World Radio

Year 14, Issue 5

November 1984 • 85¢

Larry Price, W4RA, ARRL President

The ARRL Forum

Norm Brooks, K6FO

He did it again! I'm always amazed how ARRL Pacific Division Director Bill Stevens, W6ZM, can chair a meeting and introduce everyone in sight without using notes. This time he was the host at the ARRL Forum at the Pacific Division Convention, 02 September 1984 at Santa Clara, California.

Stevens introduced Larry Price, W4RA, ARRL President; Chris Imlay, N3AKD, League Legal Counsel; Kip Edwards, W6SZN, Vice Director ARRL Pacific Division; "Mac" MacCarger, W6EY, League Honorary Vice President; and of course, himself. The room was packed, with about 200 attending.

Stevens reminded everyone that they are the League. The League doesn't do anything for you unless you want something to be done. The headquarters in Newington, Connecticut is not the League. They may be members of the League, such as you are, but they are paid employees of the League — that's all they are. You help make the policies of the League. If the League is doing something you don't like and continues to do so, it's because you haven't pounded the door loud enough, or written enough letters to people who are in a position to help you make changes.

There are 16 ARRL divisions. You reside in one of those 16 divisions. A letter to Stevens inputs to one-sixteenth of the Board of Directors. If you have a subject that is important to you, you should write to all 16 directors, plus the president and the vice presidents.

The Board of Directors doesn't meet in Newington, or wherever the meeting is held, and decide for themselves what they want; they try to reflect and project what the members of the League desire.

The meeting was opened to questions from the floor. The first question expressed concern that Senator Goldwater had two more years of his term in office to serve, and what will become of Amateur Radio when Goldwater leaves?

Chris Imlay assured the questioner that Perry Williams had excellent connections with other amateurs on the Senate Communications Subcommittee, on Senate and House staffs, in the White House staff, etc. There are many other amateurs in government, but perhaps none of them are as well known as Senator Goldwater.

What is amateur accessibility to the NTIA (National Telecommunications Information Administration), especially in reference to saving our 220 MHz band? Imlay described NTIA's responsibilities, calling them the FCC for the government.

Normally, amateurs are not concerned with NTIA, dealing with the FCC for most of their business. Now the NTIA is probably our best ally in defending the

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Iris Colvin, W6QL and Jim Maxwell, W6CF, at the DX Forum, ARRL Convention in Santa Clara, 01 September.

The DX Forum

Norm Brooks, K6FO

"What is a country and what is not a country?" This is the controversial question Jim Maxwell, W6CF, added to his talk at the ARRL Pacific Division Convention on 02 September 1984. Jim was one of the DX Forum panelists at the DX Forum.

Jim's presentation started with a short history of DX, which he has been accumulating for the ARRL. Within this history, he emphasized the changes in DX country criteria to help explain why confusion seems to reign over the subject.

DX is not really old. It has been just 60 years since the first ham signals were heard over the Atlantic Ocean. The first transatlantic tests were held in early 1921. A powerful amateur station in New England transmitted according to a schedule, but the signals were not at first heard in England. A second try in late 1921 was successful. Paul Godley, an American representing ARRL, went to Scotland specifically for the tests, which were one-way only.

In late 1923, the first transatlantic two-way QSO took place and it was not prearranged. F8AB had a three-way contact with W1MO and W1XAM. W1XAM was the well-known amateur John Reinartz, who we later knew as K6BJ.

The Santa Clara Valley Section got in on the DX bandwagon early. Claire Foster, W6HN, of the Santa Clara Valley Amateur Radio Association, suggested the creation of a Worked All Continents Award to K.B. Warner, General Manager of the ARRL. Warner thought it was a great idea, and the April 1924 QST announced the WAC Award. The League transferred the administration of the award to the International Amateur Radio Union in 1930.

The world's first-ever WAC award went to Randy Wentworth, W6OI, whose station was on the cow pasture which is now Stanford University property, and where Stanford's 120-foot dish antenna now stands.

As more and more amateurs qualified for WAC, it became apparent that distance was no big thing anymore. The next question was what other measure of DX success there might be. It settled down to the concept of "countries." Of course, as amateurs compared notes, they realized they weren't talking about the same thing. What was a country to one was not a country to another. For example, some counted Tasmania (VK7) — the huge island off Australia — as a separate country; others did not. A common standard was sorely needed.

In October 1935, Clinton B. DeSoto announced his idea of a "country" in QST and asked people to throw darts at it. His basic country was "each discrete political or geographic entity." As you can guess, that caused more problems than it solved. As time went on, the pages of QST carried pros and cons, and the subject became more and more complex. Finally, in 1937, the first countries list was published in QST. It had 157 countries.

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Communications Act amendment

Goldwater introduces bill

STATEMENT ON
INTRODUCED BILL AND
JOINT RESOLUTION

By Mr. GOLDWATER

S. 2975. A bill to amend the Communications Act of 1934 to eliminate willful or malicious interference with communications, and for other purposes; to the Committee on Commerce, Science and Transportation

ELIMINATION OF WILLFUL OR
MALICIOUS
INTERFERENCE WITH
COMMUNICATIONS

Mr. GOLDWATER. Mr. President, today I am introducing a bill to statutorily prohibit willful or malicious interference to radio communications or signals. This bill prohibits such interference by any person and authorizes the FCC to prevent continued interference while proceeding against the perpetrator. The bill clarifies and reaffirms existing law.

Recently the Federal Communications Commission (FCC) has noted a significant increase in the number of complaints concerning willful or malicious interference to radio signals. I have personally listened to some of this malicious interference. Just one individual can prevent effective communications by many other persons wishing to use a channel.

There is only a limited amount of radio spectrum available, so we must ensure that it is wisely used in the public interest. Unfortunately, this errant behavior is increasingly preventing such use in a number of different services.

Sometimes the objectionable in-

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Worldradio
is published monthly by
Worldradio, Inc.
Offices at 2120 28th Street
Sacramento, CA 95818 USA
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November 1984 Vol. 14, No. 5

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

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

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

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

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

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

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Second-class postage paid at Sacramento, CA.

Packet Radio is TRN subject

"Packet Radio Overview and Prospective" will be the subject of the December 2nd North American Teleconference Radio Net (TRN). This net, heard on over 150 gateway stations (mostly VHF repeaters) across the United States and Canada and on the OSCAR-10 satellite, will explain what packet radio is, describe how to get started in it, point out the benefits to you, and outline the pitfalls to be avoided for both the novice and expert alike. The speakers on this TRN will be none other than Lyle Johnson, WA7GXD, and Harold Price, NK6K.

Lyle is president of the Tucson Amateur Packet Radio Society (TAPR) and was the primary developer of the TAPR terminal node controller (TNC) hardware. For his work in developing the TAPR TNC, Lyle was awarded the 1984 Technical Excellence Award at Dayton. Looking to the future, Lyle is responsible for the processor design for the upcoming amateur packet satellite (PACSAT). He became active in packet radio in 1981, the pioneer days for this new technology.

Harold is a Director of TAPR and was on the team that designed the software for the TAPR TNC. He is also the AMSAT Project Manager for PACSAT. Harold is another packet radio pioneer, having first become active in that technology in 1982.

Packet radio offers opportunities for both the traditional communicator and for the experimenter. Learn about packet radio from two of its leading developers by tuning into TRN, Sunday, 02 December, at 6:00 p.m. CST (0000Z).

For a complete list of gateway station locations and frequencies, write the TRN Manager, c/o Midway ARC, P.O. Box 1231, Kearney, NE 68847-1231, (SASE please, Canada excepted), or check the CompuServe "Hamnet" XA4 Database.

FCC exams

The next three FCC exams to be administered by the Greater Los Angeles Amateur Radio Group (VEC for the 6th call area) will be as follows:

Saturday, 20 October, at Victor Valley College Vocational Compound, 18422 Bear Valley Road, Victorville, California. For appointment, contact James Kennedy, W6OUU, 19160 Hudson Ct., Apple Valley, CA 92307; (619) 242-8734.

Saturday, 03 November, at the Red Cross Building, 14717 Sherman Way, Van Nuys, California. Contact William Bell, N6GLO, 5311 Corteen Pl., #21, North Hollywood, CA 91607; (818) 762-5095.

Sunday, 11 November, at U.S. Forest Service, 873 N. Main St., Bishop, North Main Street, Bishop, California. Contact Walter Hill, NM6L, Rt. 2 Box 323, Aliso Cir., Bishop, CA 93514; (619) 387-2628.

The registration deadline for each of the exams is approximately one week prior to the exam date. — *Steven Shafit, NE6L* □

VE test session in Massachusetts

The Hampden County Radio Association will sponsor an ARRL radio volunteer examination test session on Saturday, 12 January 1985, at 9:00 a.m., at the Hampden-Wilbraham Regional High School, 621 Main Street, Wilbraham, Massachusetts. Examinations for all classes of license will be offered, from Novice to Extra.

Interested candidates should obtain an FCC Form 610 from the FCC or the ARRL, and submit the completed Form 610 with a check for $4, made out to the ARRL/VEC, to: Yorke Phillips, K1BXE, 235 Ames Rd., Hampden, MA 01031. Completed 610's can be accepted until the examination cut-off date, 14 December 1984. □

OSCAR-10 Gateway Operation

The first OSCAR-10 Gateway Operation from the New York Metropolitan area was conducted by the Staten Island Amateur Radio Association on Friday, 19 August. SIARA utilized the KR2I repeater on 223.88 MHz to link up with the WA2LQQ Gateway Station operated by Vern Riportella, Executive Vice President of AMSAT. Stations were worked from California to Florida, as well as Venezuela and even Budapest, Hungary.

Gateway Station operation allows minimally equipped hams, especially with just HT's, to operate through OSCAR-10.

For information on how you can establish a Gateway Operation, send an SASE with 39¢ postage to AMSAT, P.O. Box 27, Washington, D.C. 20044. — *Ed O'Grady, KC2ZF.* □

Check your license expiration date.

Motorcycle Club Net changes frequency

The Amateur Radio Motorcycle Club Net has moved its wintertime operating frequency to 3.888 kHz. The net meets at 0300Z each Thursday evening, local day. All brands of bikes and all types of riders are welcomed. The move has meant better copy for all participants due to the lack of foreign broadcast heterodynes and QRM from other close-by nets.

For more info, send large SASE to Gary McDuffie, AG0N; Route 1, Box 464; Bayard, NE 69334. □

Pass it on . . . WORLDRADIO

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FEATURES

COLUMNS

Wisconsin town leveled

Red Cross and Radio pick up the pieces

Jim Romelfanger, K9ZZ

"This town is leveled." Words from Steve Polishinski, WB9YSD, the first Amateur Operator to arrive in the remains of Barneveld, Wisconsin, about 3:45 a.m. on Friday morning, 08 June 1984.

Steve was with a Red Cross Survey Team from the Red Cross Madison, Wisconsin office. Those words were the first indication the Amateur Radio community had of the magnitude of what had happened only a couple of hours before in that Iowa County community of about 500 people. Boy, did it happen!

The evening of Thursday, 07 June, was muggy . . . a typical late spring day in Wisconsin. I was in Portage for my twice-weekly brainbusting session with a computer. My teacher, Tom Collins (ex-WN9LIR), asked, "Do you think there will be a weather net tonight?" There was, but I wish he had been wrong.

In the late evening on Thursday, the Severe Weather Net on Baraboo WI 28/88 was activiated by Rob Hummel, WA9ZTY. Dane County Emergency Coordinator Jim Anderson, N9AGH, headed for the NOAA Weather Bureau at Truax Field in Madison and activated the amateur station there, again on 28/88. These net operations are routine operations here, but the situation changed from just another severe weather watch operation to an emergency operation very quickly.

NOAA was requesting information from time to time about several different cells they were observing on radar, and on which they wanted confirmation.

The first indication we had of a tragedy was when a Spring Green, Wisconsin police officer (Sauk County, just north of Iowa County) advised the Sauk County Sheriff's dispatcher that a touchdown had occurred in Barneveld, Iowa County, and that police in Barneveld were asking for all possible assistance. I passed this to WA9ZTY, who then advised Frank Holliday, WB9NOV, who immediately activated the Dane County ARES Net, in anticipation of a possible request for communications from the American Red Cross, whose headquarters are in Madison.

The anticipated request became reality, and soon afterward, several Red Cross Disaster Survey teams were en route to what was left of Barneveld. The first amateur to arrive with a Red Cross team was Steve Polishinski, WB9YSD.

After about 12 hours of constant handling of traffic from Barneveld, Net Control Station W9JZ asked Joe Imilkowski, W9CWD, if the amateurs wanted relief. Joe said, "We can hang in there for a while . . . the adrenaline is flowing."

When the call came from Red Cross for our help, WB9YSD was off and running, with no time to change clothes. He arrived in the area with summer-type garb, and found it cold there in the early morning darkness and dampness. But in light of what had happened just a few hours before, minor, indeed.

Arriving shortly after were Joe W9CWD, who also brought a generator, and Kevin Kolpitcke, WB9YHB. All three spent about 12 hours with Red Cross crews, surveying the area, and helping Red Cross make initial determination of damage and their response to the disaster.

Jim Peterson, KA9KUA (left), and Susan Miller of American Red Cross Disaster Services, assist with communications following the tornado that leveled Barneveld. ***(Photo taken in Red Cross shelter in Barneveld, by Jim Romelfanger, K9ZZ)***

Barneveld was leveled. but severe damage also occurred in the Black Earth area, where our communications were needed and used. Amateur Radio also gave heavy support to the Red Cross shelter in Dodgeville, and the food preparation area in Mount Horeb, not far from the remains of Barneveld.

(On Sunday, 10 June, Red Cross had already served more than 2,700 meals, both to victims and to volunteer workers.)

The Net Control Station at the Red Cross Headquarters was W9JZ, the call sign of the Four Lakes ARC in Madison, and it was manned at all times during Amateur Radio's part in our communications for the Red Cross.

Some of the operators there were: Jim Anderson, N9AGH; Gari Berloit, K9PBV; Dave Birdsall, N9BYK; Doug Smith, W9WI; Cliff Lawson, W9ZI; Frank Holliday, WB9NOV; Joel Kupferberg, N9CPW; Peter Byfield, K9VAL; Dick Burton, N9BAF; Stephanie Fassnacht, KA9HCJ; and Fred Haring, KF9U. W9JZ was first activated by Dave Birdsall, N9BYK.

Operations were moved from 34/94 Madison to 28/88 Baraboo, and all operations were conducted on that circuit. Both 34/94 and 28/88 are owned and operated by the Central Wisconsin Repeater Association, whose address is P.O. Box 802, Madison, WI 53701. The president of the Madison Area Repeater Association — Clyde Downing, W9HSY, generously offered use of the MARA 16/76 and 75/15 machines in Madison. MARA's address is P.O. Box 3403, Madison, WI 53704.

Circuit discipline during all of this was nothing short of excellent. 28/88 is a wide-range machine, to say the least, but very little was heard on that repeater at any time except for emergency work between Madison, Barneveld, and other areas that needed communications, including severe damage in the Black Earth area, and with shelters and feeding areas in Mount Horeb and Dodgeville.

Those who followed the tried and true ARRL advice of maintaining silence in an emergency unless called provided a great a service, as did those who were helping Red Cross.

A few items . . .

• The Sunday Morning Swap Net, held on Sunday morning at 10:00 and usually NCS'ed by John LaBlonde, W9FZC, or Russ WA9EKG, was cancelled to permit continuing use of 28/88 for our emergency traffic work. Thanks!

• The CWRA 34/94 machine, located in Madison, and the repeater initially used for this work, worked well, but was marginal into Barneveld, so nearly all work was done on 28/88. Thank heaven for CWRA's excellent and extremely dependable machines! CWRA gets a gold star . . . and lots of gratitude for making these machine available.

Thanks to Clyde W9HSY for making MARA's repeaters available, too . . . another gold star!

Dane County EC N9AGH had words of praise, especially for those operators who were immediately available, at 3:00 a.m., to answer Red Cross' call.

"The cooperation on 28/88 was excellent . . . Only a very few (who weren't aware of the disaster communications in progress) who started a QSO just moved off. We had no hassle . . . absolutely no hassle. — N9AGH.

And finally . . . these words, at about 3:00 p.m. on D-Day (Disaster Day — Friday, 08 June), from a conversation between two American Red Cross officials, between Madison Red Cross and the disaster site in Barneveld, talking briefly about Amateur Radio operators and their facilities:

"This has been a Godsend . . . Without these guys, we'd have been in bad shape."

A disaster of the worst possible kind, and it brought out the very best in volunteer help . . . and the finest Amateur Radio communications work this editor has ever heard. □

The Barneveld State Bank, established 1896. The vault and safety deposit boxes did survive intact.

..... DON'T FORGET .....

INCLUDE FIRST AND LAST NAMES with call signs.

The Legal Forum — Part I

Norm Brooks, K6FO

What would be better than having an attorney give you free advice? Getting free advice from four of them! That's what a full-house group of about 200 amateurs received at the Legal Forum at the Pacific Division ARRL Convention, Santa Clara, California, on Saturday, 01 September 1984.

. The forum was moderated by Rod Stafford, KB6ZV, Section Manager Santa Clara Section ARRL, who is also a practicing attorney. Other attorneys on the panel were Steve Stevens, KD6BS; Kip Edwards, W6SZN, Vice Director Pacific Division, ARRL; and Chris Imlay, N3AKD, Legal Counsel ARRL, Washington, D.C.

Compensation

Are there any circumstances under which an Amateur Radio operator can accept anything of value for his services as an Amateur Radio operator?

This question was posed to Steve Stevens. He replied that the one exception is the one established for W1AW. If there is a regularly scheduled transmission, say code practice, the operator may be compensated during the sending of that scheduled code practice. Otherwise, an amateur cannot accept any kind of direct or indirect compensation for the use of his Amateur Radio equipment or his radio license.

When we talk about direct compensation, we mean no one can give you money for the use of your license or equipment, for sending a message to someone's son overseas or what have you. Indirect compensation is a little more subtle. You may be performing a service for, say, the Red Cross or some other organization, and they bring you a sandwich or feed you a meal by virtue of the fact that you are there. This would be, in fact, indirect compensation for the use of your radio equipment or your radio license.

Before you refuse to accept that sandwich the next time you work for the Red Cross, read Chris Imlay's answer to a question posed by an amateur who worked on the AT&T Olympic Torch Relay:

"The receipt of compensation depends on what the compensation was received for. As Steve appropriately said, if the compensation is for providing communications, using your Amateur Radio and your amateur license, that is prohibited by the rules. If the compensation is for something related but not directly or indirectly providing the communications, then you get into a matter of construction.

"If you're providing your time and your services to an endeavor that includes but is not limited to amateur communications, and you can legitimately say that anything received is provided for the purpose of not compensating you but to enable you to provide these services, and because you're there and doing something in addition to providing those services, then you've got every right to receive that reimbursement or whatever it is.

"It's a close one, but if AT&T worked it out with the FCC, who are we to question it?"

What if a club — on a yearly basis — works a particular event, and it just so happens that 60 days after the event, the organization donates something to the club treasury? Steve responded that that would still be considered compensation. The only reason the club got the donation is because you utilized your equipment and license for the benefit of the organization.

Is there any way the radio club can protect itself by a letter or something? Steve answered, "I don't know of any; my advice is don't do it."

Business communications

Kip Edwards was dealt the subject of business communications. What are legal business communications that could be handled on Amateur Radio? A: There are no easy answers.

Let's start with what the law says. Part 97 defines business communications as any transmission or communication, the purpose of which is to facilitate regular business or commercial affairs of any party. Any party doesn't mean just the two people who are communicating; it could be a third party whose commercial affairs are being furthered. It doesn't matter who that other party is. It can be an individual, a corporation, a charitable organization — it doesn't really matter.

How do you draw the line? A little over a year ago, the Commission staff issued a statement that was supposed to clarify the situation. The order basically says that amateurs can continue to provide communications or participate in the routine events of traditional public service activities. We do it all the time. We provide communications for marathons, walkathons, parades, etc. The import of the clarification was that amateurs can continue to do these traditional public service items.

There are tougher problems — things heard daily on 2 meters. These are non-public service communications. It's quite clear that you wouldn't use 2 meters to call up your broker and ask him to buy some stock for you. One situation that attracts a lot of attention is "using the autopatch to order a pizza." Whose business affairs are being furthered by such a call? Perhaps the FCC doesn't do anything about such calls, but it's probably because of how low on the totem pole we are when it comes to enforcement of FCC rules.

Rod Stafford, KB6ZV, Section Manager, Santa Clara Valley Section, ARRL, moderated the Legal Forum at the Pacific Division Convention in Santa Clara, 01 September 1984.

You may hear someone say on the repeater that jobs are available at the company he works for. I don't think this is the sort of thing that anyone will get excited about. On the other hand, when two amateurs get on the air and conduct business for themselves or their employers, that's another matter.

Then there are the so-called swap shops. There was a discussion several months ago in 'Washington Mail Box' in QST, about the kinds of things that could be said. This would be prohibited: "I'll deliver your transceiver as soon as I get your check." Very parallel to this is "list my TS-120 for $400." Once a week, the list of all the equipment available is read, including the price. Literally it is business communications, but I can't believe that is the kind of thing the Commission is going to get excited about.

Chris Imlay added his thoughts. "The on-the-air swap shop brings up the question if this the kind of thing we want to use amateur frequencies for. If your club wants to do it, it's best to do it the way they do it on the East Coast. List the equipment this way: I have such and such for sale. If you're interested, call me at (telephone number), or better yet, find me in the club directory, and discuss it off of the air. It's not the kind of thing intended in 97.1 of the rules, but it's not the kind of thing you'll get cited for."

Ron Stafford asked for an opinion whether Amateur Radio support of the Democratic National Convention was a valid public service event. Steve Stevens gave this answer.

"If you read the Amateur rules, you find we can provide emergency communications, enhance good will, provide for public service. In the field of public service, there are a lot of activities I do not consider to be public service, such as at the Democratic National Convention, using Amateur Radio to conduct a taxi service. Some amateurs were tee-ed off while their favorite repeater was tied up for several days for a public service that was just a taxi service for the Democratic National Convention.

"If it were helping the city with traffic control during the Convention, it would be OK. Now that you have conducted a taxi service for one, do you do it for all? The Republicans, the KKK? How about the Communist party?

"There's another problem. The Hatch Act. It prohibits federal employees from engaging in political activities. There is a big question whether an employee of the Post Office, say, could engage in such Amateur Radio activity for a political party without violation of the Hatch Act.

"In a lot of these activities, it would be better to use CB radio rather than Amateur Radio. The CB bands were designed for this kind of public service activity that borders on commercial. However, I know some of you would have problems in engaging in CB activities."

Rule making procedures

Currently, there are two petitions for rule making, RM 4829 and RM 4831, having to do with taking away some amateur privileges in the 220 MHz band. They were filed by Land Mobile Communications Council, and Sideband Technology, Inc., respectively. These two entities provide land mobile communications in different contexts, and are always on the lookout for more radio frequencies. They have had their eye on the 220 MHz band for a long, long time.

There was a recent study by the office of Science and Technology of the FCC suggesting that the 220 MHz band is under-utilized. They took that as a signal to the effect that the Commission would entertain a proposal to reallocate the frequencies. They had their high-priced lawyers file petitions pointing out how the frequencies would be perfect for their use, without taking into account the pre-

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'Spread word' about Education Net

Emil Bruner, KH6HHM

"This is KH6NF . . . McKinley High School Amateur Radio station . . . Honolulu, Hawaii . . . establishing the Education Net at 2000Z. Do we have any schools, teachers or students on frequency to check in?"

This is the call from Hawaii on 10 meters (28.520 MHz) every Monday, Wednesday and Friday, 2000Z until 2130Z.

W5AC — Texas A&M; W6YL — San Jose State University; W1MX — M.I.T.; W9YB — Purdue University; W4DFU — University of Florida; W8SH — Michigan State University; WB6HJJ — Fontana High School (Fontana, California); WA7PZW — Mazama High School (Klamath Falls, Oregon).

