA1UT
FB8ZQ	—F6GXB	KH6EDY/	
FB8ZR	—F6GXB	KH7	—KH6BZF
FG0ZN	—DJ9ZB	KH8AC	—WH6ANY
FK8CE	—K2ROR	N7DUU/NH0	—JA1UT
FK0AF	—FK8DD	N8BJQ/VE2	—N8BJQ
FM7CD	—F5VU *(See Note 1)*	NK6F/3B8	—DJ9ZB
FM0ZN	—DJ9ZB	OD5FB	—WA2QAU
FO8IK	—F6GXB *(See Note 2)*	OD5LX	—SM0DJZ
		OH2JL/T5	—OH2JL
		OH0AL	—OH2AL
OX5RD	—N9BEM	YB0ACL	—WA4RRB
OX9OA	—OZ1FAO	YB0AV	—KB5AS
PZ5JR	—K3BYV	YJ8NMB	—WA2MNM
RG6G	—UK2BAS *(See Note 3)*	ZC4ZD	—G3JKS
		ZF2BP	—W4YKH
SM0AGD/		ZF2BY	—K4VYN
KH1	—SM3CXS	ZK1CH	—ZL1SD
SP5IXI/OE6	—PA0NOL	ZL4OY/A	—VK3DWJ *(See Note 4)*
T31AE	—SM3CXS		
TL8GE	—F6FYD	3A2JO	—W4QAW
TT8LM	—F6FYD	3A2ZZ	—F6EGC
U2G	—UQ2GW *(See Note 3)*	3C1AB	—EA1QF
		3H3BH	—SM0DJZ *(See Note 5)*
U9H	—UA9OBA *(See Note 3)*	4N1R	—YU1DZ
UK0IAA/U0T	—UA0IAP *(See Note 3)*	4N5G	—YU5GBC
		4N6HN	—YU6KOP
V3CQ	—WA6VNR	4U1VIC	—OE3OLW *(See Note 6)*
V3DX	—N6ADI		
V3TV	—G3ATK	4U27UN	—W2MZV
V3UR	—N5UR	4Z0O	—4X6NII
VE8MA	—VE4TZ	5N0RHK	—DJ8UM
VP2EC	—N5AU	5N22GM	—I8XIU
VP2MIX	—W0IJN	5Z4JR	—OH2BAH
VP2MM	—AB1U	6E5AGH	—WA6GEH
VP5JNX	—W9CN	6W8AR	—DJ3AS
VP5KP	—W6SZN	5T5TO	—F6BUM
VP8AEF	—KA5IRZ	5W5DM	—KB6JK
VQ9PG	—WB4MTE	5Y4CS	—JI1VLV
VQ9WB	—WD9GIG	5Y4DE	—KA4S
W4GSM/HC8	—W3HNK	9K2BE	—K4GIR
W8K/VE2	—W8KKF	9M6VW	—KO2A
WB3KBZ/VP9	—KB8KS	9N1WW	—JA8BMK
WB5LPJ/DU6	—W7HPI		
WB6WOD/ CE0Z	—WB6WOD		

A4XJK	—P.O. Box 5523, Ruwi, OMAN
A92P	—P.O. Box 14, Manama, BAHREIN
A92DQ	—P.O. Box 25611, BAHREIN
C31YF	—P.O. Box 150, Andorra-la-Vella, ANDORRA
C53EU	—Scotty Deffendol, P.O. Box 596, Banjul, GAMBIA
CR9WW	—P.O. Box 933, MACAO
CX3BBW	—P.O. Box 10580, Montevideo, URUGUAY
FK8EL	—P.O. Box 1992, Noumea, NEW CALEDONIA
FM7WO	—P.O. Box 287, Fort de France, MARTINIQUE
FP8DF	—P.O. Box 41, ST. PIERRE and MIQUELON
FP8HL	—P.O. Box 1107, ST. PIERRE and MIQUELON
HL0B	—P.O. Box 162, Seoul, KOREA
J3ACB	—P.O. Box 251, St. Georges, GRENADA
JD1BBH	—P.O. Box 2, Ogasawara Island, JAPAN 100-21
KH6IMX/ KH4	—R. Meurer, Jr., 16262 Angler Ln., Huntington Beach, CA 92647
TL8ER	—P.O. Box 1503, Bangui, CENTRAL AFRICAN EMPIRE
VP2EL/J8	—P.O. Box 101, Castries, ST. LUCIA
XT2BO	—P.O. Box 182, Ouagadougou, VOLTAIC REPUBLIC
5B4LY	—U.N. Camp, P.O. Box 375, Larnaca, CYPRESS *(See Note 7)*
5Y4ITU	—P.O. Box 45681, Nairobi, KENYA
9I2DX	—P.O. Box 71979, Ndola, ZAMBIA
9L1AP	—P.O. Box 673, Freetown, SIERRA LEONE
Yasme	—Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546

Notes

1. QSL cards for FM7CD should be sent direct to F5VU, not via the bureau.
2. You may send QSL cards for FO8IK direct to P.O. Box 4383, Papeete, TAHITI, FRENCH POLYNESIA.
3. All QSL cards to the Soviet Union must be sent via P.O. Box 88, Moscow, USSR. Do not include "green stamps."
4. Use the 1982 Callbook (or later) address for VK3DWJ.
5. This applies for the operations by SM0AJU and SM0DJZ, 24 November 1982 through 6 December 1982.
6. Please add the names of the operators for cards from 4U1VIC.
7. One source of information instructs the addition of the call letters to the address. This is not suggested as it is an invitation to mail handlers that negotiable items may be included in the envelope. If you know the operator's name, add that to the address instead.

Contributors this month include VP2MM, KQ7Y, KA2EIO, KA1GOF, W3BL, K3BYV, W9ZGB, KH8AC, WB0GOB, N2DT, VK9NS, Kansas DX Association, Stark DX Association, Western Washington DX Club, International DX Foundation, *The Long Island DX Bulletin*, *The DX Bulletin* and the *DX News Sheet*.

The first phase of the annual CQ World Wide DX Contest seemed to bring everyone out of the woodwork. We are not too sure if there is an increase of DXers or if the caliber of many has deteriorated. But with everyone on at once, it would not be fair to judge.

In last month's issue, I had reported on the fun of QRP that was presented at the Pacific Division Convention in Santa Cruz. I had held a lot of respect for the QRPer, and still do. But what got me was when the pileups would drop off after the DX station would answer a caller, you would hear: "QRP, QRP station on frequency." I hope that is not the coming technique for QRP stations to break in on contacts. We also wonder how many of those QRP stations really are running low power. With the QRPers screaming "QRP, QRP" and the big guns with their "full gallon(s)" muscling in, where do us couple hundred watts types fit in! 73 es GL DX de John N6JM. □

'Nothing to it' . . .

Submitted by Gordon Patterson, N8DXL

. . . says Emberley Johnson of New Baltimore, Michigan. She is 10 years old, an honor student at her school, and now N8EHV — General Class. Some of you may have worked her as KA8NEQ on the Novice bands.

She is working toward her DXCC and if her dad, Neil N8BAR, doesn't watch out, Emberley will get the award before he does. She also says she's not stopping at General, so those rare DX stations better look out too. □

A new addition

Among Worldradio's most recent subscribers is Carlos Gates, KA7OFC. Carlos is the son of Joe VE6BIG and Carol KA7OFB, and lives in Alberta, Canada. He is also 7 years old. □

IC-720A + IC-R70

The "plus" is the New IC-7072 Transceiver Unit

Now you can add ICOM's most versatile HF general coverage receiver to your IC-720(A). Combine the portability and operating convenience of the IC-720(A), with its long list of standard features...and the IC-R70, ICOM's latest general coverage receiver, into one transceiver by using the new IC-7072 transceiver unit.

Check ths list of features that will be added to your IC-720(A) receiving system:

Audio Monitor. Monitor your own transmitted audio and check SSB audio quality/CW keying characteristics.

Selectable AGC With Off Position. Perfect for use with transverters.

2 Position Noise Blanker. Very effective, virtually eliminates impulse noise.

500Hz CW Filter Standard. 250Hz (FL63) optional 8-pole filter.

3 Stage Preamp/Off (Direct)/Attenuator Control. Controls input to ICOM's Direct Feed Mixer receiving system.

Squelch Control. Effective in all modes allowing only signals above a certain strength to be heard.

Audio Tone Control. For easier listening/less fatigue.

Record Jack. Allows connection of a tape recorder to record both sides of a QSO. Unaffected by the volume or monitor control. Also may be used to drive an RTTY decoder.

Notch Filter. Deep IF notch eliminates annoying hetrodynes from interfering adjacent signals.

Large Front Mount Speaker. Full 3 watts of audio.

Expanded Range Pass Band Tuning. For greater adjacent signal rejection in the AM mode.

Option for FM Reception. Useful for 10 meter FM.

Excellent, Clear Reception. With the R70's advance receiving system with the first IF at 70MHz, and with the lowest synthesizer noise level available — better than receivers costing much more.


IC-7072
Transceiver Unit

Bring all of these advanced features to your IC-720(A) shack with the R70 and the IC-7072 transceiver unit. The plug-in IC-7072 transceiver unit slaves the CPU of the IC-720(A) to the IC-R70 microprocessor. This allows the tuning knob and selector buttons of the IC-R70 to control the IC-720(A).

Included with the IC-7072 are cables for the mute line control on the IC-R70 and a coax line to patch the IC-720(A) antenna into the IC-R70. An accessory connector on the IC-7072 is provided for attachment of "ICOM System" accessories such as the IC-2KL linear amplifier or IC-AT500 automatic antenna tuner or both.

Now your base station can have the most advanced ham/general coverage receiver available and the crisp transmitted audio of the IC-720(A) with RF speech processor. And yet, the 12 volt operated IC-720(A) may be taken mobile or portable for the ultimate in a ham band transceiver...and you still have general coverage reception...at both places!

ICOM

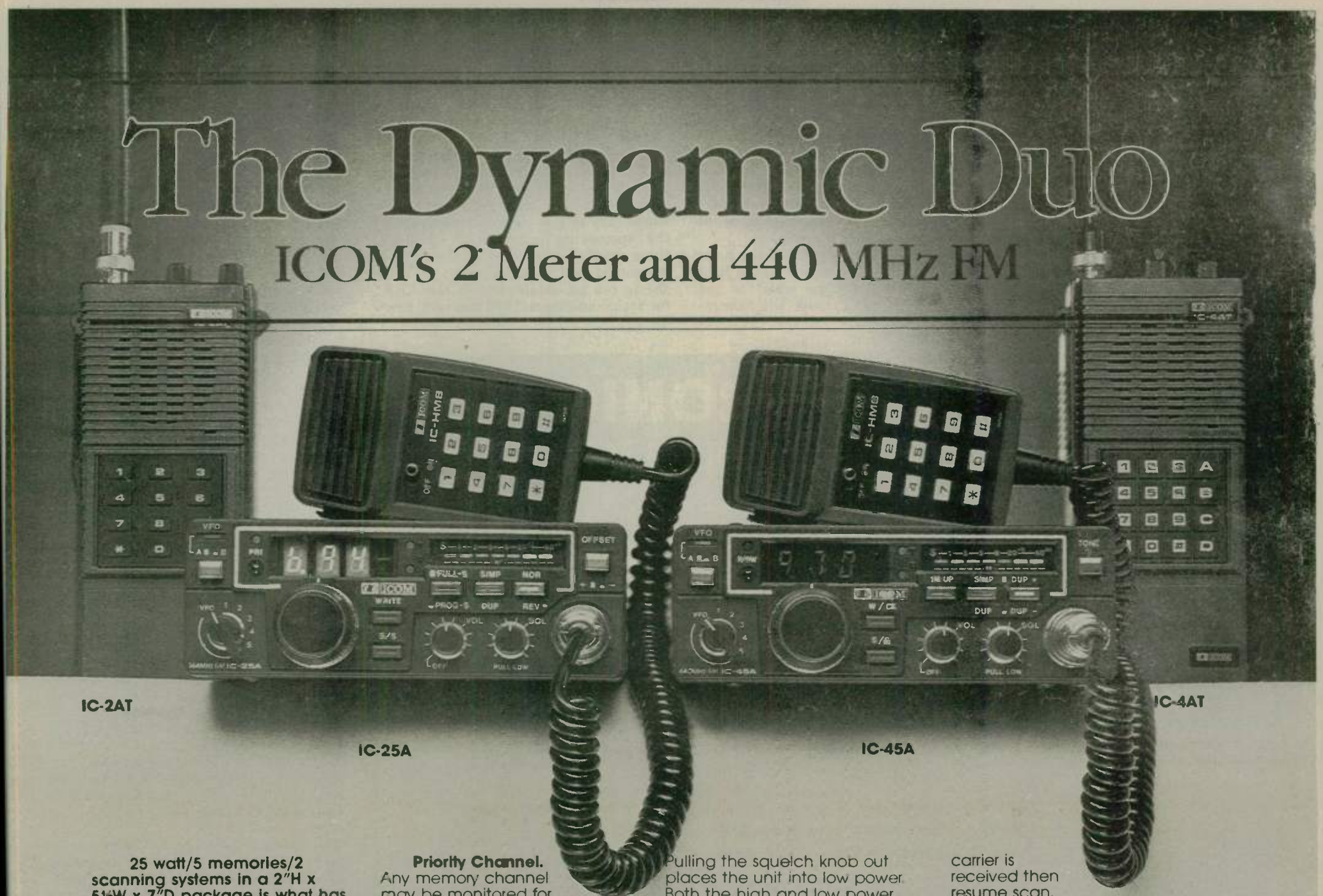
The World System

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 **(206)454-8155**/3331 Towerwood Drive, Suite 307, Dallas, TX 75234 **(214)620-2780.**

All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions.

The Dynamic Duo

ICOM's 2 Meter and 440 MHz FM



IC-2AT

IC-25A

IC-45A

IC-4AT

25 watt/5 memories/2 scanning systems in a 2"H x 5½W x 7"D package is what has made the easy-to-use IC-25A the most popular 2 meter FM mobile transceiver ever. Now ICOM presents the second half of its mobile duo...IC-45A. The IC-45A covers 440-449.995 MHz. Both transceivers are supplied with touchtone® microphones standard.

Dual VFO's. Dual VFO's give an extra stored frequency for scanning (memory scan scans 5 memories plus 2 VFO's) and each VFO has a different tuning rate for easy QSY.

	VFO A	VFO B
IC-25A	5 KHz	15 KHz
IC-45A	5 KHz	25 KHz

5 Memories. Instant access to most used frequencies. VFO A information is transferred to the selected memory by pushing the write (IC-25A) or W/CK (IC-45A) button.

IC-BU1

Priority Channel. Any memory channel may be monitored for activity on a sample basis, every 5 seconds, without disruption of a QSO conducted on a VFO frequency.

LED Bar Meter. Shows strength of received signal as well as relative transmitter cutput from the fully protected final RF amplifier. APC (automatic power control) is used to detect SWR and adjust the power output to a safe level.

Simplex/Duplex Operation. Standard 600 KHz offset initializes into radio at turn on. Offset may be changed by pressing the priority button while in VFO operation. Rotating the main tuning knob will now change the offset up or down and the offset will be displayed on the frequency readout.

Adjustable Power Levels.

	Hi Pwr	Lo Pwr
IC-25A	25 W	1 W
IC-45A	10 W	1 W

Pulling the squelch knob out places the unit into low power. Both the high and low power may be independently set to accomodate your simplex/repeater requirements or amplifier input characteristics.

Nor/Rev Capability. Use of this button on the IC-25A or the W/CK button on the IC-45A, in the duplex mode, allows one touch monitoring of the repeater input frequency. If simplex operation is possible you will know instantly.

Scanning. Pushing the S/S button initiates the scan circuitry. With the mode switch in a memory position the unit will scan all 5 memories plus the 2 VFO frequencies.

With the mode switch in a VFO position, the unit will scan the entire band or the portion of the band defined by memories 1 and 2. Full band scan or program band scan is selected from the front panel in the IC-25A, internally on the IC-45A.

Both units have internally switched scanning choices of adjustable delay period after a carrier is received then resume scan, or resume on carrier drop.

The Most Compact FM Mobiles on the Market. Fits in the smallest of places. Stacking, matching Mobile Mounts for complete mobile communications for your car.

Memory Backup. When the optional IC-BU1 backup power unit is installed on the back of the IC-25A or IC-45A, memory will be maintained while transferring the unit from power source to power source. If the unit is not removed from power, it will maintain memory even when turned off with or without the IC-BU1.

ICOM

The World System

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 (206)454-8155/3331 Towerwood Drive, Suite 307, Dallas, TX 75234 (214)620-2780.

The ART of Contesting

Contesting for fun and profit

Bob Adamitis, K9MDO

Before we get into the nitty-gritty of contesting, I think an explanation of the title of this article may be in order. Contesting is *fun* for a person who is competitive and can stick with something for an extended period of time. It can reap a *profit*, even for the casual contester who is looking for a certain state, country or zone to fill a void on their WAS, DXCC or WAZ list. My original motivation for working contests was to see those exotic QSLs come rolling in. My only problem with that was answering all those JA cards that came. (They *do* QSL-Hi Hi.) Now let's get into the mechanics of contesting.

Contests are announced and the rules are spelled out in just about all the ham periodicals. It would be wise for the would-be contester to seek out this information and familiarize himself with the specifics of each individual contest. All contesters should have an idea of how much time they can devote to a weekend contest and arrange their schedules accordingly. One should also know the contest "exchange" (information acceptable and required for a valid contest contact). One should know the times of the contest and rules pertaining to the required operating time before switching bands. Try to use log forms provided by the sponsoring organization. Some of these events require "dupe" sheets to be submitted with each entry. "Dupe" sheets can be obtained from the ARRL for both domestic and DX contests. Know the deadline for submitting your entry and what info is required on the cover sheet.

While everything you do to improve your station facilities will help on your contest, contesting does not require new, sophisticated equipment. In fact, contesters have many QRP entrants. In my experience, I have found that the transceiver used must be dependable and must be able to withstand the rigors of a contest weekend. A good antenna is a prime requisite to be competitive in Amateur Radio. It is imporant that all your antennas are working efficiently. Nothing is worse than having a transceiver, amplifier, antenna or matchbox fail during the heat of the contest battle. In a CW contest, a memory keyer proves a great tool in helping the operator endure.

Now you know the rules. Your equipment is reliable. You have the necessary forms, scratch pads and pencils. You are *almost* ready to contest.

Start a contest a half-hour head of time by cleaning off your operating desk of all unnecessary items. Keep your logs and dupe sheet where they are easily accessible. Listen to the bands to get an idea of what frequencies will be most productive for what you are trying to work. Maybe a last-minute check of your equipment. Okay, that 24-hour clock says it's time to begin. (Make sure that clock is correct.)

If you are a BIG GUN, you find an open frequency and stay on it till there isn't any more to work. Then you go hunting. If you are a LITTLE PISTOL, you may do well by the "hunt and peck" method. During the 1979 CQ World Wide DX Phone Contest, I had over 500 contacts without calling CQ once. Your QSO rate will tell how how you are doing. Also, look for the much-needed multipliers; they sure come in handy when figuring your score.

Operating technique requires the operator to be able to hear who is calling him or who he is calling. So, listen, listen, listen! There may be gold in the bottom of that din of contest QRM. Adequate receiver filtering sure helps here. Short CQ's work great. Long CQ's waste time. Get that contact in the log and on the dupe sheet fast, and make sure the info is correct. If the bands start fading out, check it for any straggling multipliers, and then change bands. Knowing when to change bands come with practice, and mental notes should be taken for future contests. That's all there is to it. *DO NOT QUIT!*

After the contest, go over your logs and dupe sheets. Double-check your multipliers. Figure out your score. Fill out your cover sheet. Make Xerox copies of all your entry material, and submit your entry promptly. It amazes me how many amateurs operate contests and never submit their totals.

Now relax — your entry is submitted. Back to regular hamming. No, not yet. Time for QSLing. Go over those logs. See a new country? Find the proper QSL route, and send off those cards. I send QSLs only for contacts whose cards I really need, but I respond to all requests for mine.

You have now operated your first contest. You feel satisfied that you have accomplished what you set out to do. Later, you will have the pleasure of seeing your call and contest score published in a ham magazine. The QSLs have come in for those needed confirmations. And as you look at your WAS, DXCC and WAZ certificates on the wall, a thought will cross your mind — "Hey, why didn't I try this contesting sooner?"

— Hamfesters Radio Club, Hometown, IL

AWARDS

Scott R. Douglas Jr., KB7SB
P.O. Box IARS
Glendale, CA 91206-7609

To begin this month's column, I would like to present to you an excellent new award series offered by the Mexico DX Club of Mexico City titled 5 Bands 5 Continents. The award series consists of six beautiful acrylic plaques printed in four colors. The awards are available to all licensed amateurs and SWLs and are issued for All Phone, CW, and Mixed modes. All contacts must be made from the same DXCC country and only contacts made after 1 January 1980 are considered valid as credit toward these achievements.

5 Band Americas Award consists of 40 DXCC countries per band from this continent for a combined total of 200 contacts. Mexico must be included on each band.

5 Band Europe Award consists of 40 DXCC countries per band from this continent for a combined total of 200 different contacts.

5 Band Africa Award consists of 30 DXCC countries per band from this continent for a combined total of 150 different contacts.

5 Band Asia Award consists of 25 DXCC countries per band from this continent for a combined total of 125 different contacts.

5 Band Oceania Award consists of 25 DXCC countries per band from this continent for a combined total of 125 different contacts.

5 Bands 5 Continents Award is issued upon completion of all of the above.

To apply for these awards, submit a log extract listing the stations in alphabetical order by prefix, listing the country and frequency along with your cards and a check or money order for $10 per award, payable to the Mexico DX Club to either the USA checkpoint via KB7SB (see address in column head) or direct to the Mexico DX Club, P.O. Box 21.167, Coyoacan 04000 D.F., MEXICO.

Yes, the fee is expensive, but so is the plaque you will receive. This is surely one of the most difficult awards series to achieve but you will be proud when you do.

While we are on the subject of awards from Mexico, let's take a look at the awards offered by LMRE, The League of Mexican Radio Experimenters.

WAXE, Worked All XE

Issued for confirmed contact with at least 15 different XE1's, five different XE2's and five XE3's. Send your log extract (GCR) along with the award fee of $3 to: LMRE Award Manager, XE1XF, P.O. Box 907, Mexico 06000 D.F., MEXICO.

Diploma Mexico

Issued for confirmed with at least 15 different states of Mexico and 10 XE1 stations located in Mexico City. Send your log extract (GCR) along with the award fee of $3 to: LMRE Award Manager, XE1XF, P.O. Box 907, Mexico 06000 D.F., MEXICO.

Diploma of America

Issued for confirmed contact with at least 40 countries of America as per the DXCC listings plus 10 XE stations. Send your log extract (GCR) along with the award fee of $3 to: LMRE Award Manager, XE1XF, P.O. Box 907, Mexico 06000 D.F., MEXICO.

6Z6 Award

Issued for confirmed contact with at least six different XE stations. Send your log extract (GCR) along with the award fee of $3 to: LMRE Award Manager, XE1XF, P.O. Box 907, Mexico 06000 D.F., MEXICO.