These are just a few call signs and schools that are part of the Education Net. Schools that are perhaps seen and heard of in the sports arena and for their academic achievements, but schools that the students of McKinley would not have thought possible to talk directly with just a few years ago.

Thanks to the majority of the hams we contact and help they give us by making phone calls to local schools, making announcements in their club bulletins, and passing information about our operation to club stations, teachers and students they contact in their hamming, the Education Net is going strong as it passes the midpoint of its fourth year of operation. Each year has seen an increase in the number of participants as the word about the Education Net has spread to schools with club stations, and to the home stations of teachers and students of all ages.

Years ago, the student operators of McKinley's Amateur Radio station were lucky to talk with one ham their age a month, but now the majority of contacts are with high school and college students.

Going back through our logbooks from 1966. the year McKinley's Amateur Radio station was equipped with new Collins "S-Line", to 1978, perhaps 25 schools had been contacted. Now it's possible to talk with 25 different schools within a month.

During our first year of net operation, we had little idea of the number of schools operating club stations. We did some research and discovered over 1,000 schools within the United States had club stations, and Canada had several hundred also. This only included schools with Amateur Radio stations registered to them, and we realized that there was an unknown number of schools operating under a trustee, since the FCC no longer issued any new club calls.

We also realized there would never be any means of knowing how many high school and college-age amateurs were operating home stations. It seemed to the students at McKinley that we would be in business for a long time if we concentrated on the young amateurs of North America.

McKinley's Amateur Radio station is unique in a number of ways. We are, at present, the most active station in the school system in Hawaii. We are located in Honolulu, on the campus of the oldest public high school on the island of Oahu, within sight of Diamond Head and only a few miles from Pearl Harbor. Our student population — numbering 2,500 — would rival the United Nations with the background of its students, who come from all parts of Asia: Japan, China, Korea, Viet Nam, Laos, the South Pacific Islands, Samoa, Philippines; as well as parts of the mainland United States and, of course, Hawaii.

The station is part of the electronics program at MHS. All phases of electronics — from the Basic Electronics class to the Computer-Tech class — utilize the Amateur Radio station to further develop the knowledge of practical electronics.

Yik Shan (Andrew) Chang, WH6AVJ, on the mike, with Simon Leon assisting with the paperwork, are trying their hand with the Educational Net. Their equipment is the Collins "S" Line and TH6DXX 6-element beam atop the electronics building on McKinley High School campus.

We use an Apple computer with the station to keep a log of our Education Net contacts, as well as a search program that has our current list of high school and college club stations. With a punch of a key we can have a list of schools from any state or city in the United States or Canada. We have the same system for the school club stations in Japan, Australia, New Zealand and the South Pacific Islands, as we hope to expand our operation in the future. This provides us with a means of getting the most out of time we are on the air with the Education Net.

CW, RTTY and SSTV via Apple is being considered for future use, as we gain more student operators. Satellite operation is also being considered for schools with the facilities of working OSCAR-10.

This school year, we had the excitement of a possible contact with the shuttle and W5LFL. The club members and the students of MHS all got involved, from making and installing the antenna system to using the Apple computer to assist in tracking it as the shuttle passed the Islands.

We were unsuccessful in making a QSO, but no one had the privilege of doing so in Hawaii. This was a disappointment to the students after all their hard work.

Perhaps in the future, the shuttle will carry a beacon to give the MHS students and others tracking the shuttle the feeling of success, knowing they are doing it correctly. It's very frustrating to never hear a sound as the shuttle passes time after time, as I'm sure many hams experienced. However, even without the success of a QSO with W5LFL, everyone learned from their activities and felt that the effort was worthwhile.

We have a number of students currently studying for their Novice exams, as well as several in the process of upgrading their licenses. Our club membership varies from year to year, as might be expected with all the activity the students have in which to participate in a school the size of McKinley.

Although Hawaii is "Paradise", being located in the middle of the Pacific has the disadvantage of not being able to contact the different high school and college club stations with ease. Band conditions aside, our biggest problem is the time difference. Being five hours behind the East Coast makes QSO's between schools difficult, as their school day is ending just about the time McKinley's school day is beginning. The two hours from the West Coast poses fewer problems, and we have been quite successful with the schools in California, Oregon, Washington and British Columbia in Canada.

The rigid schedule within the school system is also part of the difficulty in making contact between schools. The time of operating for most schools (below college level) is before and after school, and lunchtime. With the colleges and universities, it is easier, as the students have more free time to operate the club station, but will vary from school to school, student to student, as the requirements of the school year or semester change, assignments to be completed, or the need to study for finals approach. All of the college students we talk with seem very responsible and provide a model role for the high school students to follow.

To continue our success with the Education Net, we would like to enlist the help of all amateurs. As you know, it's difficult to spread the word to all club stations, the teachers, and the new amateurs as they obtain their licenses. Thus, as you operate your home station, or come into contact with anyone who might be interested in our operation, please inform them about the Education Net operating from McKinley High School in Hawaii.

Should the 10-meter band lose propagation as predicted, the Education Net will operate from 15 meters (21.420 MHz), with 20 meters (14.320 MHz) being our alternate frequency.

From the students of McKinley High School in Hawaii, we say . . . "Mahalo & Aloha." □

Please see page 9

DX Forum

(continued from page 1)

Each year thereafter the League updated the list, and the list grew. The principle remains even to today. When someone asks "What is a country?", the real answer is, "Whatever the ARRL says it is!" If you don't believe that, look at Okino-Torishima. Some years ago, that was made a country because the General Manager of the League said it was a DX-CC country.

So, the first countries lists were not based on carefully written criteria, but based on an idea that Clinton B. DeSoto had, and it was accepted by the amateurs and it worked. Everyone was happy with it.

The first listings of names and call signs in **QST** only required 75 countries. A few years later, the ARRL established the DXCC Award, and Frank Lucas, W8CRA — later W3CRA, received the first award. There were five awards the first month, November 1937.

Amateur Radio in the United States was shut down during WWII. When the amateurs were allowed on the air again 15 November 1945, the DX'ers all started again with a slate wiped clean. (There are now some people who believe it is time to wipe the slate clean again!)

In 1945, a new countries list was published. How did a country get on the list? No change. It was a country if the League HQ staff decided it belonged there. They did, however, ask the DX experts in the field for input to help put together the new countries list. The first post-war list was published in February 1946, and it had 257 countries on it.

As time went on, there became more and more interest as to what constitutes a country. The whole process became formalized. The League reviewed the countrie list and tried to come up with a set of crit ria to fit the existing countries. It's sort of a backwards approach! People now lool at the anomalies and ask, where did tha come from? Isn't that a funny rule! It's because the rules were made after the list was prepared, having been made on arbitrary decisions under different circumstances.

Briefly summarized, if a piece of land fits one of these four points, it is a candidate for a new country under present criteria:

- a unique or distinct government (e.g., United Nations).
- separation by water if sufficiently isolated (e.g., Hawaii).
- separation by foreign land (e.g., Alaska).
- unadministered areas.

The question-and-answer session that followed covered such questions as

Q: Why is Antarctica only one country?

A: I don't know. It may be because there is an international treaty that no country will claim Antarctica as its own.

Q: Why are all the Russian satellites separate countries?

A: The USSR has always maintained that Estonia, Latvia, etc. are separate countries in a loose federation of the USSR. They are separate countries in the United Nations, too. The two Germanys were recognized as separate countries only after they signed a peace treaty recognizing each other as separate countries.

Yasme Foundation

Lloyd and Iris Colvin, W6KG and W6QL, were next on the program. They told us of the Yasme Foundation.

Yasme started in 1954 when a young Britisher named Danny Wiell built a little boat and told his friends he was going around the world in it. At that time, he was not a ham. He got as far as the American Virgin Islands and met Dick Spencely, KV4AA. Dick talked Danny into becoming an amateur operator.

From left to right: Bob Thompson, K6SSJ; Iris (W6QL) and Lloyd (W6KG) Colvin, at the DX Forum, ARRL Convention in Santa Clara, 01 September.

Danny was the first person in the world to start out, month after month, on a DX-pedition. Before that, DXpeditions were only weekend affairs. Dick Spencely was the driving force behind Danny's efforts. Dick, too, set records. He is the only Amateur Radio operator to be listed in the Guiness Book of Records. About two years before he recently passed away, KV4AA worked almost 50,000 QSO's in a year.

Speaking of records, at one time, Lloyd was the first person in the world to get the Worked All Prefix award, and was one of the early ones to get the WAZ (Worked All Zones) award. Lloyd and Iris have the largest QSL card collection in the world, approximately a half million QSL's, which is a world record. It took both of them together to accomplish this lifetime record. They have made approximately a million QSO's.

The Yasme Foundation has founded more DXpeditions than any other organization. Somewhere from 130 to 140 have been sponsored by Yasme.

Four islands

Lloyd and Iris then showed slides taken on their recent trip in which they visited 13 countries in South America between October 1983 and April 1984. They selected slides from their visits to four islands — San Andres HK0; Galapagos HC8: Easter CE0; and Robinson Crusoe CE0. The slides were of the Colvins' usual superior quality, which kept the rapt attention of all. They not only showed the radio operations, along with transportation problems, but also introduced us to the amateurs living on the islands, the geography, history, flora and fauna. It was an educational travelogue.

Finland and Russia

Bob Thompson, K6SSJ, was asked by popular acclaim to tell of his trip to Finland and Russia. He had just returned two weeks earlier.

He flew to Finland and visited with DXer's there before going on to Leningrad. His tour was arranged by a travel agency in Finland. Christie, their Finnish guide, was related to OH2BM.

Bob and his wife first went by bus to Leningrad, and did not have a guide with them. They spent three days in Leningrad. They visited a lot of places with Intourist, plus a lot of places on their own. Nobody followed them anywhere, and no one acted suspiciously toward them, in spite of friends' predictions to the contrary. The most important place they visited in Leningrad was the Hamitage, a huge place originally built by Peter the Great. The place is very large. They spent six hours there and didn't see it all. They were amazed to see pictures by Michelangelo, Rembrandt and other famous artists.

Before going to Leningrad, Bob was given the telephone number of a Russian amateur to look up. But he was cautioned "Don't call him from your hotel; you could get him in trouble." Once in Leningrad, and having some free time, Bob walked about five miles from his hotel and called the amateur from a coin box. Bob didn't know exactly where he was, and enlisted the aid of a passing Russian to tell the amateur on the telephone where Bob was. The amateur then said, "Go back to your hotel, and call me on the telephone!" That's what Bob did. The amateur came by cab and met Bob at the hotel. They returned by cab to his place and talked until 2:00 in the morning.

Bob saw both old and new rigs built by the amateur. Both were very nicely made and seemed to work well. The Russians' big problem is getting parts to build things. All of the fellows around there build their own equipment.

Bob and his wife flew from Leningrad to Moscow, about an hour-and-a-half trip by air. When they deplaned, Christie met them and led them to their hotel. The arrangements were that all their expenses were paid from the time they left Helsinki to the time they got back. All meals, all hotels, all taxicabs — all everything.

At Moscow, Valery UA6HZ came to meet them. Valery had met Bob before, in California, when he and his wife came through the United States on a Russian

tour. Valery came all the way from the Ukraine, and brought along Urey UA3HR and his wife, who also had an amateur call. The visit was on a Sunday, and although they drove all over Moscow, things were closed. L.V. Sharapov, UA3DR, an engineer from one of the Moscow television stations, was also along. They were all extremely hospitable, and showed Bob anything he wanted to see. The only limitation was the fact that things were closed on Sunday.

The Finns and the Russians do not exactly see eye to eye. Finnish TV is seen in Estonia. So when the Finns learn about the shortage of any consumer product in Russia, they make it a point to emphasize that product in their TV commercials. The Russians counteract that by saying that the Finns don't really have it either, that it's just a lot of propaganda.

The Finns treated the Thompsons like royalty. When Martti OH2BH was here in the United States, one of his sons was born at home. So Martti made Bob the child's godfather, and Bob and his wife had been looking forward to getting over there to see the little fellow.

Martti took command of the visit in Finland and had a schedule set-up that was timed to the minute. When Bob and his wife got off the plane at Helsinki, they went directly to the Venezuelan Ambassador's house, YV5AMH. He was with the radio group that went to Aland Island during the big contest. There were about 30 club members involved, and they had Bob involved in the presentation of 30 plaques.

Bob was the moderator of the DX Forum. He had to cut his story of the visit to Finland and Russia short because he ran out of time. □

Micro-AMTOR

Very interesting info re his station, written by Colin Richards, 9M2CR, Malaysia.

RTTY has established its claim to the upper end of the CW portion of most HF bands. Newcomers to the mode may have been puzzled by the curious chirp-chirp-chirp at the lower edge of the RTTY sector — a chirp that doesn't bear much resemblance to the readily recognizable "jingle bells" of RTTY. It's a second cousin — AMTOR, the acronym for amateur microprocessor over radio.

AMTOR is an error-detecting system which operates between two stations which are locked in sync. The message, when typed, goes into a buffer which then sends three characters at a time in error-detecting code. The receiving station checks this group for mutilation, then promptly sends back "OK" or "Repeat". It is this two-way "handshake" signal which results in the characteristic chirp-chirp twice a second.

The astonishing achievement of AMTOR is that it produces a spectacular improvement in accuracy over ordinary RTTY. These results can be achieved with tiny transmitter power. Undismayed by QRM or QSB, the AMTOR link will continue to turn out perfect copy, even when the emerging signal is virtually inaudible. It is no exaggeration to claim that AMTOR represents a quantum leap forward in Amateur Radio.

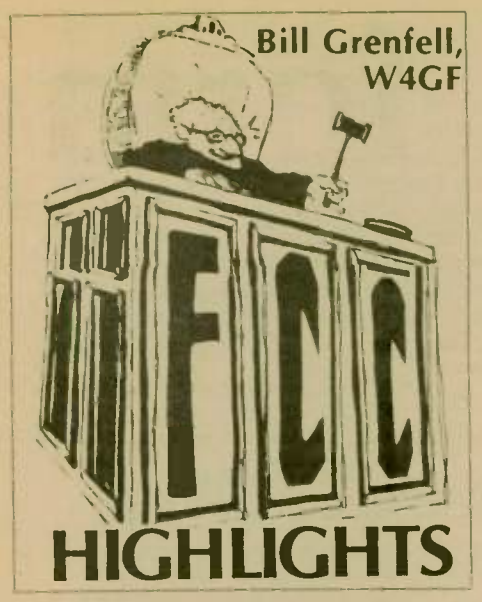
Credit for the amateur version must be given to Peter Martinez, G3PLX, who first produced a workable computer program — then the design for a small dedicated mpu board — and later the elegant AMT-1 which houses both the mpu and a terminal unit. The AMT-1 requires to be fed only with ASCII at 75 or 110 bands, and away it goes in transmit and receive. The string-LED tuning indicator is clocked to show clean-spot Mark and Space, and as a bonus, the AMT-1 will send and receive normal RTTY, and will send — but not receive — CW.

The final "micro" touch at 9M2CR was achieved by using an NEC PC-8201 personal computer as keyboard and display. The PC-8201 is the latest piece of magic to appear from NEC in Tokyo. Running on four penlight batteries, it can house up to 64K or RAM, run BASIC, and serve as terminal in TELCOM mode.

The standard RS232C port can be set with the required parameters for the AMT-1 by keying in a code, which stays in the memory even after shut-off. Eight lines of 40 characters come up with a crisp, clean image on the 8" × 2" LCD display panel. An image contrast control provides added refinement. There are ports for printer, cassette recorder, CRT and disc drives for those who want to spread.

Added facilities appear to be a built-in Word Processor Program and a "Music" mode — all in a 10" × 12" package. With the tiny TS-120V putting out its 10 watts max., the system spans the world. It's truly micro-magic! Thanks to Peter and our JA friends! — BARTG

—*Canadian Amateur Radio Teletype Group* □



Sideband Technology, Inc. (STI) has petitioned the FCC for "reallocation of 6 MHz of the 216-222 MHz band to the private land mobile radio services for narrowband systems using 5 kHz channeling." FCC identifies the petition as RM-4831.

STI referred to a National Telecommunications and Information Administration draft report (NTIA-TR-81-85) statement that "a spectrum resource assessment of the 216-225 MHz band points out that generally, the . . . band is not extensively used throughout the United States."

The ARRL Letter (08/16/84) advises that the NTIA report states "the Amateur Service is the heaviest user of the 220-225 MHz band." STI recommends: "The spectrum 220-222 MHz be dedicated to 5 kHz narrowband channels.", and proposes "The narrow band techniques would share this band with the Amateur Service."

In last month's 'Highlights', I reported on the Land Mobile Communications Council's RM-4829 petition, which included the statement that ". . . the band 220-225 MHz may prove to be valuable for future land mobile operations." Several individuals and Amateur organizations are filing objections on both petitions with the FCC.

On 08/28/84, the FCC released an order dismissing a petition filed by a Corpus Christi amateur to allow Novice licensees to use voice emissions from 223.40 to 223.75 MHz.

Petitioner Mark W. Earle reasoned that this would allow more Novice operator participation in disaster and civil defense communications activities since most such communications are carried out on VHF-FM.

Dismissing the petition as premature FCC's Private Radio Bureau Chief stated that "The spectrum requirements for the 220-225 MHz band are currently undefined." He referred to the frequency allocations resulting from the World Administrative Conference (WARC), Geneva, 1979 and the fact ". . . that both the FCC and the National Telecommunications and Information Agency (NTIA) are studying possible uses of the 216-225 MHz spectrum. Thus, it is not appropriate to consider petitions which could have a major impact on the 220 MHz band until these matters have been resolved."

•

The amateur station license and operator licenses of Calvin C. Plageman, WD6DSV, were ordered revoked and suspended for one year for willfully or maliciously interfering with communications of other amateur stations (via WB6WLV/R).

This action was taken by a Summary Decision of Administrative Law Judge Thomas J. Kilpatrick, effective September 1984. "In the event exceptions are not filed within 30 days of the release of this Summary Decision and the Commission does not review the case on its own motion, this Summary Decision is to become effective 50 days after its public release . . ." (31 July 1984).

Plageman admitted his interference was willful but argued it was not malicious. The rule 97.125 prohibits willful *or* malicious interference. "The revocation of the license of station WD6DSV is expressly without prejudice to Plageman's refiling of an application after expiration of the one-year period following revocation."

•

The ARRL has asked the FCC to "exercise federal preemptive authority over state and local zoning regulations which affect transmitters and antennas used by Amateur Radio operators." On 16 July 1984, the ARRL filed a Request for Issuance of Declaratory Ruling on this matter. The League "seeks a declaratory ruling preempting all local ordinances which provably preclude or significantly inhibit effective, reliable amateur communications, and which are not clearly necessary to insure the safety of a proposed antenna installation."

The FCC's "Private Radio Bureau seeks comments on this filing. Parties wishing to file formal comment on the issues raised therein should do so by filing an original and four copies with the Secretary, Federal Communications Commission, 1919 M St. NW, Washington, D.C. 20554, on or before 09 November 1984.

Reply comments may be filed on or before 14 December 1984. Comments and reply comments should refer to the following number: PRB-1."

•

Legislation which would add willful or malicious interference as one of the list of criminal offenses in the Communications Act, may be introduced in Congress by Congressman Jim Bates of California.

•

"Jamming" other amateur station transmissions and cheating on an amateur examination can bring loss of license and "You can say goodbye to Amateur Radio" FCC Private Radio Bureau Chief Robert Foosaner advised during his speech at the recent ARRL National Convention.

Citing the case of Gary Kerr, ex-WA6JIY, who lost his license for jamming and who hasn't paid his $2,000 fine, Foosaner observed that ". . . if he doesn't shape up he's going to be looking at you from behind bars." (*Westlink Report*, 08/10/84).

•

"The arrival of the Olympic flame in Los Angeles on 20 July was marred by an unsportsmanlike attempt to destroy communications by premeditated, though unsuccessful, malicious interference. As one ham put it, '. . . it appeared as though the jammers had rehearsed their performance well in advance.' ".

Having been forewarned, the caravan amateur communication group used a contingency plan which ". . . paid off handsomely, with the jamming attempt having no discernible impact on amateur communications for the run." (*Westlink Report*, 08/10/84)

•

Harold Claypoole has been placed on three years probation by the U.S. Distict Court ". . . on condition that he cease violating radio regulations and not speak over the air on any radio equipment without prior approval of the FCC."

Formerly N6BII, Claypoole has a history of deliberate and malicious interference dating back to 1961.

•

"On 06 July this year, David Saks, WD4SHP, pleaded guilty to a reduced charge of using Amateur Radio to transmit 'obscene, indecent and profane language'. The original charge had been a felony.

"Saks will not be sentenced until a presentencing report is submitted to the judge in the case for review." (**Worldradio**, September 1984).

•

Effective 12 September 1984, amateur stations operating between 420 and 450 MHz, running over 50 watts PEP output, and located within 124 miles of Warner Robins Air Force Base, Georgia and Goodfellow AFB in Texas are required to coordinate their operations in advance with the FCC District Engineer-In-Charge and with Military Area Frequency Coordinator. FCC Amateur rule section 97.61(b)(7) has been appropriately amended.

•

The common emergency frequency allocated for intercommunication in, or within 50 nautical miles of, Alaska by amateur and most other classes of HF stations in Alaska has been changed from 4383.8 kHz to 5167.5 kHz. Sections 97.61 and 97.107 of the Amateur Rules have been modified to include the following conditions:

"The frequency 5167.5 kHz, maximum power 150 watts, may be used by any station authorized under this part to communicate with any other station authorized in the State of Alaska for emergency communications. All stations operating on this frequency must be located in or within 50 nautical miles of the State of Alaska. The frequency 5167.5 kHz may be used by licensees in the Alaska-private fixed service for calling and listening, but only for establishing communication before switching to another frequency."

No airborne operations will be permitted on this frequency, and only SSB is authorized.

•

The FCC has recently rejected a petition requesting establishment of a "no-code" amateur operator license. In his 08/02/84 Order, FCC Private Radio Bureau Chief Robert Foosaner referred to the Commission's PR Docket No. 83-28 proceeding in which it " . . . considered the actual usage of Morse code in all bands. The slow-speed Morse code requirement for entry into the Amateur Radio Service was found not to constitute a significant barrier to potential applicants."

•

A petition has been filed with the FCC to permit persons failing an amateur operator license examination element to be re-examined on that same element within seven days instead of the present 30-day wait. It is identified as RM-4835, and was received on 07/23/84 from Phil Miller, KB8QX, of Charleston, West Virginia.

•

FCC's Gettysburg, Pennsylvania licensing division has commended all the current VEC's on the way they are handling their paperwork. Two groups were credited with submitting perfect paperwork that required no additional follow-up by the Gettysburg FCC staff. (*Westlink Report*, 08/24/84)

Amateur Radio call signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of 01 September 1984.

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

Radio District	Group A	Group B	Group C	Group D
	Am. Extra	Advanced	Tech./Gen.	Novice
0	NG0T	KD0RY	N0FRY	KA0TLQ
1	KW1O	KB1OR	N1DFH	KA1MCI
2	NG2L	KD2IH	N2FCJ	KA2VXA
3	KT3Y	KC3OU	N3EBO	KA3NDU
4	AA4EQ	KI4RP	N4KSM	KB4LKY
5	NS5A	KE5RH	N5HGF	KA5UOA
6	WC6M	KG6KU	N6LBE	KB6GJB
7	NJ7N	KD7ZZ	N7GOT	KA7TTP
8	NJ8S	KD8TT	N8FZQ	KA8VIT
9	NB9T	KD9KK	N9ETA	KA9SKY
N. Mariana Is.	AH0D	AH0AC	KH0AG	WH0AAG
Guam	AH2T	AH2BA	KH2BO	WH2AEE
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6U	AH6FM	NH6BS	WH6BAS
Kure Is.			KH7AA	
American Samoa	AH8B	AH8AB	KH8AD	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAB
Alaska		AL7GC	NL7EE	WL7BEM
Virgin Is.	KP2L	KP2AT	NP2BE	WP2ADZ
Puerto Rico	WP4D	KP4HW	NP4KV	WP4DQY

James W. Smith, W6VCE, has been granted a hearing before an FCC Administrative Law Judge to review the license revocation decision against him.

"The FCC took action against Smith after one of its engineers observed W6VCE operating in violation of regulations 97.84(a) and 97.123 (identification), 97.113 (broadcasting), 97.115 (music) and 97.125 (interference). Smith was given 30 days from the date of original service to request a hearing on the matter."

He did, and the date for the proceeding was established as 03 October 1984 in San Diego, California. *(Westlink Report,* 08/24/84).

•

Richard A. Burton, formerly licensee of amateur station WB6JAC, "... was released from federal prison the week of 07 August, after serving six months of an 18-month term for operating an unlicensed amateur station." (*Westlink Report,* 08/24/84) The Order of revocation and suspension of Burton's amateur station and operator licenses became effective in September of 1981.

This action was based upon Burton's operation in December 1980 in violation of the following amateur rule Sections: 97.84(a) (station identification requirements); 97.85(d) one-way communications); 97.85(e) (station control); 97.91 (one-way communications); 97.113 (broadcasting prohibited); 97.125 (malicious interference) and 97.119 (transmission of obscene, indecent or profane words, language or meaning). □

Correction

In the September 'FCC Highlights', second column, fifth paragraph, two words were deleted. The paragraph should have read:

An arrangement to permit the exchange of third-party communications between Amateur Radio stations in Belize and United States Amateur Radio stations became effective 22 June 1984. □

Pass it on ... WORLDRADIO

ARRL reacts to FCC proposal

The FCC has proposed to reallocate half of the 160-meter band (1900-2000 kHz) to non-government radiolocation because of an anticipated expansion of the AM Broadcast Band that would force certain radiolocation stations to move.

Although the 11 September release of Docket 84-874 came as a surprise to the Amateur Radio community, the ARRL's reaction was swift. The ARRL was prepared to file a motion on 14 September to hold this NPRM in abeyence pending the resolution of an ARRL petition filed 10 September.

Ironically, the day before this NPRM was released, the ARRL filed a Petition for Initiation of Inquiry Procedure on the present use of the medium-frequency bands by non-government radiolocation users.

The purpose of this inquiry is twofold: first, to define the spectrum requirements of individual users, and second, to find the number of radiolocation stations needed in a given geographical area.

The League requests that the Commission take a look at the spectrum efficiency and the technical need for the use of the 1900-2000 kHz band by non-government radiolocation users.

As we go to press Thursday morning, we have no indication of the course the FCC will follow in this case, which is beginning to look like the bureaucratic equivalent of a soap opera. We'll keep you updated via this letter and W1AW bulletins.

— *The ARRL Letter* □

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Youths excited about Radio

Mary Duffield, WA6KFA

The Amateur Radio club at Del Mar School in Santa Cruz, California was the communications net for the First National Youth Congress in history, 23-24 June.

Along with several other sponsoring groups, the clubs invited 300 delegates from all over the United States to formulate a Youth Party Platform, for both the Republican and Democratic conventions. This was actually in response to a request from both the Democrats and the Republicans to make a videotape of what responsible youth are doing these days.

"We plan to demonstrate how the new technology frees people up, so they do not have to put their bodies always where they want their ideas," said Craig Richardson, Redwood Youth Foundation Director, one of the organizations sponsoring the Congress.

Many youths, ages 12 to 22, responded to the invitation by Santa Cruz students in different ways. Some flew from North Carolina, Virginia, Washington, Arizona, and many other locales in the United States. One 13-year-old from Amsterdam heard of the event by a computer bulletin board and wanted to come and see if such a national scene would be suitable in Holland. Many who could not find the time or funds to fly were well-represented by sending videotapes or audiotapes of their ideas and those of their schoolmates.

Youth Platform ideas were videotaped and delivered to the Democratic and Republican conventions by Congressman George Miller, Chairman of the House Select Committee on Children and Youth.

Throughout the Congress, many young Amateur Radio operators from Del Mar School and University of California, Santa Cruz networked the world from five boats in Santa Cruz harbor.

"We plan to access amateur satellites by means of the state-of-the-art antenna donated to Del Mar School's radio station by KLM Company," said Jeff Creed.

John Bettencourt fills in the anxious hours awaiting his new Novice license by helping Jeff Creed, KB6AQA, ready a sail on board one of the sailboats the Del Mar School Novices used on Field Day. ***(Efren photo)***

We decided we would host the young congressmen and women on Field Day. We operated ecologically, using strictly wind and solar power and QRP, all through that weekend.

"We hope all the youths participating and listening to our 8th grade hams will catch the contagion of taking responsibility for themselves and their community and their world," commented Keith Sugar, a veteran Planetary Citizen sailor, now an international law student at San Francisco State.

Del Mar Novices who have just received their tickets include: teacher Gary Frederick, KE6EZL; Ricky Martinez, KB6EFV; Rich Lochner, KB6EFU; Dean Shivers, KB6EDD; Gina Keating, KB6EDB; Nell Regan, KB6ENL; Tracy Mesch, KB6EDE; Jeff Creed, KB6AQA; Jennifer Johnson, KB6EDA; Nellie Bawden, KB6EDG; Blue Terronez, KB6ECZ; Mark Locatelli, KB6EDC; and Monte Pruitt, KB6BNJ. Three others are still awaiting their licenses.

Two powerful motivations to advance to the Technician and General Class have been given the class: a state-of-the-art satellite antenna donated by KLM, and a Yaesu 2-meter base station by Ben Deovlet, WB6FDU. (The antenna, with 14dB gain, is so new we are awaiting the manual to assemble it.) Ben has also put a "like new" Collins 75A-4 in mint operating condition and given it to us.

Gene Piety, KH6PP, supervised our QRP Field Day operations; Lloyd Cabral, AA6T, has tutored us in DX competition.

To help us log the times carefully, Earl Duncan, KE6RU, gave us his world clock, a keyer and a 15-meter antenna, so now we can run two stations at the school.

Of course, there's a lot of loving tender

Santa Cruz 8th graders, newly licensed, persuade Santa Cruz Mayor John Laird to proclaim 19-24 June "Listen to Youth Week." From left to right: Gina Keating, KB6EDB; Nellie Bawden, KB6EDG; Cecilia Gulardo (still waiting for call sign); Jennifer Johnson, KB6EDA; Mayor John Laird; Nell Regan, KB6ENL; John Bettencourt (awaiting call); and Jeff Creed, KB6AQA. ***(Efren photo)***

care required by gear handled by so many hot young hands, so Phil Hensley, W6OYO, and Bob Wieland, KE6OH, resurrect the rigs. Sailor Terry Parks, now awaiting his ham license, parlays some of his fine wines into donations for us.

Bob Wieland, KE6OH, and Jack Meehan, N6FJK, keep our tormented rigs in running order. Traffic handling is taught by Phil Maslin, N6GKE, while Susan Tracy, W6OCV, our local Emergency Coordinator, shares emergency operating tips. Consequently, the new amateurs have pledged to serve in emergencies.

Indicative of their heartfelt appreciation of this student learning and career empowerment, the entire faculty and school board have authorized an elective in Amateur Radio. We, in turn, thank **Worldradio** for their ample recognition of our young amateurs and their infusion of fresh energy into Amateur Radio. □

VIP hams assist U.S. Forest Service

Grant Storey, W6NTK

The Sierra National Forest of California had high fire danger this past summer due to a lack of normal rainfall last winter and very high temperatures this summer. Due to federal funding cutbacks, the number of available personnel on the local Bass Lake Ranger Station has been reduced. The District consists of 96,000 acres and is adjacent to Yosemite National Park.

Because of the Democratic National Convention in San Francisco and the Olympic games in Los Angeles, thousands of additional visitors from out of state have visited Yosemite National Park and the surrounding area. The additional exposure, coupled with the high fire danger and reduced fire patrol personnel, has given cause for concern.

As a member of the VIP (Volunteers in Prevention) Program, Grant Storey, W6NTK, was approached by the Fire Prevention Technician, Nick Nixon, asking if it was possible for the local radio amateurs to give some assistance with patrolling on the back roads, issuing campfire permits and making sure no campers started illegal fires. Also, that they properly extinguished their campfires before leaving their campsites.

The 30-some members of the Mountain Amateur Radio Club of eastern Madera County at Oakhurst, California, gladly accepted this challenge, and we were soon into the program every weekend. Training and equipment and supplies were provided by the Forest Service; they have been very responsive to our needs and requests.

We have set up a "staging area" at Goat Meadow, just below the South Entrance of Yosemite National Park, where we accept the overnight campers who have been unable to gain admittance into the Park. We also use this area as a "command center."

The USDA, Forest Service has issued us one of their radio units, whereby we

(*please turn to page 41*)

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ARRL Forum

(continued from page 1)

220 MHz band, because we share the band with the U.S. Navy, whose radar is the primary user of the band. NTIA would probably prefer to have amateurs as secondary users of the band, because we are a better disciplined secondary user than CB or land mobile users.

A member made the observation that the ARRL doesn't seem as concerned about public service as it should be. He asked President Price if he received this comment from other sections of the country. Price responded that you take the question and substitute DX or RTTY or anything else in place of public service. It seems every group of the specialties which make up Amateur Radio has a tendency to feel that not enough attention is given the activity in which they are primarily interested. He said, I understand what you're saying, and I want to assure everyone here that public service activities are very high on the priorities of things that are good things to do, things that the League supports.

A Life Member said he feels "gypped" because the League established a new publication, **QEX**, and that he would have to pay to subscribe to it. He feels the information is the kind that should be in **QST**. Price explained the policy of establishing a separate publication was addressed by the Board of Directors.

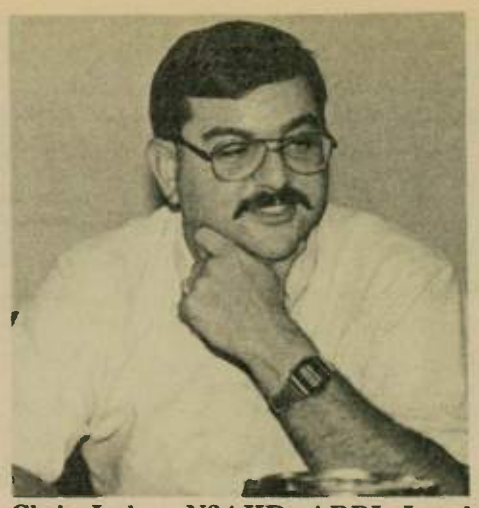
The Board thought specialty newsletters were a great idea, as long as they approached self-sufficiency. We gave some attention to the very question you raised, he said. The content of the newsletters reaches a more limited audience and **QST**, by its nature, provides material that is broader in scope and more general in nature. The specialty newsletter also allows an author to expose his ideas for comment without polishing them to the form necessary for publication in **QST**. **QEX** is a medium of exchange between experimenters, allowing them to act as catalysts to each other.

Paul Rinaldo, W4RI, League Technical Manager, was called out of the audience for comments. When a technical article comes in, they first decide if it is acceptable at all. If it is acceptable, they decide if it should be published in **QST** or **QEX**. **QST** space is limited to 35 or 40 pages, and we have a wide audience that we have to cater to, he explained.

We have the absolute beginner who is saying there aren't enough beginner's articles, so this year we run two beginner's articles each issue. We also put in construction articles and high tech articles. This doesn't leave much room for the experimenter, as such.

Very often, the experimenter is looking at one aspect of Amateur Radio — perhaps a narrow field. We believe **QEX** is reaching this kind of person and that it is doing its basic job. The questioner admitted that the League officials had answered his question, "but it doesn't make me happy."

When is the Emergency Communication Manual coming out? It has been promised for years now. Stevens said from the last bit of information he had, Mike Riley has written the book and it is being edited right now. In the next six to eight weeks at the latest, we should be seeing the first published copies.



Chris Imlay, N3AKD, ARRL Legal Counsel

How can we best help Perry Williams, the ARRL legislative advocate, in his work in Washington? The biggest thing you can do is to be a source of intelligence for him. Tell him of members of Congress who may be disposed in favor of Amateur Radio. Identify those Washington representatives who have amateurs as members of their family, those who have personal knowledge about Amateur Radio, etc. There are hundreds of members of Congress, and they change a lot.

It is difficult to ferret out radio amateurs who will be sources of contact. The League needs eyes and ears who can advise us of what's happening, before it happens, so there are no surprises.

What is Larry Price, the new ARRL president, going to try to do? He responded, "I'll start by telling what I perceive to be the role of the president."

"The function of the Board of Directors is to set policy and not to involve themselves in the day-to-day operation of the League headquarters. That's why we hired a General Manager. The General Manager is there every day; the Board is in formal session twice a year. The League's Executive Committee, which has the same power as the Board, is normally in session only four times a year.

"I see my job as seeing that the Board's policy is executed by the General Manager and League headquarters. If there's a question of Board policy, it is my responsibility to interpret that policy. I am in fairly frequent contact with the General Manager — that means daily.

"I have a facsimile system on which we can exchange documents between my office, the General Manager's office, Chris Imlay's office and the FCC. We subscribe to an electronic mail system, and traffic flows on this fairly heavily. I don't look at every little thing that is done, but I try to look at big picture items that impact policy.

"I am aware of changes you want, and one of those will be forthcoming soon — that's a change in **QST**. This may take place in the November 1984 issue. I won't spoil the surprise by telling you about it here. There should be a 'new look' to part of the editorial content of **QST**. Look for it — I believe you will like it.

"One of Amateur Radio's problems is to encourage youth to join. From the FCC data base, the typical radio amateur today is a white male about 49 years of age. From previous demographic studies, we find that in three years calendar time, the Amateur Radio population aged about two-and-a-half years. What is needed is an effective effort to recruit youth into Amateur Radio. You can be sure we will start such an activity. If you have any ideas along this line, we'd be glad to hear from you."

The Forum concluded with Chris Imlay giving a summary of Amateur Radio legal actions. These have been covered in more detail in the companion article, "Legal Forum." □

How to know when you're an old-timer

You finally reach the top of the DX ladder to find it leaning against the wrong wall.

You sit in a rocking chair at the operating desk and can't get it going.

Young squirts begin to look middle-aged.

The first thing you look at in **QST** is "Silent Keys".

Your favorite part of **QST** is "50 years and 25 years ago."

You know all the answers on how to work DX, but nobody asks you the questions.

When climbing the tower, your knees buckle more than your safety belt.

You walk with your head held high, trying to get used to your tri-focals.

The little grey-haired lady you help across the street is your wife.

— Hal Godfrey, N6AN □

David May, KA7STL

9-year-old General

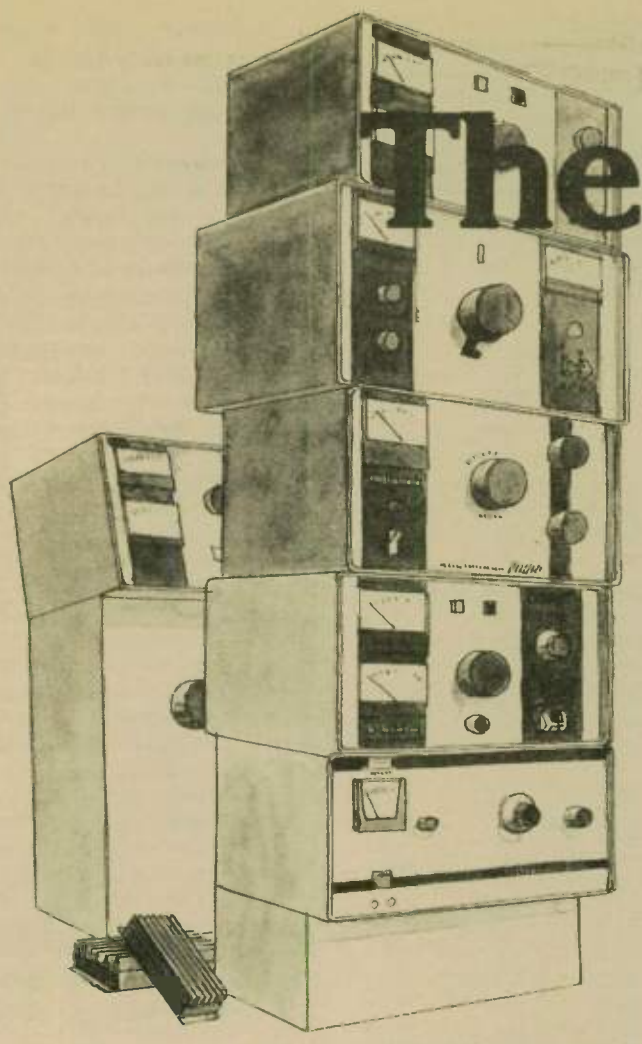
On 10 July 1984, David May, age 9, passed his 13 wpm code test with the FCC in Salt Lake City, Utah. He was the only one who passed out of the group of two children and 21 adults taking the exam. David is now a General Class licensee, but kept his Novice call: KA7STL.

David is the son of Walder (KA7STK) and Carolyn May. Walt KA7STK says his son sends CW, usually 40 meters, as "good and smooth as a good piano player!"

The Mays use a Kenwood T-599 transmitter and Collins R-388-URR (military) receiver, along with a 40-meter dipole.

— Information submitted by Walt May, KA7STK □

The HENRY REPORT...



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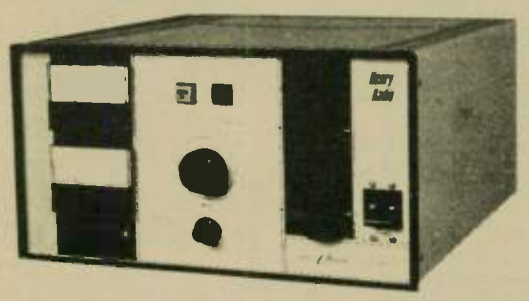

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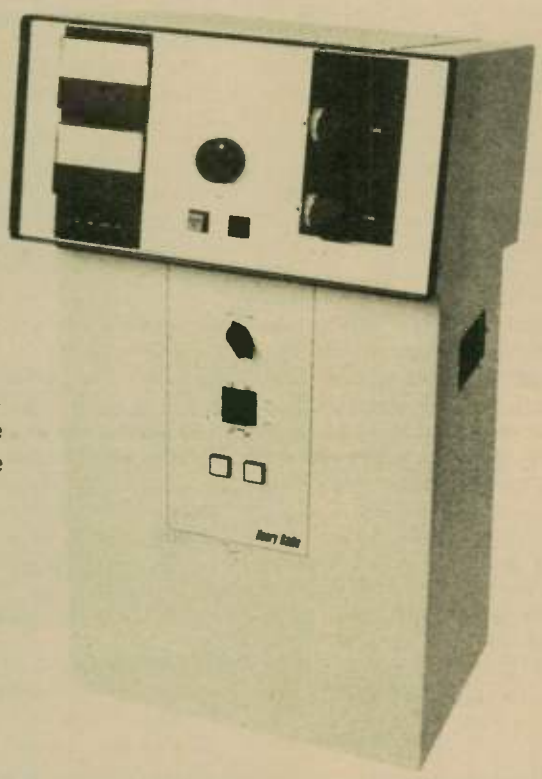
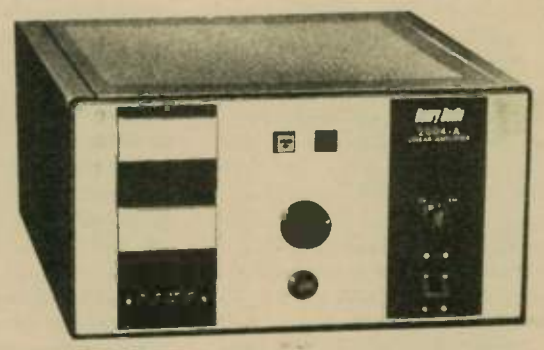


2002-A...a bright new rework of our popular 2002 2 meter amplifier. Uses the new Eimac 3CX800A7. The RF chassis uses a 1/4 wave length strip line design for extreme reliability. It provides 2000 watts input for SSB and 1000 watts input for CW. Because this tube is rated at an unheard of 15dB gain, only about 25 watts drive is required for full output.



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

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

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

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CW comes to the rescue again

Leona Wallace, WA6OHB

The folks on *Zubenubi* are notorious for practically never monitoring the radio, so I was astonished on the morning of 29 April to find Barbara running emergency traffic between *Firehorse II* and the boats in La Paz harbor (Baja California, Mexico).

It turns out *Firehorse II* had had contact with *Kontika* in La Paz in the early evening. *Kontika* continued to keep radio watch since *Firehorse II* was heading for La Paz. The crew on *Zubenubi* returned from a get-together on another boat, heard some of the conversation, so also started to monitor.

That Saturday night was similar to the second night of our crossing from the Mexican mainland — pitch black due to complete cloud cover, high wind and black, angry seas. The wind was northerly and *Firehorse II* had been set 25 miles south of where they thought they were. (Our heavy wind was southerly and we had been set north.) Visibility was very limited.

Dave, on *Firehorse II*, thought he was turning into San Lorenzo channel about 11:00. The lights looked right — well, almost. One was missing, but it was easy to surmise that it might not have been functioning. The DR position put them at the San Lorenzo channel, but when Dave turned, instead of going down the channel, he drove the boat into the beach in Bahia La Ventana.

Even though they realized no one could come to their aid very soon, they put out a Mayday on the VHF. The psychological lift of hearing another human voice was tremendous, and knowing someone knew what had happened to them was as comforting as anything could be at that time.

Dave made several futile attempts to land an anchor with the dinghy, but just could not get through the surf. Finally he draped the chain over his shoulders and waded through the surf, carrying the anchor. That weight helped him keep on his feet. Later, during the rescue attempt, people wondered how he ever had the strength to set those two anchors in that fashion. (With enough adrenalin flowing, one can perform superhuman feats.) He kedged the boat around so she was bow to the waves.

Meanwhile, Nancy and Karl off *Kontika* had contacted the owners of a powerboat, *Blue Dolphin*, and had collected some long, stout line and powered out to *Firehorse's* position. Nancy and Karl were aboard *Blue Dolphin*.

The owners of that vessel advised *Firehorse* that only one attempt would be made. So anxious to get it over with were they, that towing was begun before Dave had gotten back on board from positioning the line. The boat had only started to move when the towing line caught on a rock, pulled the boat around with her cab to the waves, then literally exploded! *Blue Dolphin* radioed "Well, the line broke, so cheerio." and off they went! Back in La Paz, they extracted $300 from Karl and Nancy for the effort. All they had succeeded in doing was to move the stricken vessel right into the surf line. Before long, the windows broke out, and glass and salt water were everywhere.

At that point, the family — Dave, Sandy, Kathy and Philip Delano and their guest, Lynn — got off onto the beach with some difficulty. Sandy insisted that Dave lie down and cover himself with a sail they had salvaged. He had been awake for 25 hours.

Philip got a ride into La Paz with a Mexican, so he was able to direct Craig Junger, K7EXJ, off *Kibitka* and his wife, Sue KA7ENF, when they drove their camper out to the site for use as a command post. The plan was to use the Baja net frequency, 7.235 kHz, to communicate with La Paz MM/2 stations to relay requests for material needed and give progress reports.

Part-way out to the site, Craig discovered the camper had been broken into and the mike to his Argonaut radio stolen. The first several hours, his communications were all on CW. The signals were made by the use of his tuning switch. That was a good demonstration of the usefulness of CW. (In an emergency, that may be all you have.)

One of the first things Craig asked for was a mike. *Malaga* decided to just send her back-up radio, a Kenwood TS-120S.

The first two days, the La Paz contact was Lee Leonhard, W6NPQ, of *Mar y Vent*. He would relay the traffic to Barbara Smith on *Zubenubi*, or Russ on *Maverick*, who relieved her. They would then arrange for the trucks, storage space, food, supplies, or whatever was needed at the site.