For those of you out there wondering just what "GCR" stands for, it means General Certification Rules, which translates to having your log extract verified by your local radio club or two licensed amateurs of General Class or higher. This method is often used now because of the high risk and great cost of international and national mails.

Till next month, Season's Greetings from all of us at the International Amateur Radio Society. 73, Scott. □

•••••

Check your license expiration date.

Pick a winner

Gee! Just a week left to pick a winner for *Ham of the Year* according to this magazine — hummm! Maybe I ought to nominate old "Joe Ham," W8XZZ, down the street. He's been at it for 30 years. Now let's see, where are those postcards? Ah, there they are! OK, let's see now, I nominate Joe Ham, W8XZZ, licensed 30 years, married, hmmm, three kids (I think), works all bands, goes to church and teaches code classes. I think Joe should be *Amateur of the Year.* Signed — Fred Freq., W8XXX. There, that ought to do it. Now where the heck are those darn stamps!

Don't you believe it! It takes just a little more effort than that to pick a winner for "Amateur of the Year" at the Hamvention in Dayton.

Yes, nominations have been received that were as short as the foregoing example and even more so. On the other hand, nominations have been received that were voluminous but didn't give the necessary details.

We want all the ordinary things such as name, call, marital status, number of harmonics, years licensed, awards, civic activities, military service record, type work, etc. Above all, include all accomplishments that are directly attributable to him. Did he start the local club, build and operate the local repeater, design equipment to advance the state of the art, design a new antenna, organize an emergency network, write a book or technical articles? Is he outstanding in some phase of satellite, VHF or ATV?

Since our Awards Committee is small, we do not have the time or resources to research each nomination, so you, the nominator, have to do the digging for details. So a thumbnail sketch of "Amateur of the Year' would probably be a ham licensed for a relatively long time. He has contributed to the advancement of Amateur Radio in a very broad sense over a long period of time. A well-balanced individual, respected and active in his community — a leader.

There is also a Special Achievement Award each year.

This award is just what you would expect it to be. An award for a one-time outstanding accomplishment by either a single or a small group of amateurs in any phase of our hobby.

Now, a few more details — there's that word again. Please! Sign your nomination and give an address, and if possible, a phone number where you may be contacted. There have been nominations received without a nominator's identification of any kind. We might need more info from you, and if you should win, we would like to notify you.

All nominations are considered for both awards, so one nomination will do for both. Any amateur, Novice through Extra Class, man or woman, may be nominated by any amateur, group of amateurs or club. All nominations are kept in a permanent file for future consideration. It is felt that many nominees will grow and mature in our hobby through the years and should be considered in the future.

New nominations may be sent in at any time throughout the year, as well as updated information for inclusion in the file of past nominees.

Nominating forms are available but are not mandatory. Entries may be typed, printed or written as long as they are legible. Clippings or copies from newspapers, magazines, club papers or other sources may be used as supporting nomination material.

No, it's not a popularity contest. Nominations have been received and then followed by a deluge of QSLs, each voting for said nominee. Nominees are judged by a committee on their merits as *detailed* in the nomination.

Also, there is no award category for clubs. Small groups may qualify for the Special Achievement Award.

That's about it. Pick a winner, sharpen your pencil, and begin your journey to Dayton for you and your nominee. Need more information? Please write to: Hamvention Awards Committee, Box 44, Dayton, OH 45401; or Bob Roettele, W8UNV, Awards Chairman, 1299 Hanes Rd., Beavercreek, OH 45385. □

AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

Phase III launch date again changes

The Phase IIIB AMSAT/OSCAR spacecraft launch on the *Ariane* LO-6 European Space Agency Rocket has been scheduled for the latter half of April 1983. As more data develops, we'll report it in these columns.

UOSAT AMSAT/OSCAR-9

From the *AMSAT Satellite Report*, we learn that the UOSAT/OSCAR-9 educational downlink-only amateur spacecraft is continuing in its test phases. University of Surrey UoSAT project people indicate that progress is being made and that soon all of its experiments will be turned on for all to try to use.

- UO-9 is spinning on its Z-axis at less than 6 rpm; despin has begun and about 5 percent of the remaining angular momentum can be dissipated on each orbit within range of Surrey. Despin and reorientation is being performed on a closed loop basis through a ground computer. Magnetometer data is transmitted to the Surrey Earth station on 70cm and magnetorquer commands are uplinked to UO-9 on the 2-meter command channel. The Z-axis was perpendicular to the plane of the orbit. After spin-down, rectification would take place so as to orient the Z-axis toward the geo-center. Deployment of the gravity-gradient boom can then proceed.
- The radiation counter is apparently OK despite the indications on telemetry channel 13, which has been indicating no EHT voltage. M.N. Sweeting, G3YJO at Surrey believes the problem is in the telemetry sensor, not the EHT power supply.
- The CCD camera has been tested with mixed results; noisy picture was reported to be caused by QRM on the ground but further tests will be performed as priorities allow.
- UO-9 will likely not be on during the week except when over Europe while attitude adjustment is proceeding. If on over the weekend, look for 300 baud and 45.5 baud on 2 meters (145.825 MHz).
- Some strange symptoms of current drain have showed up on the secondary (Ferranti F100) computer. The computer memory may be showing signs of radiation damage. The primary computer is in good shape.
- R.J.C. Broadbent, G3AAJ will be evaluating the merits of going into production on the CCD decoder boards soon.

These CCD decoder boards will make it possible for users to decode the picture data derived from the CCD camera when pointing to the subsatellite point. The picture information can be displayed on any home TV receiver. The images will resemble the weather satellite images you see on your evening TV news programs.

Availability and cost information about the CCD boards and other data decoding boards for UoSAT/OSCAR-9 experiments will be reported in this column when available.

The STS-5 shuttle mission

Most of you must certainly have been watching the lift-off, landing and onboard activities of the STS-5 shuttle orbiter. The manner in which the SBS and the Anik satellites were launched from the shuttle toward a geosynchronous orbit should give you a very good feel for the manner in which a future Phase III AMSAT/OSCAR satellite may be launched. A launch of this character was pictured in these columns after the landing of an earlier shuttle.

You must also have been able to listen to the astronauts and ground controllers talking to one another via one of the many Amateur Radio channels over which the signals were passed over the country retransmitted from W6VIO/R — the JPL Amateur Radio Club Station near Pasadena, California. The considerable interest in the JPL ARC transmissions is best evidenced by the fact that Radio Netherlands, several TV networks and local stations carried news items about the JPL club activity. JPL was granted a special STA by the FCC to permit the retransmission of the shuttle audio.

A ham in space

A future Amateur Radio event is expected on shuttle STS-9 in a proposal to permit Astronaut Dr. Owen Garriot, W5LFL — one of the crew of that mission — to carry an amateur transceiver with him so that he may engage in "hamming from space" during his leisure hours.

The National Aeronautics and Space Administration (NASA) received a proposal from ARRL to include such an informal Amateur Radio activitiy on the shuttle mission scheduled for October 1983. According to *ASR:*

The overall concept seems to have garnered favor in several quarters and chances are said to be favorable for final adoption according to knowledgeable sources. Informal work on the astronaut-ham-in-space concept dates at least to the Apollo mission series with NBC correspondent Roy Neal, K6DUE — among the more prominent proponents of the concept.

A number of key government agencies, Amateur Radio organizations, amateur and professional journalists are involved at this stage. Organizing the proposal on behalf of Amateur Radio is ARRL President Vic Clark, W4KFC. Vic is shepherding the diverse forces aiming to have NASA Headquarters bless the mission. Supporting W4KFC is the ARRL Newington Staff under General Manager Dave Sumner, K1ZZ. The key player at Newington is Bernie Glassmeyer, W9KDR — ARRL's Satellite Program Coordinator — who was instrumental in bringing the idea to ARRL HQ attention and marshalling the ARRL diamond behind the concept. Bill Tynan, W3XO, who has been touting much the same concept as K6DUE for a decade, is providing much of the proposal text for W4KFC.

W3XO's effort represents AMSAT's collective opinion on how best to propose a workable concept while maximizing both its chances for adoption and public appeal. Amateurs at NASA's Johnson Space Flight Center (Houston) and Marshall Space Flight Center (Huntsville, Alabama) are also contributing to the proposal effort.

Significantly, AMSAT's Dick Daniels, W4PUJ is on the receiving end of the proposal since he is a NASA employee who, because of his intimate working knowledge of the amateur space program, has been charged by NASA to provide the requisite review of the proposal for senior management. Thus, although Dick is not in an executive capacity on this assignment, (he is *NOT* the one to give the green light), his guidance assures that ARRL's proposal will be the best it can be by providing feedback to the proposal writers.

Planning for operation of a ham station from STS-9 has already begun informally, even though formal approval of the concept is still a couple of weeks away according to ARRL and AMSAT sources. W9KDR has invited all interested amateurs to suggest through their ARRL Division Directors how best to utilize this fascinating opportunity should it be approved. AMSAT will provide technical support for the operation's planning activity and will lend specific guidance in areas where AMSAT's space communica

tions experience is required. AMSAT members who have suggestions for operations planning for STS-9 may communicate them either to AMSAT HQ or ARRL. Ideas sent to ARRL should be addressed to the attention of W9KDR.

A number of ground rules need to be stated before serious planning begins, however. Although very few rules form the present baseline plan, a few things are clear even at this early stage.

First, the installation has to be very, very simple. That likely means a handheld VHF/UHF transceiver in the crew cabin and a groundplane antenna in the cargo bay of the shuttle. Any complexity proposed beyond that would likely meet disapproval. Second, the frequency selected for operations would likely be the one with the greatest user equipment base above 50 MHz — that is, the 2-meter band. Beyond this, however, very little is certain, except that if done well this enterprise could be an absolute boon to Amateur Radio by exposing amateurs to the general populace in a very enviable light. "Gee . . . hams get to talk to astronauts." That, in turn, could pay big dividends in new amateurs, new ARRL members and — dear to AMSAT's coffers — new AMSAT members.

On the other hand, if the operations planning is inadequate or operations go awry for whatever reason, hamdom may suffer a black eye it will not soon get over. Thus, a great deal of well-thought-through planning must precede actual operations if a potential public relations disaster is to be averted.

It is likely that the strong presence of NBC's Roy Neal, K6DUE will assure coverage of the shuttle-hams if it happens as planned. Roy has been an ever-present proponent of hams-in-space and appeared at a number of AMSAT and Project OSCAR forums, including AMSAT's Dayton Hamvention presentation earlier this year. So if plans are approved, it may be that the story is picked up by the major news services (AP, UPI, Reuters, etc.), as well as the TV networks.

Several amateur newsletters have already carried the story, although ARRL has avoided comment on the mission to this point since it is still under consideration by NASA. As of 5 November, the proposal was still under review at NASA. AMSAT likewise has only acknowledged the existence of the proposal and offered modest interpretations of what it may signify. According to *ASR* Editor Vern Riportella, WA2LQQ, "It is usually wise to underreport at this stage of negotiations. Besides . . . the other tabloids have already said it all . . . including a lot of plain baloney. Somewhere in that mass the truth lies; *ASR* will provide an effective 'baloney shovel' when the time is right!"

Long-haul packet test successful

On 16 October 1982, from 1645 UTC until 1700 UTC, a successful long-haul packet radio demonstration QSO took place between Maryland and Texas; the stations involved were Bob Diersing, N5AHD in Corpus Christi and Tom Clark, W3IWI near Washington. The QSO took place on the 10-meter band at 28.300 kHz with both stations running FSK at a 1200 baud rate using HDLC protocol currently accepted as Amateur Radio standards.

This demonstration represents another phase of the AMSAT activities to advance the state-of-the-art in Amateur Radio communications technology development. The tests were conducted to test the suitability of various existing hardware and protocols under weak-signal and QRM conditions in anticipation of the AMSAT Phase IIIB satellite launch in April 1983, and to help in the planning of future satellite missions, including a possible dedicated packet radio mission a few years from now.

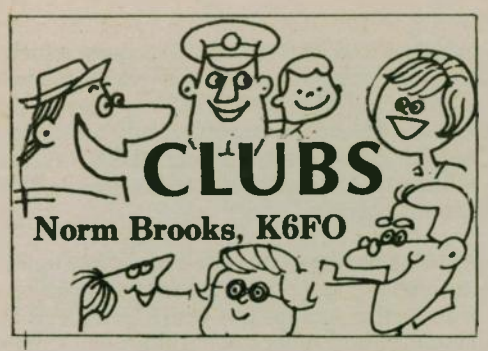
The demonstration QSO took place just one week after a landmark meeting held under AMSAT's auspices with software developed in Vancouver, San Francisco and Washington. They both used conventional "202A" FSK modems operating through 100 watt SSB transceivers. A number of packets were successfully exchanged in both directions, and the TNC board's software automatically verified the accuracy of each transmission. The HDLC protocol dictates that if any error is detected, the transmitting station retries until an error-free copy is received. In the test QSO, the number of retries required never exceeded three. The stations had conducted previous long-haul test experiments through the AMSAT/OSCAR-8 satellite.

Dr. Thomas Clark, W3IWI has been involved in a number of previous AMSAT demonstration tests, including initial feasibility demonstrations using the AMSAT/OSCAR-6 and 7 satellites which led to the international Search-and-Rescue Satellite (SARSAT) program to locate downed aircraft, and tests of digital phase-shift keying (PSK) techniques to be employed on the Phase III satellite series.

Bob Diersing, N5AHD has developed automated, real-time telemetry acquisition techniques for the UoSAT/OSCAR-9 satellite and operates AMSAT's Computer Bulletin Board System (CBBS) which can be accessed at (512) 852-8194.

Both N5AHD and W3IWI have been frequent contributors of Amateur Radio software, which is available through the AMSAT Software Exchange (ASE). Further information about AMSAT, ASE or AMSAT's CBBS can be obtained by calling the CBBS or by writing: AMSAT, Box 27, Washington, D.C. 20044. □

Please
send **NEWS** and **PICTURES** to
Worldradio



An interesting new club

How would you like to be a member of an Amateur Radio club along with Barry Goldwater, W7UGA? Actually, he was the first member of this interesting club. Then there are honorary members such as Prince Talal Ben Abdul Aziz, HZ1TA; Father Moran, 9M1MM; Fred Maia, W5YI; and others. The club is the Senior Citizens Amateur Radio Society (SCARS) with George A. Greenwood founder and president.

The club publication *Mike 'n Key* is impressive. Twenty pages with lots of photos, QSL cards, etc. The paper, by its columns, indicates the club covers a variety of interests such as DXing, MARS, handicapped, QSL design, stamp collecting, equipment collecting (an excellent article on Chuck Dachis' (WD5EOG) Hallicrafters collection), and the like.

I don't know how "senior" you must be to belong or what the cost may be, as a half-page was gone from the copy I read, and I suspect it may have been the membership application form. However, I see that membership is free to handicapped amateurs.

For more information, write to the club at 449 Old Seventy-Six Road, Brooktondale, NY 14817.

In our September 1982 column, I wrote about the club's "Widow's Assistance Committee." Here is an article from the October 1982 issue of *Ham & Eggstras* — the bulletin of the BEARS/Ø, Boeing Employees Amateur Radio Society, Wichita, Kansas — which vividly repeats the point I was trying to make.

Ham Leftovers Are Items For Concern

Pat Milligan, N7PM

The local ham club was having its annual white elephant sale. There was the usual exciting stuff. On one table there sat some battered and almost functioning general coverage receivers. Folger's cans full of paper-covered .001's with clipped leads were on one end of another table. Maxwell House got equal billing on the other end with brownish rods with wires coming out each end and on one end of some of them, you could almost see the remnants of colored bands.

There were some neat plastic packages from the local ham store containing such treasures as miscellaneous dials, seven-prong tube sockets and square aluminum cans with wires coming out of the open end.

There were a couple of greenish looking boxes with labels that said five of them came out of an arc. Under the table there was a huge green cylinder labeled dynamotor. On another table there sat a tilted and naked record-changer and a TV set with no cord. Scattered around on other tables were many items of lesser importance.

A neatly dressed gray-haired lady walked up to the table where a YL was busily recording the ticket numbers. "Do you suppose someone could help me carry in some boxes? I heard this was where you could dispose of surplus ham radios."

"George, go carry in some boxes," the YL yelled at a guy in a yellow vest.

George snatched the arm of another yellow-vested, and they marched out following the gray-haired lady to a quite un-new Ford sitting down the street. They came back loaded down with five large clean boxes and plunked them down on a vacant table end. The lady went over to the registration desk, so the YL gave her a numbered red sticker for each box.

Well, the red light soon came on on the coffee maker. Joe took the lid off of a box of doughnuts, wrote "Kitty" on the side of a styrofoam cup and somebody yelled, "Bill, we're ready to start the auction."

Now an auctioneer Bill wasn't, but no one argued that he wasn't the fastest ragchewer around, so he soon had a line of chatter going loud enough that the rest of the conversation in the room attenuated to a steady hum. He got a dime each for the Maxwell House and worked up to a half a buck on the big green tube amid cries of "boat anchor" and "cast iron."

Things kind of looked up awhile later when somebody bid $15 on an SX-70 with orange paint. He finally worked down to the end of the table and said, "Will somebody take the stuff out of the white boxes with the Drake labels?"

A few willing hands lifted the white formed styrofoam packing out of the top, and the first item out was a glistening case with a blue label "TR-7". This was followed by a matching speaker, a linear and other associated components.

All of a sudden the only thing that could be heard was a lone "balump" from the coffee maker. Bill looked at the equipment for a few minutes, turned and said, "Ma'am, do you have a minimum price to put on this equipment?"

The gray-haired lady looked a little hesitant and said, "Well, before my husband died a few months ago I believe he told me he paid almost $200 for these things."

There were several little buzzes of conversation beginning, and there were a lot of throats being cleared. Several billfolds were being examined, and here and there a checkbook was being quickly thumbed. Bill walked back and forth in front of the table a couple of times and finally said, "This auction is recessed for 10 minutes."

Bill and two other fellows led the gray-haired lady over to a corner and they chatted for a few minutes. All that was heard from the group was a "My goodness" and a "Well, I had no idea."

Bill soon bashed an empty mike case on the table a few times and when the dull roar quieted down he said, "May I have your attention a moment? Don has an announcement to make."

Don, the owner of the local ham store, stepped up to the table and said, "Jim WØXAND lived down in Smithville about 100 miles from here and I'm sure many of you have talked to him. He became a Silent Key a few months ago and Mary, his XYL, moved here to the city to be near her only daughter. This is Jim's equipment, and I understand it has never been on the air. I have a catalog out in my car, and we will consider any bids above the distributor's price. If there are no buyers tonight, Mary has agreed that I will have it on display in the store from tomorrow until it's sold.

"I know each of you hams appreciate the circumstances of Jim's explanations of the price of this equipment and I'm not going to discuss that any further. I'm also sure that none of you would want your XYL to get less than actual value out of your equipment if something happened to you. I have, personally, long

YOUR LOCAL RADIO CLUB

ALASKA

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

ARIZONA

Tuscon Repeater Association
P.O. Box 40371, Tucson, AZ 85719
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

Amador County Amateur Radio Club
PO Box 598, Pioneer, CA 95666
Pioneer Elementary School, Pioneer, CA 95666
1st Thursday/monthly - 7:30 p.m.
Talk-in 146.235/146.835

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

East Bay Amateur Radio Club
P.O. Box 6017, Albany CA 94706
Salvation Army Bldg., 36th & Rheem,
Richmond (415) 525-6200
2nd Friday/monthly — 7:30 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. W6TO/R 146.34/94

Gabilan Amateur Radio Club
Monterey Savings & Loan Public Room
Corner First & Westwood
Gilroy, CA 95020
2nd Thursday/monthly - 7:30 p.m.

Livermore Amateur Radio Klub
2441 Heatherlark Cr., Pleasanton, CA 94566
Meets: Valley Memorial Hospital
Multi-purpose room, Livermore, CA
2nd Friday/monthly - 7:30 p.m.

Mt. Diablo Amateur Radio Club (MDARC)
Grace Presbyterian Church
2100 Tice Valley Road
Walnut Creek, CA 94598
3rd Friday/monthly - 8:00 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: Chet Almond, N6DRU, (916) 967-4295
Meets: MARS Building, Sacramento Army Depot
Troop gate, Florin-Perkins Road
2nd Wednesday/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 - 8:00 p.m.
San Fran. Fed. Savings, 1995 41st Ave., Capitola
K6BJ repeater 146.19/146.79

S.C.A.T.S./WB6LRU
S. CA Amateur Transmitting Society
PO Box 1770, Covina, CA 91722
Vine School
1st Monday/monthly - 6:30 p.m.

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

Silverado Amateur Radio Society - (SARS)
Silverado Jr. High School
1133 Coombsville Rd., Napa, CA 94558
Bill Williams. N6EIH - (707) 255-7600
1st Tuesday/monthly -7:30 p.m.

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 147.765/165 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 - 8 p.m. rptr 146.13/73

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

Tri-County Amateur Radio Association
Pomona First Federal Savings and Loan
399 N. Garey Ave., Pomona
Talk-in 146.625/025 For info. call (714) 985-8184
2nd Monday/monthly - 7:30 p.m.

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.

Ventura County Amateur Radio Club
Oxnard Community Center
Camarillo Room
900 Hobson Way, Oxnard, CA
2nd Friday - 7:30 p.m.

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

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

Greater Titusville Amateur Radio Club
c/o W.R. Young, N4DQT, 3845 Catalina St.
Titusville, FL 32780 • Repeater 146.31/91
3rd Monday/monthly - 7:30 p.m.
Chamber of Commerce Bldg.

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.

Sarasota Amateur Radio Assoc., Inc.
Sarasota Co. Admin. Ctr.
US301 & Ringling Blvd. - 6th fl. lounge
President:"O.W." Lander N4FCF
3rd Tuesday/monthly - 8:00 p.m.

GEORGIA

Gwinnett Amateur Radio Society
Red Cross Center
Hi Hope Rode, Lawrenceville, GA
147.87/27 for Talkin/Info.
3rd Thursday/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

Chicago Suburban Radio Association (CSRA)
Clyde Federal Savings & Loan Assn.
7222 West Cermak Road
North Rivrside, IL 60546
2nd Wednesday/monthly - 8:00 p.m.

Fox River Radio League
McCullough Park Dist. Bldg. Rm. 101
Rt. 31 & Illinois Ave., Aurora, IL
(312) 898-2779 for more information
2nd Tuesday/monthly - 7:30 p.m.

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

Tri-Town Radio Amateur Club
PO Box 302, Hazelcrest, IL 60429
Above Hazelcrest Police Station
1st & 3rd Friday/monthly - 8 p.m. (except July & Aug)
Net every Wed. 8 p.m./146.49 MHz

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.

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
PO Box 10342, Ft. Wayne, IN 46851
Allen-Wells Charter 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.

IOWA

Muscatine Amateur Radio Club
Info: Bruce Dagel, WB0GAG (319) 264-3320
Meets: Basement Meet. Rm., Public Safety Bldg.
Muscatine, IA
1st Monday/monthly - 7:30 p.m.

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

Sooland Repeater Association (SRA)
KD Stockyards Station
2001 Leech, Sioux City, IA
Classes Thursdays 7-9:30 p.m., Sept-May
Club meets 3rd Tue. 7:30 p.m.