There was a great outpouring of help from all the yachties and the people of La Paz. A Mexican shrimper anchored near the site and gave the workers a big bucket of hot, fresh cooked shrimp with sauce. You can imagine how good that tasted to the people who had been working hard out there in that salt spray and fresh air!

About 4:00 p.m. on Sunday, *Esperanza Viva*, the big powerboat that was so much help to us the night we almost lost our mast (July **Worldradio**, page 1), reached the site. John off *Ariel* and Marc off *Free Bird* tied all the small line they could find together to use in feeding the towing line out. They used sailboards to help them swim back and forth, getting the line positioned. Those little lines kept breaking. It would have taken three guys on the board with paddles to have carried the big line through that surf. The first two tries were unsuccessful. It got dark by the time they were ready for the third attempt, so there was no use in trying again.

The next day they radioed into town and bought 600 feet of 1/4" polypropeline. They tied that to the tow line, and that didn't break. As the tow line went out, they tied on a life jacket or anything that floated, every 50 feet or so. Even then, it still got hooked under the rocks in a few places. By that day, the water had calmed down quite a bit.

When the big hole in the side of the hull was discovered, Dave realized the only thing that would be accomplished by pulling her off at that point would be to sink her for sure. The decision was made to abandon her. All the gear and fittings were removed from the boat, including the masts.

Len on *Endless Summer* did a wonderful job of getting the masts off with no heavy equipment of any kind. There was not a scratch on them; even the wind indicator on the top was not bent.

Chris Schleifer, a local businessman with the VHF handle of "Gaviota", furnished the trucks and cars to haul people and goods and masts. He ended up buying the salvage and is in the process of repairing the boat.

Such an outpouring of caring that continued the whole week of rescue and salvage activities is very heartwarming to all of us cruisers. People gave their labor, supplies, food — anything that was needed seemed to be forthcoming.

John Worth, who has an electronics shop in La Paz, gave the use of the yard and a small building on his property to store the stuff taken off *Firehorse II*. He went over each piece of electronic equipment and made sure it was all working. This is the second time this year he has befriended a yacht in trouble.

Some of the things taken off *Wings*, that went around in Ceralvo Channel in January, are still there. Wistfully John said, "I hope there are no more shipwrecks for a while. I'm running out of room."

Alberto Morphy at NOA Yachts stored some things on his property also — the masts, bow pulpit, and all the miscellaneous stuff from the last load in from the beach.

Barbara and Diane off *Zubenubi* spent most of a day at John Worth's drying all the wet stuff as it came in and putting in neatly in the storage building.

Dave on *Firehorse II* says it's impossible to name all the people who helped, but they very much appreciate it all.

Dave Beckman, N6HSU, took the La Paz operator position Tuesday. Carl Wallace, K6YEO, on *Malaga* did it 02 May. By the end of that day, all the gear and people were back in La Paz, so the radio watch was ended. The insurance adjuster, who turned out to be Howard Munson, N6ANT, was here on 03 May. He stayed several days getting everything ironed out.

Now, a month later, Dave and Sandy Delano off *Firehorse II* are the owners of a 22 ft. Winnebago. They are going to drive to the East Coast and look for another boat to be *Firehorse III*. □

Frank Kibbish Jr., WB6MRQ, enjoying a softball game while "working" at the Fireman's Olympics. *(N6HMO photo)*

Something new at the Fireman's Olympics

Randy Miltier, N6HMO

The 1984 California Fireman's Olympics were held 26-31 August and were hosted by Santa Clara firefighters. These Olympics have been occurring since 1972, alternating between Southern and Northern California, featuring 17 events with over 2,500 participants from fire departments throughout California. However, the 1984 Olympics had something a little different . . . Amateur Radio!

The idea came from Randy Miltier, N6HMO, who is also a member of the Santa Clara Fire Department. After attending an Olympic Committee meeting and hearing of the communications problems that occurred in 1982, Amateur Radio seemed like a natural. In 1982, Santa Clara firefighters hosted the Olympic

games for the first time and tried using CB and fire department radios to cover the events, some of which were over 50 miles away over mountainous terrain.

Randy contacted Bill Robinson, WB6OML, who is an Emergency Coordinator for the Silicon Valley Emergency Communications System (SVECS), and asked if Amateur Radio operators were available to help the firefighters with their communications. Of course, Amateur Radio operators love this sort of thing, so the wheels were turning immediately. Bill WB6OML contacted Don DeGroot, KA6TGE, SVECS Emergency Coordinator for Santa Clara, and told him of the upcoming challenge.

Weeks prior to the firefighter Olympics, WB6OML and KA6TGE ran QST's over several 2-meter nets in the area, soliciting for volunteers to work four-hour shifts, anywhere from 6:00 a.m. to 7:00 p.m., Sunday through Friday. The toughest slots to fill were from 8:00 a.m. to 5:00 p.m., as most amateurs must support their hobby by working. However, the challenge was met as 50 radio amateurs from three counties volunteered their time and resources to help support the Olympic games.

During the six-day period amateurs worked 412 hours, and another 50 hours went into planning and scheduling for a total of 462 hours! Don KA6TGE put in over 48 hours as Olympic Control at the Marriott Hotel in Santa Clara with short relief help from Bob K6DHO and Randy N6HMO. Lou James, WB6BPU, acted as a backup to Olympic Control from his home, in case KA6TGE got tied up on one rig while someone was trying to call him on the other rig. Two rigs were used: a Kenwood TR9000 to work the "out-of-town" events and an Azden PCS 3000 to work the local events. The SVECS repeater, WB6ADZ, at 146.715, was used for Olympic Control.

The "mutual aid" between amateurs of the various jurisdictions and counties to cover the events that were out of town went very well. Bill WB6OML said, "Even when I was wrong, my colleagues made it right! I called Len Ivarson, WA6SDA, at Livermore to handle the motocross, which turned out to be out of his territory. He took the initiative to contact Bill Van Voorhis, WA6ZFZ (Contra Costa County ARES/RACES), who picked up the ball and got the job done.

"I've heard of inter-territory friction, but I sure didn't find any here. When I called Roy Engehausen, AA4RE, for help from Gilroy, he lined me up with Ed KA6FXW, who said, 'How many, when and where?' Susan Tracy, WA6OCV, said she'd see what she could do at Santa Cruz. The Santa Cruz ARES not only staffed the surfing event, but they spent the day chasing the event up and down the coast as the wave patterns changed!

All these groups responded on short notice to events that were subject to last-minute changes. This operation crossed both territorial and section lines without a ripple. The visiting firefighters and dignitaries were impressed . . . and so was I!"

The Amateur Radio operators did their job and did it well. The firefighters, from local and distant fire departments, were impressed by our skill and knowledge in communication. I'm sure Amateur Radio will stick in the minds of many of the firefighters who participated in the 1984 California Fireman's Olympics. In fact, Amateur Radio may become a regular event in the Olympic Games. □

East side, west side, ...

Jerry Murphy, K8YUW

Once upon a time, there was a town that had no fire department. The town had grown to the point that a fire department was a real requirement, and there were funds in the bank that would pay for all the equipment they needed. The citizens of the town would have to volunteer their time as firemen. Enough of the town people supported this plan, so funds were spent on two of the very best steamer pumps, and two of the very best horses to pull them. Stables on the east and west sides of the town were provided as firehouses.

The volunteers on the west side polished the pumper every day and kept it in the very best condition. The horse was groomed every day and had the very best of care. The horse was taken for a walk every day through all the streets of the town, and he eventually knew his way up and down every street on his side of town. A drill was held every day so that when the horse would hear the bell ring, he would automatically leave his stall and stand in front of the pumper, ready for the hitches. The volunteers trained on a regular basis, and could handle any fire that happened on their side of town. They visited all the citizens and convinced them to be safer with fire hazards.

Meanwhile, the horse on the east side of town rarely left his stall and had no idea what a bell sounded like. The pumper was rarely polished, and eventually rusted in place. Some of the volunteers had never been to the stable and never attended the infrequent drills. They had uniforms and called themselves volunteer firemen, but had never been to a real fire. In time, the citizens on that side of town forgot they even had fire protection, because they rarely saw the firemen.

One day there was a terrible lightning storm that started fires on both the east and west sides of town. The citizens on one side of town were not pleased with the results; which side of town do you suppose that was? □

Rev. Fred Taylor (left), pastor of First Free Will Baptist Church in Toledo, Ohio, and Rev. Lyle Root, WA8DEO, associate pastor, test out the church's new Amateur Radio station. ***(Blade photo)***

Church uses AR for ministry

Lee Steele

What may be Toledo, Ohio's only Amateur Radio station operating out of a church went on the air in January, at First Free Will Baptist Church, assisted by an ecumenical group of supporters and technicians.

WA8DEO Gos-Pal Missionary Station, operating on 1,200 watts, expects to operate on a regular schedule.

The station is used to contact missionaries around the world as an outreach ministry of the church, the Rev. Fred Taylor, pastor, said.

Where agreements exist for third-party traffic, the station will make communication possible for the person overseas through phone-patching. The caller to the church station can be patched from the station, via telephone, to family and friends.

The congregation has a $500 annual budget for domestic or overseas telephone calls.

'Country Parson' radio show

The church's associate pastor, Lyle Root, WA8DEO, a licensed Amateur operator for the last 20 years and a retired

(please turn to page 44)

Robert Taylor, W8CBA, helped Rev. Lyle Root, WA8DEO, wire the church radio station.

Goldwater

(continued from page 1)

terference is created by intentionally transmitting on a channel when another station is already using it. At other times, whistles, tapes, records or other types of obnoxious noises are transmitted for the sole purpose of interrupting or preventing other uses of the frequency.

All too often, this type of interference can be heard on amateur, citizens band, marine and other frequencies. But that is not all. This type of interference is appearing on frequencies used by private land mobile services, public safety services such as police and fire departments, and government communications networks such as those of the Federal Aviation Administration and the Department of Defense.

The increase in willful interference to authorized communications simply must be stopped in order to ensure the reliability of the authorized public interest and safety uses of the radio spectrum.

The purposes of this bill are to clarify that such activities are absolutely prohibited, to provide mechanisms by which such interference can be stopped in a timely fashion, and to authorize significant penalties for such behavior.

If this proves insufficient, I am prepared to introduce even tougher legislation to further increase the penalties for violation and include, for example, mandatory disqualification of those convicted from being licensees in the future. But I sincerely hope and expect that the provisions of this bill will be sufficient to significantly reduce, if not eliminate, this type of interference.

Section 303(m)(1)(E) of the Communications Act prohibits FCC licensees from causing willful or malicious interference. The FCC also has promulgated regulations which specifically prohibit willful or malicious interference by commercial, amateur, and citizens band radio operators (47 C.F.R. §§ 13.69, 95.413(a)(3), 97.125 [1982]).

The language of this bill tracks that of these provisions and is, I think, clear. Willful or malicious interference includes the type of interference to which I have just referred and which is illustrated by the following FCC decisions, which are based upon the above regulations.

First. Transmissions, including those of unmodulated carriers, recorded material, music and threats, made directly over the ongoing transmissions of other operators, *Harold R. Claypoole,* 95 FCC 2d 331 (1983).

Second. Long, continuous transmissions of computer voice synthesized audio signal or ticking clock on a frequency known by defendant to be that used as a repeater input frequency without monitoring the repeater output frequency to determine whether others were using it, without regard to requests that a different frequency be used for defendant's "tests," and transmissions initiated when others were on the frequency, *Henry C. Armstrong, III,* 92 FCC 2d 485 (1983).

Third. Initiation of transmissions when others were already using the frequency, including changes in frequency which coincided with changes made by parties attempting to evade the interference, *Kenneth L. Gilbert,* 92 FCC 2d 126 (1982).

Fourth. Whistling on frequency for long period of time for jamming purposes, *Donald E. Miller,* 69 FCC 2d 1740 (1978).

These cases illustrate examples of the type of purposeful interference which this bill prohibits. By citing them, I do not intend to limit the definition of the bill's terms to the activities described in these examples, but rather, to explain the type of behavior to which the bill is addressed

The term "radio communication" as used in this bill is intended to be liberally construed within the definition presently set forth at section 153(b) of the Communicatons Act. The term there is defined and I intend it to encompass all signals. The bill's prohibition applies to interference with any authorized use of the radio spectrum, including noncommunicative uses, such as authorized radar signals. "Signals" and "communication" are not to be narrowly construed as they have in State court cases such as *People v. Faude,* 388 N.Y.S. 2d 562 (1976) and *People v. Moore,* 401 N.Y.S. 2d 440 (1978).

Interferenece not directly caused by transmission on the frequency of interference, using normal bandwidths for the service at issue, is not addressed by this bill. For example, some stereo-amplifiers, television sets and telephones suffer interference when they are near an operating radio transmitter. More often than not the problem is caused by the improper design of the equipment experiencing the interference.

The Senate addressed this issue in 1982 when it approved section 108 of Public Law 97-259, which authorizes the FCC to establish minimum performance standards for home electronic equipment and systems to reduce their susceptibility to radiofrequency energy.

This bill is not addressed to the same problem, nor are its provisions to be construed as applying to interference caused by susceptibility of equipment to radiofrequency energy. In such cases, the interference problem is not caused by or solvable at the transmitter.

This bill applies solely to purposeful interference on the frequency caused to be radiated by the violator. Such radiation may include that of the fundamental, harmonic or other frequencies.

This bill is desirable because the present law is not comprehensive or clear. Although section 303(m)(1)(E) of the Communications Act appears to prohibit willful or malicious interference, it may apply only to FCC licensees and only authorize suspension of an operator's license. Such interference is also prohibited by article 18 of the International Radio Regulations Treaty, annexed to the International Telecommunications Convention, which the United States just ratified in its latest version last October.

Barry Goldwater, K7UGA

Therefore, my introduction of this bill is not to be interpreted as evidence that such activities are not now prohibited under both domestic and international law. The purpose of this bill simply is to clarify and strengthen the applicable law because even a little uncertainty inhibits the desirable protective effect of a clear prohibition.

Section 1362 of title 18 of the United States Code prohibits interference with facilities owned or operated by the United States. It is my intention that this bill also apply in any case of willful or malicious interference with the communications of government facilities.

Often, FCC assistance is requested to investigate such interference. This bill would provide a stronger basis for the Commission to investigate such incidents and seek prosecution by the U.S. attorney based upon violation of both the Criminal Code and the Communications Act.

Mr. President, I think that enactment of this bill also would substantially assist the Commission in curtailing willful and malicious interference by elevating such activity to a criminal offense pursuant to section 501 of the Communications Act. This section provides for both a fine of up to $10,000 and imprisonment for up to one year for a first offense and the same fine and up to two years imprisonment for repeated offenses.

Presently, section 502 — which makes violations of the Commission's regulations or treaty provisions a crime — only provides a maximum penalty of $500 and no imprisonment. Thus amending the act to statutorily prohibit willful or malicious interference substantially increases the penalties for such actions. It also allows the Commission to initially seek immediate criminal prosecution of such violations by the U.S. attorney without the necessity of first completing administrative proceedings.

Section 1 of the bill is merely a technical amendment to correct a section number of the Communications Act. It would renumber one of two identically-numbered sections passed two years ago.

Section 3 of the bill provides a mechanism for ending willful or malicious interference in extreme cases. The length and complexity of administrative and judicial proceedings all too often have not provided an adequate and timely remedy for immediately ending specific instances of serious malicious interference. The FCC tells me that too often a perpetrator continues causing interference even while proceedings are in progress.

Therefore, section 3 of the bill authorizes the FCC to seize equipment, the use of which is capable of causing the subject willful and malicious interference in those cases where the owner or operator, having received written notice that the equipment appears to be operated in a manner which violates proposed section 333 and is requested to cease from the objectionable acts, fails to comply with such request and the subject interference continues.

The bill ties in with provisions of the existing law which mandate that a search warrant be obtained by proper judicial process before any seizure can occur, even in these extremely flagrant situations.

This bill accomplishes this purpose by amending section 510 of the Communications Act, which was enacted by section 125 of Public Law 97-259 in 1982. As explained in the conference report on that law, section 510 presently authorizes the Attorney General to seize and retain radio equipment used in violation of section 301 or section 302a of the act, which principally deal with unlicensed operation of equipment and equipment that because of its construction may cause or result in interference.

This bill extends section 510 authority to seizure of equipment used for transmitting willful or malicious interference when reasonably necessary to prevent continuance of the interference. This authority is limited to ensure that the seizure

authority is used only in those flagrant cases where the operator refuses, after specific notice is given, to cooperate in ceasing actions which are causing interference.

Section 510 was passed in 1982 because the Commission had reportedly encountered situations where notwithstanding conviction or judgment against an individual for violating the act, the court returned the equipment to the defendant although the equipment failed to meet FCC mandatory standards or the defendant was not licensed to use it. Section 510 was designed to prevent its continued operation in violation of the act.

The purpose of this proposed amendment is the same, to prevent interference and illegal operation, but it applies where the equipment complies with FCC regulatory requirements and the operator is licensed to use it in a legal fashion, but instead, the operator persists in using it to cause malicious or willful interference in violation of the act, after having received notice of the detected violation.

And, Mr. President, I would repeat that in all cases subsections 510(b)-(d) require warrants to be properly obtained and served by law enforcement officers upon a judgment rendered in the U.S. district court having jurisdiction over the property.

The amendment to section 510 is intended to include within its scope only the actual equipment used to cause the interference or functionally similar thereto. For example, where the station used to violate proposed section 333 consists of a separate transmitter, receiver and power supply, only the transmitter is subject to seizure where the other two devices by themselves are not capable of emitting the objectionable signal.

Other devices commonly connected to the transmitter, such as computers, antennae, power meters and scopes are also excluded, unless it is incidental radiation from any of these devices which is actually causing the interference.

A transceiver with built-in power supply, on the other hand, would be seized because the power supply and receiver are included with the transmitter in one unit. Transmitting amplifiers are also subject to seizure if used or useable to create the alleged interference because they emit radiation, even though they must be driven by a transmitter.

The intent of the amendment proposed to section 510(a) is to authorize seizure of any equipment capable of emitting the interference alleged to violate proposed section 333. Thus, if a person is formally accused by the Commission of interfering with the operations of a repeater station, and the interference continues after the person has been notified of the apparent violation of proposed section 333 and is requested to cease causing such interference, and refuses to cease such operation, all equipment capable of being used to transmit on the frequency upon which the interference has occurred may be seized upon compliance with the procedural requirements of section 510.

Lastly, Mr. President, let me say that I hope that word of this legislation, and its passage, will be sufficient to convince those that engage in these objectionable activities to cease doing so. Otherwise I expect the FCC to use these provisions aggressively to eliminate the increasing number of willful or malicious interference problems which are seriously impairing effective communications.

The FCC has informed me that this amendment would not have a significant impact on present or projected Commission budgetary requirements.

Mr. President, I ask unanimous consent that the bill be printed in the Record.

There being no objection, the bill was ordered to be printed in the Record, as follows:

S. 2975

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

Sec. 1. Section 331 of the Communications Act of 1934 as enacted by section 120 of Public Law 97-259 is redesignated as section 332.

Sec. 2 Part I of title III of the Communications Act of 1934 as amended by sec. 1, is amended by adding at the end thereof the following new section:

"WILLFUL OR MALICIOUS INTERFERENCE

"Sec. 333. No person shall willfully or maliciously interfere with or cause interference to any radio communication."

Sec. 3, Section 501(a) of the Communications Act is amended by inserting "(1)" before the word "Any" and adding at the end thereof a new subsection "(2)" as follows:

"(2) Any electronic, electromagnetic, radio frequency, or other device or component thereof within the control of any person accused of violating section 333 of this Act or rules prescribed thereunder, and capable of emitting the radiation alleged to violate such section or rules, may, after written notice or an alleged violation, be seized by the United States when there exists reasonable belief that seizure is necessary to prevent continued willful or malicious interference to any radio communications.

"Such equipment is subject to forfeiture to the United States if the operator of such equipment is determined to have violated section 333.

"For purposes of this subsection, 'reasonable belief' shall be deemed to exist in, but not limited to, instances where continued interference is caused by use of the same or similar equipment by any person after that person has received written notice from the Commission alleging violation of section 333 and requesting that the person cease the actions alleged to constitute violation of such section until a final determination is made." □

Reply to Minshew

Harry Minshew, W6ZOW, in his letter appearing on page 12 of the September issue of **Worldradio**, says he has been in Amateur Radio from the spark days on and apparently has an intense dislike of CW operation. All of which makes one wonder how he got into Amateur Radio in the first place.

He asks to be convinced why "there's something psychological about demonstrating code proficiency that results in a better quality and more dedicated Amateur Radio operator." After all these years he has been in Amateur Radio, he should know that the skilled CW individual is a "radio operator." All others are micro-electronic gadget operators.

He really falls in over his head when talking about extreme emergency conditions, advising that it would be easier to find gadget operators than radio operators.

War is certainly in the class of extreme emergency conditions, and I suppose the "no-coders" would report for military service in the signal corps with their computers, modems, interface, keyboard and a sack full of software strapped to their backs. And I would suggest that W6ZOW, if he has not already done so, read the letter — also on page 12 of the September issue of **Worldradio** — captioned "Military does need CW operators."

EARL LINDER, W9DZG
Lombard, Illinois □

ATTN: Novices and Technicians

In re: Kansas ham wins Roundup award", page 33, September Worldradio

At my age (54), I am old in years, but very young in Amateur Radio. I would certainly encourage *all* Novices and Technicians to participate in the Novice Roundup. I find it disappointing that so many newly licensed amateurs elect to bypass this contest.

To have a contest that gives you the opportunity to operate 30 hours over a nine-day period seems well-suited for almost everybody to operate at some time or another.

FRANK GUNJA, N0FMR
Kansas City, Kansas □

He misses those old- time dials

Radio tuning dials really used to have character. I'll never forget my old Hallicrafter SX-28 with its beautifully lighted main tuning and bandspread tuning dials. And then there was the National NC-180 with its big beautiful slide rule dial.

There was something about these dials that gave me confidence. I always knew approximately what portion of the band I was in, and how many inches I could move up or down without going out of band. The bands were marked right on the dial in various shades of thick gray lines.

Now, the digital readouts seem so impersonal. As you turn the tuning knob, the numbers change up or down, but you've got to visualize where you are with respect to the band edges and assigned frequency spectrums for your particular class of license.

I must admit that the digital readouts make logging much easier. And if the knob is accidentally bumped, you can get back to the exact frequency previously being used. But personally, I would like to see receivers and transceivers have a nice big slide rule dial with all the bands marked on it in multi-colors, and perhaps a small digital readout in a less conspicuous place, for accurate logging purposes.

I've noticed that the wristwatch manufacturers went through a cycle of all digital watches. (Have you ever tried to take your pulse with a digital watch?) Now, many manufacturers are offering watches that have both a linear dial and a digital readout on the same face. Maybe the Amateur Radio equipment manufacturers will follow suit. I sure hope so!

HAROLD ESTOK, W6JIP
San Diego, California □

Praise for VE exams

With all that's been said in the past few months about the volunteer exams, I thought it might shed some light on the matter for someone who has taken the exam both ways to speak up.

Before we go any further, let's clear the air about volunteer exams. There's nothing new about them at all. Years ago, back in the days when 40 meters was all CW, there were three classes of license: A, B and C.

Class A operators took their exams before an FCC examiner, passed a more rigorous test and had to receive, *and send*, Morse code at 20 wpm. Class B operators took their exams before an FCC examiner, received *and sent* code at 13 wpm, and wound up with fewer privileges than the Class A ham.

If you lived more than 150 miles from an FCC examining point, you were eligible for a Class C license. There was no difference from the Class B ticket except the code and written tests were administered by a volunteer.

Essentially the same system served us until very recent years when the old Conditional ticket was phased out. My first license, a Novice Class ticket, was issued in 1956, and a year later, I moved up to Conditional.