MARYLAND

Frederick Amateur Radio Club
Frederick Electronics
Vernon Simmons, KA3CVD
(301) 371-5735 after 1800 except Thur.
2nd Tuesday/monthly - 2000

MASSACHUSETTS

Billerica Amateur Radio Society (BARS)
Honeywell Systems Division
300 Concord Road
Billerica, MA 01821
1st Wednesday/monthly - 7:30 p.m.

Q.R.A. (Quannapowitt Radio Assoc.)
Masonic Hall — Salem Street
Wakefield, MA 01880
2nd Friday/monthly - 8:00 p.m.

MICHIGAN

The Eastern Mich. ARC (EMARC)
St. Clair County Comm. College
Student Center Building (Cafeteria)
Port Huron, MI (313) 364-9640
1st Tuesday/monthly - 7:30 p.m.

MISSOURI

Heart of America Radio Club
3521 Broadway
Kansas City, MO
3rd Tuesday/monthly

NEW JERSEY

Gloucester County ARC, W2MMD
PO Box 370, Pitman, NJ 08071
American Legion Post
Delsea Dr., Rt. 47, Clayton, NJ
1st Wednesday/monthly - 8:00 p.m.

Old Bridge Radio Assoc. (OBRA)
Cheesequake Firehouse — Route 34
Old Bridge Township, NJ
Daily 8 p.m. Net on 147.72/.12 MHz
3rd Thursday/alternate (odd) months 8 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: Jerry Kamen, K2QXH, 44 Robin Lane, Levittown, 11756 Net every Mon. 8:30 p.m. 146.25/85
Meets 1st Tues/8 p.m., H.B. Thompson, JHS, Syosset

Suffolk County Radio Club
Meets 1st Tues. monthly, 8 p.m.
Bohemia Recreation Center
Smithtown Ave., Bohemia, Long Island
More info! Jim Heacock, KA2LCC, (516) 473-7529

NEW HAMPSHIRE

Great Bay Amateur Radio Assoc.
Airex — Tel. 742-3703
Route #16, Dover, NH 03820
2nd Sunday/monthly - 7:00 p.m.

NORTH CAROLINA

Wayne County Amateur Radio Assoc., K4CYP
PO Box 1578
Goldsboro, NC 27530
MGN Regency-Uptown
3rd Saturday/monthly - 8:00 a.m.

OHIO

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

C.A.R.S. (The Clyde Amateur Radio Society)
Ervin Remaley, KA8CAS, Secretary
2nd Tuesday/monthly - 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeaer 144.75/145.35

Champaign-Logan A.R.C., W8EBG/R
Joe Palmer, KS8M, President
2 Meter Net, 147.60/00, Tuesdays, 8:30 p.m.
Dinner Meeting, 1st Thursday/monthly
Dajolees Restaurant, West Liberty, OH, 7 p.m.

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.

OREGON

Oregon Tualatin Valley ARC
Portland General Electric Auditorium
14655 S.W. Old Scholls Ferry Road
Beaverton, OR 97005
3rd Wednesday/monthly - 7:00 p.m.

TENNESSEE

Lakeway Amateur Radio Club
Randy Hall, Activities Mgr.
Box 1636, Morristown, TN 37814
State Area Vocational School
Last Thursday/monthly - 7:30 p.m.

TEXAS

Garland Amateur Radio Club (GARC)
146.775/146.175 K5QHD/R (Info Net Mon. 7:30 p.m.)
Garland Women's Activity Building
713 Austin Street, Garland
4th Monday/monthly - 7:30 p.m.

Houston Amateur Radio Club, W5DPA
7011 Lozier Street
Houstin, TX 77021
(713) 747-5073
Fridays/weekly - 7:30 p.m.

UTAH

Utah Amateur Radio Club (UARC)
Room 161, Murray High Sch., 5300 S. State
Gordon R. Smith, K7HFV
582-2438/talk-in 16/76
1st Thursday/monthly - 7:30 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 — WR4ALW
VEPCO Bldg. (Penbroke Av. & G St.)
Hampton, VA
1st and 3rd Wednesday/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.

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
First National Bank of Ripley, WV
1st Thursday/monthly - 7:30 p.m.

SUBSCRIBE TO WORLDRADIO; see page 9

urged that each of you leave a frequently updated price schedule around or have it understood that a close ham friend will be called to properly dispose of your equipment. This equipment is no longer for sale except as I've described."

There was a soft "Thank you," and the buzz around the room soon went up several decibels.

Bill got a few more bids out of some knick-knacks, but the thinning crowd soon gave evidence that somehow the fun had gone from the evening.

Next month, the local ham meeting was called to order, the flag salute given, the minutes of the last meeting were read, the auction results were given and the treasurer announced the balance. The president announced that the speaker of the evening was Don and his topic would be "How to evaluate your equipment" or "What's this junk worth?" Before that, our secretary had a letter to read.

Jack got up and said, "This letter is from Mary, XYL of W0XAND, and reads as follows: 'Dear OM's. I want to express my deepest gratitude for my treatment at your recent auction. I want you to know that Jim's equipment sold for only 5 percent less than the list price and that Don didn't charge any handling fee. We had assumed Jim would have several more active years and our finances were such that the money from the equipment was badly needed to avoid selling some furniture I really need here in my new residence. I owe a real personal thanks to Bill, Don and a couple of other fellows in helping me to understand Jim's real devotion to his hobby and my lack of acceptance of its real importance in his life. I had been very disturbed at the idea he would pay $200 for some boxes. If I had it to do over again, I would say, 'Why don't you get some really good equipment so you can enjoy it more.' Jim always read the monthly club bulletin and sometimes read aloud or showed articles to me. Perhaps you should print this letter in your bulletin and you fellows can discuss it with your wives. I've never been a YL, but I assume they'll have a somewhat different problem. Thanks again, and I believe I should say 73's.' Signed, Mary, ex-W0XAND's XYL."

Don's first comment as he started to talk was "Well, the first 10 minutes of my talk have just been given and said far better than I could do it."

Sure enough, Mary's letter was printed in the next issue of the *Not Quite Solid-State Items*. It was rather surprising how often in the months after that that somewhere in the conversation, "You know, I was just talking to my XYL the other night about my equipment."

From *RAIN*, publication of the Humboldt Amateur Radio Club and the Far West Repeater Assn., Eureka, California:

Is your license current?

About two months ago, a well-known member of the FWRA received an FCC Form 610 in the mail along with a note reminding him that his ham ticket was about to expire and that he should submit his renewal application. He did, and is now good until September 1987. Another prominent ham discovered two days too late that his ticket had expired. He got a Form 610, and submitted his renewal, but having let his license run out, he must stay off the air until his renewal is received. He is *not* now licensed.

How did this happen? Well, the first had registered his license expiration date and the other had not. Tom Monroe, W6GGR keeps a list of license expiration dates for those who register their dates with him, and about two months before expiration, sends a reminder with an FCC Form 610 in time to renew. If your expiration date is not on Tom's list, he cannot help you except to give you a 610 when you ask for it. Check your license date and Tom's list at the club meeting or the FWRA brunch, and get *your* date listed. This costs you nothing extra. It is a courtesy for members of both HARC and FWRA.

Another solution to this problem: The Northern California DX Club prints the member's license expiration date on *every* newsletter mailing label. However, the member must find his own FCC Form 610. The Dayton Amateur Radio Association lists members' license expiration dates in its newsletter, the *R.F. Carrier*. □

Ohio club promotes friendship with cable TV

Gary Eldridge, KC8UD

The Kettering Medical Center Amateur Radio Club (KMC ARC) in Dayton, Ohio is pioneering a friendship between Amateur Radio and cable television. On 3 November, the club went on line with its first monthly live cablecast over Continental Cable Public Access channel 13. So far, the live cablecast is seen in six cities to the south of Dayton, but plans are being made for an interconnect with Viacom Cable to carry the cablecast to the north.

The purpose of the program is to present live programs of interest to the public (and Amateur Radio operators in particular) with topics relative to the hobby of Amateur Radio, computers, modern communications technology and electronics in general.

KMC ARC is sharing the limelight with other area radio clubs in order to facilitate better utilization of the cablecasts to disseminate information to members of other clubs.

A very unique aspect of the cablecasts is live interaction between the viewing amateurs and the participants in the studio. At the end of each presentation is a question and answer session which is open to not only the studio audience but to the viewers at home as well. The viewing amateurs call their questions in on one of the KMC ARC repeaters, and the questions are answered live over the television. □

PA club has ATV fans

William Barefoot, W3UQJ

Here is some news out of the York, Pennsylvania area. The Keystone VHF Club of York has a new offshoot of various club members into Amateur Fast Scan Television. At the present time, we have a local club beacon, remote-controlled on 426.25 MHz, output 10 watts.

The following stations have two-way color capabilities: William Barefoot, W3UQJ; Don Baker, K3NUZ; Steve Cruse, K3WHC; and Frank Bair, K3GDI. Those with two-way black-and-white capabilities are Ray Shaub, W3AXC; John Shaffer, W3SST; George Moran, W2DGZ/3; Robert Riese, K3DJC; K3COZ; Merl Miller, W3IQF; Bill Hopkins, KA3CCA; Sterling Trimmer, K3GXU; John Zett, W3FLD, and Rick Goodman, WA3USG. Those who have receive-only capabilities are: Jim Shultz, W3MYK; Lloyd Rohrbach, W3YQJ; Paul Miller, K3AVF; Robert Ickes, WB3LJS; John Jaminet, W3HMS (soon two-way); and Don Bowders, WB3EZQ. □

Mail boat

Thanks for your letters and phone calls. Your response to this Maritime Mobile series has been overwhelming! This month, let's review your most often-asked questions.

Maritime multibands

A landslide of mail indicates the popularity of using small multiband antennas on the stern of sailboats for worldwide operation. It's also possible to use this same setup on the bridge of powerboats. Mobile whips work quite nicely if you don't have room for larger dipoles, slopers or backstays.

The key to good performance on a mobile multiband system aboard your boat is a good groundplane beneath the whip assembly. Copper foil, screen and wire mesh are the proper way to go about providing a good counterpoise.

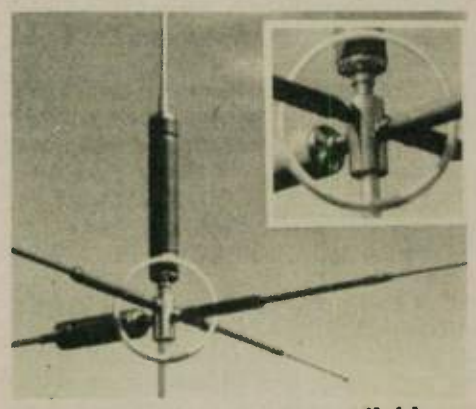
Not acceptable as a counterpoise for a set of mobile whips would be using the outside coax braid as your only ground source. A small wire run to the ball mount is also an insufficient groundplane. It simply won't tune up.

Wide copper foil and screen beneath the antenna assembly is the only way to go.

Mobile HF whips may be used individually for single-band operation. Why not tie them all together so you don't have to go aft for a coil change? This arrangement works nicely — the individual whip for the band of operation automatically resonates with the others almost "invisible" to your high-frequency set.

Both the Spider™ and Swan™ multiband mobile antenna assemblies work out well. They are sold as a complete kit for 10 through 40 meters. All you do is screw the assembly into your ball mount, prune and tune for each band, and you are on the air!

If you already have a complete set of mobile resonators, a neat little five-band adapter assembly will simultaneously mount Hustler™ and Hy Gain™ coils to one single mast.



Four-band adapters are available.

The best adapter I have found especially treated for the marine industry is available from J.L. Industries, P.O. Box 030413, Fort Lauderdale, FL 33303, Attention Lou, W4LP. Lou formerly was with Pearce Simpson, so he knows what it takes to develop a product that won't disintegrate after a few hours aboard.

Grounds

For worldwide high frequency work, the better your ground, the better your signal. If the other boats are out-talking you on the net, don't check your radio — improve your ground.

Yes, the incapsulated lead in your keel makes a good ground. Even though it does not touch the water, a good RF ground is capacitively coupled into the sea water. Use copper foil — repeat, copper foil — for your ground run. Round wires don't work well at HF frequencies for grounding.

Yes, it's hard to find thin copper foil. Try harder. Local marine electronics specialists usually have it for their marine single-sideband grounding system. Thickness of the foil is not important — .005 mil is nice to work with. It's very bendy, but seldom will tear.

Claims that you can't get at your keel bolt will fall on my deaf ears. Sailboat owners using anything other than their lead keel are simply fooling themselves. Counter-sink a keel bolt for a good connection. Muster up your courage and drill into the lead. Nothing beats a keel bolt ground.

If you have a fiberglass powerboat, you are relegated to running quarter-wavelength sections of copper foil below the waterline. Make three runs for each band. Also, tie into copper plumbing and hydraulic lines. Grounding only to your engine is rarely efficient.

Ground, ground, ground! The better you ground, the louder your signal. Period.

Seal all connections.

VHF antennas

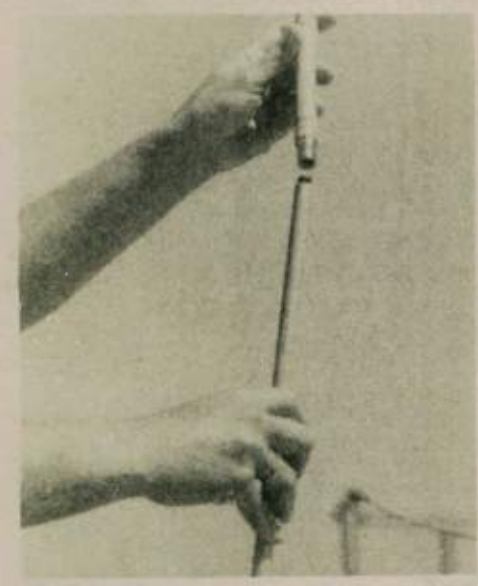
I have never found a marine VHF antenna that won't do a good job in transmitting 2-meter signals. Even though we are using the antenna 10 MHz below where it was originally tuned, the gain and height of most marine VHF antennas will do a nice job on the 2-meter band.

Use a coaxial cable switch to go between both sets. No, you won't burn out a set if you inadvertently transmit without the load on it.

The best broad-band antenna for both marine and ham VHF work is the Metz stainless steel base-loaded half-wave DC shunt-fed whip. (Metz Communications Corporation, Corner Route 11 and 11C, Laconia, NH 03246, $50.)

This stainless steel wonder exhibits low SWR on both bands, is less than a yard long, all stainless steel, and does a great job on small trailer boats, as well as on the masthead of super sailboats. It's an ideal emergency antenna, and it's one of the best ones going. You can even put it on a magnetic mount, which they have available for mobile use.

See this antenna at your local ham dealer, or order it direct from Metz. This



Mobile whips work well.

is a large company with little time for correspondence, so don't expect them to send you any flashy literature or any long dissertations on how well it works.

Just take my word for it. You can even screw it on to an adapter and use it directly on your hand-held for extended range. This same antenna on your hand-held will outperform any telescopic whip 2-meter antenna hands down.

Automatic tuners

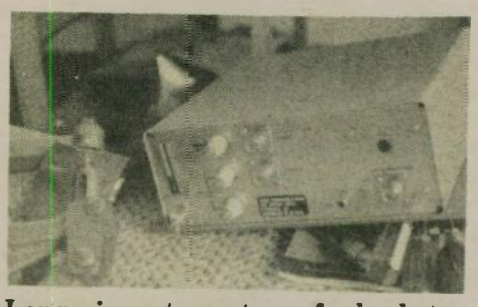
I have installed, with some success, automatic HF antenna tuners to backstay antennas. I have installed them with the factory-recommended whip with more success. However, automatic antenna tuners for maritime mobile work depend on a tremendous groundplane system evenly surrounding the antenna system for maximum results. If you are extra lazy, very rich, and feel you want everything automatic for you when you switch to 20 meters on your next cruise, you may wish to consider the automatic tuner. However, do consider that it probably won't work unless you have an ideal ground situation aboard.

Ball mount on stern

Manual tuners will tune anything from a backstay to a screwdriver stuck in the back of the low-impedance output terminal. My best success is with the cubic (Swan) ST-3B.

Bob at ICOM now has a unit quite similar to it, so if you want to keep brand names the same, you may wish to consider the new ICOM manual tuner.

Fine-tuning the whip is necessary.



Long-wire antenna tuner for backstay antenna

No, your inexpensive 50 ohm mobile tuner won't work on a long wire. Notice on the back that there is no long-wire output insulated terminal. Only coax output — and the output may only be between 30 and 70 ohms. Most long wires in marine installations look more like 5 to 15 ohms impedance.

Dropping code requirements

This new codeless license is only for beginners who are either inept or who simply refuse to learn the code for VHF operation. The code requirements, by international agreement, will always stand for worldwide frequencies that we use in maritime mobile.

I'm trying to tell you that you have to pass the 13 wpm code test, as usual, to operate on the General Class HF bands.

I have prepared a special set of five C-90 tape cassettes especially for those of you who have little time to study for the General Class code test. These tape cassettes are all you need to practice code in the car, out on the water or jogging down the sidewalk. They will also keep you wide-eyed while on watch in the early morning hours! Many portions of the tape allow you to say what the letters are after you hear them, so you don't have to fool around with a pencil.

I produce this whole series myself for our radio classes and correspondence students learning the code throughout the world. $35 will be the best investment you ever made in getting your General Class code test out of the way. I might add that the General Class sample code tests are extremely accurate!

If you have friends learning the code, I have just produced the world's first stereo code set. That's right, living stereo, so that the student may turn down or off the voice audio or the code audio. This is ideal for practicing receiving code without voice instruction, as well as sending code without hearing the dits and dahs. On a regular portable cassette player, the stereo tapes play like any regular monaural tape.

This beginner set consists of four C-90 stereo cassettes and prepares students for the Novice Class code test. The price is $29.

And since you asked me, our Extra Class code preparation set of three tapes — each 1½ hours long — is $20, and does the trick if you want to pass the Extra Class code test.

So that's it for this month — your most often-asked questions answered.

My new shiny aluminum tower is now up, and I am ready to get back to all of you on HF with a much more decent signal. The beam has been polished, the 40-meter add-on kit installed aloft, so when you hear WB6NOA on the air, give me a call.

Let's hear how your signal compares to the rest of the maritime mobile stations throughout the world. 73, de WB6NOA.

Citations

(continued from page 1)

ed the portion of the band between 10.109 and 10.115 MHz. Those frequencies are still used for government operations, *which cannot tolerate interference.*

"Amateur operators who use the unauthorized frequencies in the 30-meter band will be in violation of Section 97.63 of FCC rules, and *will be subject to enforcement action.*"

The FCC is *very closely monitoring* the 30-meter band and *is issuing "pink slips."* More is at stake here, however, than just some amateurs receiving citations. Temporary operating authority is *unprecedented* in U.S. amateur history and unless we are careful, it could be the last. It also should be pointed out that the Fixed Service is allocated 10 MHz on a primary, priority basis and should not be interfered with even on the 30-meter frequencies that U.S. amateurs are authorized to operate on.

It has generally been agreed that contesting and competitive amateur operation be excluded from 10 MHz to keep down unnecessary hamming In a nutshell, *be careful of your operation on 10 MHz!*

— W5YI Report □

Explosion

(continued from page 1)

tor, Joe Phillips, expressed ARC's gratitude to the following Lincoln members of the Amateur Radio Service, who provided communications at the chapter house (home of the Lincoln Amateur Radio Club's K0KKV, used as Net Control Station), at the disaster scene and in the Red Cross shuttle vehicles, or who assisted in other ways:

Gail Tanabe, KA0CGF; Jim Rogers, N0DDE; Bruce Colgrove, WD0DMS; Mike Drabant, N0DMX; Don Shurtleff, WB0DVS; Jerry Kohn, WD0EGK; Lynn Blesh, K0EK; Denny Souba, WD0FDV (David City, Nebraska); Evan Boiler, W0FTR; Clarke Butcher, WB0GAK; Barb Olson, WD0GKA; Gordon Trout, W0KBS; Jerrold Kohn, KA0KUR; Harold Tudor, WB0QQS; Bob Mitchell, WB0RJJ; Joe Eisenberg, WA0WRI; Roy Burgess, WB0WWA; John Hauner, WA0YPY.

Communications on Red Cross frequencies were marginal, but communications by Amateur Radio worked well through the Lincoln Repeater Club's WR0AEV/K0SCM/R, 146.25/.85, and on 146.85 simplex in the town of Raymond. The last body was brought out shortly before 2:00 a.m. Wednesday, and the emergency net closed within the next hour. □

Happy Flyers
HAMS & PILOTS
"THERE IS NO LIMIT TO WHAT YOU CAN DO – IF YOU DON'T CARE WHO GETS THE CREDIT"
INTERNATIONAL COMMANDER, **Hart Postlethwaite, WB6CQW**
1811 Hillman Ave., Belmont, California 94002 (415) 341-4000
International Vice Commander, Paul Hower, WA6GDC
Box 2323, La Mesa, California 92041 - (714) 465-5288

New Year's resolutions

As sure as the holiday seasons come and go each year, the subject of making New Year's resolutions will crop up. Even though most New Year's resolutions are soon broken, much benefit can accrue from the good accomplished while the resolution is kept. This year, I cheated a bit and made one of my resolutions early. I changed my eating habits before the season's heavy, delicious and fattening meals. I hope I have succeeded by the time you read this. Even short periods of proper eating can be of assistance in weight control and ultimate good health (and longer life).

By the same token, Amateur Radio can be improved by those who are actively involved in operating on the air and/or public service activities. Any time of the year is fine for resolutions, but at this time of year we have the advantage of others being involved in attempting to keep resolutions. Let's give a little thought to our operating practices, as they relate to others.

Ham operating practices

We presently live in an era of electronic explosion. When we use our radios, we are no longer limited to being heard mostly by other Amateur Radio operators. Scanner groups monitor many frequencies previously considered private. We now must realize that every time we key our transmitter, many may be listening. Since most building of electronic equipment now in use is being done by professionals, conversations have had to be changed. We seldom can discuss an unusual circuit we are trying or a special "homebrew" novel antenna. Conversations now tend to concern things like: computers, new commercial rigs, sports activities, elections, the economy, our volunteer activities, etc. Being a good conversationalist is becoming a part of Amateur Radio. Now that we are being listened to by so many outside the fraternity, we need to give some thought to the content of our conversations.

Another area needing attention is that of proper practice for the band and mode in use. When FM became more and more fashionable, and many who had spent much of their operating years on HF SSB drifted into VHF and UHF FM, they discovered many differences in practices. Through the short few years of explosion and growth, so many new people came on the air that much of the good, established practices were diluted, and in many areas of the country, few have ever given much thought about reasons for certain of those old procedures.

One of the first things I noticed my first times on 2-meter FM (about 1962) was that no one called "CQ". On the low bands, with almost everyone operating with a VFO, you had to make a number of "CQ" calls so they could locate you and get on frequency. With crystal-controlled FM rigs, this was not necessary. Certain groups listened on pre-established frequencies. The accepted way of making your presence known and indicating your desire to talk was to say something like:

"Good morning, WB6CQW." If someone was listening and wanted to talk to you, he/she would pick up the mic and give you a call. If you did not wish to make small talk, but thought someone might have traffic for you, we might come on the air with something like: "WB6CQW monitoring." This indicated we were there if you were looking for us, but not in a position to talk. This was common for those who started their morning commute with a cup of coffee in their hand and the steering wheel in the other. It was also common for active operators who were technically inclined builders, but really not interested in just small talk. We knew not to bother those who broke in with "monitoring" after their calls, unless we had a good reason.

As more people became active, many of our sensible practices were not understood. Many soon began to indicate their desire to have their presence known, yet clarify their intent not to become engaged in idle chit-chat, by saying: "K6XYZ monitoring ONLY." Today, many operators will come on the air saying: "K6XYZ monitoring," and wonder why someone does not talk to them. Monitoring, when added to their call, infers to many that they do not wish to talk. If you break in with just your call (I prefer the addition of some salutation), it is obvious you must be "monitoring" for a response, since giving your call on a given frequency would make no sense.

The use of the word "BREAK" has become another area of confusion. On HF, there were numerous uses for that word. It was a means of joining an ongoing conversation. It could be used to indicate emergency traffic by saying it twice, or priority traffic of great importance when said three times. Attempting to use "break" on FM can have a number of undesirable side effects.

In the first place, technically speaking, you are supposed to give your call on your first transmission of a series. In the second place, if someone else breaks in at the same time, or the next party picks it up too fast, there is a good chance no one will even know you tried to join in (or acquire use of the frequency to pass traffic). This can lead to hurt feelings, especially when a number of attempts to "break" fail to lead to any acknowledgement by someone on the air. I personally feel that things like this have contributed to the present jamming problems in many areas.

If you were to give your complete call and some salutation (or a statement that you had traffic of a routine or emergency nature), you have a much better chance that you will be heard. Even if you "double" with someone, you stand a better chance of a heterodyne being noticed. The word "break" is so short that it can easily be missed, even if a short heterodyne is produced.

As an aside — due to the large amount of unidentified operators and jammers, many of us have adopted the practice of not acknowledging a voice or the word "break" unless it is accompanied by a full amateur call. If someone hollers "break" when I am the next one who should be talking, I will give the party time to come on the air with full call sign and state their desire. If no one comes on the air within a few seconds of waiting, I will continue as if no one said anything. I will explain the value of this practice in next month's column, along with some suggestions to reduce jamming on your favorite frequencies. Trust you did have a good holiday season! □

Armed Services recognize Amateur Radio

Bro. Leo Scholz, S.M., W9SWB

As a teacher and moderator of the radio club at Chaminade College Prep. — a private school (day and boarding) in St. Louis, Missouri — I come in contact with many of the students, both middle and high school. The radio club is well known as some have obtained their amateur licenses, and the students hear the dit dah before and after school. The offer to join the radio club is made to the entire school.

Recently, some of the seniors have made application to the U.S. Naval and Air Force Academies and have been asked the question, "Are you a radio amateur?" One of the seniors expressed regret that he did not take the opportunity to join the radio club and get a license. One of the juniors made application for the U.S. Air Force Academy and found the same question and was able to answer it in the affirmative, being KAØIXN — a Novice. He was elated that he was an amateur.

The Armed Services have always recognized Amateur Radio, as many of the rop-ranking officers are amateurs. Perhaps educators, student counselors and principals will be able to help students who desire to attend the academies.

Project Randsburg 1982

Paul Turkheimer, WA6NKL

Emergency communications "exercising" does not always mean taking complete self-contained stations to some desolate valley or mountaintop. Nor does it mean that commercial power is lost and you have to start the gasoline-driven electric generator. The scenario may require that a group of communications specialists move into a community and diplomatically and carefully persuade an owner to permit a "take-over" of an establishment, be it a home, store or whatever, to set up a communications center for an around-the-clock operation, without interference from the local population.

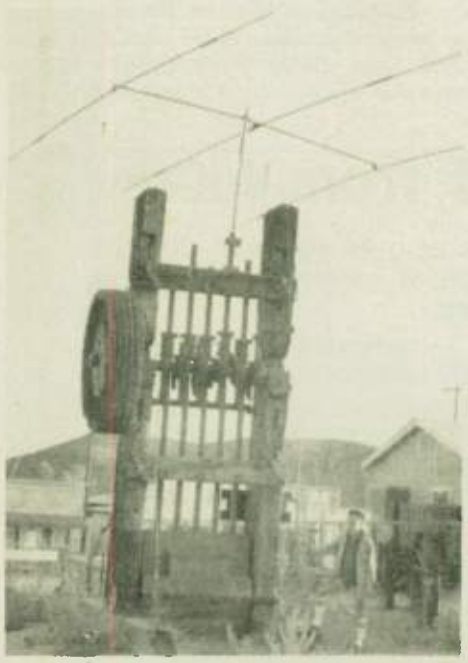
This is what occurred at Randsburg, California — a small town with a population of 113, at an elevation of 3,200 feet in the upper Mojave Desert in California. The communications specialists were members of the Los Angeles Air Force MARS Base Support Team, who used this event as the third major annual emergency communications exercise. This project follows the successful Project Ballarat in 1980 and Project Johannesburg in 1981.

The Base Support Team, tasked with the development and maintenance of the Space Divisions Worldwide Communications Net, planned for this event to practice its familiarity with long-distance worldwide communications. The decision to use Amateur Radio frequencies seemed logical. The event was officially booked as a worldwide Amateur Radio event, and the South Africa Radio League chapter became the other end of the linkup. The distance of 10,000 miles short-path and 15,000 by long-path seemed ideal. To add additional interest, the linking between Randburg, South Africa and the old gold mining town of Randsburg, California — where historical ties exist dating back to the last century — were investigated.

The site chosen in Randsburg, California was one of the oldest remaining buildings dating back to about 1890 and used up to the 1920's as a barbershop where a shave could be obtained by the goldminers for 5 cents. The adjacent building was also used by the radio group, where a deluxe bath used to cost 20 cents.

During the afternoon of 1 October, members of the radio group arrived at the old desert town to begin the establishment of the communications center. By late afternoon, five HF transceivers, two three-element beams and several dipoles and a vertical were in operation on 10, 15, 20 and 40 meters SSB. The first contact was made on the MARS Region 6 frequency at 2000Z. Later, the first Amateur Radio contact was made at 0445Z with JA1MK on 15 meters. In addition to the MARS call signs of the individual operators, the event call signs used were WA6NKL and W6LED. Over 200 stations were contacted, including 25 ZS stations.

Not all went as planned. One of the beams would not function properly. The electric rotator indicator became defective. When the operator positions were switched, one of the transceivers was not turned off while the other transmitted on the other's frequency at the full 1kW output, thus severely damaging the standby transceiver. During the night, the coaxial transmission line to the other beam



This is not a sophisticated antenna rotator, but an old stamp mill, used at the turn of the century to crush gold and silver ore into fine mesh prior to the extraction process. Bob Plummer, WB6BFU/AFA6SG is helping to hold up the rig.

became entangled with a moving camper, tearing it apart, resulting in a short loss of communications. Another transceiver lost its transmit audio because of excessive vibration during transportation. All these misfortunes had little impact on the success of the project because of experience; that redundancy of transcievers, antennas, transmission lines and skilled operators is essential in achieving successful communications field missions.

On Saturday morning, 2 October, two major planned events occurred. At 1300Z, John Pakusich, WB6KVF (AFA6RH) piloted his Cessna 150 from Los Angeles, successfully testing the team's Attache Case MARS VHF repeater while airborne. He landed his aircraft at the Johannesburg, California dirt airstrip two miles away and then joined the group.

Later in the morning, at 1600Z, the official simultaneous ceremonies between Randburg, South Africa and Randsburg, California signaled the official opening of the event with dignitaries taking part at both locations. Over the air, the Randburg mayor — honorable Izelle Swart — could be heard greeting the people of Randsburg, California and the many visitors, including Neville Dawson, ZS6AND, prominent South African Radio Announcer. He made the trip especially to cover the event here. Schalk Van Der Westhuizen, Information Officer South African Consulate, Los Angeles, was the official consular representative from Los Angeles.

Formal exchanges and written greetings were made between honorary mayor A.J. Napolis, Sr. — long-time resident of Randsburg — and the visitors. The greetings consisted of goodwill and peace wishes and the appreciation of Amateur Radio as one of the contributing forces to achieve it.

The organizer of the event in the United States was Paul Turkheimer, WA6NKL (AFA6YJ), while at Randburg, South Africa, Roland Hiscock, ZS6BF — who visited California during Project Johannesburg last year — led the group. Other participants were Bob Kline, WA6LED (AFB6GW); Howard Berk, KA6DNA (AFA6BX); Bob Plummer, WB6BFU (AFA6SG); Dale Birmingham, WB6MMO (AFA6CA); John Crowe, W6ULZ (AFA6FJ); Barry Priddy, K5VIP (AFA6CT); Jake Gaskel, WA6RJG (AFB6IB); Lloyd Garrison, WD6BUF (AFA6ID); and John Pakusich, WB6KVF (AFA6RH).

The group is already planning another similar activity for 1983. □

Bruce L. Humphrys, KØHR

On the day this month's column is being written, it's snowing in Minnesota. Just great! Kinda reminds one that winter is coming *REAL* soon! I don't know how things are in other states, but here in Minnesota, winter is the best time to put up antennas.

The theory goes like this: if you put up your favorite 40-meter dipole on a nice summer's day, the durn thing will have SWR all the way up and down the coax. It won't make any difference at all how accurately you cut it, how high you get it or how much silver you plate it with. It won't work. If, however, you wait until January or February to put up that antenna — especially if you go outside in 20 degrees below zero weather to solder your connections — you are guaranteed of success.

Now, that's silly, of course — but it does bring up a couple of interesting points. One is — winter is a great time to work on Amateur Radio things. Maybe not putting up an antenna, but certainly a terrific time to work with a HANDI-HAM student!

At the last session of Radio Camp (more about the next session a little later), we learned that the people who are fairly new to Amateur Radio need help knowing what to say when they finally get on the air.

Back many, many years ago in QST, there appeared an article called, "Your Novice Accent." This great little piece dealt with some of the "no-no's" committed by Novices (and others, by the way) in their daily operations on the air. Stuff like calling CQ CQ CQ CQ CQ CQ CQ (a coupla hundred times) and the DE DE DE DE DE DE KØHR KØHR KØHR KØHR (another coupla hundred times), and so forth. These days, what with personal instruction being the norm in Amateur Radio classes and in the HANDI-HAM System, we can usually steer a new amateur in the right direction as far as "Novice Accent" type of stuff is concerned. But not always, and not always do we include some of the simple operating techniques that we older and (*much*) wiser hams know almost instinctively. For example: what band or bands would you recommend a newcomer start out on? With (at least) five bands to choose from, the choice can be difficult and — perhaps — a frustrating one.

Now, you might really enjoy the pileups on 20, but would they be the clear ticket for the new General? Or traffic nets on 80 might be your ticket. But would they appeal to a new Novice? You have to put yourself in the position of the new amateur, evaluate what he/she might run across on the bands and types of operating, and make some intelligent suggestions. And (this is really very important), you have to put your suggestions in terms the newcomer is going to understand. Remember — that new amateur is *very* eager to "join the crowd" and sound like he's an old-timer, so he's probably going to nod his head "yes" to everything you say, whether or not he understands it.

I think it's very important for new amateurs to become familiar with as many aspects of Amateur Radio as possible. This means occasionally sliding off your favorite net frequency and doing some listening to OSCAR, or 2-meter SSB/CW, or even — just to reinforce your positive feelings about Amateur Radio — those couple hundred KCs just below the 10-meter band! The more varied your experiences in Amateur Radio are, the more easily you'll be able to become an interesting conversationalist on the air.

I guess that's what we're really getting to in this month's column. What *DO* you talk about on the air? For many people, it takes courage to boldly strike out and make a new friend. After you've exchanged the standard information (signal strength, name, QTH, rig and antenna — maybe weather), you just sit there wondering what to do next. Well ... you've got other hobbies, don't you? Or, if not, you're going to school or working or loafing or keeping a house or all of the above, aren't you? Or you have a kid that just set an all-time passing record on the football team, right?

What I'm getting at is, there is a lot to talk about on the air which will probably be interesting to the person on the other end of the QSO. For example: one of my other hobbies is sailing. I often mention that I just completed building a sailboat (took five years and a forest of mahogany!). That usually stirs up some sort of comment, and sometimes (often, really), I find out the other guy has some connection with the water, too.

Whatever your hobbies, put them on the air! Make your QSOs more interesting by talking about something other than your new Snapper 1000 transmitter, interesting though that may be. Even more importantly, be sure you get your new ham students into the habit of talking about themselves, too.

Many of our HANDI-HAM participants (the handicapped ones) are shy about talking about themselves with other people. This is largely because most of their communication is face-to-face, and the other person is likely to make some pre-judgments seeing that he is facing a handicapped person. But on the air, you can't see the other person. You can't make pre-judgments — at least not negative ones (you can rightly presume that the guy on the other end has at least the same smarts and skills as you — you both passed the same exams!).

So, go ahead and express yourself. Be interesting. Make friends. Have a good time on the air — and spread the joy of yourself around. □

Handicap hasn't slowed him down

Submitted by Herman Baker, N6ARP

On 11 September, for the third successive year, the September meeting of the Naval Postgraduate School Amateur Radio Club was held at the Pebble Beach home of Lt. Cdr. John L. Clarke Jr., WA6PDN. John is a former Navy flier, invalided out of the service in 1966 by the onset of multiple sclerosis. As a true Navy man, he did not allow this disability to curb his interest in aviation, electronics and other activities. He also studied law as a further mental stimulus.

John obtained his ham license in 1973, and has been active in HF and VHF since that time. He is presently the control operator of the club's repeater, K6LY/R.

Fred Bonavita, W5QJM

Since its introduction in the April 1980 issue of **Ham radio**, the 40-meter QRP transceiver designed by John Keith, WB5DJE has been something of a "sleeper."

It has not attracted widespread attention, unfortunately, but among those who have built the CW-only unit, it is highly regarded. Its compact size, healthy 1 watt-plus output and reasonable price (a kit is available for about $100) make it an attractive rig, especially if one is looking for gear to take along on a backpacking trip or some other outing. And it has done yeoman duty in the home ham shack, giving a good account of itself.

Unhappy with run-of-the-mill direct-conversion receivers, John came up with one that offers a wide dynamic range with resistance to overload; excellent rejection of AM signals; no hum, tunable hum or microphonics; and a VFO that operates at a half of the desired receive frequency.

One drawback to John's original design has been overcome by Jim Lammers, NB5O and Tom Williams, W5LUL, who have come up with a simple modification that costs only a few dollars and takes about an hour to perform. The result is a form of break-in keying.

The original version called for a double-pole, double-throw toggle switch to shift from receive to transmit and back. The switch (S2) shifted the antenna and the 12 volts DC from the transmitter to the receiver or vice versa, but Jim once complained that he frequently forgot to flip to receive after calling CQ with the rig and could not understand why he was hearing no one.

He and Tom cured things by substituting a small, 12-volt reed relay for the switch. The coil of the relay was connected with one end to 12 volts and the other to the key jack (J2) and offered quasi-QSK. The 1 watt output was within the power-handling capabilities of the relay, which they bought at Radio Shack. However, the relay they used required an IC socket. That, in turn, required drilling a small hole in the case adjacent to the antenna connector (J3) — an easy enough task. In addition to achieving break-in keying, this modification enabled Jim and Tom to avoid running coax lines from the transmitter output to the switch and then to the antenna jack on the rear panel. It is also a modification of which John says he approves.

There are some other points about the original article that should be noted by anyone building one of these rigs. Some of these correct errors in the schematic and parts lists in **Ham radio**, while others are additional modifications:

— Q203 is a 2N2222.

— There is no R103 or R104 in the schematic, although all resistors are shown.

— The value of C208 is 360pF, not 3pF.

— Although the parts list calls for FT-50-1 and FT-37-1 toroids, those designations should be FT-50-61 and FT-37-61.

— R211, a fixer resistor whose value is adjusted between 68 and 330 ohms to produce the proper output at pin 3 of the VFO board, may be changed to a circuit-board variable resistor of up to 300 ohms and adjusted.

In addition to the above, John advised he used dipped mica capacitors for all RF applications, although ceramics could be used if semi-stable ones of not more than 10 percent tolerance are available.

"The 5600pF (capacitors) in the active filter should be matched or about 2 percent (tolerance) types," he said. "However, it will still work even with a 5 percent mismatch."

John cautions to check values of components carefully. He says capacitors with tolerances of +80 percent, −20 percent — which are readily available these days — should be avoided, even if the move drives up the cost of the transceiver somewhat.

Radiokit[1] markets this transceiver in kit form and offers a wide variety of components for the homebrewer. The original **Ham radio** article printed full-size circuit board patterns for those who want to brew their own. But Dynaclad Industries[2] offers a fine set of boards at a reasonable price.

This transceiver with these modifications will make a fine winter evening construction project.

[1]Radiokit, Box 411, Greenville, NH 03048. Fifty cents for catalogue.

[2]Dynaclad Industries, Box 296, Meadow Lands, PA 15347. Twenty-page catalogue of printed-circuit boards for scores of Amateur Radio construction projects is $1.50. □

QRP nets

There is a QRP net on the air Wednesdays, 7:00 p.m. on 7040 kHz. KQ7T is NCS. There is also a QRP Roundtable each Sunday at 7:00 a.m. on 7045 kHz. Send SASE to QRP, Box 12072 Capitol Station, Austin, TX 78711-2072 for information on joining QRP ARCI. —*Ralph Sadler, KC7IG* □

TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Emergency traffic

Judging by the mail and by on-the-air and eyeball contacts recently, I believe there is considerable interest among the amateur fraternity in planning for emergency communications. So I hope to have some comments on this subject in this and probably future columns.

Don Simon, NI6A — Section Traffic Manager for the East Bay Section in California — sent me 75 pages of reports and comments generated in the past few months by discussions among the traffic handlers and emergency personnel from all over California. Included have been nets on 3907 kHz at 2000 local time, last Thursday of the month; correspondence; and discussions at meetings.

Several net bulletins I have seen lately carried discussion of the topic, and interest in the Simulated Emergency Test (SET) in October seemed higher than in previous years. Obviously, I can't say in the page at my disposal all that the California group said in 75 pages, but I do feel the interest that is developing in disaster communications merits some extensive coverage in this column — probably more than can be contained in a single issue, so I hope to return to the subject in a future column.

NTS vs. ARES

In the minds of the folks at ARRL headquarters, the Amateur Radio Public Service Corps includes two contingents — the Amateur Radio Emergency Service (ARES) and the National Traffic System (NTS). The ARES is mainly local in character, is under the direction of the Emergency Coordinator (EC), and has as its function providing communication for civil authorities and relief agencies when normal communications are interrupted, overloaded or not available. The NTS operates traffic nets for handling formal traffic every day in the year, and is prepared to provide communication into and out of disaster areas when needed.

Ideally, the two groups should work together, with ARES handling the local communications and NTS taking care of the long-distance messages. But it often does not work that way. The ARES in most areas concentrates on providing service to the authorities, relief agencies, public utilities, and is principally concerned with communications within the disaster area. Interface with the NTS is kept in mind, but is rarely needed these days because a locality is rarely deprived of all outside communication. If it should be needed, the odds are that NTS would not be in session at the time anyway. And NTS is set up to handle formal traffic and usually takes several hours at least to go through all the relays to get the traffic to its destination. In a disaster, we want action now.

Meanwhile, the NTS will be collecting inquiry messages from anxious relatives of persons in the disaster area and will be looking for stations in the disaster area to handle them. Other amateurs, following the procedures of the 20-meter phone nets, will be trying to get two-ways into the area, and will be told, "We aren't handling inquiry messages at this time." Traffic piles up, with no outlet. And disaster area stations find themselves hampered by all the amateurs "wanting to help" who are only adding to the problems.

The solution requires some thought on both sides — the ARES and the NTS.

The ARES

ECs must be careful not to take a too narrow view of their function. Ideally Amateur Radio should provide communications for all who need them, not merely for the authorities and relief agencies. While realizing that official traffic must be given priority, there often will be enough help available to permit handling other traffic as well. The secret of this is to provide additional channels. If, for example, the area has a RACES (Radio Amateur Civil Emergency Service) net in operation, it can and should be limited to official traffic as long as the need exists. But other amateurs can be put to work collecting inquiry traffic, making lists (and non-amateurs can be of great assistance here), holding inquiries until the relief agencies are able to process them, and sending replies, as well as sending messages for the benefit of persons in the disaster area who have no official position and who merely want to contact relatives to reassure them all is well. Both functions are important to Amateur Radio's operation in a disaster.

An EC will be well advised to appoint an assistant to coordinate liaison with NTS, whose function it will be to facilitate the handling of traffic into and out of the disaster area, by NTS nets or by any other means available. This assistant will have to be experienced in traffic work, and should have available other amateurs who also have traffic know-how. A disaster is no time to break in new operators.

One of the secrets of success in keeping traffic moving with the outside is to separate incoming and outgoing traffic. Ideally, there would be a dedicated net like the RACES net, if one exists — handling

emergency and priority traffic for officials only.

Then there would be a station or several stations operating on publicly announced frequencies and checking into the various nets to receive traffic coming into the area, giving priority to formal traffic, but even handling phone patches if conditions permit. Normally, when the volume of inquiries is great, however, these stations will have to tell inquirers that the number of requests makes it necessary for them to limit themselves to making lists and turning them over to relief agencies such as the Red Cross to determine the status of the persons involved, and that a reply will be sent either via Amateur Radio or via regular commercial channels as soon as the persons are contacted.

Finally, there would be a third group of amateurs who maintain special schedules with experienced traffic handlers outside the disaster area, perferably by CW to escape from the interference problem, to clear outgoing traffic. If the volume of such traffic is very large, say 50 messages or more a day, it would be well to bypass the regular NTS routes and instead to rely on special schedules with several traffic handlers who can either handle it via their own special schedules or put it into the NTS in a net far enough removed from the disaster area to avoid overloading the system.

TS

Gordon Wenz, N6GW, Section Traffic anager of San Diego, points out that, Contrary to widespread presumptions, e ARRL National Trafic System (NTS) not designed to handle disaster com-unications." It is a mistake to try to nnel disaster communications through The NTS does have several vital func-ns in connection with disasters, how-r, and it should be utilized to the lest extent possible.

1) The NTS is a source of trained erators. You will find the personnel you d among its ranks. Conversely, when u try to use people who have had little no contact with NTS in a situation re-iring accurate, efficient handling of large numbers of messages, you are almost sure to be disappointed.

2) The NTS is an excellent way to make initial contact and to handle individual messages when the traffic load is light.

3) NTS officials are usually the best people to contact when it becomes necessary to set up special schedules as the traffic load becomes greater. They are usually some of the most experienced traffic people around and know who is available and what their capabilities are. In addition, they can call up extra sessions of their nets should that seem advisable.

In normal times, NTS policy is to adhere strictly to standard routing for messages. While this is sometimes carried to excess, it is a wise policy. Unless traffic is generally routed in the established way, it can easily happen that some nets which should be handling traffic will find nothing to do. But when disaster strikes and there is more than enough traffic for everybody, the primary concern becomes not the system but moving the traffic. NTS officials, and even net control stations, should not in such cases be reluctant to use alternate routings when it appears the regular ones are in danger of being overloaded. NTS officials should also have contingency plans for calling extra sessions when needed and for alerting the stations that will be needed to operate the special sessions.