After 28 years, I have just completed the cycle again. This time, as before, under the volunteer examiner scheme.

From my experience, I feel more qualified to be called a General Class operator today than I felt 27 years ago when I first upgraded.

Two of us took the exam back in 1957 before the same volunteer. The code test was a paragraph from the morning paper, sent at somewhere around 10-13 wpm. The examiner admitted he was no CW operator. Our portion of the test was to send back to him the next paragraph at 13 wpm. After less than a minute of it, he stopped the test and told us he was satisfied we both knew how to send code.

The written test was a different matter. To be candid, it was tough. Diagrams had to be analyzed, series-parallel problems had to be calculated, and all this without the aid of anything other than our brains and a pencil! As I recall, there wasn't even an answer sheet: we checked the right (or wrong) answer on the exam booklet.

When we finished, the examiner scanned the test, scratched his head and said, "Well, I think both of you passed. But I can't be sure 'til the FCC sends you back your card." In those days, we enclosed a self-addressed postal card with our exams, then waited an interminable five to six weeks to hear!

What's it like taking a VEC-administered exam today? Compared to my experience over two decades ago, it's like another world!

In the late '60s, because of business considerations, I became inactive as a ham. My ticket was filed away and when I realized it was time to renew the unused license, it had been expired for nearly two years. That ended the career of K4KSY.

In the spring of 1984, I became interested in getting back on the air. Through the help of a couple of friends, I scrounged a receiver and decided to relearn Morse. Before long, I was hooked again and was making arrangements to take the Novice exam, just as I had so long ago.

My new call, KB4KDD, was issued in May and I was on the air shortly after it came in the mail. In just a few weeks, I was beginning to feel as if I might be ready to try to upgrade.

Enter the VEC. "Go to Atlanta to take the test," some friends said. "These VEC tests are killing the hobby!" Or this one, "If you want to pass, take the FCC exam . . . VEC tests are *MURDER!*"

After successfully completing the VEC-administered exam at the Shelby, North Carolina hamfest, I can vouch for several things: the exam itself is fair, has no hidden traps in it, was fairly easy (for those of us who had studied), and it was done much more professionally than the ones I've taken before, including FCC commercial exams.

The differences from my past ham experiences are numerous. For one thing, nearly 200 people were sitting for the exams in Shelby. There was no question about the code speed, either, or its intelligibility: it was a perfect 13 wpm. The written test covered material that every ham should know in his day-to-day operation of a station. No, that "off-the-wall" question on magnetizing current was not on the exam!

My experience at the hands of a VEC test was very positive. Yes, I passed, but anyone who had studied should have, and even those who failed could not fault the VE group or the test.

If there's any advice I would pass on to those who are worried about taking a VEC-administered exam in the months ahead, it would be this: get the question pool and study it; *DON'T* try to memorize it.

Reading over the pool of 500 questions, you quickly realize there are only about 200 real questions on it, perhaps even fewer. Get out the ARRL Handbook, the *Antenna Book*, and a copy of the most recent ARRL *License Manual*, then dope out the answers for yourself.

Granted, some of the wording of those 500 questions could be improved, and some of them could be dropped from the pool altogether. But for the most part, you'll find all the answers are right in the normal study guides.

Far from being the bane of Amateur Radio, as some of the doomsayers have predicted, my experience with the VE is just the opposite. It might just be the shot in the arm the hobby's needed.

One other thing: if you pass, you walk out of the session the proud possessor of a "temporary identifier" (in my case "/AG"). There's no postal card to wait for; you can go straight home, as I did, and whip out a snappy CQ right in the middle of the 20-meter Kilowatt Alley!

By the way, what made my day was when PY3PG answered that CQ.

DRAYTON COOPER, KB4KDD/AG (ex-K4KSY)
St. Charles, South Carolina □

Amateurs asked to 'spread the word'

It was announced by Chris Imlay, General Legal Counsel for ARRL, that a notice of proposed rule making had been issued by the FCC regarding the issue of overly excessive local regulation of Amateur Radio antennas.

The League had requested this hearing and has based their claims that such activities on the part of cities and counties are illegal on the basis that federal regulations pre-empt such local regulation.

A decision by the Commission a year ago over a similar issue was decided against such regulation. The Commission, at that time, refused to simply make a decision on a request from the League that amateur antennas come under the same ruling.

In that instance, the Commission decided that amateur antennas and satellite antenna dishes serving condominiums and apartment complexes had absolutely nothing in common. They asked the League to voice its concern in a separate petition, resulting in the current issue.

This matter has the potential to be as meaningful to the Amateur community as the No-Code proposal of this same time last year. If it is held that the federal laws do not preempt local rulings, many of us not now directly affected by such local regulations may quickly learn how fast such rules and regulations can come into being. It is essential, therefore, that we make our opinions — and horror stories if you have or know of any — known to the Commissioners.

Bear in mind that the League is not seeking to end all local control of antennas. Certainly there are legitimate concerns with which one can only deal on a local basis. The safety of the installation, in terms of the method of construction, for example. It is those regulations which we hams consider overly severe, from which the League is seeking redress. In many areas, these include an absolute prohibition against any and all antennas, visible or otherwise.

Please assist the League by extending this information to as many amateurs in your area as possible and encouraging them to take the time to compose a letter to the FCC stating their opinion on the subject. Watch **QST Magazine** for complete particulars on this subject — *ARRL*
(See the article on page 9.) □

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Special Events...

Clock Tower Fortress

The Benicia ARC will operate KA6BPR from 1500 to 2400 UTC on 10 November, from the Clock Tower Fortress in Benicia, California.

Built in 1859 as the first U.S. military bastion in California, the fort commands the Carquinez Straits and protected against Indian attacks (which never came).

Phone frequencies will be 28.510, 21.360, 14.240 and 7.240. CW will be 28.110, 21.110, 14.110 and 7.110 MHz ± QRM.

A QSL/certificate is available from BARC, Box 899, Benicia, CA 94510, upon receipt of QSL and regular-sized SASE. □

Veteran's Day

The Armored Force Amateur Radio Nationwide Emergency Team (A FAR Net) will sponsor a Veteran's Day activity for the amateur community on the weekend of 10-11 November.

Member stations will participate as special event stations for the net. A special commemorative certificate will be available to all amateur stations that make contact with one member station.

To obtain the certificates, the station making the request should send a QSL and a large-sized SASE to the net's certificate manager, Alfred Beutler, 36 Manchester Rd., East Aurora, NY 14052.

Net stations will operate on the Veteran's Day weekend from 1200 GMT on Saturday, 10 November, through 2400 GMT on Sunday, 11 November. Primary frequencies will be as follows: 7285, 14,325, 21,375 and 28,640 kHz (±QRM).

Plimoth Plantation

A special event station from Plymouth, Massachusetts (America's home town) will be sponsored by the Whitman Amateur Radio Club and Plimoth Plantation on Thanksgiving Day, 22 November.

An attractive certificate suitable for framing will be issued to any (foreign or domestic) amateur who makes contact with this station, which will operate from 9:00 a.m. until 3:00 p.m. This station will be in operation at the Plimoth Plantation from an indoor site in the museum's 1627 Pilgrim Village.

Plimoth Plantation is an unusual living history museum which depicts life as it was in the 17th century Plymouth Colony. Its sites includes the 1627 Pilgrim Village, Wampanoag Summer Settlement and *Mayflower II*, a replica of the type of ship that brought the Pilgrims to the New World in 1620.

Operation details

Call: WA1NPO

Date: 22 November 1984

Time: 1300 GMT to 2000+ GMT. 1300-1430 GMT, 21.260 MHz; 1430-1730 GMT, 7.280 MHz; and/or 7.050 MHz (CW); 1730-2000 GMT, 21.385 MHz. All frequencies and times ± QRN.

1300-1600 GMT, 14.255 MHz; 1400-1500 GMT, 14.025 MHz or 14.180 MHz; 1600-2000 GMT, 14.345 MHz. All frequencies ± QRM.

Limited 2-meter operation on local club repeater. Tentative frequencies: 147.225/835 and 146.52 simplex.

The WARC was established in 1965, and meets on the first and third Monday of every month in the clubhouse on Pine Street, Whitman, Massachusetts.

This being our fourth Thanksgiving Day special event station, it has become a regular part of the community's holiday celebration, with message centers located at the plantation during the festival season and now the special event station contacting hundreds of foreign and domestic stations throughout the world.

We are looking forward to an even greater contact total this year with the addition of another HF rig and band, as well as the participation of a UK club station:

To receive a certificate, send proof of contact and $1 (domestic) or 4 IRC's (foreign) to: Whitman ARC, P.O. Box 48, Whitman, MA 02382. PLEASE NOTE: This is a non-profit organization, and folding of this beautiful certificate will destroy it, so please send proper postage.

For additional information contact: Ed Hommel, KA1CZS, WARC, (617) 826-4772; Jim Russell, WB1CNM, WARC, (617) 586-7524; Rosemary Carroll, Plimoth Plantation, P.O. Box 1620, Plymouth, MA 02360, (617) 746-1622; or Peter Jackson, G3ADV, 32 Brown Ave., Parkfield, Nantwich, Cheshire, UK, phone 0270-627149.

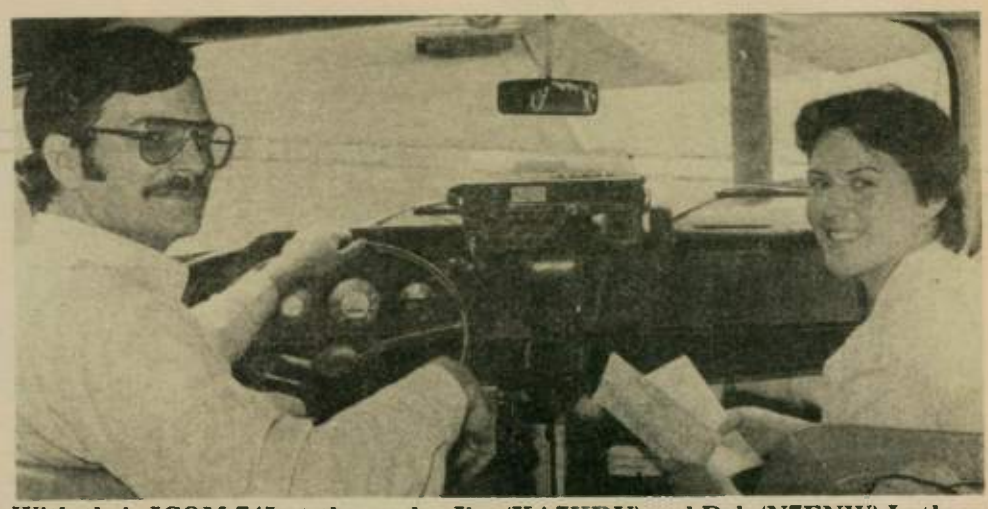
The U.K. stations will be located at the astronomical observatory at Sidmouth in South Devon, high above Lyme Bay and the English Channel.

Two stations are planned at the observatory: GB2UST (United States Thanksgiving) on 20M and 15M, with GB4UST on 80M and 40M, and they have some 40 acres in which to erect antennas.

The BOMB Squad

The BOMB Squad (Best of Mt. Baldy) will operate W6HCP (Hollywood Christmas Parade) from 1600Z on 25 November to 0400Z on 26 November. Operation from the parade communications center of the 1984 Hollywood Christmas Parade will be on 7.284, 14.284 and 21.284 MHz SSB.

Send SASE to John Shaffer, W6GVR, for special commemorative QSL. Address: 1549 N. Euclid Ave., Upland, CA 91786. □



With their ICOM 745 at the ready, Jim (KA7KDU) and Deb (N7FNW) Latham are on the 180-mile Operation Salt March. Contacts will be QSL'ed via your card and SASE to KC7YN.

Ham couple joins Salt March

Bob Kuhn, KC7YN

Jim (KA7KDU) and Debra (N7FNW) Latham are usually on the air from their home in Amity, Oregon. But for the past few months, you could most likely find them anywhere in the country, as they joined Yogesh Gandhi's Operation Salt March, 180-mile trek across the United States visiting 70 major cities.

The great-grand-nephew of Indian leader Mahatma Gandhi, Yogesh Gandhi has established an international foundation to further the teachings of his ancestor in promoting "peace, love, truth and non-violence."

The original Salt March was in 1930, as Mahatma Gandhi led hundreds of followers on a 200-mile walk to the sea to focus attention on a British-imposed law requiring all Indians to purchase their salt from a government-controlled monopoly.

Recently, the Gandhi Foundation announced plans to build a World Peace University on 101 acres in north central Oregon, near the town of Mosier. Plans call for the $22 million school to be located on the Sunrise Ranch, which has donated the land. The ranch also has an amateur station operated by Ruth Schneider, KA7SRI.

The Lathams, both involved with the non-profit corporation which owns and operates the ranch, provided their services as part of the advance coordinators for the Salt March.

After the march, Debra returned to Amity to continue her studies at Oregon State University, where she is finishing her master's degree in food science and technology. Her husband continued with the march through its conclusion at Washington, D.C., in October.

Any contacts will be QSL'ed by sending an SASE with your QSL card to KC7YN, P.O. Box 433, McMinnville, OR 97128. A special Operation Salt March QSL is in the works. □

Contact Worldradio for hamfest prizes.

STATION APPEARANCE

Paul E. Rhoads, WB6TUT, of Vancouver, Washington wins this month's Station Appearance. As he mentions in his letter, he is a good candidate for a "Smallest Ham Shack" award, and we agree. Just goes to show you don't have to have a huge station to be an active, on-the-air amateur.

"About three years ago, someone sent in an article contending he had the 'smallest ham shack'. I had every good intention of entering that 'contest' long before this, but did not. (Like many fellows, I usually put off letter writing!)

"Find enclosed a photo of my 'shack'. I reside out in the country on a 5-acre "estate", and our home is what is commonly called a mobile home, I prefer (and the trend is) to call this type of housing a 'pre-manufactured' house. In any case, my 'shack' is in the utility room.

"Our house is a big one, 24 by 66 feet of USEABLE space, for a total of 1,584 square feet. Everywhere else we have plenty of room, but the utility area was just a big short-changed! On the one side is the space heater and a fridge and our freezer. On the other side is my XYL's washer and dryer — and just enough space for poor old King TUT's radio stuff!

"The table which I built is 38 inches wide and 24 inches deep. I just measured again to be sure, and with my 'executive' chair (ahem), complete with proper squeak, at a comfortable position from the table, I am 48 inches from the facing wall, so we are talking about a 38" x 48" area for an approximate 12 square feet of NEAT AND TIDY radio room! No clothes in a closet to fight around, or other inconveniences with which to contend.

"The HF rig is a 20-year-old Hallicrafters SR150 with outboard power supply/speaker combo. Hanging from the cupboard, which runs the length of the room, is a Yaesu 227R 2-meter rig. The SR150 is an all-tube job with 6146B's in the final.

"The antenna system consists of a 40-meter 'Vee', a long-wire for 75 meters, and a 14AVQ trap vertical for 10, 15 and 20. The 2-meter side sports a TG4 gam up 28 feet and a (at this point in time) low-flying 3-element quad!

"It is my hope that eventually, when funds permit, we will build on an additional room right off the utility room outer door. Then we will have more room for storage and a small workshop, *AND* a nice corner walled off for a bigger ham shack so I can spread out a little and set up some other gear which is lying idle in my bedroom and in boxes under the house!" □

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

Hawaiian ham sets world record

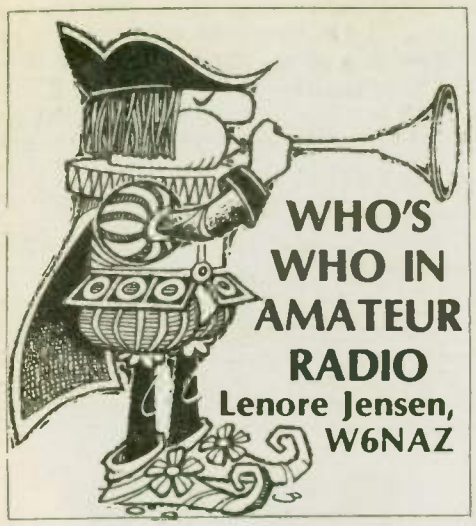
Katashi Nose, KH6IJ

On 24 June, Paul Lieb, KH6HME, of Hilo, Hawaii, set a world record on 1296 MHz, which — I believe — is going to stand for a long time. On that day, he worked N6CA in California from Mauna Loa, at the 8,200-foot elevation.

Other world records established by amateurs mentioned in the Amateur Radio VHF Manual, ARRL 1968, page 13, were by John Chambers, W6NLZ, in California and Ralph Thomas, KH6UK, of Kahuku "when they were able to work across 2,500 miles of the Pacific on 144 MHz in July 1957.

"This was the longest path ever covered by tropospheric means by any communications service, and as such it achieved worldwide acclaim. Not satisfied, Chambers and Thomas went on in subsequent years to bridge the path on 220 and 432 MHz . . ."

I saw the antenna in Kahuku, which was a 16-foot dish that had been loaned to Thomas by the Army. — *Submitted by Rufus McCracken, KH6QL* □



"Did Amateur Radio play an important role in your obviously very, very successful career?" we asked the owner of IEE, Don Gumpertz, K6OF.

"Definitely!" was the emphatic answer. Amateur Radio, take a bow.

But most of the credit goes to Don's enormously creative talent, hard work and business sense.

One of his rewards has been his 86-foot motor vessel, the *Westward*, with which he and his wife, Ann, enjoyed a five-year voyage around the world to put in at more than 60 ports of call.

It all started when he was 12 years old, as a youth in Oxnard, California, fascinated with telephones and the nearby Navy base at Port Hueneme.

"They had this huge loop antenna with a handle to turn it and we listened to 455 kHz. Also, the good men at Western Union and Postal Telegraph humored me. The son of the school principal was a ham and helped me, and soon I was building crystal sets and scrounging around for radio parts. My idea of beauty was a bus-bar wired receiver with an engraved bakelite panel."

Don studied electrical engineering at UC Berkeley, but found he could make good money in broadcast stations there and in Santa Barbara, while experimenting with his particular fascination: telephone switching techniques.

"We didn't then know the word *automation*, but that's what intrigued me."

Soon he found himself working for an aircraft company and spent a year on Catalina Island installing and operating the country's first VHF aircraft radio. "But WWII shut us down and I went to work for Bendix."

He became project engineer in charge of building the "Gibson Girl" emergency radio transmitter and "built thousands and thousands of them. I tried to join the Marines but they patted me on the head and said to go back to your war work."

Ann and Don Gumpertz, K6OF, review the route of their five-year voyage on their 86-ft motor vessel, the *Westward*. *(Photo by Bob Jensen, W6VGQ)*

Don then became Chief Engineer of a concern in radar counter measures. "The gear was designed at Harvard but we built it, debugged and did the installation."

"It was responsible for tracking the Japanese fleet in the Gulf of Leyte. We could see them (their signal depended on sending out a pulse and receiving an echo), but they couldn't see our tracking planes. Ours had passive tracking gear which didn't create a signal; it was a scanning antenna and receiver. We would find and lock onto their radar frequency, and by knowing the characteristics we could tell what radar it was, the type of ship and location."

Finally, with war's end, Don was brimming with creative ideas. He decided to go into business for himself; he was still thinking of using telephone switching techniques to automatically control processes. He started Industrial Electronic Engineers, Inc. and was building things "in the back room of our house. My plan was to invent something and have other people build it, rather like an architect."

Becoming a pioneer in automation, his first big success was for General Mills, providing an automation method of weighing truckloads of grain. As the years went by, the techniques grew more and more sophisticated. Today, as he shows you through the 125,000-square-foot plant in Van Nuys, it is an astonishing example of modern technology! Complex test gear and manufacturing machines, mostly controlled by computers, fill the buildings, keeping 400 hand-picked technicians, engineers and management personnel busy.

What do they make? Interface systems, which make it possible for people to communicate with machines and visa versa. At IEE (he used that long before the well-known engineering society, IEEE, was so named), these devices can be readout displays using daylight readable letters and numbers, keyboards (simple or so rugged they can be doused in salt water, ice, oil or sand), or switches of all kinds, perfect enough to perform in our space shuttles (as they do).

Gas plasma (gas excited by electrons) enables computer control by the touch of your fingertip; liquid crystal and vacuum fluorescent displays are fascinating reminders of "how far we've come" in relatively few years. Control mechanisms "residing within the interface hardware" can be other "smart" switches and displays. High-tech visitors no doubt are impressed with the quality control stations where each product is tested again and again. Hams can only marvel to see thousands of solder joints made at once — and the surplus leads sheared off with a swoosh. Precision tooling hits perfection. (Companies such as IBM, Hughes, GE and government agencies have bestowed awards for zero defects and excellence.)

Because much of the output finds its way into extremely important and sensitive situations, the reliability tests are severe. Temperature ovens and freezers may take it high and low.

Displays, switches and control devices from IEE are found in blood analyzers, atomic subs, naval vessels, military aircraft, air traffic control and the like. Audi dashboards and fast food chains also see IEE aids. Bright readout numbers have even found their way into electronic slot machines.

Don asks, "You know the numbers you look at on a gas pump? They're all from us."

It is a tribute to the management skill of "Mr. G." that he was able to fulfill his lifelong dream of a world voyage on his own boat. "We only make this trip through life but once," he reasons wisely.

After a worldwide search, he finally found the boat he wanted and then spent three years refurbishing. *M.V. Westward* not only has a woodburning fireplace and a library in its beautiful interior and a fine galley for Ann, but topside it sports a 2-element beam with a fine ham shack area below.

Determined as Don Gumpertz is to have his plant turn out the finest state-of-the-art, his attitude toward *Westward's* venerable 1924 diesel engine reveals his admiration for its power plant. It requires that 200 different points be oiled every two hours, when underway — a chore he insists on performing himself! (Obviously, Don is capable of designing a more modern one, but this engine seems to appeal to his joy of keeping busy.)

An expert navigator and seaman, he is capable of caring for the entire boat's needs when necessary.

Amateur Radio was a vital part of the voyage, keeping Ann and Don in touch

AWARDS

McMinnville, Oregon volunteer fireman Gregg Robinson, KA7MDM, gets his air tanks refilled during a residential fire.

Ham named 'Volunteer Fireman of the Year'

Bob Kuhn, KC7YN

Gregg Robinson, KA7MDM, was recently surprised while attending the annual Fireman's Appreciation Night dinner sponsored by the Greater McMinnville (Oregon) Chamber of Commerce. "I was sitting there listening, when suddenly I heard my name being called out," he recalls.

Gregg jumped to his feet in time to walk up to the podium and receive the group's "Volunteer Fireman of the Year" honor.

The city of 14,000 is the largest in Oregon still being served by a volunteer department, a proud organization of about 150 that celebrated its 100th anniversary just before this country's Bicentennial.

When the fire alarm in McMinnville goes off, people can be seen running out of businesses, offices and even the dentist's chair to respond.

Two of the largest employers of firemen include the head office of a fire insurance company and the McMinnville Division of Hewlett-Packard, where Gregg is a machinist. While the lathe turns in the shop, both the fire radio and 2-meter rig are usually on nearby.

The volunteers are very active in the community, with regular, mandatory drills on Wednesday nights. Some of the volunteers are also active in running the fire department's ambulance service. Gregg has been certified by the state as an Emergency Medical Technician and is currently undergoing further instruction to gain certification in IV therapy.

Gregg's ham activities center around his home station, with a Kenwood 830 and Yaesu 2-meter rigs. He recently acquired a Commodore 64 and has been trying out RTTY. The tower with several antennas looms above his backyard. It's an older Mosely crank-up which he bought during his teenage days as WN7RNO, a Novice license that was never upgraded because Gregg soon found himself competitively racing his Datsun 510.

After his racing days subsided, however, he sold the 510 and used the income to get back into Amateur Radio with the purchase of the 830. He still works on the crew for the 510, however, since he has many hours of time into building the car. His father was McMinnville's Datsun dealer for years, so cars were always around.