A suggestion has recently been made that it may be possible to expand NTS operation not only by having additional sessions at other times than usual, but also by sandwiching area and regional nets. Thus, on cycle four — the normal evening cycle — section nets meet at 7:00 p.m., region nets at 7:45, area nets at 8:30, region nets again at 9:30, and section nets at 10:00 p.m. If needed, additional sessions of area nets could be added at 7:00 and 10:00 p.m., and section nets at 8:30 without upsetting the system. In fact, the concept could be carried right through the whole daily cycle with both section and area nets meeting between each session of the region nets.

It would take additional help; I doubt that the NTS would have the personnel to keep such a system going for any great length of time, and it is rare that we have enough traffic anyway. But if there were to be a major disaster that interrupted or overloaded communications circuits in a wide area, such a system might be needed, and would provide rapid traffic movement throughout the country.

ARRL contingency plans for NTS have even included the possibility of keeping region and area nets open on a continuous basis with liaison and Transcontinental Corps (TCC) stations shuttling back and forth as fast as they can pick up and clear traffic. It has never been done, as far as I know, but maybe a trial run could be staged sometime — perhaps during an SET or during the holiday season.

Operator training

Some of the topics discussed above are the opinion of the writer or of some of his correspondents, and are not fully accepted by all who are involved in ARES and NTS. But there is one point on which all are unanimous, and that is the need for more trained operators. It happens all the time: During a drill or even during a real emergency (I should say especially during a real emergency), operators come "out of the woodwork" who have spent their on-the-air time chewing the rag, working DX, experimenting, and have had no exposure to handling traffic, and they find themselves at a loss when they are asked to fill a slot in the emergency communication system. They may even regularly check into their section net on 75 meters or the VHF net on 2, but all they do is give their call, sit out the formal traffic handling portion, and then participate in the informal session afterwards.

They will be unfamiliar with the standard form for messages, unable to pace themselves to allow the receiving station to copy (usually going far too fast), be unfamiliar with standard phonetics, and probably will edit the message, sending what they think it should say instead of what it actually says. They will break in "to help" and only help foul things up even worse, never having learned that the most important thing an emergency operator has to know is when to keep one's mouth shut.

The remedy is simple: Every amateur should realize that our licenses are granted in the public "interest, convenience and necessity," that public service is our duty.

True, emergency communication is only one way in which we fulfill that duty, but it is an important one, and we should all give thought to the possibility that any one of us could be the one to provide a vital link to save lives. To prepare oneself for this possibility, the best way is to take part on a regular basis in both routine traffic handling and drills of the ARES. By taking part, I mean more than just checking into the net. I mean originating, relaying, delivering traffic; I mean actually filling a slot in the ARES or RACES organization. And maybe, just maybe, how about improving CW skills? CW operators are hard to find these days, but there are times when they are desperately needed. □

ARES appointees

Two new ARES appointments have been announced for the Northwestern Section of Los Angeles by District Emergency Coordinator, Len Drayton, WA6LAU.

Bill De Armond, W6UEN will serve as Emergency Coordinator for the Devonshire/West San Fernando Valley while the central Van Nuys/North Hollywood area will be handled by Steve Godwin, KD6CC.

Continuing the important liaison between ARES and the Red Cross headquarters in Van Nuys will be the responsibility of Bob Bright, WA6AQQ.

All amateurs in the Northwestern area are urged to check in the Monday net at 9:00 p.m. on 146.58 MHz simplex, announced Len, who pointed out that amateurs would be greatly needed in case of a disaster, such as a severe earthquake. The San Fernando Valley itself, only part of the section, has a population of more than a million. □

ARRL section reorganizes

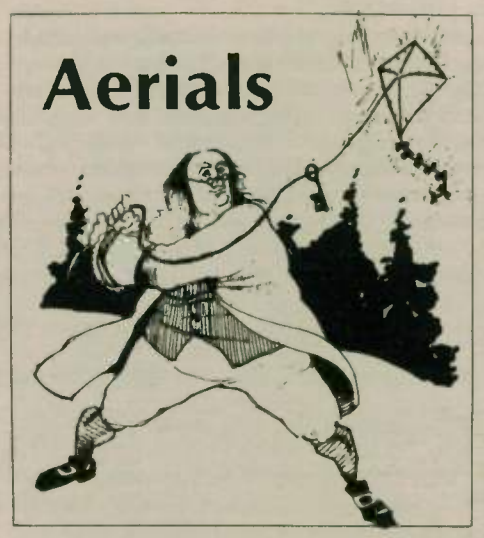
Pete Kemp, KA1KD

Effective 1 January 1983, the Connecticut Section of the American Radio Relay League (ARRL) will be reorganized in accordance with the guidelines established by the Long-Range Planning Committee of the ARRL, as approved by the Board of Directors. Under this new administrative structure, the Section Communications Manager will become the Section Manager, with greater authority to delegate responsibility to other volunteers and with direct input to the League's policy-making processes.

Following is a list of those individuals who will be serving our section in a variety of capacities. All amateurs who currently hold station appointments, and those who wish to obtain them, should contact these coordinators directly, concerning all administrative matters and monthly reporting. Under this new system, the ARRL will have the opportunity to expand its services to all members within our section.

Section Manager — Peter Kemp, KA1KD; **Section Emergency Coordinator** — Robert Koczur, K1WGO; **Section Traffic Manager** — Betsey Doane, K1EIC; **OO/RFI Coordinator** — Al Jaras, KA1ML; **State Government Liaison** — Bill Clede, K1AH; **Affiliated Club Coordinator** — Ed Esborn, K1UQE; **Public Information Officer** — Joe Stofko, WB1AIU; **DBS Coordinator** — Dave Sarault, WA1DWE; **Technical Coordinator** — Paul Doane, W1HAD.

Aerials



Kurt N. Sterba

All Hail Doug DeMaw! Praise be (appropriately call signed) W1 Fine Business! This stalwart QRPer rose to great heights (in case you missed it) on page 47 of the November 1982 issue of **QST**.

Never no mind that the company involved advertises in the ARRL official journal; the Senior Technical Editor gallantly spoke his piece about the data sent out by Western Electronics.

I heartily recommend that you avail yourself of DeMaw's review. Truly he is a Commando. The statements made by the manufacturer are so bizarre that one can only imagine they are graduates of the Quickie Crash one-day course in advanced engineering. (We have heard that their new medical seminar takes two days — Friday on brain surgery and Saturday on heart transplants.)

Let's set the record straight on a few shocking statements made by the manufacturer. "Anything above 15 feet will work well." Friends, the only thing an antenna 16 feet up works well in comparison with is a garbage can lid buried 15 feet underground.

"The height above ground has nothing to do with matching the SWR to the feedline, or feedline to transmitter, and it will not increase radiation efficiency of the antenna."

Well, let your buddy put up his dipole at 60 feet and you put yours up at 20 feet, and both of you go in some contest and see who ends up at the bottom of the heap.

If anyone has any interest in antennas at all, kindly purchase the ARRL Antenna Handbook. Next, of course, you have to read it. The book does no good tucked under your pillow, hoping osmosis will let the knowledge seep through. Such is not what they refer to when they speak of sleep learning. Notice the charts that show what happens to antennas at various heights, please.

Then there was something on page 48 of the November **Ham Radio**. When I read that, my cigar almost fell into the bathtub water. While usually that particular magazine is right on, in this case I'd say, forget it.

If you have enough room to put that antenna up, you have enough room for a dipole. A vertical would be better than the antenna shown. The rule of thumb is that you can not scrunch things up and expect much from them.

Let's move on to something positive. A problem in many QTHs is having enough room to put up an 80-meter antenna. There is one design that has worked quite well for those that have tried it. Dave Birkin, N6AWU, Technical Chairman of the Santa Clarita Amateur Radio Club, has come up with these dimensions. . . .

First, cut two 10-inch lengths of thick-wall PVC pipe (1 1/16-inch outside diameter). In a space of 8¾ inches, wind 197 turns of No. 18 enameled wire on each of the PVC tubes.

Going 33 feet out from the center insulator, put the loading coil (above). From the loading coil run 46 inches of wire to the end insulator. Such is done on both sides of the center insulator.

Fine tuning would be accomplished by trimming the 46-inch wires. Yes, it works on 80 just fine in not much more room than a 40-meter dipole.

There are some old-timers who rant, "We had wooden ships and iron men, then we had iron ships and wooden men." I am not that way.

Far be it from me to put down hams who can't figure out the lengths of antennas because when that was presented at their crash course they had to go to the bathroom. I stoically accept the fact that we have hams who can't find the calculators in their shirt pockets using both hands.

(Why do the Russian Secret Police always send out teams of three? One to do the reading, one to do the writing, and the other to keep an eye on the intellectuals.)

However, to be of maximum assistance to all, we present here a chart of dipole lengths. Such is the computer work of Emmett Earley Jr., WA8USO. I spot-checked them on my abacus. You may cut your dipoles to these lengths with confidence.

	Frequency (MHz)	Feet	Inches
	1.800	260	0
160	1.820	257	1
meters	1.850	252	11
	1.875	249	6
	1.900	246	4
	2.000	234	0
80	3.500	133	8
75	3.600	130	0
meters	3.700	126	6
	3.800	123	0
	3.900	120	0
	4.000	117	0
40	7.000	66	10
meters	7.050	66	5
	7.100	66	0
	7.150	65	6
	7.200	65	0
	7.250	64	7
	7.300	64	1
30	10.000	46	10
meters	10.100	46	1
	10.200	45	11
	10.300	45	5
	10.400	45	0
	10.500	44	7
20	14.000	33	5
meters	14.100	33	2
	14.200	32	11
	14.300	32	8
15	21.000	22	4
meters	21.100	22	1
	21.200	22	0
	21.300	21	11
	21.400	21	10
17	24.500	19	1
meters	24.600	19	0
	24.700	18	11
	24.800	18	10
	24.900	18	9
	25.000	18	8
10	28.000	16	8
meters	28.100	16	7
	28.200	16	6½
	28.300	16	6
	28.400	16	5½
	28.500	16	5
	28.600	16	4
	28.700	16	3½
	28.800	16	3
	28.900	16	2½
	29.000	16	2

(Kantankerous Kurt goes by his disguise moniker so that during Sweepstakes he will not be slowed up by praise from the erudite or outbursts from the noodinks.) □

Antenna wisdom

Dick AA44PP

Want to start an argument at your nex Amateur Radio club meeting? Want t draw a crowd and watch them choos sides? Here's all you have to do: shou "Any antenna without a balun ain worth a damn!"

You can also shout the opposite: "N balun made is worth a damn!" Sam results!

You can, if you like, provoke fights ov antenna tuners. Or whether 2-met sidebanders should join the rest of th human race by flipping their horizontall polarized beams to vertical or . . . we let's hear what one expert says on the subjects. (Now you can provok arguments and win them.)

Here's some wisdom from Jac Althouse, K6NY of Palomar Engineer (These folks make a balun which, if y can blow it, you are using illegally hig power with an SWR you should ashamed of.) "If you have trouble wi noise in receiving, a balun will help yo get rid of the vertically polarized noi picked up by your coax. And, of cours since you won't be receiving on your coa your nulls will be better. But, if you we — for example — running military pho patches to Germany and getting pat quality on a beam without a balun, addi a balun wouldn't make any noticeable d ference."

I asked Jack about the theory that R power turns mostly to wasteful heat balun at higher SWRs. He said: "N with bigger models like our 2K balu Running barefoot, it would be minimal. you kicked in a linear with more than 2 SWR, you would lose some power, but n a lot."

Does a balun "fight" a tuner? "Not o with a big enough core."

— *Florida Skip*

Joy of Radio

What do you like about Amate Radio? Answer: The joy of associat with a lot of good people.

—Cherry Cherrigan, KH6JW

— *Big Island ARC, Hilo, HI*

1982 is winding down and is just about over. It has been a very exciting and fast-moving year for SSTV with many new developments and achievements. 1983 is just around the corner and it, too, promises to be most interesting for SSTVers. Color SSTV is well established with both RGB frame sequential and RGB line sequential single-frame color being popular. High-resolution black-and-white (B&W) SSTV is increasing in popularity.

Plans are coming along fine for the 1983 Dayton Hamvention. As described in my **Worldradio** column last month, special Dayton housing arrangements have been made for SSTVers who wish to stay together at one convenient location. 1 February 1983 is the deadline for reservations from this block of rooms. I will again print the full details in next month's column if rooms are still available at the Holiday Inn North of Dayton.

The annual Dayton SSTV Get-together will be held Friday, 29 April 1983 at the Holiday Inn North. From preliminary inquiries, plans are taking shape for this event. If you have any experimental or modified SSTV equipment you would like to display at the Get-together, please write me about it. Final plans and format will depend to some extent on what is to be displayed.

A good idea

Most everyone is familiar with the four-bar grey scale which the Robot 400 transmits at the bottom of each 8.5-second frame of SSTV. When Syd Horne, VE3EGO introduced his Colorscan 403 three-memory color SSTV modification to the Robot 400, he included with it a unique color bar generator. In his RGB frame sequential system, a different number of grey scale-type bars were transmitted at the bottom of each red, green and blue frame of the color sequence. Two bars were sent in the red frame, four bars in the green frame, and eight bars in the blue frame. When the full RGB color picture is received, eight different colored bars are seen at the bottom of the picture.

Jim Williams, KC5VC and several others have gone one step further. They have installed the color bar generator so that it appears at the top of the SSTV scan. When an RGB frame sequential picture is being transmitted, you can immediately tell which of the RGB frames you are receiving by looking for two, four or eight bars at the top of the screen. Also, in the RGB 25.5-second SFC mode, you can immediately tell whether you are receiving the picture in color sync by the colors in the bar at the top of the scan. Sometimes it is not apparent what the true colors of an SSTV picture are. If the color bars at the top of the scan are correct, you can be assured you are seeing the true colors of the picture.

SSTV picture prints in color!

I have received from Howard Nurse of Commsoft what he believes to be the first color hardcopy printouts of color SSTV pictures. Commsoft is the company which has the PhotoCaster, SSTV system for Apple computers. PhotoCaster features 128 × 128 × 16 grey level shades for B&W SSTV using dot dithering. It is capable of receiving and transmitting RGB frame sequential color SSTV with eight colors (six true Apple colors plus two mixes), with 16 intensities and 16 saturations using dithering. There is a possibility of 2,048 different color combinations.

Among the many features of the PhotoCaster system is the ability to print hardcopy B&W SSTV pictures on an Epson MX-80 printer with the Graftrax feature. Howard has been experimenting with various techniques to get a color hardcopy printout of a color SSTV picture. By using colored carbon papers and running the picture through the printer three times — once for the information from each of the RGB memories — quite interesting and remarkable results can be achieved. Experiments are still going on, and I'm sure we'll hear more about this as techniques are perfected.

SSTV concerns

I know that the vast majority of SSTVers have little or no interest in the political aspects of SSTV. Most of you consider SSTV as a relaxing, enjoyable way to pursue your hobby of Amateur Radio. You and I would much prefer to ragchew with our SSTV friends and send some pictures back and forth than listen and partake in political wrangling. Not all the political aspects of SSTV are bad, by any means.

There are a few things I would like to bring to your attention and ask you to think about. The opportunity will come in 1983 for those of you who would like to get involved and do some good for SSTV to do so. In these areas, perhaps more of the silent SSTV majority should be heard from.

It is no secret that every day there are more new amateurs on the bands. It's getting more crowded and we've been saying that for years and it isn't getting any better. On top of that, we are on the downside of the current solar cycle, and 10 meters for SSTV won't be getting better for awhile. General Class SSTVers are having a tough go of it on 20 meters. Even on 14.230, the gentlemen's agreement is being strained. Our DX "friends" appear there more and more, and phone patch traffic is heard regularly on 14.230. SSTVers used to "protect" that frequency. Now if we stray off of 14.230 1 or 2 kHz, we are told that all SSTV is supposed to operate on 14.230 precisely. SSTV doesn't work like a DX pileup. All the SSTVers cannot operate precisely on that one frequency.

A proposal for the expansion of 20-meter phone privileges is being considered. Shouldn't the voice of SSTVers be heard in this matter? When the band-plans for the 10, 18 and 25 MHz frequencies are determined, shouldn't the voice of SSTVers be heard?

Within the past month, it has been announced that not one, but two SSTV societies will be formed. One will be a combined FSTV and SSTV American ATV Society, and the other will be an International Slow Scan Society (ISSS).

The primary purpose of the ATV Society will be political issues of concern to ATVers. The ISSS will be primarily philanthropic in providing help to Third World Countries, but political issues of concern to SSTVers will also be undertaken. I will comment further on both societies when more details about each are available. This is, however, your chance to get involved, speak out for SSTV, and do some good for SSTV and for yourself.

As this is written, Robot Research has informed me they are having an inventory reduction sale. Both Robot 400 and 800 models will be 50 percent off while supplies last at participating dealers. Sometime after 1 January 1983, Robot Research will offer a color SSTV modification for the Robot 400. It will be offered in kit form or factory-installed. Robot Research has a new color SSTV scan converter in the works. At the least, prototype models will be shown at Dayton 1983. They expect, however, to have production models available for sale at Dayton next year. 73s, Ron Flynn, KB8LU; Rt. 2, Box 204, 67th St., Bangor, MI 49013. □

A5 WAS-SSTV contest frequencies

A5 ATV Magazine will be sponsoring a WAS-SSTV contest the weekend of 14-16 January 1983 on the following frequencies:

Band	Advanced/Extra	General
80	3.845 MHz	3.990 MHz
40	7.171 MHz	7.290 MHz
20	14.230 MHz	14.340 MHz
15	21.340 MHz	21.440 MHz
10	28.680 MHz	28.680 MHz

Further information on ATV operation by radio amateurs can be obtained from Mike Stone, WB0QCD c/o A5 ATV Magazine, P.O. Box H, Lowden, IA 52255-0408. □

CONSTRUCTION

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Using CMOS circuits

Complementary-metal-oxide-silicon (CMOS) integrated circuits have been with us for several years now and appear to have so many advantages that many designers use them in preference to any other type of logic whenever possible. They have the following advantages, among others:

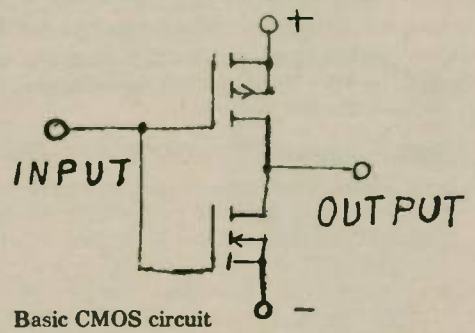
- They operate over a wide range of supply voltages, usually anywhere between 3 and 15 volts. Other types such as TTL (transistor-transistor logic) need closely controlled voltages, such as 5 volts plus or minus 5 percent.
- They use far less energy. A CMOS logic circuit consumes only an infinitesimal amount of power when not switching. This is especially valuable for equipment powered by batteries. Any additional cost paid for CMOS devices is usually recovered very quickly in longer battery life.
- They are quite immune to noise. It takes noise pulses of a volt or more to make a CMOS device switch erroneously.
- CMOS devices act as double-throw switches, connecting the output to either the positive or negative side of the supply, so that current can flow in either direction through the output terminal.
- The relaxed requirements for supply and signal voltages make it feasible to use diodes extensively as gates instead of more elaborate integrated circuits, often resulting in simpler and less costly designs.

The principal disadvantage of CMOS circuits is their lower speed of operation. In many applications, however, they are quite fast enough, and even where they are too slow it is often necessary to use other types of logic in a few circuits that have to operate faster, allowing CMOS to be used elsewhere.

Using CMOS in linear applications

Although CMOS circuits are intended only for digital applications, they have been found to work well in linear applications too, often making remarkably simple devices possible. Digital applications are well covered in the literature, so the rest of this treatment will be concerned with linear applications.

The CMOS gate is essentially made up of two insulated-gate field-effect transistors, as shown in *Figure 1*. One is an N-channel unit, the other a P-channel unit. The two transistors are what are called *enhancement* types, indicated in the drawing by the fact that the channel is



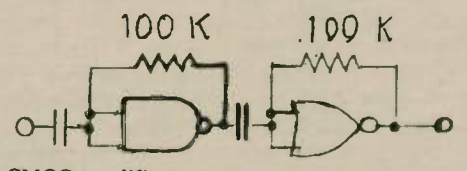
Basic CMOS circuit

Figure 1

represented by three short lines opposite the gate. Enhancement transistors are non-conducting until a forward bias is applied to the gate. The other type of MOS field-effect transistor (MOSFET), called *depletion* transistor, has a channel that conducts normally and is rendered non-conducting by a reverse bias applied to the gate. It is the type commonly used in receivers and similar low-power devices.

In the CMOS circuit of *Figure 1*, the gates of both transistors are connected to the input terminal, and the drains of both are connected to the output. The source and substrate of the N-channel transistor (arrow points *away* from the substrate) are connected to the positive terminal, while those of the P-channel transistor are connected to the negative terminal. If the input voltage is close to the positive supply voltage, only the P-channel transistor will have its gate forward-biased (the lower transistor in *Figure 1*, connected to the negative supply terminal), and so it will conduct, causing the output to shift to the negative side. Conversely, when the input goes negative, only the N-channel transistor will conduct (the upper one), and the output will be positive. Thus, this circuit acts as an inverter. Because only one transistor is conducting at any time, no current is being drawn and no energy is consumed, unless a load is connected to the output terminal. And if that load is another CMOS gate, no current will be drawn and so the energy used is still zero. It is only during switching that both transistors conduct simultaneously, and in normal logic operation, it's all over in a microsecond or so. That's why digital watches can run so long on a battery: their power drain is measured in microwatts.

When the voltage is halfway between the positive and negative supply voltages, however, both transistors do conduct and current is drawn from the power supply. In this mode of operation, CMOS devices act as an amplifier. The circuit needed is very simple, as shown in *Figure 2*. A resistor from output to input serves to hold the gate bias at half the supply voltage. It is shown in the diagram as 100,000 ohms, but the value is not critical; it could as well be 10,000 ohms or a megohm.



CMOS amplifiers

Figure 2

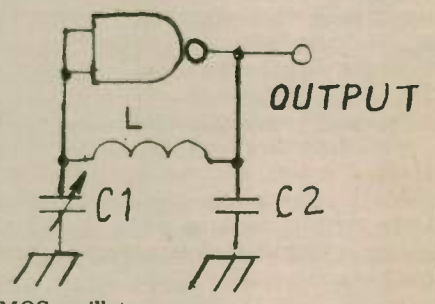
Some may note the similarity of a CMOS amplifier to an operational amplifier, and in fact, they are somewhat alike. The CMOS unit does not have as high a gain and has only the one inverting input, but will work fairly well in many operational amplifier circuits.

The C in CMOS is for *complementary*. It refers to the use of the two transistors, one N-channel and the other P-channel, in such a way that as one becomes more conductive the other becomes less so. It forms what has been called a single-ended push-pull amplifier, something impossible to do with tubes, but easy with transistors: you can't make a tube with a positive cathode, but transistors have both P and N type semiconductors. As a push-pull amplifier, a CMOS circuit discriminates against even harmonics, giving a more linear output. Odd harmonics are readily produced, however, as the signal level rises, because the gain drops rapidly as the gate voltage departs from the midpoint between the two supplies.