Gregg's Amateur Radio and firefighting came into play last year when he used an emergency autopatch link to report a serious blaze at a nearby farm, before heading into a building to shut off the natural gas line that was feeding the fire. □

New endorsements for WAC Award

The International Amateur Radio Union (IARU) Administrative Council has created two new endorsements for the Worked All Continents (WAC) Award: FAX and QRP.

Amateurs who have achieved two-way facsimile (A3C, F3C or J3C) communication with all six continents may request FAX-endorsed WAC certificates. In honor of the pioneers in this mode who may now be engaged in other activities, contacts of any date are valid. FAX certificates will not be numbered, consistent with the practice for SSB, SSTV and RTTY certificates.

QRP endorsement will be available next year. The endorsement will be sent in the form of a sticker for affixing to a basic (CW or mixed-mode), SSB, SSTV, RTTY, FAX or 5-band certificate. QRP is defined as 5 watts output (10 watts input) or less.

Only contacts made on or after 01 January 1985 will be valid. The applicant must make the six contacts while running QRP; there is no restriction on the power of the stations contacted.

The other endorsement stickers that are presently available are for 1.8, 3.5, 50, 144 and 432 MHz and 6-band operation. Contacts on 10, 18 or 24 MHz will not count for the 5-band certificate or 6-band endorsement. — *The ARRL Letter* □

Kermadec DXpedition

One amateur's story

Ken McLachlan, VK3AH

I was fortunate to catch up with Duane Ausherman, W6REC, who was on the eventful Kermadec Islands expedition, whilst he was passing through Melbourne. It was indeed a pleasure to meet this quiet and unassuming gentleman and hear of his thoughts on DX'ing and the trials and tribulations that the group experienced prior to, during their trip and whilst on the island; the shattering news of the yacht *Shiner* being damaged beyond repair; and their trip home in a freighter.

Duane has many talents and hobbies. He is a registered paramedic and a medical technician who specialised in electronics concerning artificial heart research, and worked with the group that later implanted the first artificial heart in Barney Clark. Other strings to his bow are that he is a registered private pilot, and has hobbies of collecting and restoring antique BMW motor bikes, teaching and playing pool. His coaching of a YL team led them to winning two championships. Probably the biggest thrill of his hobbies is CW DX'ing.

The Kermadec group included five members of Auckland University's marine biology and zoology departments and four amateurs — John Litten ZL1AAS; Ron Wright, ZL1AMO; Roly Runciman, ZL1BQD; and Duane ZL0AJW — who were all under the leadership of Dr. John Craig. Dr. Craig's wife, Anne Stewart, who is studying for her doctorate degree, was a member of the group that had intentions of studying tuis, bellbirds and vegetation on the offshore islands in the Kermadec group.

The party left port for their destination a couple of days late on what was to be a pretty uneventful trip, except for a few who were not used to sailing and ended up being a little seasick. Duane remarked that "It was a wonderful sight to watch the dolphins playing around the yacht. A few fish were caught, and they had a very competent crew and captain in John Taylor, an Englishman, who also was a marvellous host."

On approaching Raoul Island the weather was deteriorating and it took them about six hours to land at the boat cove on the southeast corner of the island. The *Shiner* anchored about 600 metres from the rocky-faced shoreline, and the personnel and all the equipment were transferred to a rubber inflatable boat with an outboard engine and transported to the shoreline. The equipment and personnel were then swung ashore by a gantry, where the equipment was loaded into containers and taken by a "flying fox" to the summit.

Each person that went ashore used the steep gradient pathway which was the only access to the top. Duane said that "the signs en route to the top were hilarious and typical of the sense of humour of the Weather Station's crew who they were to eventually meet, and even in this remote area one could not get away from 'parking meters' as there was one with a suitable caption at one of the 'rest' points on the steep upward climb."

Their equipment was then transported by the island "vehicle" to near the weather station where they set their equipment up in a small hut, which was warm, dry and comfortable. This area was surrounded by Norfolk Island pines, and one of the scientific expedition members

Duane Ausherman, W6REC, tries out a friend's BMW while in Melbourne.

volunteered to climb the pines and erect some of the antennas which were at a height of 25 metres and adjacent to the cliff. This gave them a tremendous take-off advantage.

The drama commenced soon after the party arrived, when a deep extra-tropical low closed in on the area, producing extra strong winds and strong seas that caused the ferro-concrete yacht to drag its three anchors, break its tie line and crash onto the rocky coast. The vessel's hull was badly holed and appeared to be a write-off. Two members of the weather station party helped the crew wade ashore through the surf as the yacht sank, and they spent the night with them in a beach hut. Next day, the group walked over the rugged volcanic terrain to the weather station on the north coast. Very little equipment was lost, but Duane — as with the others — lost some personal items, including his address book of friends that he was going to look up on his visit to VK. So if Duane didn't catch up with you, the reason has been explained.

Eventually arrangements were made through official channels to have an inter-island trading ship, the *Vili*, with a Tongan crew, diverted to Raoul Island to pick them up at the vessel's earliest convenience.

Whilst awaiting the pick-up, the amateurs were constantly notching up contacts when they were free from other duties. Duane said that "Roly ZL8BQD and Ron ZL8AMO notched up about 10,000 QSO's each, John ZL8AAS around 4,000 and I made about 5,000 contacts."

Not a bad effort, considering that the expedition was cut short and other problems including power sources went haywire at times.

In his own words, Duane described the island as "being very interesting, an unusual place, and that in his opinion the men from the scientific group could be termed 'supermen' for the way they went about their duties and the help they gave to the amateurs. Also, the five men attached to the meteorological station under the leadership of Mike Bourke were marvellous in their assistance and they had a tremendous sense of humor, which eased a tense situation."

With the *Vili* laying offshore the evening before departure, the winds were still very strong, causing the surf to run extremely high, there were thoughts that they may not be able to depart. Next morning, however, it was calm and allowed a reasonably easy loading and departure. As the *Vili* departed and with the island still in sight, one could see the clouds rolling in again and shrouding the areas, so apparently luck was with them.

Duane said that "QSL's for the expedition went to each individual operator, except his, which were being looked after by ZL1BQD. Also, he would like thanks extended through this column — particularly to the Northern California DX Foundation for their extreme generosity, along with other clubs and the individuals who dug deeply into their pockets when they sent their QSL cards that had been received in New Zealand by their return."

Duane decided that before he left VK, he would like to do a little DX'ing and it was easy to convince him that there was no better place to go to than Lord Howe Island, with its newly allocated VK9L prefix. Arrangements were hurriedly made, and a phone call to Dick VK9LH confirmed that the visit was on.

All Duane required was a power supply for his rig, and this was kindly loaned by Sandy Brucesmith, VK2AD, from Trio Kenwood (Australia) Pty Ltd in Sydney, through a telephone call from a friendly VK3 amateur.

Dick VK9LH was at the airport to meet Duane, and coincidentally, the editor of *Amateur Radio* — Gil Sones, VK3AUI — was departing on the same aircraft after an enjoyable holiday on both Norfolkland Lord Howe Islands, so at least they had time to be introduced before departure.

Duane was signing VK9LL and would make the two resident operators — Dick VK9LH and Ken Hicks, VK9LK (ex-VK2BKE) — quite happy by taking the CW heat off them.

QSL's for Duane's calls of ZL0AJW, 3D2DA, VK3DLA and VK9LL go to his home QTH: Duane L. Ausherman, 100 Sanders St., Fort Bidwell, CA 96112, USA.

Meanwhile, the Kermadec's will be represented by Warick ZL8AFH until the end of his tour of duty, which is in November, and it is quite possible that a DX-oriented operator from another meteorological outpost will travel north and be on the crew that leaves to take over 1984/1985 posting. □

WHO'S WHO

(continued from page 22)

with home via regular skeds with faithful stateside ham friends. "Except for a few days on the Indian Ocean, we didn't miss a day!'

Of course, their signal was superb on the water. Local amateurs would advise him of others to listen for, as they approached each new country. He's a member, of course, of the Maritime Mobile Amateur Radio Club. Often, on high seas, Don was able to relay personal messages for other sailors out of touch with home.

Countless adventures awaited them and hospitality ashore was generous and enthusiastic.

One operator in Kenya suggested on the air that there was a plush safari tent camp "and don't miss it!" Without telling Ann about it, he obtained a small car and he and she set out across the African veldt and desert amid wildebeests, giraffes, elephants and other game, bouncing for several weeks over boulder-strewn roads. Wonderful, but far from comfortable. The reward came when they arrived at the camp "in the middle of nowhere" and astonished the celebrities who had flown in. Ann, "a perfect good sport," survived the rugged trip with her usual smile.

Back on the ship, QSO's abounded. Many a European amateur would exclaim (something like), "Gottin Himmel, what are you doing to my receiver!"

They visited a wide variety of ports, and in certain places saw life-as-it-really-is, leaving Don to comment upon arriving home after a trip of 47,000 miles: "I left home a liberal and came home a conservative!"

Recently, Don and Ann spent three weeks aboard the sailboat of friends Sharon (WB6SDI) and Merritt (KA6KOC) Adamson, as part of the large group on 2 meters who served the Olympic Yacht Races off Long Beach, California. Their assignment was the precise positioning of large orange buoy markers.

There's far more to tell about Don Gumpertz, but you may hear K6OF on the air. Till then, our congratulations to the hobby of Amateur Radio for giving that teenager his chance to make the American Dream come true! □

If your club is involved in any emergency situations, send the story and pictures to **Worldradio.**

See your group in print and help your fellow amateurs with shared experiences. Your story may help others be better prepared.

International Amateur Radio arrangements

The United States has arrangements for third-party communications and for reciprocal operating privileges in the Amateur Radio Service with the governments listed below.

Third-party arrangements

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

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

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

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

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

Reciprocal operating arrangements

The United States has arrangements to grant reciprocal operating permits to visiting alien Amateur Radio operators. An alien Amateur Radio operator licensed by one of the following countries, who is also a citizen of that same country, may apply for a permit to operate his or her Amateur Radio station in the United States. (A U.S. citizen is not eligible for a reciprocal operating permit in the United States under these arrangements.)

Argentina
Australia
Austria
Bahamas, The
Barbados
Belgium
Belize
Bolivia
Botswana
Brazil
*Canada
Chile
Colombia
Costa Rica
Denmark
Dominican Republic
Ecuador
El Salvador
Fiji
Finland
France
Germany, Fed. Rep. of
Greece
Grenada
Guatemala
Guyana
Haiti
Honduras
Iceland
India
Indonesia
Ireland, Rep. of
Israel
Italy
Jamaica
Jordan
Kiribati
Kuwait
Liberia
Luxembourg
Monaco
Netherlands
Netherlands Antilles
New Zealand
Nicaragua
Norway
Panama
Paraguay
Peru
Philippines
Portugal
St. Lucia
Seychelles
Sierra Leone
Solomon Islands
Spain
Suriname
Sweden
Switzerland
Trinidad & Tobago
Tuvalu
United Kingdom
Uruguay
Venezuela
Yugoslavia

Arrangements with Canada authorize operation by Canadian Amateur Radio operators in the United States without a reciprocal operating permit and vice versa.

An alien Amateur Radio operator may apply for a permit by completing FCC Form 610-A, available from any FCC office or, in some cases, from United States missions abroad. The permit is valid for one year or until the date of expiration on the applicant's license — whichever comes first.

The completed application Form 610-A and a photocopy of the applicant's current amateur license should be sent to: FCC, Gettysburg, PA 17325 USA.

Amateur Radio operation in areas where telecommunication is regulated by the FCC must comply with Part 97 of the Rules. Reciprocal permit operator privileges (see §97.311) are those authorized by the operator's own government, but do not to exceed those of the FCC Amateur Extra Class operator license (see §97.7).

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

**Hope we can serve you.
Your comments
and suggestions
are welcome.**

Chris Wilson

DX WORLD

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

Activities Calendar

27 - 28 October	CQ World Wide DX Contest (SSB)
10 - 11 November	DARC European DX Contest (RTTY)
24 - 25 November	CQ World Wide DX Contest (CW)

Details on the above activities can be found in the latest issue of CQ Magazine. Refer to 'Contest Calendar', edited by Frank Anzalone, W1WY. Frank's column also includes much information on domestic contests. When the band is dead and there is no DX try one of these local affairs.

W-100-N
237. KI6O Deane J. Yungling
238. KF6KR Robert G. Armor
239. KR0S Vernon J. Joyer
240. N6CGB Dan Davitt

The September issue carried the complete rules regarding **Worldradio**'s Worked 100 Nations Award. Terry Dobler, KJ7F, asked for a clarification on Rule 2 that stated no contacts with reciprocal calls, such as N6JM/UL7, will count. Terry wanted to know if people who have a reciprocal call with the normal block call sign or the special reciprocal calls, such as the New Zealand ZL0, would count.

The response to that item is that it would be too difficult to control. The original intent when the award was developed was to only allow calls with nationals, but this would be almost impossible to check. We could not investigate each call to see if the operator was a national of that country or not. Therefore, we made a compromise with the obvious reciprocal calls.

Back in 1979, Steve Hawley — using the reciprocal call WA4UAZ/HC1 - applied for the W-100-N and became the first South American station to receive the award and received a plaque for his efforts. Although Steve's WA4UAZ/HC1 cards would be of no value for the W-100-N award, he was still eligible to receive the award.

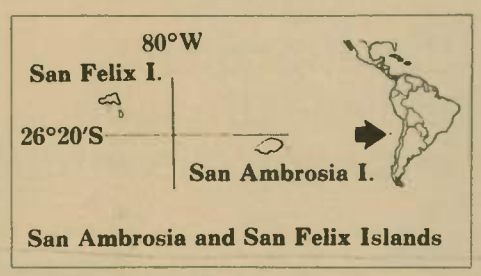
San Felix (CE0X)

This one came on the bands within about a week or two of advance notice. The operation is a joint venture by the Chilean Navy and the Radio Club of Chile, and should be in operation through the end of October and possibly into the early part of November. The station, CE0AA/X, is manned by two operators, Max and Fernando.

The operators are reported to have very little Amateur Radio experience, although their CW ability is not lacking. on SSB, the operation is strictly a "take a list" routine. This is due to the fact that the operators are not fluent in the English language. On CW the contacts are split, usually with the operator at CE0AA/X listening up anywhere from 8 to 35 kHz.

QRZ DX, edited by Bob Winn, W5KNE, reports that lists for SSB contacts are taken on the INDEXA Net starting around 2145 UTC on 14.236 MHz, then on other frequencies as announced. For 40 meters, lists have been taken on 7.085 MHz around 0345 UTC and 7.174 MHz from 0500 UTC. CE0AA/X has also been on 75 meters on 3.795 MHz with the list being taken above 3.800 MHz between 0800 and 1100 UTC.

CW contacts are a different story. You are on your own here. (Actually, we have never heard of lists being taken for CW contacts, although I'm sure there have been exceptions.) Reports of CW contacts have been on 7.019 MHz around 0300 UTC, 14.010 MHz at 1400 UTC, 14.026 MHz at 0330 UTC, 14.030 MHz at 1515 UTC and 14.034 MHz at 1545 UTC. The station has also appeared on 15 meters on 21.030 MHz at 1600 UTC and 21.050 MHz at 1615 UTC. Notice that not all the CW frequencies are limited to the "Extra" portion of the band.



San Ambrosia and San Felix Islands

Map courtesy of *QRZ DX*

The DX Bulletin, edited by Jim Cain, K1TB, reports that the last operation from San Felix was in April 1972 — an INDXA DXpedition by Wayne Warden, W9IGW, and Joe Goggin, K9KNW. Therefore, everyone licensed since that date will need this one and everyone working at their CW DXCC will need it.

Comoros (D68)

Bill, D68WB, is reported to have a twice-weekly schedule with a station in South Africa. Check 14.200 MHz at 1600 UTC each Monday and Friday. He will make contacts with the deserving after he has completed his schedule.

St. Kitts (V4A)

QRZ DX reports that the new prefix V4A will replace the prefix VP2K for St. Kitts and Nevis effective 19 September 1984, the first anniversary of their independence from Great Britain.

Svalbard (JW)

Sometime in late October there is to be a YL DXpedition to Svalbard. The

At the beginning of our long summer tour, we stopped off in Durango, Colorado, to ride the Durango and Silverton Narrow Gauge Railroad. The line was once a branch line of the vast Denver and Rio Grande narrow gauge system, now completely isolated from any railroad. Sitting behind me was Norm Whipp, VK2BYD, who was vacationing in the United States with his family. Amateur Radio got into the act when Norm brought it up. His comment to me was, "You look like a ham." Here Norm pauses before entraining at Silverton on the return trip to Durango. ***(Photo by N6JM)***

operators are expected to be Irma Kari-Vilkki, OH8MA, and Mirja Salminen, OH1YL. The operation will commemorate 50 years of YL amateurs in Finland.

Other active calls reported from this one include JW6BAA, who has been reported on 20 meters SSB at various times. The frequencies and times reported for this one include 14.180 MHz at 0645 UTC, 14.201 MHz at 1845 UTC, 14.207 MHz at 0400 UTC and 14.227 MHz at 1600 UTC. There is also a JW5VAA that has been reported. Look for this one on 14.175 MHz after 1900 UTC.

Also in the DX reports are JW6VDA, who has been worked on 14.227 MHz at 1500 UTC, and JW6WDA on 14.189 MHz at 1545 UTC.

Tonga (A35)

A35MP can be found on 14.228 MHz around 1200 UTC trying to maintain a daily schedule. This station is located on Vava'u Island, (OC-64 for IOTA hunters), and has also been found near the same frequency at 0830 UTC working Europeans.

Another active call is A35SA, who made several of the DX newsletters being reported on 14.220 MHz at 0515 UTC, 14.291 MHz at 0600 UTC, and 14.297 MHz at 1000 UTC. Looks like this one moves up the band as time goes by.

Also reported is an A35EB, who was worked on 14.264 MHz around 0400 UTC into the western reaches of North America.

Zaire (9Q5)

If you need this former Belgian Congo country, take a listen for Roger 9Q5RN, who is often found near 14.230 MHz at 0145 UTC. Roger has also been found on 15 meters on 21.200 MHz around 1515 UTC working into Europe.

Another call, 9Q5MA, has been reported on 14.175 MHz at 1900 UTC. No other reports of this one have been reported.

When this country was the Belgian Congo, the prefix for this one was OQ5. Later the name was changed to the Republic of The Congo, and later to just plain Zaire. Whatever it may be, it still counts as only one DXCC country regardless of what it was called when you worked it.

Pitcairn Island (VR6)

Kari Young, VR6KY, has been a regular check-in with the INDEXA Net on 14.236 MHz from 0500 UTC, on Tuesdays, Thursdays and Sundays. She has also been making an appearance on the Brown Sugar Net on 14.309 MHz at 0200 UTC.

Tom, VR6TC, a long-time operator on the island, has also been reported on 14.155 MHz around 0300 UTC. He has also been reported near 14.181 MHz about a half-hour earlier. Tom is not the net check-in type and has been known to be a ragchewer.

Bangladesh (S21)

During the early part of August, there was a JH8YDY/S21 active from Dacca on 15 and 20 meters. But from what we understand, this operation was not authorized. The Bangladesh Amateur Radio League is now a member of the IARU, so perhaps there will be some activity from there soon.

Novice Band DX

Drayton Cooper, KB4KDD, writes from St. Charles, South Carolina, with a few interesting notes, including activity on the Novice bands. Drayton was formerly K4KSY, (1956 to 1969), and

returned to Amateur Radio last May as KB4KDD.

Drayton reports that Brian Lavender, VK4LV, has been working American Novices during the early mornings (East Coast local time). Look for him between 7.105 and 7.115 MHz during your sunrise. Try calling CQ, as he has been known to answer a CQ from a Novice.

If you need Hawaii, look for KH6OU, who has been found between 7.138 and 7.145 MHz during those early hours. "He's a ragchewer, so you may have to wait and sweat out the band closing on you!" reports Drayton.

KP2AS has a schedule on Friday mornings near 7.105 MHz around 1000 UTC. Also found in the Novice bands are DX stations on SSB such as 9J2BO on 21.180 MHz around 1800 UTC, and VS6CT on 21.157 MHz at 1030 UTC. Try giving them a call when they are through. You have nothing to lose, and they might just come back to you. Call them on CW, of course.

Prefixes

With the CQ World Wide DX Contest coming up the end of the month, (SSB in October and CW in November), rarely used prefixes surface. BY5RA is scheduled to be in the contest using the special call BT5RA.

That CS9DI operation was from Desertas Island during the early part of August.

The Canadians have issued special calls for the Pope's visit from 07 September. Such calls include CZ2P, plus the prefixes of XJ for VE, and XK for VO. Yukon stations (VY1) will be using the prefix CJ1.

FV4VAR was a special event station celebrating the 40th anniversary of the Provence landing in World War II. Another French call, HX4MWC, was a special call to commemorate the World Mennonite Conference.

The following is the call sign allocation for the People's Republic of China. This was printed in a recent issue of *The Long Island DX Bulletin* and was originally submitted by JA1UT.

BY1AA - BY1ZZ	Beijing
BY2AA - BY2IZ	Hei Long Jian
BY2JA - BY2QZ	Jilin
BY2RA - BY2ZZ	Liaoning
BY3AA - BY3FZ	Tianjin
BY3GA - BY3LZ	Nei Mongol Zizhiqu
BY3MA - BY3SZ	Hebei
BY3TA - BY4ZZ	Shanxi
BY4AA - BY4IZ	Shanghai
BY4JA - BY4QZ	Shandong
BY4RA - BY4ZZ	Jiangsu
BY5AA - BY5IZ	Zhejian
BY5JA - BY5QZ	Jiangxi
BY5RA - BY5ZZ	Fuzian
BY6AA - BY6IZ	Henan
BY6JA - BY6QZ	Anhui
BY6RA - BY6ZZ	Hubei
BY7AA - BY7IZ	Hunan
BY7JA - BY7QZ	Guangxi Zhuangzu Zizhiqu
BY7RA - BY7ZZ	Guangdon
BY8AA - BY8IZ	Sichuan
BY8JA - BY8QZ	Guizhou
BY8RA - BY8ZZ	Yunnan
BY9AA - BY9FZ	Ningxia Huizu Zizhiqu
BY9GA - BY9LZ	Quinghai
BY9MA - BY9SZ	Shaanxi
BY9TA - BY9ZZ	Gansu
BY0AA - BY0MZ	Xinjian Uygur Zizhiqu
BY0NA - BY0ZZ	Xizang Zizhiqu

Perhaps in the near future when the BY calls become "garden variety," a Worked All China Award — or something similar to that — will be initiated where the above information will be very useful.

The Pribilof matter

Several months ago, the DX Advisory wound up with a tie vote on the matter of creating the new DXCC country of the Pribilof Islands. This left many a DX'er in a state of confusion. Many with this feeling were members of the Alaska DX Association, the organization that submitted the original petition. As the group went into great detail in its preparation it is understandable as to how they feel. Following are their comments (in somewhat condensed form), that appeared in the September issue of *The Alaskan Goldpanner:*

" . . . we felt that our petition stood on very solid roots. With an 8-to-8 tie vote in the DXAC, it might be worthwhile for us to take a step back and ask a few questions. Specifically, what evidence has been presented against our case? Has our evidence held up under the DXAC investigation? And, finally, what are some of the reasons the votes were the way they were?

"First off, the evidence against the Pribilofs seems to operate on a different level. The ADXA has yet to see *any* documented evidence showing the Pribilofs should not count . . . The main argument against the Pribilofs was that it did not meet the criteria established in the set of internal guidelines used by the DXAC."

The group maintains that the arguments against having the Pribilofs as a new DXCC country are not valid. The opposition claims the Pribilofs are part of the Aleutian Chain, which they are not. Also, they claim that if the Pribilofs are let in, there will be a rash of new countries coming in. There are several other opposition arguments in addition to those above.