It was mentioned above that the chief disadvantage of CMOS devices is their slower speed. Does this affect their use as amplifiers? It certainly does, but the usable frequency limit is somewhat higher for them when they are used as amplifiers than when they are used in logic circuits. In logic circuits they have to switch completely and settle down before they are switched again; otherwise, erratic operation is likely. In amplifier service they do not have to swing through as wide a voltage range. As a result, the usual upper frequency limit given in logic operation is about 5 MHz, but I have had no trouble making them oscillate at over 20, indicating they are able to amplify at that frequency.

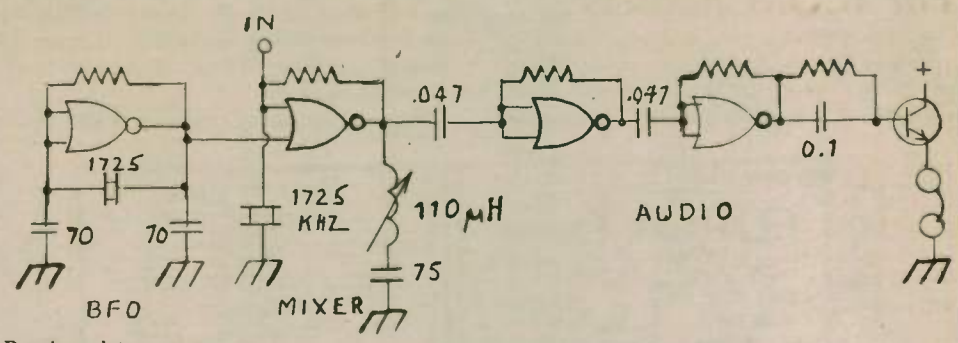
Cautions

Every electronic device has limitations.



CMOS oscillator

Figure 3



Receiver detector

Figure 4

CMOS devices have a few. They can b damaged by static electricity. Protectiv diodes are built into the devices, but som precautions should still be taken, as oc casionally a static charge can be built u that the diodes can't handle. The protec tive diodes can, in turn, be damaged if in put or output voltages swing outside th range of the supply voltages. Because CMOS unit acts as a double-throw switch outputs should not be directly connecte in parallel, for if one output should at given instant be connected to the positiv supply and the other to the negative there would be a short circuit through th two devices, and you would probabl have two CMOS devices zapped.

Oscillators

You can make an oscillator by feedin the output of the amplifiers in *Figure* back to the input, with frequency dete mined by the resistors and capacitors o the circuit. Or a tuned circuit can be ado ed, if desired. *Figure 3* shows how a singl CMOS unit can be used as an oscillato No resistor is needed in this circuit. Th inductor L provides the DC path betwee input and output to bias the gate at ha the supply voltage. C1 and C2 provide th tap for a Colpitts-type oscillator. Be results are with C2 having high

capacitance than C1, but the values are not critical.

Note that some circuits show NAND gates (the left-hand one in *Figure 2)* and others show NOR gates, but in all these circuits, the two are interchangeable. An inverter with only one input terminal can also be used. In testing these circuits, I plugged in alternately a CD4001 NOR gate and a CD4011 NAND, and got the same results in every case.

Receiver detector

Figure 4 shows a somewhat more ambitious project — a detector, BFO and audio amplifier for a receiver. This circuit uses a 1725 kHz intermediate frequency only because there happened to be a couple of crystals on hand for that frequency. It would be good for a simple receiver covering the 80 and 40-meter bands, however, as the HF oscillator could tune from 5225 to 5475 and give coverage of the CW portion of both bands.

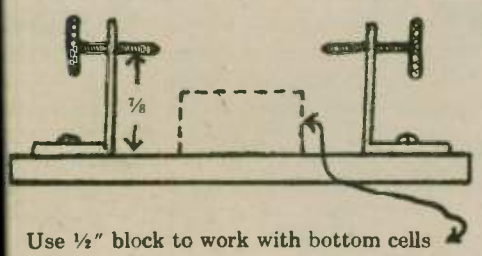
The BFO uses the same circuit as *Figure 3*, but for a crystal oscillator. Because the crystal does not provide a DC path from output to input, a resistor is needed in this case. The mixer uses a gate as an amplifier, but it is modulated by the other gate in the integrated circuit. A NOR gate is shown, but a NAND gate would work just as well. The series-tuned trap is quite effective in keeping the IF out of the audio circuit. The audio amplifier is simply the circuit of *Figure 2*, with an emitter follower added.

All four gates would be contained in a single CD4001 chip, or a CD4011 with NAND gates would work equally well. Only a few additional parts are needed, giving a circuit that is simple and compact — and inexpensive too. □

For ICOM addicts

Some good news for those who own IC-2AT's: BP-4 cases are available again. So, if you have been waiting to build a battery eliminator, your wait is over.

If you have had Nicad trouble with your BP-3, you will either have to work on the cells or buy a new BP-3. ICOM has no plans to sell the batteries separately. On the bright side, rejuvenating cells that don't hold a charge is not difficult — anyone can do it.



Use ½" block to work with bottom cells

Jim Compton of ICOM sales says that charging a defective pack and then rapidly discharging through a piece of heavy coax braid frequently helps. Recharge normally after the pack is completely discharged. If you use this method, watch the braid — it gets hot!

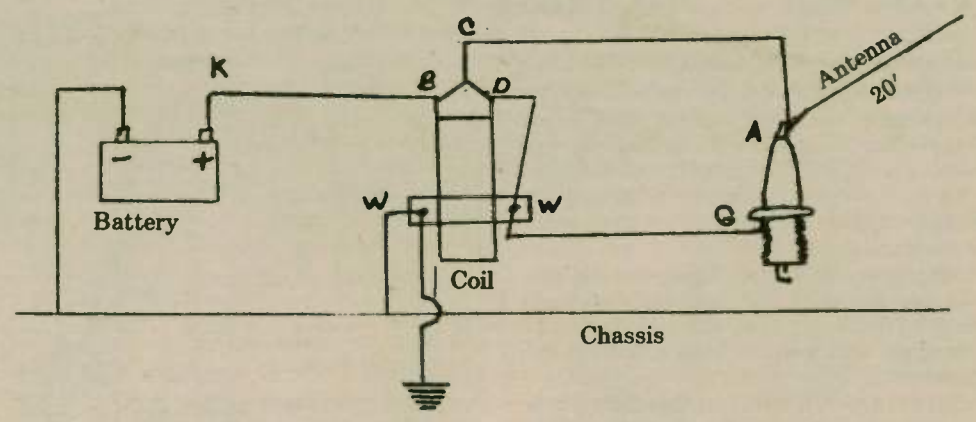
John Horton (also of ICOM) suggests zapping defective cells with leads from a 12-volt car battery several times. This repolarizes the cell and destroys the "spider webs" that develop in the cell.

I had a BP-3 pack go bad. After consulting with some of our local pros, I zapped my bad cells several times with a 4,000 mid-capacitor charged up to about 20 volts. The individual cells were then slow-charged (25mA) for about 16 hours and it did the trick. To solve the problem of working with individual cells, I built a jig as shown in the drawing here.
— Dayton ARA, OH □

Emergency radio

Not many amateurs would ever be stuck or stranded without a radio of some kind. However, one of the current hunting magazines tells how anyone can rig up an outlawed spark transmitter. It's outlawed because it has such a broad signal, it may be heard on any radio within several thousand miles. The article explains how to send SOS with dots and dashes (or as we know them, dits and dahs).

Use K as the sending key. If the spark plug fires, screw it back into the engine and remove W to G wire. If it is a true emergency, maybe you won't get a pink slip!
— Kaw Valley ARC, Topeka, KS □



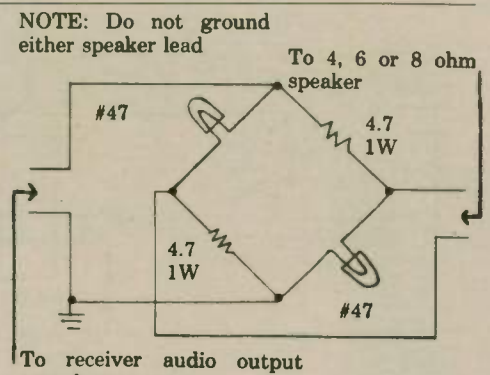
Trucker's special

Submitted by Neil Delafield, K5YME

Primarily intended for mobile use to suppress spark plug and ignition noise from other cars, this noise blanker will also help cut out electrical power line arcs and bad ground connections, as well as static crashes. It will, of course, work home receivers.

At night or in a dimly lighted room, you can see the pilot lights flash with each pulse of noise, but they will absorb part of the noise and keep it from reaching the speaker.

To get the full effect of this unit, there is a certain way you should adjust your volume control. First, tune in a station and set the control for the normal volume you usually listen to while someone is talking in a normal tone and signal strength. When they stop talking, you will gradually notice that the background static and noise is decreased. It will almost seem like you had turned on a variable squelch control. For proper operation, it takes a light hand on the volume control, but with a little practice you will be well rewarded.



The price of this unit (parts) will vary in different parts of the country, but should not cost more than $1; in fact, most amateurs will probably have all the needed parts on hand.

If you want to use it on earphones, use number 49 pilot lights and two 470 ohms, ½ watt.

— *The Triple States RAC BNT* □

Rotatable quarter-wave antenna

Phil Ingraham, W2OSY
Wyck Sherwood, W2YIF

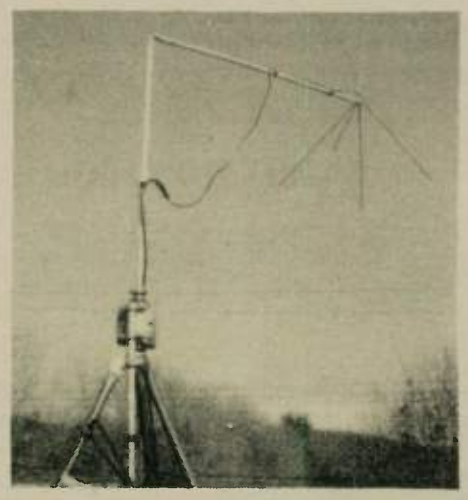
If any of you readers have ever thought of the ultimate 2-meter antenna that would afford you not only the qualities of a good groundplane as well as some of those of a good beam, join the club! Yours has been the dream of many others over the years.

Now, don't laugh at what follows until you have read it through. Such an antenna may be had in a quarter-wave rotatable groundplane antenna. While you are still shaking your head, let us regress a bit. In the early days of VHF-TV, antenna installers spent hours searching for a spot to bring in a fringe area picture as snow-free as possible. The key was to place the antenna in the right spot. Think of the times the mobiler using 2 meters moves his car a few feet one way or another to improve a signal. The two instances are identical in nature. The rotatable groundplane we are describing was born in and designed for hilly or mountainous terrain.

Here is the recipe: one quarter-wave groundplane antenna. Choose your mount, tripod, chimney or a guyed mast, etc. One antenna rotor, two sections of TV mast — pick your length, one boom one half-wavelength long (about 38 inches).

The testing of the antenna was carried on twice a day for five straight days. The times of the test were 9:00 a.m. and 9:30 p.m. These times were chosen to conduct the tests under different climactic conditions each day.

In conducting the tests, the antenna was run through 360 degrees at 30 degree intervals. This afforded 12 points at which readings were taken. Wyck W2YIF in Addison, New York used 10 watts power and a Ringo antenna furnished the signal which was received 10 miles away by Phil W2OSY in Painted Post, New York. At least two ranges of hills lie between the two points. These hills extend 400 to 600 feet above normal terrain. Both stations lie in valleys. The frequency used was 146.52 MHz simplex.



A rotatable vertical 2-meter groundplane was operated by Phil Ingraham, W2OSY in Painted Post, New York.

The antenna does not have gain. It merely takes advantage of the strongest signal your particular location is able to receive. In making the tests, both transmitting station W2YIF and receiving station W2OSY noted similar readings throughout the test.

It is simple to build, cheap to build, and easy to erect. If you build it, the best of luck and we hope your results are as good as we found them to be. □

Through the kindness of a friend — E. Ray Long, W5TY — I have been able to peruse the February 1914 issue of **Wireless Age**. **Wireless Age** was one of the first, but not *the* first, magazines to be published in the United States for wireless operators and experimenters. At one time known as **The Marconigraph**, it was put out by the Marconi company primarily as a house organ for its employees. It did, however, expand to cover items of interest to experimenters and amateur operators.

The table of contents for this issue can be divided into several categories. Let's look at a few.

Technical articles predominate. These, with one exception, are "heavy," that is, designed for engineers or engineering students. Here are some titles: "Elementary Engineering Mathematics," "Engineering Measurements of Radio Telegraphy," "Wireless Engineering Course," "Instruction for Boy Scouts." Note the interchange between "radio" and "wireless." It would be eight more years before "radio" became the more commonly-used term!

To balance the somber technical material, a number of articles for the "homebrewer" were presented. Several of these were on the construction of loose couplers and loading coils to extend the low frequency (30 to 300 kHz) range of the couplers. It was not practical to put enough wire on a coupler to get down to the really low frequencies, frequencies where the very high-power stations operated. Also, there was an article on building coil switches that had small "dead end" losses. There were several descriptions of how to build "mineral" detectors. It would appear that Marconi was not doing to give any free advertising to competitors who were marketing "crystal" detectors in competition with his magnetic detector!

A tour of the Marconi plant demonstrated how their equipment was constructed. Quite impressive, too! Voice transmission was touched upon with "French Radio-Phone Apparatus" and "Wireless Telephone a Fact Soon." Several high-power stations were described. The massive equipment and the awesome antenna towers draw attention to how much the science (art?) of communication has advanced.

One adventurous soul built (and described) an "audion" amplifier — two stages, no less! For a coupling transformer he used an 8-inch Spark coil! That size of a Spark coil was about equal to that of a modern kilowatt plate power transformer! He tried a microphone on the primary of the massive transformer and discovered what perhaps was the first PA system!

One portion of the issue was a bit disappointing. The advertisements displayed only two or three items for a constructor or amateur operator. Headphones were an item little changed since 1914! They lacked parts for home building which suggests that radio advertising in magazines may have traversed a full circle since the year of 1914!

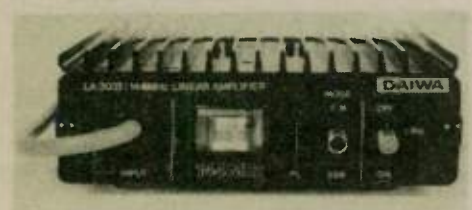
Anyway, reading the 1914 magazine was a pleasure. I hope you enjoy its review. □

2M linear amplifier

Daiwa challenges the competition with a new, rugged, compact 2-meter booster/amplifier! The LA2035 amplifier can deliver up to 30 watts of RF punch on either SSB, CW or FM. This is perfect for those low-power "all mode" 2-meter transeivers or any other rig that needs the extended 2-meter coverage that an amplified signal can provide. The LA2035 can be used in the car or at home. It's up to you!

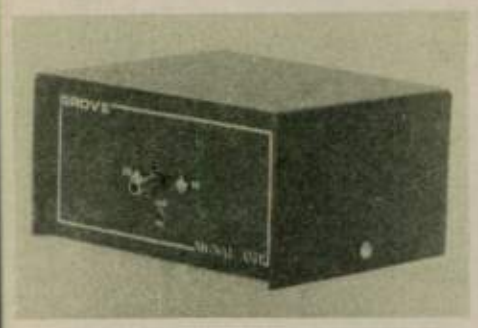
The LA2035 features rugged circuit design to guard against damage from shorted antennas, high SWR or excessive input power. The amp can be changed from SSB to FM operation at the flick of a switch. The LINE switch provides a direct transmitter-antenna connection whenever it is in the OFF position. A front-mounted relative output meter is also included.

The LA2035 comes equipped with an attached input cable with BNC plug. Just connect your antenna to the amp, connect the cable to your rig, connect the amp to a suitable source of power, and GO!



LA2035 specifications: *Frequency* — 144-148 MHz; *Mode* — SSB, CW, FM; *Input power* — .5-3 watts; *Maximum output power* — 30 watts (+); *Power requirements* — 13.8VDC at 5.8 amps max.; *Dimensions* — 1-½" H × 4" W × 5" D.

Suggested list price is $79.95. See your Daiwa dealer for details or call MCM Communications at (513) 434-0031. □



Antenna preamplifer

Grove Enterprises, prominent manufacturer of accessories for scanner and shortwave reception, has just announced their PRE-1 Signal Amp masthead preamplifier.

Designed to provide high gain, low noise amplification for received VHF and UHF signals, the PRE-1 boasts a midband gain of at least 15dB with a noise figure of only 1.8dB.

The Signal Amp consists of a lightweight antenna-mounted preamplifier module and an indoor control unit. Switch-selectable high and low gain allows the user to customize his signal-enhancing needs.

Guaranteed to outperform competitive indoor preamplifiers, the PRE-1 Signal Amp comes with all necessary hardware, connectors and instructions.

PRE-1 is only $69 plus $2 UPS shipping from Grove Enterprises, 140 Dog Branch Rd., Brasstown, NC 28902, or call toll free in continental United States; 1-800-438-8155 (except North Carolina). All others call 1-704-837-2216.

Woodpecker Blanker

The Advanced Electronic Applications (AEA) model WB-1 Moscow Muffler™ Woodpecker Blanker represents the latest of many AEA breakthroughs. This blanker is the first to offer effective blanking of the Russian Woodpecker signal with *no modifications* to the receiver required.

The WB-1 is designed to be connected in the antenna feedline between the antenna and the receiver. The WB-1 effectively blanks the interfering pulses before they have been stretched out by receiver-tuned circuits, thereby causing the least amount of distortion possible.

Because the WB-1 is a synchronous blanker, it simply *does not* overload from strong adjacent channel signals. The overload condition is a *significant problem* with all IF blankers, making the Moscow Muffler the most effective Woodpecker Blanker under most band conditions.

In addition to the superior blanking features, the WB-1 offers an effective *low noise*, broadbanded 6dB RF preamp with +13dBm intercept point. The preamplifier may be switched in or out whether or not the WB-1 is in the blanking mode.

The WB-1 Moscow Muffler Blanker is available in a transceiver version (model WB-1C) which features a carrier-operated relay (COR) for automatic transfer from receive to transmit. A COR ADJ. control is provided for adjusting the relay dropout delay in switching from transmit to receive.

The WB-1 features a pulse blanking width control for reducing the blanking width to the minimum width necessary to achieve

maximum blanking. The minimum blanking width will assure the *minimum* signal distortion that must result from placing holes in the received signal.

Blanking of both 10 Hz and 16 Hz Woodpecker modes is achieved with the WB-1. At the time this brochure is being written, most Woodpecker transmissions are made with a 10 Hz pulse repetition rate.

The WB-1 is simple to operate and *the most effective blanker* of Russian Woodpecker signals that we have been able to test, including the most popular blankers built into modern transceivers. The WB-1 will typically display 45 to 50dB of Woodpecker signal attenuation with *no overload* from strong adjacent channel signals.

The WB-1 comes with a 90-day limited warranty and is backed by the same AEA customer service that has earned AEA a prominent position in the Amateur Radio market.

To order, contact AEA, P.O. Box C2160, Lynnwood, WA 98036-0918; (206) 775-7373. TELEX: 152571 AEA INTL. □

High-pass filter

Model #3378-4S/5V suppresses complete spectrum of channel 2 video through channel 4 sound with a minimum of 50dB, while passing channel 5 video and above.

This special high-pass filter allows economical channel deletion for reinsertion of new information.

The 75 ohm filter comes in a 1" x 1½" x 3½" seamless steel case with type F connectors and mounting holes.

Price and delivery are $105 and 10 days, respectively. For more information, contact Emily Bostick, Microwave Filter Co., Inc.,

6743 Kinne St., East Syracuse, NY 13057. U.S. toll-free 1-800-448-1666 (collect 315-437-3953 in NYS/CAN/HI/AK). □

Repeater package

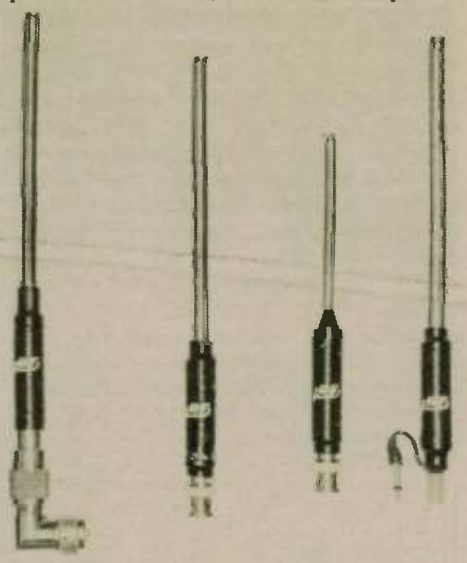
For many years, amateurs and commercial users have applied Hamtronics® FM Exciter, Receiver, Power Amplifier, COR and CWID modules to making their own repeaters, either by obtaining wired units or by building them from kits. Now, Hamtronics, Inc. has announced the availability of a complete repeater package, including all of the hardware and controls.

Although there are many high-quality features in the new REP-100 repeater line, the one of most interest to the average amateur is the attractive price. At $595 for the VHF unit in kit form or $745 wired and tested, you can save a bundle without compromising quality. There just isn't anything else on the market to give you that kind of value. That has always been the goal of Hamtronics in all of their equipment: to provide top-notch performance at an affordable price.

The REP-100 is constructed on an attractive beige 7-inch rack panel, with a simple, uncluttered control arrangement. Electrical features include excellent sensitivity (0.15uV at VHF, 0.2uV on UHF), superior selectivity (both 8-pole crystal filter and ceramic filter for ± 12 kHz at -100dB), AFC and hysteresis squelch to lock onto drifting or fading signals, a clean easy-to-tune transmitter, and up to 20 watts output. A proportional-controlled crystal oven option provides 2 ppm frequency stability down as low as -30°C (-22°F), if needed. □

UHF ⅝-wavelength telescopic gain antennas

RF Products announces the addition of UHF to its existing line of ⅝-wavelength VHF telescopic gain antennas for hand-held transceivers. The new models are available with a type BNC connector in 10 MHz frequency segments for the 440-512 MHz band, the most popular of which are now in production along with the 144-174 and the 220-225 MHz versions. Typical gain is 6dB (ref. quarter-wave helical) or 3dB (ref. quarter-



wave). Maximum gain and minimum VSWR is achieved by a tunable LC network.

The antennas include a base spring to prevent whip damage to the telescopic radiator. Minimum bandwidth for 1.5:1 VSWR is 10 MHz with a maximum RF power rating of 5 watts. The maximum extended length with connector is 17-3/16 inches and the collapsed length is 6-5/16 inches.

The small collapsed length makes it ideal as a pocket-carried accessory that can be quickly interchanged with the quarter-wavelength primary antenna when additional T/R range is required.

The operating frequency range for each model is identified by the color of the base spring cover. The model/frequency ranges available are as follows: 191-914 (440-450 MHz), 191-954 (450-460 MHz), 191-964 (460-470 MHz), 191-974 (470-480 MHz), 191-984 (480-490 MHz), 191-994 (490-500 MHz), 191-904 (500-512 MHz).