Further comments from the ADXA include: "The country determination process turned out to be a lot more political than we ever suspected, and a bruised ego or two could have hurt our efforts. One suspected 'no' vote made a big point of the fact that he had not worked our DXpedition . . . we have been reassured by the DXAC chairman that the Pribilof issue will be scheduled soon."

Please understand that the DXAC is made up of volunteers, and all discussion and decisions must be made via the mails, often taking many months. Each division has a representative on the committee — hopefully a dedicated DX'er. How the decision is made in the selection of the division representative is most likely based on his clout in the DX circles. But we wonder what the thinking is of one particular DXAC member with this final comment from the Alaska DX Association: "About the only really dark spot we have to report is this quote from one West Coast DXAC member, 'Technically the Pribilofs meet the criteria, but I'm still not going to vote for it.' Any suggestions on how to combat rank stupidity?"

IOTA

AF-19	Linosa Island	I2KAJ/IG9	14.192 MHz	0915 UTC
AF-46	Desertas Island	CS9DI	14.195 MHz	2100 UTC
AS-32	Tangega Island	JH1JPY/6	21.283 MHz	0945 UTC
AS-42	Severnaya Zemlya	UA0BCA	14.151 MHz	1515 UTC
AS-55	Wise Island	UA0BDG	14.013 MHz	1500 UTC
EU-16	Dalmatian Island	YU2QQ	14.224 MHz	1630 UTC
EU-17	Lipari Island	I2PFY/ID9	14.135 MHz	1845 UTC
EU-33	Andoya Island	LA3CEA	14.172 MHz	1615 UTC
EU-37	Oland Island	SM6DER/7	14.261 MHz	1200 UTC
EU-38	Saarema Island	UR2IID	14.176 MHz	0830 UTC
EU-41	Maddalena Island	IM0LYN	14.215 MHz	1000 UTC
EU-42	Heligoland Island	DL5AE	7.071 MHz	0800 UTC
EU-46	Ringvassoy Island	LA1CI	14.314 MHz	1145 UTC
EU-50	San Domino Island	I2DMK/IL7	14.288 MHz	0900 UTC
EU-52	Levkas Island	WA1ZCE/SV	14.289 MHz	1930 UTC
EU-57	Rugen Island	Y48ZA	14.191 MHz	0845 UTC
EU-67	Cyclades	SV1IS/8	14.102 MHz	0515 UTC
EU-70	Porquerolles Island	F6KTI/P	14.212 MHz	0700 UTC
EU-75	Aegina Island	SV1UM/8	21.245 MHz	0915 UTC
EU-77	Sisargas Island	ED1ISI	14.205 MHz	0745 UTC
EU-88	Kattegat Island	DL8NU/OZ	14.131 MHz	0800 UTC
EU-90	Palagruza Island	YT2P	14.258 MHz	0745 UTC
EU-92	Summer Islands	GB0TXS	14.238 MHz	1045 UTC
NA-06	King William Island	VE8YQ	14.198 MHz	2230 UTC
NA-41	Sitka Island	KL7BJC	14.245 MHz	0730 UTC

The Fraser Valley DX Club Award, VE7DXC

This award is offered by the Fraser Valley DX Club for working members. Canadian and U.S. stations must work at least 15 members, while the rest of the world need only work five members. No indication was given as to how Hawaii or Alaska were classified, but we would think they would need the 15 members.

The cost of this award is $1 (U.S.) or 5 IRC's. Send log information only, showing date, time, call sign, name and frequency to: P.O. Box 3112, Langley, BC, CANADA V3A 4R3. There are over 60 members of the FVDXC, and membership is not limited to just the Vancouver area. There are several Washington state members living near the border.

35th anniversary of LOK Award

This award is available to all licensed Amateur Radio operators (and SWL's) who can prove contacts with at least five club stations LOK between 01 January 1979 and 31 December 1983. All club stations have the letter "K" as the first letter in the suffix. Note that this is for working Polish stations only.

Send log information only and a fee of 5 IRC's to: Students Radio Club SP7KTE, P.O. Box 19, 25-950 Kielce 10, POLAND.

The Complete DX'er

Once in a while we receive a book to review and make comments on. *The Complete DX'er* is a recent book written by Bob Locher, W9KNI, for the DX'er who wishes to increase his country total.

To start off with, I will tell you right away without even reading it what it doesn't have. It doesn't have page after page of outdated QSL manager lists or beam headings. Beam headings are not the same for everyone and are readily available from several computer services for your individual location. And the QSL routing information is always changing and must be continually updated. Back in 1968, there was another DX-type handbook that had almost 65 pages of the above useless information out of a total of 195 pages. Therefore, Bob's book has already passed the first test.

The whole point of the book is to teach you how to develop your skills to work toward the goal of getting on the Honor Roll. It is almost an obsession here, as the object is to work only the ones you need and nothing else. Now, if you are the type of "DX'er" who is content with working your radio via lists and nets, read no further. Save your money and don't buy Bob's book. I might also add that most active DX'ers aren't going to push this book. Heck, why let everyone else know the tricks of working pile-ups and new ones when you have a good thing going?

Bob's book begins with a chapter, "A Night on the Bands," an introduction of what an evening of DX'ing is like. He then begins with such items as basic listening, equipment, techniques, then intermediate listening through advanced pile-up techniques. My reaction to this is the skier riding up on the chairlift looking down on all the ski-runs marked beginner, intermediate and advanced only.

Chapter 10 deals in calling "CQ DX" and when and why to use it. The experienced DX'er listens and listens and rarely will call for DX. Bob explains when to use this method to your best advantage. Contests are discussed in Chapter 11, and he makes the point:

"However, the DX'er must first decide whether he is a DX'er or a contester. There is a very significant difference. The DX'er uses a contest strictly as a vehicle to grab new countries, improve chances of getting QSL's not already received, and sharpen his skills — both in tuning for the rare ones and slugging it out in the pile-ups. He is *NOT* tempted by meaningless QSO's just to fill lines out in the log sheet."

Locher also covers other items such as

QSL'ing, looking for a new home most ideal for the DX'er, and special language techniques. Bob suggests that in reading his book, you read one chapter at a time, so that's what we did; we read one chapter in the morning and one at night while riding the bus.

The book is softcover with a few illustrations and no photos or charts. The book is not for award hunters, although such an item is discussed near the end of the book where you, as the experienced DX'er, will have a high DXCC total and the new ones are hard to come by. Chasing the awards is to keep you in tip-top shape in the event the one or ones you need show on the bands. The book, *The Complete DX'er*, by Bob Locher, W9KNI, is available from Idiom Press, P.O. Box 583, Deerfield, IL 60015, for $10.95, plus $2 postage and handling.

Comments from readers

Karl Renz, K4YT, says there will be no more trips to Africa for another two to four years as he and his XYL, Janie KG3R, have been transferred to Manila.

There will be times that Karl will be traveling to China, Taiwan, Hong Kong, Macao, Papua New Guinea, Brunei, Indonesia, Australia, New Zealand and Fiji (prefixes BY, BV, VS6, CR9, P29, VS5, YB, VK, ZL and 3D2). Karl and Janie's new QSL manager is Bill Kessinger, KE3A, 1502 Flanders Lane, Hollywood, MD 20776.

Karl further writes, "Somehow the word got out that W2TK was QSL manager for all 9V1VP QSO's, which is not true. We only QSL contacts that I made at VP's last April 11 to 20, 1983. All other QSO's go via the bureau. Bob Furzer, N6BFM/9V1VP, is now living in Frankfurt operating /DL, but I don't have his address."

Incidentally, W2TK mentioned above is Karl's brother, Bob, who had handled QSL cards for Karl's past DXpeditions.

A DX QSL manager
(To be or not to be . . . that is the question!)

The following is from the Stark DX Association and was printed in their newsletter, *The Beam*. From what we understand, these are excerpts of recent correspondence to their club.

"At one time or another, we DX'ers have all thought about how noble it would be to become a manager for a 'deserving' ham somewhere. Good intentions, but a lot of work! There are several avenues by which one can approach the matter: by listening on the bands, or in casual conversations with another 'good ole boy' on the other end, or even by volunteering your efforts.

"Being a manager can entail more than forwarding cards. 'You' may be his source for spare parts, (there are no Radio Shacks where he lives), and various books which you may have to ship out of your own pocket sometimes! Many of the fellows on the other end chose to have a manager to get out of the mountainous paperwork, (guess who gets it!!), so if you have a hard time getting out your own QSL's . . . you had better hang up the idea completely.

"Also, since you volunteered for the job, be prepared to foot some of the bill for the task. (After all, to *him*, the guys in the USA are well-to-do, right?) Your on-the-air time will be reduced and if you enjoy getting QSL's in the mail, then God are you going to have fun . . . *by the pounds!* Of course, there are decisions to make, like whether to QSL the stateside boys or worldwide, (I recommend that you walk before you run, so you do not fall on your face in front of the whole DX community).

"Another important decision: Who will supply the cards, you or him? How often will he send you the logs? (ED: see W4FRU's comments elsewhere.) Will you handle SWL QSL's, (if the DX is even semi-rare, the SWL reply can be up to 20 percent or more!). You will have to work out the details of sending him his cards, monthly or bi-monthly. Maybe quarterly or bi-yearly! Also, who will take care of his records, awards, etc. It is cheaper for *him* if you do it . . . if you have the time. Will you QSL his contest QSO's and after a period of time will you 'blanket' his QSL via bureaus . . . local and foreign?

"Ah, yes, it is all quite complicated, time-consuming and expensive. Now, that is the good news . . . now for some of the bad. How about having to explain to a guy that he is not in the log; go to extra work and expense because the QSL'er didn't send an SASE envelope, stamp or maybe his info on the QSL doesn't correlate with the log or maybe the QSL isn't even filled out properly (local time, etc.).

"Maybe you even get into fights right on the air because someone didn't get their card yet (and you didn't even get the logs yet), and remember 'everyone' now knows your call and name(s) when heard on the air . . . great fun, isn't it? You will get proficient at filling out notes on the cards or pre-made forms about 'UTC, SASE not in log, wrong date, *can't find date/time*, and no, I don't have pictures, IRC's, free postage'. You really do not know what fun is until you have sat up half the night looking through pages and days of contacts that are partly legible to find or not find confirmation! And again, you too can and will get piles of cards with no postage and have to decide what and how.

"If you are contemplating being a QSL manager, never change your call sign, because that can screw things up for years to come . . . people will scream and holler and *you* will be classed as a bum and worse! The loose ends never get tied up and cards will float around in limbo for years. Oh . . . yes, God help you if you *ever* change QTH's!

"Contrary to popular belief, the post of QSL manager is not as romantic as it's cracked up to be — not even close! It takes great amounts of time, money, fortitude, patience and effort, but there is one reward . . . a kind of good feeling one gets from making people happy, and even with the abuse 'we' get, many of 'us' wouldn't trade doing this for a top honor roll position. (Well, maybe.)

"Well, do you still want to join the fun? Then you must: 1) make a written contract with the DX station agreeing on areas of responsibility; 2) make sure you always get the logs, as agreed; 3) cards of his will be coming into you bureau; make sure you claim them promptly!; 4) cards received without postage should be handled via the U.S. bureaus and the proper foreign bureaus; 5) once you are a DX QSL manager, you are one for life. Even if you quit, you can be getting and forwarding QSL's for 10 years or more!; 6) unfortunately, even if you are an honest, reliable and considerate DX manager, you will still make enemies because some guys will try anything and everything to get a card out of you. Let the comments roll off of your back or you might suffer for it later on. By all means, maintain high standards! Well, that's it . . . any volunteers??"

Antique QSL Department

George Meek, W6IC, responds to the 'Antique QSL Department' in the July issue. George worked Hilton O'Heffernan, G5BY, and his good friend and neighbor, George Bennett, G5BZ, in the mid-1920's. Hilton, he says, is now in his late 70's and still plays tennis. George just happened to work G5BZ again recently on 20 meters, the first time since April 1927. This was 57 years between QSO's.

George sent in these old QSL cards. Although they are not the DX cards, they should be somewhat interesting. The first card, 9CXX, was for a contact George made signing KFUH in Honolulu on 40 meters on 30 July 1925. The operator was A.A. Collins, in Cedar Rapids, Iowa.

George says, "Arthur Collins, 9CXX, began building transmitters on his kitchen table in Cedar Rapids. Then, as now, there was no compromise with quality or workmanship. Everything was the best."

The next card evidently was an answer to a SWL card to a "Mr. Roebuck". The call 9ZT-9XAX is unfamiliar to most of you. Check the owner, who is listed as Don Wallace in Minneapolis. George says, "Don Wallace's 9ZT won the 1923

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 Frequency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to Bill Welsh, W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (54¢) envelope at least 9" × 11½".

DECEMBER 1984

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	16.3	22.5	27.4	10.3	18.1
0200	12.8	17.7	22.7	10.3	15.8
0300	10.9	14.3	18.8	10.0	14.6
0400	10.4	12.6	16.3	8.7	14.2
0500	9.6	11.6	14.6	7.4	13.6
0600	9.8	10.6	13.5	6.8	13.2
0700	10.5	10.6	13.1	8.7	13.4
0800	11.2	10.3	12.6	11.0	14.4
0900	11.4	10.2	11.8	11.9	15.2
1000	11.0	10.8	11.6	12.1	14.0
1100	10.1	11.5	12.5	11.3	11.6
1200	9.3	10.6	12.5	9.8	10.8
1300	10.2	9.7	11.0	10.0	13.5
1400	13.7	8.9	10.5	12.2	18.8
1500	18.5	11.1	14.0	17.0	24.0
1600	22.7	11.4	20.7	17.9	27.1
1700	25.6	10.6	20.1	14.8	27.9
1800	28.0	10.8	20.0	11.9	27.8
1900	27.1	11.6	21.4	10.1	28.0
2000	26.0	13.5	23.7	8.8	28.7
2100	24.6	17.8	25.6	8.5	29.1
2200	22.5	22.3	26.5	8.9	28.2
2300	20.4	25.3	27.5	9.5	25.5
2400	18.6	26.8	29.3	10.0	21.7

Hoover Cup for the best amateur station in the United States. Note that the card states that he has worked 12 countries." He said that Don told him that those 12 countries from 9ZT were exactly the same as working 355 countries from W6AM. The 9XAX license authorized Don to operate with any power and on any wavelength.

Gary Payne, KE6CZ, would like to know how to submit oldies to the 'Antique QSL Department'. He has several cards that date back to the 1920's. You may send your cards to **Worldradio** or to me directly. I then have copies made of those that I feel would be of interest, now or for a future issue, then return them to the owner. You may also have the copies made yourself, but they should be of sufficient quality to be reproduced.

Gary has also been trying to find a good, clear, uncopyrighted photo of a ham station, dating between 1920 and 1925 that is in good enough shape to reproduce on a QSL card. Anyone have such a photo for Gary? Contact Gary at 1347 East Dakota, Fresno, CA 93704.

QSL information

Richard Kenyon, KL7XA, writes, "I have worked several DX stations in which I have no QSL information except via the 'buro'. Maybe you could put the QSL route of these stations in your QSL Route List if you know of these: ZF2HF, CP7GM, 4K0A and EK9/1."

A check was made with the latest issue of the *W6GO/K6HHD List* and gives the following: ZF2HF via KM5R, 4K0A via UA1MU and EK9D/1 via N8ACA. Nothing was listed for CP7GM. For that one, either use the bureau route or the Callbook address if he is listed. Although the route for 4K0A is given as UA1MU, it still must go via the bureau, (P.O. Box 88, Moscow, USSR), but to UA1MU. You could also send the EK9D/1 card there; that's the way ours went, and it has already been confirmed.

Those of you unfamiliar with the *W6GO/K6HHD List* may write to P.O. Box 700, Rio Linda, CA 95673. The list contains several thousand QSL routes for all known DX stations that use the services of a QSL manager. Single copies of the list are $1.75, while the yearly subscriptions are $15 for 12 issues.

Cards for the YV0AA operation last spring have been showing. There seems to have been some trouble with the mails out of Venezuela. My YV0AA card arrived 29 August. If you haven't yet received yours, try sending another QSL card to Gustavo Gomez, YV0AA QSL Commission, Radio Club de Venezuela, P.O. Box 65537, Caracus, 1066-A VENEZUELA.

Those of you still looking for a QSL card for a contact with 9V1VP should try his new European address: Bob Furser, Jungstrasse 16, D-6365 Rosbach 1, WEST GERMANY.

John Parrott Jr., W4FRU, writes through *QRZ DX* concerning logs for KX6PO. "Last logs received from KX6PO were through 31 December 1983. I have been unable to get logs from Ian for 1984. Furthermore, I cannot locate him. My last contact with Ian was in May 1984 and at that time he promised to send me the logs. To date, I have not received any logs. If I do not receive logs by November 1984, I will return all QSL's." John's new address is P.O. Box 5127, Suffolk, VA 23435.

This brings up another point regarding complaints similar to the one above. Often a DX'er has to wait "forever" for a return QSL card via a QSL manager. The first reaction is to criticize the manager for not responding immediately. It could very well be that he doesn't have the logs to confirm your contact, and the blame rests on the DX station who you worked. And if you worked a station who is isolated many months of the year, this also can add to the delay.

QSL routes

A4XYS	—W4FRU	J87BK	—W8PSD
A35SA	—JM1MGP	JH8YDY/S21	—JA1SDV
AP2SQ	—W3HNK	JT1AO	—W7PHO
C30BBC	—F6EGG	JW6BAA	—LA7JO
C30LAV	—EA3CTE	JW0EQ	—LA5NM
C30LAZ	—EA3DDP	JY4MB	—WA4HNL
C30LBK	—EA3TJ	JY9WR	—G4ATS
C30LBS	—IK1CJT	K2QA/HI8	—K8DHK
CE8ABF	—LU8DPM	KC6DS	—KJ7F
CE9AJ	—CE3AA	KC7UU/5N6	—K6EDV
CE0EVG	—WB6WOD	KD5VD/HR5	—WA7TZE
CN8EL	—W2PD	KE5IZ/PJ3	—WA5ZVZ
CP6IM	—WB1DQC	KN8M/SV9	—K8CW
CS1GRA	—CT1AQF	KX6PO	—W4FRU
CS9DI	—CT3BM	LA2EX/3X	—N4CID
CY0SAB	—VE1CBK	LA6BBA/OH0	—LA6BBA
DF2PI/OY	—DF2PI	LG5LG	—LA3ZN
DF3GX/PJ4	—DF3GX	N6IUF/DU2	—K9URA
F6EYS/3A	—F6EYS	OA4DW	—N4DW
F6GXB/TK	—F6GXB	OD5NT	—WA3HUP
F6HIX/3A	—F6EYS	OE6MKG	—KB7SG
FB8WJ	—W4FRU	OE8AJK/YK	—OE8AJK
FK8CR	—F6EWK	OH1JL/OJ0	—OH1JL
FM4DJ	—W5JLU	OH1LW/OH0	—OH1LW
FM7CL	—W3HNK	OK5SNP	—OK3KPC
FO8CX	—WB6GFJ	OK6SNP	—OK3KBB
FO0FB	—WB6GFJ	OK7SNP	—OK3KPV
FO8GW	—K6FM	P29KY	—JR1EMT
FO0KW	—WB6RFI	R1O	—UB5CW
FO0NM	—DF7NM	RJ6K	—UJ8JMM
FV4VAR	—F6GFC	SJ9WL	—SM4FTF
GB2MT	—G4LDS	SP0DXC	—SP7KTE
GU5C1A	—N6MA	SV1JG/SV5	—SV1JG
HB0LF	—HB9CRV	SV0AC/SV9	—WB4GCP
HB0NL	—HB9NL	T2ITA	—N4FJL
HH2Q	—I2YAE	T3AY	—WB6LED
HI3TGS	—N2BAY	T30AT	—G4GED
HL1CG	—JA1ADD	T30AY	—WB6LED
HL9WK	—KA1CWK	TA1AS	—DJ0OC
HP1XXO	—WB5HXO	TA1MB	—K2UO
HS4AMS	—W7PHO	TI8RP	—F6GKU
HS0JUA	—JA1SDV	TL8GE/ST0	—F6FYD
HX4MWC	—PA0HEL	TU2JD	—AK3F
HZ1AB	—K8PYD	TU2NA	—K2IBW
HZ1HZ	—N7RO	TZ6FE	—DL4BC
I2NYN/ID8	—I2MQP	VI3WI	—VK3WI
ID8DMK	—I2MQP	VK4BZZ	—WB6GFJ
J73D	—K2OB	VK4NIC/3X	—W4FRU
VK9LH	—VK2AGT	3B8AA	—DL8YBU
VK9ZA	—VK6YL	3D2FB	—WB6GFJ
VQ9AC	—KA3CDN	3D6AN	—WK4Y
VP2MDX	—N5DXD	3X1Z	—W4FRU
VP2MO	—WB2LCH	4K1CEY	—UY5DJ
YB9ARN	—W4QDF	4K1GAG	—UQ2OC
YB0AFA	—WA7OGU	4N5A	—YU5KXY
YJ8GX	—F6GXB	4Z4NUT	—WB2FTK
YN4RC	—WB8SSR	5N1OL/5H1	—N0AFW
YT1L	—YU1DZ	5N3RTF	—DK2IF
YT2B	—YU2CBM	5N0DOG	—W4FRU
YT2P	—YU2CBU	5T5ZZ	—W4FRU
YZ0U	—YU2BHI	5V7NG	—WB4LFM
ZD8HH	—W4FRU	5W1DZ	—WB2LVB
ZD9BV	—W4FRU	5X5GK	—JA1BK
ZD9CC	—ZS2DK	6W1CK	—DL1HH
ZD9YL	—W4FRU	8P6MZ	—WA2OGR
ZK1XE	—WB6GFJ	9J2TJ	—N8JW
ZL7PO	—ZL4KI	9H3DB	—G4TTS
ZL0AKO	—WB6GFJ	9M2HB	—N4FFN
ZP5XDW	—N4DW	9Y4VU	—W3EVW
1Z9A	—W7PHO	9Y9VU	—W3EVW

A35MP	—P.O. Box 30, Neiafu, Vava'u Island, Tonga Islands, SOUTH PACIFIC
A35MS	—P.O. Box 618, Nuka'alofa, Tonga Islands, SOUTH PACIFIC
CE0AA/X	—P.O. Box 700, Santiago, CHILE
CP5LK	—P.O. Box 1900, Cochabamba, BOLIVIA
D62WB	—B.P. 540, Moroni, Grand Comere, REPUBLIC OF COMORE, via FRANCE
EA9MM	—P.O. Box 379, Melilla, SPAIN
FW8AF	—P.O. Box 92, Mata-Utu, Wallis Island, SOUTH PACIFIC
FW0BT	—P.O. Box 190, Whakatane, NEW ZEALAND
FY7CG	—P.O. Box 313, Kourou, FRENCH GUIANA 97310
JY5CI	—P.O. Box 616, Amman, JORDAN
KX6AO	—Box 36, APO San Francisco, CA 96555
OX3QW	—Tom Hubbard, TE PSC, Box 1022, APO New York, NY 09023
OY9R	—P.O. Box 280, 3800 Argir, FAROE ISLANDS
P29JS	—P.O. Box 515, Konedobu, PAPUA NEW GUINEA
RI8C	—P.O. Box 15, Izhevsk, 426064 USSR (*See Note 1*)
T2ADE	—P.O. Box 5, Tuvalu, SOUTH PACIFIC
YB4FU	—P.O. Box 27, Bangka Island, INDONESIA
ZK2IK	—P.O. Box 37, NIUE ISLAND
9Q5RN	—P.O. Box 12646, Kinshasa, REPUBLIC OF ZAIRE

Note

1. Alternate route is the normal P.O. Box 88, Moscow, c/o RA3AR. All SWL cards also go this route in care of UA3AQP.

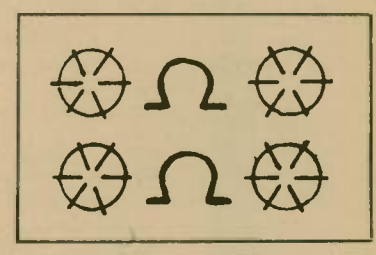
Contributors this month include W1APU, KB4KDD, K4YT, KE6CZ, WB6GFJ, W6IC, KJ7F, KL7XA, *QRZ DX* (W5KNE), *DX News Sheet* (G3XTT and G3ZAY), *The Long Island DX Bulletin* (W2IYX), and *The DX Bulletin* (K1TN). Also, we wish to thank the newsletter editors of the following clubs: Alaska DX Association (NL7P), Redwood Empire DX Association (VP2ML), Southern California DX Club (W6ABW), Western Washington DX Club (K7ZR), Kansas DX Association, Kansas City DX Club (AB0X), and the Stark DX Association (KD8AM).