Suggested list price for all models is $19.95, with dealer and OEM discounts available. To order, contact RF Products, P.O. Box 33, Rockledge, FL 32955; (305) 631-0775. □

VISIT YOUR LOCAL RADIO STORE

CALIFORNIA

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801

Henry Radio
931 N. Euclid
Anaheim, CA 92801

Ham Radio Outlet
999 Howard Avenue
Burlingame, CA 94010

Jun's Electronics
3919 Sepulveda Blvd.
Culver City, CA 90230

Fontana Electronics
8628 Sierra Avenue
Fontana, CA 92335
(714) 822-7710 or (714) 822-7725

Jun's Electronics
7352 University Ave.
La Mesa, CA 92041

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 820-1234

Ham Radio Outlet
2811 Telegraph Ave.
Oakland, CA 94609

The Radio Place
2964 Freeport Blvd.
Sacramento, CA 95818
916) 441-7388

Ham Radio Outlet
5375 Kearny Villa Road
San Diego, CA 92123

Quement Electronics
1000 S. Bascom Avenue
San Jose, CA 95128

Shaver Radio
1378 S. Bascom Avenue
San Jose, CA 95128
(408) 998-1103

Tele-Com/Alltronics
15460 Union Avenue
San Jose, CA 95124
(408) 377-4479 or 371-3053

C&A Roberts, Inc./Radio King
25326 S. Crenshaw Blvd.
Torrance, CA 90505
(213) 534-4456 or (213) 775-7684

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91401

HAWAII

Honolulu Electronics
819 Keeaumoku Street
Honolulu, HI 96814
(808) 949-5564

ILLINOIS

Aureus Electronics Inc.
1415 N. Eagle
Naperville, IL 60540

MASSACHUSETTS

TEL-COM Communications
675 Great Road
Littleton, MA 01460
(617) 486-3400 or 486-3040

MICHIGAN

Purchase Radio Supply
327 E. Hoover Ave.
Ann Arbor, MI 48104
(313) 668-8696

Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA

Jun's Electronics
460 E. Plumb Lane, #107
Reno, NV 89502

NEW YORK

Radio World, Inc.
Oneida Cnty. Airport Terminal Bldg.
Oriskany, NY 13424
(315) 736-0184
(800) 448-9338/out-of-state

OHIO

Universal Amateur Radio, Inc.
1280 Aida Drive
Reynoldsburg (Columbus), OH 43068
(614) 866-4267

TEXAS

Appliance & Equipment Company
2317 Vance Jackson Rd.
San Antonio, TX 78213
(512) 734-7793

MKB-2000 Keyboard

The MKB-2000 Keyboard by DGM Electronics, Inc. sends Morse, RTTY and ASCII codes. It contains a large 500-character text buffer with a break feature which allows you to break into and transmit without clearing the pre-loaded text buffer. The text buffer can be operated in character, word or line mode.

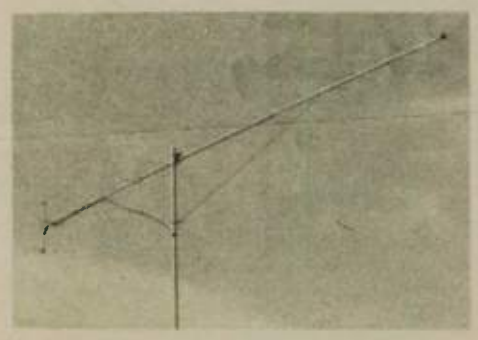
The MKB-2000 also contains ten 40-character programmable message memories. The memories can be made to call one another or can be linked together for longer messages. If additional memory is required, a memory expansion option with battery backup is available that doubles the capacity of the text buffer and message memories. The battery backup will retain all programmed messages and mode settings up to six months without power.

The MKB-2000 also has a cassette interface which allows you to record and transmit very long messages or code practice tapes using a standard cassette recorder.

Morse features include: 1-199 wpm speed range, weight and intercharacter space controls, random code, positive and negative keying outputs, adjustable sidetone and special function keys. RTTY features include 60, 66, 75, 100, 132 wpm Baudot, 110, 300 baud ASCII, loop keyer output, automatic LTRS/FIG shift, automatic CR/LF with selectable line lengths, CW ID, sync idle, QBF and RY test messages, PTT control and optional AFSK modulator.

The MKB-2000 is housed in an attractive, compact, RFI proof enclosure with a built-in 110 VAC power supply. The MKB-2000 is covered by a one-year warranty on parts and labor and is manufactured in the USA.

For more information, contact DGM Electronics, Inc., 787 Briar Ln., Beloit, WI 53511; (608) 362-0410. □



70cm Yagi antenna

The newest Cushcraft Boomer antenna is the 424B. It is a 24-element, 70cm Yagi, exhibiting 18.2dBd forward gain. At the 1982 Central States VHF Conference, a 424B won the 70cm antenna gain measuring contest. The antenna's features include insulated elements, stainless steel hardware, N-type connector, T-match feed and trigon reflector.

For more Boomer information, see your local dealer or contact Cushcraft Corporation, P.O. Box 4680, Manchester, NH 03108. □

ABOUT YOUR SUBSCRIPTION

When does it expire?
Printed on your address label in the upper right-hand corner is a 4-digit number, such as 0284. This tells you that the last issue of your subscription is February, or the second month of 1984.

Why does my renewal notice come so early?
Advance planning is essential in producing a periodical. We have to plan for the time the issue will be in the mail, the time it takes to get ready to mail, and also the time it takes to process new subscriptions and renewal information at the computer house. If you wish uninterrupted service, we need to have your renewal instructions at least six weeks prior to the beginning of the month in which your subscription expires

How can I ensure that my renewal will be added to my present subscription?
By making sure your include your subscriber number, the 6-digit number that precedes your expiration date, in all correspondence about your subscription. It enables us to service you better.

Morse code Basic Trainer

Advanced Electronic Applications, Inc. (AEA) has achieved the dominant position in computerized Morse code keyers, readers and trainers.

All our previous Morse code trainers have been *proficiency* trainers that are meant for improving the speed copying ability of operators that *already* know the Morse code. The BT-1 Basic Trainer was designed for the person having *no proficiency* in the Morse code. The BT-1 introduces each character individually in a well-researched sequence (by Educational Technology & Services, Inc.) that avoids confusion with other characters and permits maximum practice of characters that are difficult to learn.

Each new character is introduced by itself until the student is completely familiar with its sound. The trainer then mixes the new character 50 percent of the time against all previous characters learned in a similar manner. The characters are mixed first in groups of two, three, four and finally five characters before the student progresses to the next new character. The characters are sent at 20 wpm with a three-second space between character groups.

The BT-1 is a completely self-paced trainer that requires *no instructor*. It can even be used as a code practice oscillator for improving one's sending fist.

For the serious Morse code student, it is possible to achieve a 20 wpm copying speed in as little as one month with the BT-1. Most students can achieve good results by practicing 20 minutes in the morning and 20 minutes in the evening each day. We know of no other teaching methodology that is even close to the efficiency of the BT-1 in training new Morse code operators, providing a student truly concentrates during practice sessions.

The BT-1 is a perfect adjunct for any Amateur Radio class. It allows the instructor to spend most of his time teaching theory, while at the same time producing top-quality Morse operators.

Operation of the BT-1 is straightforward and easily learned. All operations are selected via the top panel keypad and ON/OFF volume control. Power is derived from any 12 volt DC power source capable of delivering 200mA. An earphone jack is also provided for private practice sessions.

The Basic Trainer is also available in a portable version, the BT-1P. The BT-1P features a built-in NICAD battery pack that allows a couple of hours of operation between charges. The BT-1P comes with the mating charger unit.

The Basic Trainer can be ordered from AEA, P.O. Box C2160, Lynnwood, WA 98036-0918; (206) 775-7373. TELEX: 152571 AEA INTL. □

Noise bridge with range extender

MFJ Enterprises, Inc. introduces its new and improved model MFJ-202B Noise Bridge. It allows quick adjustment for maximum performance of any antenna — single, multiband, dipole, inverted vee, beam, vertical whip or random systems.

You can measure resonant frequency, radiation resistance and reactance of your antenna. It tells you whether to lengthen or shorten your antenna for minimum SWR over any portion of the band.

The MFJ-202B will measure resistance to 250 ohms and has a wide capacitance range of ±150pF. It includes a built-in range extender that shunts large unknown impedances down to its measuring range.

You can tune transmatches, adjust tuned circuits, measure inductance, RF impedance of amplifiers, baluns, transformers and other RF circuits.

It can also be used to determine electrical length, velocity factor and impedance of coax cable. With a transmatch and dummy load, it can synthesize RF impedances for test purposes.

The MFJ-202B front panel has push-button ON/OFF and range extender switches, reactance adjustment and a resistance adjustment. It measures 4½ × 2 × 4½ inches and is housed in a rugged black aluminum cabinet with eggshell white front.

MFJ provides a 30-day money back trial period. If you are not satisfied, you may return it within 30 days for a full refund (less shipping). MFJ also provides a one-year unconditional guarantee.

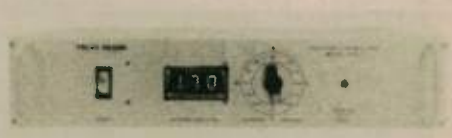
The MFJ-202B RF Noise Bridge is available from MFJ Enterprises for $59.95 plus $4 shipping and handling. To order, call toll free 800-647-1800 or mail order to MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762. □

Heavy-duty antenna rotator control

Hy-Gain, a division of Telex Communications, Inc., has announced a new, heavy-duty communications antenna rotator control. The DRC-1 rotator control incorporates a crystal-controlled modem allowing all control signals to pass over standard two-wire telephone lines up to distances of five miles. With leased phone lines, this distance can be increased indefinitely.

The DRC-1 control offers high versatility in azimuth control of larger antennas with "shortest path-continuous rotation" or "north-center 360°" rotation verified by a digital azimuth readout. Switch selectable 110/220 volt operation and line-fault indicator are standard. The DRC-1 is housed for tabletop operation or can be rack-mounted.

The DRC-1 controls any one of three heavy-duty Hy-Gain antenna rotators with torques of 9,000, 16,000 and 23,700 lbs. supporting vertical loads of 1,000, 7,000 and 20,000 lbs. respectively.



For further information, please contact the CIM Department, Hy-Gain, Division of Telex Communications, Inc., 8601 NE Highway 6, Lincoln, NE 68505. □

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

Receiver multicoupler

Two shortwave receivers may be operated rom one antenna, thanks to a new ulticoupler just released by Grove Enterrises, prominent manufacturer of accessories r listening.

The CPL-2 Multicoupler acts as a signal plitter, providing equal signal levels to two ceivers simultaneously from one antenna. Designed for flat response from 3-30 MHz, the inexpensive splitter comes equipped with interconnecting cables and adapters for different types of lead-in connections.

A scanner version of the multicoupler is also available as the model CPL-1.

CPL-2 or CPL-1 only $14 plus $1.50 UPS shipping from Grove Enterprises, 140 Dog Branch Rd., Brasstown, NC 28902; or call toll free, 1-800-438-8155 (except NC). All others call 1-704-837-2216. □

Michigan QRP Club CW Contest

The Michigan QRP Club's second annual CW ntest is set for 1500Z, Saturday, 15 January 1500Z, Sunday, 16 January on the tradinal QRP frequencies. It's open to all amarrs.

Exchanges should include RST, QSO number d power *output*. There are three categories of tions, all based on power output: 1) 1 watt or ; 2) 5 watts or less; and 3) more than 5 tts. Each contact is worth 1 point, and cercates will be awarded the highest scoring tion in each state, Canadian province and ntry.

cores are calculated by multiplying total O points for all bands by the number of es, provinces and/or countries worked. A us multiplier of 1.5 times the total is availfor use of 100 percent natural or 100 pert battery power. Separate logs are required each band and must contain all data, inling name, address, equipment used and er output.

eadline for receipt of entries is six weeks n end of contest. Send entries to Contest Manager, Michigan QRP Club, 281 Crescent Dr., Portland, MI 48875. Inquiries about the club may be sent to the same address.

This contest coincides with the German QRP Club's annual CW contest. □

Texas QSO Party

A Texas QSO Party — sponsored by the West Texas Amateur Radio Club — will be held 22-23 January, from 0000 hours on the 22nd to 1800 hours on the 23rd. All bands and modes will be used. Each station may be reworked upon each county change. Single operator only. CW QSOs in CW sub-bands only.

Exchange: QSO number (beginning with 001) and county for Texas stations. QSO number and state, province or country for all others.

Scoring: All non-Texas stations score points as follows. *Phone* — fixed station = 1 pt.; *CW* — fixed Texas station = 2 pts.; *phone* — mobile Texas station = 5 pts.; *CW* — mobile Texas station = 7 pts. All Texas stations score 1 point per contact on phone, 2 points on CW, whether fixed or mobile.

Multipliers: Non-Texans multiply by number of Texas counties worked (254 maximum). Texas stations multiply by number of states, countries and Canadian provinces.

Frequencies: *CW* — 3565, 7065, 14065, 21065, 28065; *phone* — 3940, 7260, 14280, 21370, 28600; *Novice* — 3710, 7110, 21110, 28110.

Awards: Plaques go to top U.S. score, top U.S. Novice score, top DX and top Canada score, and top Texas scores (fixed, mobile and Novice). Certificates go the top scorer in each state, country and province. Certificates also go to the top 10 Texas stations. Other special awards will be given as activity dictates.

Logs: All logs must be received by 15 March 1983. Mail to WTARC, P.O. Box 9944, Odessa, TX 79762-0041.

Illinois

Wheaton Community Radio Amateurs Hamfest will be held 6 February 1983 at Arlington Park Race Track EXPO Center, Arlington Heights, Illinois. Doors open at 8:00 a.m. Free flea market tables and plenty of floor space. Large commercial area including computer section.

For general info, call Paul Sexauer, W9JTO at 312-231-9524. Paved parking. Awards. Tickets $3 at entrance, $2.50 in advance. Send SASE to WCRA, P.O. Box QSL, Wheaton, IL 60187.

Talk-in on 146.01/61 and 146.94. □

Iowa

The 3900 Club of Sioux City, Iowa is sponsoring the 1983 Midwest ARRL Convention, which will be held at the Marina Inn, South Sioux City, Nebraska — directly across the river from Sioux City. The convention will be held 15-17 April 1983.

Among those present will be ARRL President Vic Clark, W4KFC; Midwest Division Director Paul Grauer, W0FIR; Roy Neal, K6DUE. There will be a full program of seminars, displays, commercial exhibits and a 66-table flea market — all indoors, in the same building. Also featured will be a QCWA breakfast, a 3900 Club luncheon and an outstanding ladies program all day Saturday.

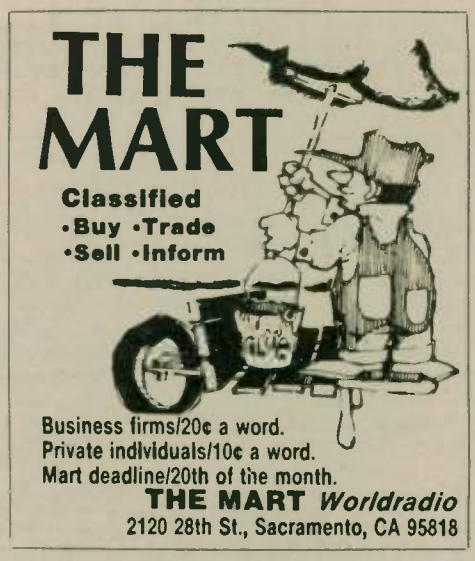
Anyone interested in obtaining a flea market table (8 ft. x 30 in.), contact Al Smith, W0PEX, 3529 Douglas St., Sioux City, IA 51104. ($5 for three days, $4 for Friday and Saturday) Prospective exhibitors should contact Jim Boise, KA0GZY, 22 LaSalle St., Sioux City, IA 51104. Convention costs are $6 for the three days. Saturday night banquet is $10 in advance, $12 at the door. We will make and confirm motel reservations for you. Motel rates at the Marina Inn are $30 single, $34 double.

For general information, contact General Chairman Dick Pitner, W0FZO, 2931 Pierce St., Sioux City, IA 51104. For advance banquet ticket reservations and motel reservations, write to Jerry Smith, W0DUN, P.O. Box 14, Akron, IA 51001. □

Louisiana

The Southeastern Louisiana University Amateur Radio Club (SLUARC) and the Southeast Louisiana Amateur Radio Club (SLARC) are sponsoring a hamfest on Saturday, 15 January on the SLU campus in the Twelve Oaks Cafeteria (Eastside Cafeteria) from 9:00 a.m. to 3:00 p.m. Free admission and free swap tables.

For more information, write to Ralph Shaw, K5CAV, Box 402, SLU, Hammond, LA 70402.



MOBILE IGNITION SHIELDING, provides more range with no noise. Available most engines in assembled or kit forms, plus many other suppression accessories. Free literature. ESTES ENGINEERING, 930 Marine Drive, Port Angeles, WA 98362.

QSLs & RUBBER STAMPS — TOP QUALITY! State Outline, Straight Key, Space Shuttle QSLs and More! Sample Pack - 50¢ - EBBERT GRAPHICS, Dept. 1, Box 70, Westerville, OH 43081.

WORLD TRAVELERS: Send for your free sample copy of "International Travel News." P.O. Box 160568, Sacamento, CA 95816.

QSLs by W6BA — "Customized" $19.75 per 1000. Star Route 2, Box 241, 29 Palms, CA 92277.

SOLID BRASS BELT BUCKLES. Name or call. One line — name or call — $8.50. Two lines, name and call — $9.50. Add $1.00 postage. S. Slonim, 320 Rose St., Massapequa Park, NY 11762.

TRS-80 AMATEUR RADIO SOFTWARE for Model I/III. Finest selection in the country! Super-Log, Super-Duper, Antenna Anatomy, Morse Code Trainer, etc. Priced $14.95-$24.95. SASE for free color catalog. MICRO-80 INC., 2665 Busby, Oak Harbor WA 98277.

SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

BUYING OR SELLING? An ad in **Worldradio** makes it happen FASTER.

QSLS. QUALITY AND FAST SERVICE FOR 22 YEARS. Include call for free decal. Samples 50¢. Ray, K7HLR, Box 331, Clearfield, UT 84015.

CDE ROTOR OWNERS — You need a "D-Lay-5"! This easy-to-install circuit protects the rotor from damage caused by accidental braking. Works with the Ham II, Ham III, Ham IV, and Tailtwister models. Provides a five-second safety factor in your rotor brake. Incredible value at $19.95 — Postage paid world wide. LANCE JOHNSON ENGINEERING, PO Box 7363, Kansas City, MO 64116.

TELETYPEWRITER gears, ribbons, manuals, parts, supplies and toroids. SASE list. Buy unused parts. TYPETRONICS, Box 8873, Ft. Lauderdale, FL 33310 N4TT.

WORLDRADIO ON CASSETTES — Worldradio for blind amateurs on cassettes. To receive this free service send $3.00 (one-time only contribution for tapes) with your name, address and call to George Hickin, W4GH, Box 7497, Macon, GA 31209.

DISTINCTIVE QSLS — Largest selection, lowest prices, top quality photo and completely customized cards. Make your QSLs truly unique at the same cost as a standard card, and get a better return rate! Free samples, catalogue. Stamps appreciated. Stu, K2RPZ, Box 412, Rocky Point, NY 11778. (516) 744-6260.

RTTY JOURNAL — Now in our 30th year. New Beginners Handbook just out; $8.00 PPD USA, foreign add postage. Year's subscription to the RTTY JOURNAL, $7.00, foreign $13.50. Send to: RTTY JOURNAL, POB RY, Cardiff, CA 92007.

THE BEST HAM RADIO/PERSONAL COMPUTING INSIDER NEWSLETTER IN THE BUSINESS! Published twice a month: $18.00/year. Twice as many pages as Westlink Report! (Sample: FREE!) THE W5YI REPORT; PO Box #10101W; Dallas, TX 75207.

The SOCIETY OF WIRELESS PIONEERS, Inc., invites all professional operators, active or retired, military or commercial, to join the world's largest organization of its kind. Many active nets. Write Box 530, Santa Rosa, CA 95402 for details or send $1 to pay postage on sample SPARKS JOURNAL.

WYOMING AND UTAH RANCH LAND. Wild horses, antelope, deer. Near paved road. 10 acres — $60 down, $60/month. FREE information, maps, photographs. (Offer void in Calif.) Will trade equity for ham gear, home computer, test equipment, etc. Owner — Dr. Michael Gauthier, K6ICS, 9550 W. Gallatin Road, Downey, CA 90240.

AUTO-CALL KEEPS UP WITH THE LATEST Ham info from Washington, DC area. Subscription $5.00 a year, sample copies $1.00. Address: AUTO-CALL, c/o W2GHK, 2417 Newton St., Vienna, Virginia 22180.

QSL SAMPLES — 25¢ SAMCARDS, 48 Monte Carlo Dr., Pittsburgh, PA 15239.

WANTED . . . TUBES. All types high power microwave nixies or ? Pay cash or trade. WA6LHR, (415) 530-8840.

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write Fran Norrick, WB9WPS, Route 6, Box 239, Kankakee, IL 60901.

INTRODUCING: Beautiful natural **full color photo QSL cards,** made from your color negative or slide. From $240.00 for 3,000 cards minimum. Free samples, stamps appreciated. K2RPZ, Box 412, Dept. NCW, Rocky Point, NY 11778, (516) 744-6260.

STOP LOOKING for a good deal on Amateur Radio equipment — you've found it here — at your Amateur Radio headquarters in the heart of the Midwest. Now more than ever where you buy is as important as what you buy! We are factory-authorized dealers for Kenwood, Drake, Yaesu, Collins, Wilson, Ten-Tec, ICOM, Dentron, Hewlett Packard Calculators, MFJ, Tempo, Regency, Hy-Gain, CushCraft, Swan and many more. Write or call us today for our low quote and try our personal and friendly Hoosier service. HOOSIER ELECTRONICS, P.O. Box 3300, #9 Meadows Center, Terre Haute, IN 47803. (812) 238-1456.

SAFETY BELTS professional lineman (Klein) with adj strap. Forged rings. 4000 lb test. Waist size? $110. Ppd. Free specs. AVATAR CO. (W9JVF), (317) 359-5278, 1147 N. Emerson, Indianapolis, IN 46219.

SELL — MINT DRAKE-C-LINE, R4C-T4XC-AC4-MS4, Looks new, recently factory aligned, low hrs.—$650. Frank, KBØW, 1058 Ridge Road, Nevada City, CA 95959. (916) 272-7203 day, (916) 265-3948 nite.

EMBROIDERED EMBLEMS, custom designed club pins, medallions, trophies, ribbons. Highest quality, fastest delivery, lowest prices anywhere! Free info: NDI, Box 665 L, Marietta, GA 30065.

WANTED — old radio transcription discs. Any size, speed, subject. Send full details & price. W7FIZ, Box 724, Redmond, WA 98052-0724.

ELECTRONIC PARTS CATALOG. IC's, transistors. Send first class stamp to ELDELCO, 2789 Milburn Ave., Baldwin, NY 11510.

MIRROR IN-THE-LID, and other pre-1946 television sets, picture tubes, parts, magazines wanted for substantial cash. Specially interested in any RCA "TRK", GE. "HM", or Westinghouse "WRT" ries set. Arnold Chase, 9 Rushleigh Road, West Hartford, CT 06117. (203) 521-5280.

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send $2 (USA) or $3 (DX) to cover certificate cost. W6LS, 2814 Empire Ave., Burbank, CA 91504.

CODE PROFICIENCY DRILLS are transmitted from WB3IVO, BRASS POUNDERS ARC, each Saturday and Tuesday starting 0200Z on 3560 kcs. Each Saturday and Sunday starting 2000Z on 7060 kcs. Monday thru Friday starting 1930Z on 14060 kcs. Speed ranges from 20 to 60 WPM.

INTERESTED IN QRP? Free fact-filled information booklet for large SASE to: QRP/ARCI, Box 12072, Capitol Station, Austin, Texas 78711-2072.

HAMS FOR CHRIST - Reach other hams with a Gospel Tract sure to please. Clyde Penfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.

50MHz NOW OPEN FOR USA. We have 8243-A type of crystals etched for doubling and tripling. Your selection of Frequency 3 for $10 postpaid. E/T LABS, 2921 Portola Dr., Davis, CA 95616.

SHAKE SATELLITE RECEIVER with demodulator installed only $969. Satellite and microwave TV catalog $1.00. TEM Microwave, 22518 97th Ave. No., Corcoran, MN 55374, (612) 498-8014.

GROUND RADIALS WORK — Solve your vertical antenna radial problems with the Fiberglastic ground plane one (GP-1). A 10" diameter, 24-point cast aluminum buss that clamps any 2" diameter or smaller mast. Radial problems solved for only $24.95. Send an SASE for photos and brochure. Lance Anderson Engineering, P.O. Box 7363, Kansas City, MO, 64116.

CW IS EASY — Pass the Extra code exam with SYSTEM EXTRA, a one-hour cassette tape with one side of random code and a second side with six FCC QSO's (20 WPM). Included are FCC type examinations to test your skill. $6.50 post paid. SYSTEM GENERAL, (13 wpm), consists of two cassettes, ten FCC QSO/exams and more text. $12.25 post paid. LANCE JOHNSON ENGINEERING, P.O. Box 7363, Kansas City, MO 64116.

MONROVIA BASIC RADIO. Ham & SWL accessories. Hours: TWThF 1900-2200; Sat. 1000-1700. 325 Linwood Ave., Monrovia, CA 91016. (213)359-2986.

ATTN: BAKERSFIELD, CA. MONROVIA BASIC RADIO local phone: 871-1764, eves.

HW-101 good condition, with Protronics Digital Readout, RIT Kit, WWV Kit and Bezel Kit, factory installed. $449 plus shipping. VISA/MasterCharge OK — Al Staggs, 20 Monte Vista, Buckley, WA 98321. 1-206-829-0056.

AMATEUR ACCESSORIES: Our name says it all! "FALL"ing prices — new Azden PCS-4000 — $299; Larsen 2m 5/8 wave mobile magnet or trunk lip mount antenna — $36; W2AU Balun — $13; MFJ 989 3KW tuner w/roller indicator — $283; MFJ 816 HF Watt/SWR meter — $27; Mini-quad HQ-1 — $137. Free Shipping. Check, MO, VISA/MC, AMATEUR ACCESSORIES, 6 Harvest Ct., RD 7, Flemington, NJ 08822, (201)782-1551.

KEYER PADDLES, Iambic, hand crafted for the Elite, with more features, and nicer action. A contest winner. Write E. SNYDER, KA5AEQ, 213 W. Davis, Sapulpa, OK 74066.

SOLAR CELL BATTERY CHARGERS, great for 12 Volt Radio Stations! Panels, Inverters, Regulators, SASE Gene Hitney, W7LFC, Campwood Rt., Prescott AZ 86301.

NOTICE NOTICE: To celebrate our ninth year in business we give a FREE Larsen Antenna to our customers send an SASE for full details (Business size). NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

DUPERMAN — REAL TIME MACHINE LANGUAGE CONTEST DUPE CHECK PROGRAM — Checks dupes during contest, prints dupe sheets afterwards. Checks 600 QSOs per second. Stores 2750 QSOs per band. Requires TRS-80 Model III with 48K and either 1 or 2 drives. Single disk version $29.95, double disk version $39.95, postage paid. Florida residents add 5%. Check or MO to Tim Cotton, N4UM, 5680 SW 16 St., Plantation, FL 33317.

SUPER-SENSITIVE FIELD STRENGTH METERS: Specify right or left-handed model. $28.00 & $2.00 shipping. ELECTRONICS DESIGN CONSULTANTS, INC., P.O. Box 4031, Hampton, NH 03842.

KENWOOD TR7800 2-meter 25w FM transceiver with built-in TT Pad — $270.00, good condition, Bearcat 210 scanner — $150.00, and NEW Wilson Mark II and IV battery charger — $25.00, all with manuals and original cartons. Dr. Larry Oakley, W7AAA, (702)825-2626.

Be first to know precisely when and where to work all the choice DX. Bi-weekly LI DX BULLETIN has: Hot DX news — time and frequency of each goodie — QSL info — propagation forecast — and more . . . Send business size SASE for free sample or $12 for 1-year domestic subscription to:

LONG ISLAND DX BULLETIN
PO Box 173, Huntington, NY 11743

FAST, DEPENDABLE MAIL ORDER??? You bet! Semiconductors, parts, ham and computer accessories. Surplus goodies, too! Free 54 page Catalog. THE PARTSTORE, Dept. 140, 999 44th St., Marion, IA 52302.

REPLACE RUSTED ANTENNA BOLTS with stainless steel. Small quantities, FREE catalog. ELWICK, Dept. 459, 230 Woods Lane, Somerdale, NJ 08083.

MULTI-BAND DIPOLE 160M-10M (WARC), single coax feed, Model KT5B $59.95, also KT7B Bal feed line KW Line — Order from KILO-TEC, P.O. Box 1001, OakView, CA 93022. (805)646-9645 Info Available.

AMATEUR RADIO REPAIR calibration — experienced, licensed, reasonable. ROBERT HALL ELECTRONICS, W6BSH, P.O. Box 8363, San Francisco, CA 94128. 408/292-6000.

SAROC SWAP TABLES — $2.50 each. Limit one per registered guest, inside. Send for details. PO Box 945, Boulder City, NV 89005-0945.

YOUR NEW AZDEN PCS-4000 is here! Only $299 brings you this incomparable, compact microprocessor-controlled 2m mobile or base beauty. Check, M.O., VISA/MC. Free shipping U.S.A. AMATEUR ACCESSORIES, 6 Harvest Ct., RD. 7, Flemington, NJ 08822. (201)782-1551.

MOST QSL CARDS look pretty much the same! Your card will say "This is me". Priced from $7.00. Send stamp to: WA6SOK, 4056 Acacia, Riverside, CA 92503.

TS-120S/V, 130S/V USERS' SUPPLEMENT, 72 pages full of important modifications, 10MHz WARC, etc. $8.95 postpaid. USERS' INTERNATIONAL RADIO CLUB (CC), 364 Kilpatrick Ave., Port St. Lucie, FL 33452. (305)878-7296. Visa/Master Card.

WANTED: OLD BUGS for my telegraph and radiotelegraph key collection. I am trying to find each make and model of bug manufactured before 1950. Vibroplex, Martin, McElroy, Bunnell, Mecograph, MacDonald, etc. Also looking for Spark keys, sideswipers, cooties and keys of historical significance. 73 de K5RW, Neal McEwen, 1128 Midway, Richardson, TX 75081.

SPECIAL SALE — Do you need a computer for RTTY, CW, ASCII, personal or business use? Then use one of these! Commadore 64 with 13-inch color monitor — $954.00 (list $1094.00), Commadore 64 with 12-inch green screen monitor — $659.00 (list $740.00), Franklin Ace 1000 (uses Apple hard & software, is 64K, etc.) and 12-inch green screen monitor — $1129.00 (list $1635.00), Franklin Ace 1000 — $1025.00 ($1495.00). Diskets 5¼ inch single density, package of 10 — $24.95, Disk Drive for Vic 20s and Commadore 64 — $370.00. Green screen monitors 117 vac 12-inch — $129.00, Color monitors — $385.00. Just add your interface and go. Same day shipment on money orders. Personal checks OK. No CODs or charges. Soon to come: Interface kits for CW, RTTY, ASCII. 201-962-4072, NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

SELL L-48 LINEAR. Guaranteed mint in appearance and operation, with manual and Eimac tubes, packed for shipment and delivered to carrier — $750. W7EZ, (503)344-3646.

BUY NEW SONY 2001 — $150 or less. Contact W4BLX for names, addresses of discount dealers.

ARGONAUT 515 with all accessories and manuals plus 100W linear — $365/offer. Tempo S1-T, leather case, spkr./mic., etc., with manual — $175/offer. Microwave modules MMT144/28 2m. xvrtr. with cables and manual — $95/offer. Terry, KD6VR, 619/446-6847 after 5 p.m.

POOR MAN'S VOICE PROCESSOR/ACCENTUATER for MC-50 microphone — $9.95. KD7X, 405 Whittier, Silverton, OR 97381.

COPY SATELLITE PHOTO, weather maps, press photos on our fax machines. We provide the information and the equipment. Catalog $1.00; teletype machines, parts, supplies and manuals. Catalog $1.00: ATLANTIC SALES, 3730 Nautilus Ave., Brooklyn NY 11224. (212)372-0349 — Ask for ED, "WA2FBY".

COMPUTERS & AMATEUR RADIO is the newest magazine for Hams interested in computers in the shack. Subscribe today: 1 year (6 issues) $4.00. Send to CAR, 1202 E. 23rd St., Lawrence, KS 66044.

APPLE COMPUTER NOVICE TUTOR. CW, FCC sim. tests, hi-res, more. Complete, professional. For school, club, individuals. DOS 3.3, 48K required. Terrific value! Only $19.95. E-T-M, Box 111, Mahomet, IL 61853.

R390A SSB ADAPTER — Excellent SSB, RTTY. No receiver modifications needed — $25. K8EYU/7, 963 Birch Bay Lynden Rd., Lynden, WA 98264. (206)354-5554.

BUMPER STICKERS — "My Favorite Radio Station is (your call sign)." Great to display on car, in shack, anywhere! A nice gift for your ham radio friends. Just $3. ARPRESS, 380 Wilbanks, Rome, GA 30161.

NEED MANUAL OR SCHEMATIC for WRL Globe-Chief model 90 transmitter. Also new 807 tubes at reasonable price. W8CAE, John Chenoweth, 9130 Yankee St., Miamisburg, OH 45342.

NICAD "AA" BATTERIES Standard type with bump on top, Industrial with flat top, or with solder tabs — $1.75 ea. 10 or more — $1.50 ea. UPS $2.00. Specify type. Ernie Cheslow, 895 E. 54 St., Brooklyn, NY 11234.

NEW ROHN BPH45G, Hinged base plate for Rohn 45G Tower, now discontinued, cost $129.00, sell for $100.00 Will ship. Dr. Larry Oakley, W7AAA, (702)825-2626.

FOR SALE: ROBOT 400 for slow-scan TV, practically new, with manuals — $475.00. Communications Specialist TE-64 unit for 64 PL tones with instructions, never used — $50.00. Will ship UPS. Ed Knowlton, 39 Via Granada, Rolling Hills Estates, CA 90274. (213)377-7101.

COFFEE MUGS OR WALL PLATES with your callsign in gold and design — $10 each. Includes shipping. Please print call. LISA'S ART & CRAFT, WD4MVQ, Box 453, Lexington, TN 38351.

HENRY RADIO LINEAR AMPLIFIER, model 3KA, 10-80m., less than 30 hours' use. Absolutely mint condition. $1395.00. K6RMM, 805/927-4177.

YAESU FT-101 transceiver with fan. New spare tubes plus YD-844 and YD-846 microphones, mint $399. W6OAB, 619/444-6098.

EIMAC 4-1000A

Sub/Extra heavy duty 2KW +

only $69.95 Limited Quantity

Tested and guaranteed to run legal limit • Used tubes • Note: Draw about 5 Amps more than 4-1000A. Most all transmitters will handle easily.

MIKE FORMAN

3740 Randolph • Oakland, CA 94602 415-530-8840

Terms: Cash, M.O., or COD.
Add $5 shipping & handling

★ I pay cash or trade for all types of transmitting or special purpose tubes.

ROSS $$$$ NEW SPECIALS: Kenwood TR-7950 $349.90, TS-130SE $589.90, TR-9500 $549.90, TR-2500 $287.90, TS-930S $1349.00. ICOM AH-1 $234.90, 4AT or 3AT $233.90, IC490A $550.00, IC505 $385.00, IC701 $795.00, Yaesu FT-102 $959.90, FT-901DM $999.90, YR-901 $550.00, NC-2 $59.90, FSP-1 speaker $15.90. ENCOMM HT-1200 $229.90, ST-144up + free goodies $275.00. KANTRONICS interface $165.25, signal enforcer $129.90. USED, like new: Collins 62-S1 $595.00, 32S-3 $439.00, 75S-3B $399.00. Drake R4A/T4X/AC3/MS4 $449.00, MN-2000 $129.00. T4XC/R4C/MS4/AC4 $695.00. ICOM DV 21 $150.00, IC 21A $189.00, IC 245 SSB $259.90, IC 551D $479.00, IC 255A $200.00. KENWOOD TR-7800 $235.00, TR-2400 $199.90, TS 520S $465.00. For all your ham needs, good prices and fast delivery, phone (208)852-0830. Closed Monday at 2:00. ROSS DISTRIBUTING CO., Preston, ID 83263.

ADVERTISERS' INDEX

COMPLETE QSL catalog. 32p, cuts, forms, type plus fifty samples. $1.00, refundable. UNADILLA PRESS, P.O. Box C, Unadilla, NY 13849.

BUMPER STICKERS: "Hams Do It With Frequency" or "dahdidahdit dahdahdidah" — $1.00. NORTHWEST BUTTON-WORKS, 7805 N.E. 147th Ave., Vancouver, WA 98662.

ROHN TOWERS — Wholesale direct to users — all products available. Write or call for price list. Also, we are wholesale distributor for Antenna Specialists, Regency, Hy-Gain and Wilson. HILL RADIO, P.O. Box 1405, 2503 G.E. Road, Bloomington, IL 61701-0887. (309)663-2141.

HOSS-TRADER ED selling radios far below dealer cost. Telephone the Hoss last, for the best deal. BIG SALE: New Drake TR-7A regularly $1699.00, cash $1299.00. New Dentron Clipperton-L linear $569.00. New Astro-Swan 100-MXA solid state transceiver, regularly $699.00, cash $419.00. ICOM IC-2A walkie-talkie, $204.00. Azden Display PCS-4000 $279.00. HAM-4 rotor $179.00. New ICOM 730 regularly $829.00, cash $659.00. New Drake TR-5 $599.00. ICOM 25-A $289.00. New Drake L-7 linear $859.00. New KDK model 2030 $259.00. HYGAIN ANTENNA SALE: TH5DXS $209.00; TH3MK3 $189.00; TH7DX $349.00; 204BA $165.00. New ICOM 720-A regularly $1349.00, cash $1029.00. RG-8 coax 19¢ foot. MOORY ELECTRONICS, 12th & Jefferson Sts, DeWitt, AR 72042; 501/946-2820.

WANTED. SOFTWARE for cbm or pet computer to run RTTY. Prefer 8032, but will modify a good program to suit my needs. Send price and availability to: Darin Smith, 1607 Palmer Ave., Pueblo, CO 81004.

HENRY 2K-4 LINEAR, 80-10m., mint — $895. Hy-Gain 204BA new, in box — $150. Collins F455Y21 filter for KWM2 — $50; F455FA05 500 Hz CW filter — $75. Kenwood CW filter (narrow) for TS120, TS130 — $50. Used 4BTV — $60. Four-foot copper clad ground rods — $3 each, 5 for $12.50. Hy-Gain 18AVT vertical — $75. Derek, KI6O, (916)965-1027 days, (916)965-4904 eves., Sacramento, CA.

YAESU FRG-7, excellent SW receiver, mint condition. Pick up only. Sacramento, CA $200. N6WR (916)457-3655.

REPAIR AND SERVICE of ham equipment. Terry, WAØVQF, 913/845-9034 evenings. (KS)

TRADE: YOUR MINT ICOM 25A or Kenwood 7730 for a pair of Zeiss Dialyt 10x40-B binoculars as advertised in NY for $589.00. N3BQA, 20 W. Madison St., Baltimore, MD 21201. 301/685-6308.

BUILDING A REPEATER? Complete repeater control panel, General Electric model 4KC19A10, complete with Audio coupler, COS, Drop out delay timer, 3-minute timer, channel guard filter, with manual, clean, $220. Ship UPS. Dr. Larry Oakley, W7AAA, (702)825-2626.

SELL SPARE 4PR 1000A, ideal for linear, only $75.00. Collection of 20 years new boxed receiving tubes only $1.00 each. Send your list of needs for availability. W5QJT, PO Box 13151, El Paso, TX 79912.

BARGAINS! Cleaning out my ham shack. Send for list. Jos. Lewalski, Apt. 30-A, 1200 Alpine, Walnut Creek, CA 94596.

ELECTRONIC BONANZA — Kenwood R-1000 — $419.95, R-600 — $344.95. Sony ICF-2001 — $268.95, ICF-6500W — $189.95. Bearcat BC-100 — $288.49, BC-350 — $384.49. Regency D810 — $269.95, M400 — $229.95. Yaesu FRG-7700 — $489.95. Panasonic RF-3100 — $268.95. Cordless phones, frequency directories, CBs, radar detectors, much more. True discount prices and free UPS shipping to 48 states. Picture catalog — $1.00, (refundable). GALAXY ELECTRONICS, Box 1202, Akron, OH 44309. (216)376-2402.

SELL: MINT ICOM 701, matching power supply with speaker and mike — $650. N5ADJ, Jerry, 1509 Elm, Crossett, AR 71635. (501)364-8987.

ICOM IC-701, IC-701PS power supply, IC-HM mic., manuals, cords, original boxes, excellent — $685. UPS pd. continental USA. (Cert. check.) KC8OU, 3510 Arnold, Canton OH 44709. (216)492-0624.

FOR SALE — Yaesu FT 101E SSB Transceiver with CW filter, fan & mic. Ship in original box. $425.00. WA7IIR, PO Box 596, Moses Lake, WA 98837.

SELL: YAESU FT 707, FP 707 p/s speaker, CW filter and FC 707 tuner, with YM 35 mic. — $800.00. Argonaut 515 w/ps, calibrator, CW notch filter, extra filters and KB-40 keyer — $400.00. Both items guaranteed. Have 4 new 4 CX1000A left. SM 220 with BS-8, mint — $325.00. Wanted YK88C filter. W2PD, S. Slonim, 320 Rose St., Massapequa Park, NY 11762. (516)541-2342.

FOR SALE: HW-101, PS-23, PTT mic., Heath checked, aligned. Like new — $250. Miller AT-2500 automatic ant. tuner, new condition — $400. K6WE, Calistoga, CA (707)942-4768. Deliver 75 miles.

SELL, THREE-BAND VHF DRAKE UV-3 TRANSCEIVER. Brand new in original unopened carton, with external Astron power supply. First check for $750.00 prepays to you via UPS. Peter Onnigian, W6QEU, (916)392-8964.

ICOM & KENWOOD OWNERS! You are definitely missing out if you do not receive our very important separate newsletters! Free information! Send S.A.S.E. to USERS' INTERNATIONAL RADIO CLUB (CC), 364 Kilpatrick Ave., Port St. Lucie, FL 33452.

A CLASSIFIED AD PLACED IN WORLDRADIO will reach the most active, involved Amateur Radio operators. Your ad will be seen here before it will be seen in any other Amateur Radio publication. We get the news out first. Get results from **WORLDRADIO.**

SELL — DRAKE TR-7 line, mint, TR7/DR7 transceiver, NB-7, SL-1800, SL-500, FA-7, PS-7, SP-75, RV-7, MS-7, MN-7, B-1000, AK-75, 7077, service manual, original boxes and accessories. 1½ years old — $1595.00. Doug, K6HLE, 408/252-1272 night.

NEW HIGH SPEED AND TIMELY CLASSIFIED AD PUBLICATION. ($8.00 six months) ($12.00 annually) Published three times monthly, the 1st, 10th and 20th, for the fast service needed in buying, selling or trading. Very reasonable ad rates! Reaches thousands of active hams! First class mail out only! Subscribe to "The Ham Boneyard" (CC), 364 Kilpatrick Ave., Port St. Lucie, FL 33452, 305-878-7296. Master/Visa Card welcome.

USERS INTERNATIONAL RADIO CLUB LABORATORIES REPAIR OR UPDATE ALL AMATEUR RADIO EQUIPMENT! Offer performance testing and optimize alignments. We specialize installing any modifications in the UIRC (ICOM/Kenwood Newsletters) and Fox-Tango (Yaesu Newsletter). Quality work at a reasonable cost. UPS and POSTAL shipping. Fast turn-around time. Radio Amateur Extra Class License, N8RT. Thirty years experience. Call or write for quotation. Master/Visa Card welcome. UIRC LABORATORIES (CC), Suite "N", 1532 S.E. Village Green Drive, Port St. Lucie, FL 33452. 305-335-5545 — 10:00 AM thru 5:00 PM, Mon. thru Sat.

YAESU FT 107M w/WARC, mint condition — 6 months old, DMS internal power supply, speaker phone patch, CW filter — $800.00. NEED ROHN 25G tower sections, must be in good condition. Derek, KI6O, (916)965-1027 days, (916)965-4904 eves., Sacramento, CA.

EMPLOYMENT

Classified ads for jobs wanted or positions offered will be run free of charge in Worldradio's MART.

OPPORTUNITY WANTED: I am looking for a company with a special need for an industrious, dedicated, tireless worker. 2 years with my previous employer. Interest skills and experience in public relations public speaking, management, sales, conducting seminars, search and rescue, writing and numerous technical skills. Interested in long term employment. Contact Hartley Postlethwaite, WB6CQW, HAPPY FLYERS, 1811 Hillman, Belmont, CA 94002. (415) 341-4000.

COMMUNICATIONS TECHNICIAN: Immediate need for qualified bench tech to test and troubleshoot state-of-art HF/SSB and VHF/FM transceivers and accessories. Must have hands-on experience and work without direct supervision. Good benefits, pleasant conditions; moving to new quarters Dec. '82. Entry salary depends upon experience. U.S. citizenship not required. Company also has openings for RF Design Engineer with track record and degree; International Salesman bi-lingual (Spanish/English) familiar with HF/VHF equip lines. Your resume or typewritten letter will receive immediate attention. No phone calls. Write to: Ken Easley, Manufacturing Manager, STONER COMMUNICATIONS, INCORPORATED, P.O. Box 176, Rancho Cucamonga, CA 91730. (Equal Opportunity Employer).

HOME COMPUTER business opportunity. Positions available for self-motivated individuals who know MULTI-LEVEL marketing, and desire to introduce to their area a brand-new, ground-floor and unparalleled program that features a well known home computer, peripheral hardware, software, and other high tech products. Write, COMPU-COTTAGES, PO Box 26, Candler, NC. 28715.