With the changing band conditions, (this happens every few years you know), there will be many a DX'er that will throw in the towel and forget about DX. Well so be it. But, there will be the die-hard that will sit and tune the bands looking for that short opening — 10-meter buffs do that. You never know what may be hiding on a dead band. Then there are other true-blue DX'ers who will QSY to 40 or 80, or even 160 meters. There is a lot of good DX down there.

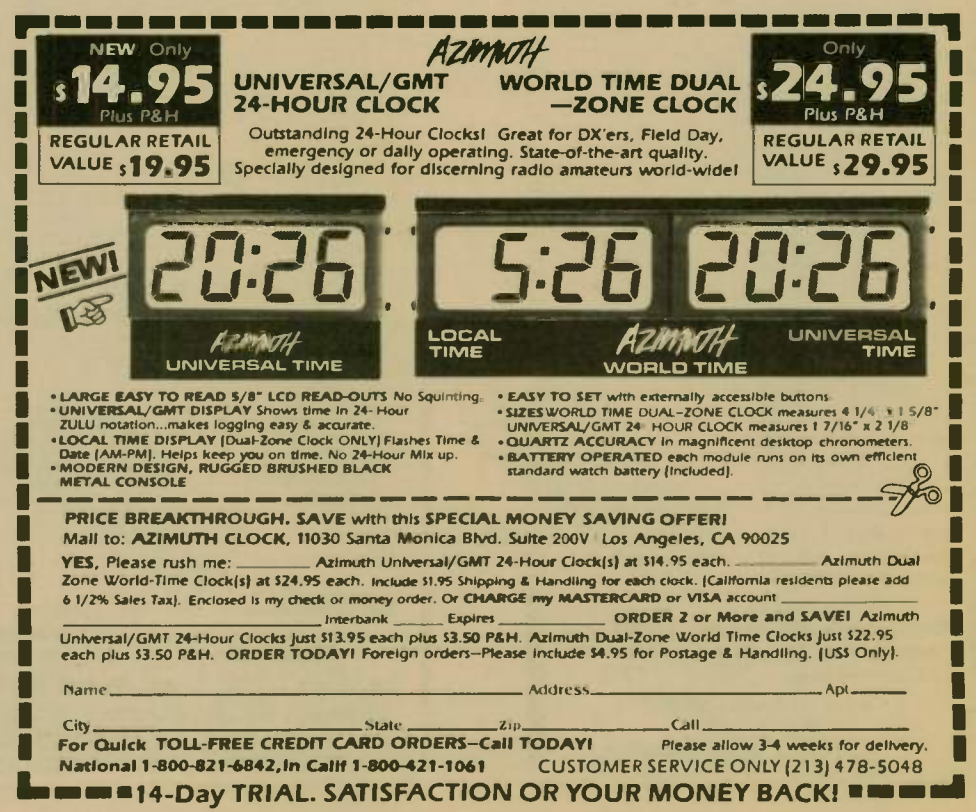
During the Washington QSO Party I was involved in, (I chase other stuff besides DX), I heard an SSB station in the CW portion of 40 meters. It was 4K1GAG on the South Shetlands with a strong signal. Some of the CW boys were frantically calling him, and he said he would get to the United States in a moment. He then said he would listen up on 7.237 MHz. Lucky me, and after a couple of calls I got a new one on that band. I was using a sloper on Europe running an IC-740 barefoot. GL DX to you, 73 de John, N6JM. □

Ohm-Brew

This month's winner is Robert Berdeen, KA2GWR, of Stittville, New York. The answer is on page 53.



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



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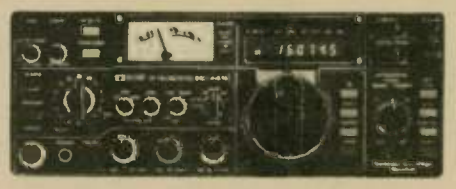
IC-751, ICOM's brilliantly new transceiver, sets a new high standard of comparison with high-tec advancements and the superior quality essential for competitive-grade performance.



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R-71A GENERAL COVERAGE RECEIVER

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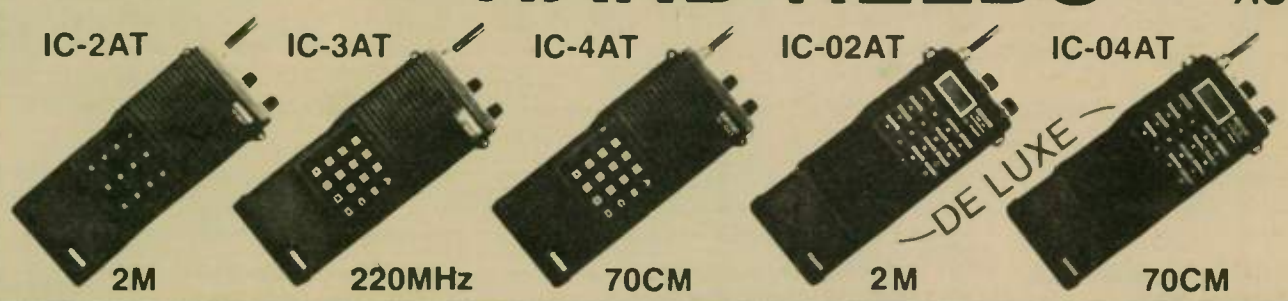

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6 STORE BUYING POWER

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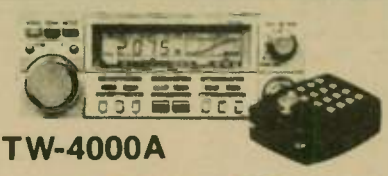

TW-4000A

TM-201
TM-401

TR-7950

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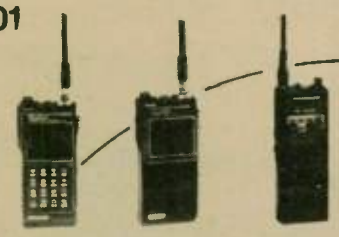

TH-21AT/ TH-41AT
TH-21A TH-41A
TR-2600A

NEW! NEW! NEW!

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TM-411A

TS-930S

TS-430S

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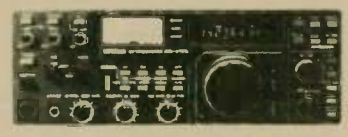

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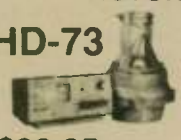
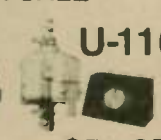


U-110 $54.95



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AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

A/O-10 Gateway

There has been lots of activity on the Gateway circuits for AMSAT/OSCAR-10. Just before the Labor Day weekend, I heard the Catalina repeater in Southern California running a Gateway Operation for better than an hour. This is an amateur space communications event occurring twice weekly from this repeater.

Larry KG6EG was net control for the Catalina repeater on 147.09 MHz user receive and 147.69 MHz user transmit. Lee Owens, W6IFW, was set up with a link to the Catalina repeater, which he retransmitted on the 70cm uplink to AMSAT/OSCAR-10. The A/O-10 downlink on 2 meters was retransmitted to the Catalina repeater. Thus, the users on the .09/.69 repeater were able to talk to A/O-10 users across the country.

Jack Somers, WA6VGS; Jerry KB6CRN; K6DAU; KA5DND; KG6FB; NX6M; K6UEG; Will Snell, W6HFH; George Watts, KB6V; Mark Pines, N6ITQ; and Fred Crooks, N6IHZ, in California were heard talking with Buck Ruperto, W3KH, in Pennsylvania and Art Seltzer, K2ACD, in New Jersey.

The Californians had made prior arrangements with Larry KG6EG to participate in the Gateway operation. It was very successful and beautifully handled — a prime example of the cooperation and courtesy that is the hallmark of Amateur Radio and should always be so.

The MARCE Getaway Special #007

If all goes well and the Space Shuttle Mission 41-G is launched on time, it will carry the Marshall Amateur Radio Club's Getaway Special (GAS) #007. The scheduled date was 01 October 1984. The MARCE (Marshall Amateur Radio Club Experiment) is a student space-science experiment similar to that which was shown under construction in the ARRL's video/film *Amateur Radio's Newest Frontier.*

The GAS-007 Experiment was designed to telemeter data on a downlink frequency of 435.033 MHz. If this telemetry data were to be picked up by A/O-10, the plan was for the GAS 007 data to be relayed on the Mode B downlink at 145.972 MHz.

A telemetry decoding sheet is available from the ARRL. Send an SASE to GAS #007 C&TD, ARRL, 225 Main St., Newington, CT 06111.

The following is a list of equator crossings of the Shuttle 41-G in mission elapsed time. Mission elapsed time is computed from lift-off.

Shuttle Flight STS 41-G Equator Crossings

Orbit No.	D/HH:MM:SS	Long. (deg)	Alt. (Km)	N.P. (min)
		GAS #007 Downlink #1		
23	1/09:25:53	110.94 E	273.52	89.9683
24	1/10:55:51	88.13 E	273.50	89.9367
25	1/12:25:47	65.25 E	273.48	89.9700
26	1/13:55:45	42.44 E	273.43	89.9367
27	1/15:25:42	16.57 E	273.37	89.9683
28	1/16:55:40	3.24 W	273.34	89.9383
		GAS #007 Downlink #2		
39	2/09:19:14	106.49 E	224.17	88.9067
40	2/10:48:08	84.33 E	224.09	88.9067
41	2/12:17:02	61.72 E	224.02	88.9367
42	2/13:45:69	39.18 E	223.91	88.9067
43	2/15:54:53	16.58 E	223.80	88.9067
44	2/16:43:47	6.01 W	223.70	88.9067
		GAS #007 Downlink #3		
55	3/09:01:57	105.50 E	224.98	88.9383
56	3/10:30:54	82.89 E	224.91	88.9683
57	3/11:59:52	60.35 E	224.81	88.9383
58	3/13:28:48	37.76 E	224.72	88.9367
59	3/14:57.44	15.16 E	224.61	88.9383
60	3/16:26:40	7.42 W	224.52	88.9050

N.P. = Nodal Period

For those who have their own computers, the following are the Keplerian element sets for GAS 007 planning:

Launch: 01 Oct. 1984, 11:00 GMT

I.D.	Planning set downlink #1	R.A.A.N.	68.7538
Epoch	84/276.85138889	Eccentricity	.0010544
Drag	4.6E-02	Arg. of Perig.	346.276
Inclination	57.2007	Mean Anomaly	14.1415
		Orbit No.	23

The MARCE is also identified as Project Explorer. Using a voice synthesizer Digitalker System, its on-board digital data systems will convert the experimental data into English language to modulate the transmitter.

Amateur Radio stations receiving the signals either on the direct downlink on 435.033 or via A/O-10 on the 2-meter Mode B downlink are asked to send the recordings of the data via HF amateur channels or by mail to MARC, Huntsville, Alabama.

Listen for the 8-second "QST QST QST from WA4NZD." There will follow a time announcement, a status and data announcement ending with "from WA4NZD."

UOSAT/OSCAR-11

Telemetry and data gathered from UOSAT/OSCAR-11 to confirm gravity-gradient lock indicates that the libration (oscillation) of the spacecraft, or its movements away from the ideal position are contained within 20 degrees.

Simulations performed at the University of Surrey in England prior to the gravity-gradient boom deployment indicated it would be between 38 and 42 degrees of satellite libration. The lower range makes everyone at Surrey very happy.

The internal temperatures of the U/O-11 continue to be improved by spinning the satellite slowly about its Z-axis. The spin is expected to have a slight tilt effect due to interaction with the gravity-gradient boom stabilization.

AMSAT's annual meeting

In last month's column, we reported on the upcoming Annual Meeting of AMSAT on 10 November 1984. The location of the meeting is the AMFAC Hotel, formerly Airport Marina at 8601 Lincoln Blvd., Los Angeles, CA 90045. The telephone is (213) 670-8111.

Information can be obtained from Dennis Dinga, N6DD, P.O. Box 4111, Diamond Bar, CA 91765.

You can expect a great series of technical discussions along with some important business items. Your correspondent expects to be there. ☐

If a foreign amateur visits your area, do a picture story for WORLDRADIO.

Vince Luciani, K2VJ

Vince Luciani, K2VJ*

CARI — Chess & Amateur Radio International — is a worldwide organization of chess players who like to play chess by Amateur Radio.

Notice that we do not necessarily say that CARI members are radio amateurs who play chess; in fact, over 10 percent of our members are not radio amateurs. Quite a few, however, have gone on to become radio amateurs, having been keenly motivated by their desire to combine both hobbies.

And, yes, the "international" to our name is more than mere smoke. We have, as of August 1984, members from the United States (plus KH6 and KL7), VE, VK, ZL, CR21, P29, SM4, OH2, I2, DA2, HK3 and HH2.

CARI basically had its start from my ham-active son Jim WA2JNN, who had run through a lot of what Amateur Radio had to offer, one summer. Turning to radiochess, he soon learned that to uncover a radiochess aficionado could be an enormously draining chore. You simply can't find them when you're looking.

To help, I turned to **Chess Life**, official publication of the U.S. Chess Federation, with a letter to the editor that brought considerable numbers of inquiries from not only hams but non-hams; they suggested there should be an organization, and would I start one. I agreed to.

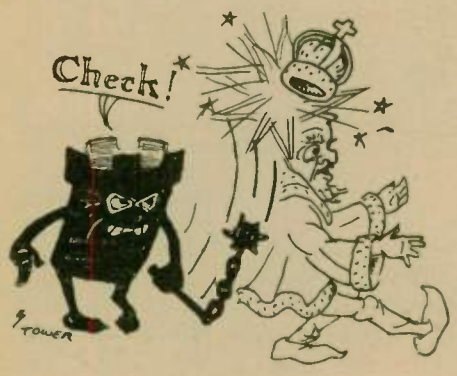
Publicity in **Worldradio**, plus a feature article in **CQ Magazine** (which included a cover photo of Jim at radiochess), did the trick. We were on our way. That was over two years ago.

We reach our membership, now, with a bi-monthly newsletter sent airmail around the world.

CARI News is a newsy publication somewhat in the spirit of **Worldradio**, except we are on a much smaller scale (so far). A typical issue might include: a cover cartoon (front, back or both) by CARI member Steve Tower, who joined as a non-ham but stayed with it to become WB6DZU recently; then my editorial that so many early members liked (better than W2NSD's, they used to say); member news; chess fillers; swap shop; articles by various international members (which we were doing long before **73 Magazine** got the idea, and a very good one it is, their international news feature. **73**, by the way, gave *CARI News* their "Newsletter-Of-The-Month Award"); chess game scores; CARI chess ratings (we have our own system); procedures on how to play radiochess by CW; CARI frequencies and nets; and news on old and new radiochess tournaments worldwide.

We hope to make this column a regular monthly contribution to **Worldradio**. If you would like more information on CARI, please send an SASE to K2VJ, P.O. Box 682, Cologne, NJ 08213. □

Pass it on . . . WORLDRADIO



The Marine Scene

The Olympics are over. The FCC is no longer giving ham tests. There is a new type of auxiliary out there, and it's not the United States Coast Guard Auxiliary we're talking about. There's a lot changing on the Amateur Radio scene, and let's take a look at what's new.

Olympic thanks

A public thanks goes out to ICOM America, Inc. for all of their help during the Olympic Regatta in Long Beach this past August.

ICOM and their local Southern California dealers went all out in assisting us with loaner Olympic Amateur Radio communications equipment for our marine base station operation, as well as equipment for several stake boats. ICOM also went out of their way to effect immediate repairs on some business radio hand-held equipment just before the start of the Olympics. This is the type of cooperation we like to see from a manufacturer.

While we realize that manufacturers are constantly being asked for loaner equipment, we salute ICOM in recognizing the importance of the Olympics and giving that extra support to their ICOM dealers. Ham Radio Outlet in Anaheim, as well as C&A Roberts in Torrance, cleaned out half their store to keep the Olympic communications going.

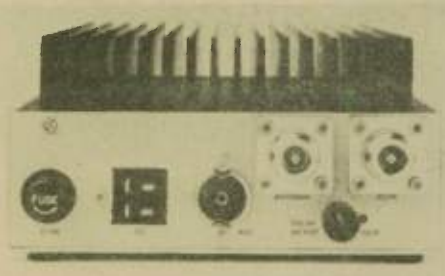
Yaesu Corporation in Paramount indicated that they could not supply any equipment for the Olympic Regatta communications. Kenwood did not respond to any correspondence on this matter at all.

We found that the Metz (Laconia, New Hampshire 03246) marine antenna works quite nicely on marine VHF channels as well as 2-meter frequencies. Without retuning, the antenna is broad-banded enough to give us low SWR readings on both the marine and the ham service bands. We recommend the more rigid whip for marine applications.

I'm still getting letters about the modification to an ICOM 02AT hand-held for simultaneous ham and marine VHF communications. While it's not illegal to modify Amateur Radio equipment, it is illegal to transmit on marine channels with a radio that does not meet FCC Part 83 type acceptance.

Although the simple mod will allow your set to transceive from 144 MHz all the way up through 165 MHz, you would not be allowed to transmit except within the Amateur Radio band limits. However, it's a great way to monitor not only marine frequencies but also government channels, the VHF 162 MHz weather broadcasts, plus a host of other business and land-mobile services in the 150/160 MHz range. No receiver retuning necessary!

Complete modification details, including the three diodes plus a frequency list of all marine channels, is available for $5 from Radio School, 2414 College Dr., Costa Mesa, CA 92626. It's an easy 30-minute mod job, and all parts and schematics are provided.



We received some very nice evaluation results from the T.E. Systems VHF and UHF power amplifiers for 2-meter and 432 MHz operation. (P.O. Box 25845, Los Angeles, CA 90025)

While I'm a real fan of Mirage amplifiers, T.E. Systems produces solid-state VHF and UHF power amplifiers with a built-in GaAs Fet preamplifier for single-sideband and weak signal applications. Not only do they give you a strong boost of power output, they can also help you receive those extremely weak signals. Preamps are usually not effective on FM, but for SSB operation, they work well.

Write T.E. Systems for more information about their military-grade amplifiers that are priced right in line with Mirage amps.

FCC test info

The FCC is now officially out of the test-giving business. No longer are Amateur Radio examinations given at any FCC field office. You will take your next upgrade from fellow volunteer examiners who have been approved as a three-member team by a volunteer exam coordinator (VEC).

If you have a friend who's just getting started, the Novice license may be administered by any ham, 18 years of age or older, who holds at least a General Class license. This is a one-on-one test and the participating ham will choose questions from the FCC-published pool of 200 questions, one each in 20 categories.

For the Technician written exam, the test may be given by three Advanced Class Amateur Radio operators, or higher. The team of three operators must be certified by a VEC who will pre-announce the test day through the local FCC office. There is no minimum number of persons necessary for the three VE's to give the test; however, any test given must be announced in advance so that interested test-takers and ham test-checkers can oversee the operation. Fifty questions will be administered out of a pool of 500 questions.

For the General Class code test, Advanced Class theory test, and the Extra code and theory tests, it takes a team of three Extra Class, certified VE's to give the test. Like all other tests (except for Novice), it must be pre-announced by at least 45 days and a VEC will send the test questions to the Extra Class examiners. For the Advanced Class tests, 50 questions out of a pool of 500 will be selected by the VEC to be administered by the VE's to the applicants. For the Extra written test, it's 40 questions out of 400. For the code test, the VEC is allowed to choose commercially available code test messages at either 13 wpm or 20 wpm.

Now let's see what all this means in plain English.

If you are planning on upgrading, identify the local VEC nearest you from the list of volunteer exam coordinators. Call or write them, and tell them where and when you plan to take an examination. They will inform you of local test dates and potential locations for taking an upgrade.

This new system can also be expanded to cover distant foreign cruising locations for mariners. Mariners wishing to take part in the volunteer examination program who hold at least an Advanced Class license or Extra Class license should write me immediately for volunteer examiner credential information. There is a VEC organization specifically encouraging hard-to-get-to locations through their extensive VEC network — Fred Maia, W5YI, (VEC covering all 13 call areas), P.O. Box 10101, Dallas, TX 75207. This same organization also publishes an every-other-week newsletter that's probably the most factual and up-to-date review of the Amateur Radio scene.

If you are truly interested in becoming a volunteer examiner, the newsletter is a must. It's only $20 per year and gives you the very latest on the FCC and Amateur Radio scene.

Compromising or cheating on an examination is going to be tough under the new volunteer examination program. The chances of finding three Extra Class operators who are going to risk their own licenses to "give away" upgrades is pretty unlikely. They won't know themselves what the questions are until the very last minute, so there's no telling what 50 questions out of 500 will be given on the theory exam ahead of time.

Under the new volunteer examination program, all test taking must be pre-announced and cannot be held in secret meetings. This will allow other interested amateurs to double-check the operation to see for themselves that the tests are being given above-board. An FCC "auxiliary" may take on this job, plus on-the-air monitoring for rule violations.

For the maritime mobile volunteer examination program to work, we need to find willing Advanced and Extra Class volunteers who will drop me a line and request the W5YI VEC volunteer examiner certification information. There is no charge in becoming a volunteer examiner.

The ultimate growth of the Amateur Radio Service depends on the success of the volunteer examination program. The hardest part will be finding Advanced and Extra Class volunteer examiners who will give a little bit of their time in the administration and supervision of upgrade examinations.

All of the test questions have been published by the FCC. If you are interested in receiving a complete collection from Novice to Extra, once again write Fred Maia, VEC, P.O. Box 10101, Dallas, TX 75207. The fee is $3 for the entire question set which covers the postage.

Smooth sailing this winter, and next month we'll take a look at a Christmas gift list that you may wish to give your spouse! □

Florida ham goes mobile

Joseph Boris

Walter Thain, WB4KKB, has been an Amateur Radio operator since 1921, when he was 15 years old. He is a member of the Medical Amateur Radio Council and has been active on the MARCO Net.

In recent years, because he lives in a Miami (Florida) condominium where he is not permitted to use his transceiver, he has changed over to operating a mobile unit from his automobile.

In 1978, he went to Georgetown, British Guiana, to consult on a pilot program to screen women for early detection of cervical cancer by the Pap test.

His objective for going to Georgetown was to investigate the questionable operation of the Amateur Radio station, WB4MID/BH3, in use in the Jonestown tragedy.

— The Elder, New Haven, CT; submitted by by Joseph Boris □

Top Sail '84

Paul Turkeimer, WA6NKL

Top Sail '84 made waves around the world — radio waves, that is. Communications support for this special event, a part of the month-long Olympic Arts Festival, held on the 4th of July 1984, was provided by the South Coast Amateur Radio Network (SCRAN), which fielded 34 Maritime VHF Amateur Stations and four Packet Stations for coordination between the officially participating vessels. The spectator fleet was estimated at 6,000 sailboats and powerboats during the five-hour journey around the South Bay, the Palos Verdes Peninsula, with Long Beach as its final destination.

Adding to the special event and affording Amateur Radio operators the opportunity to participate from the far reaches of the globe was the HF station operating on 40, 20 and 15 meters SSB from the TS *Golden Bear,* the official training ship of the California Maritime Academy under the call sign WB84IWB. The ship's Amateur Radio station consisted of a Yaesu FT-101FE, a Henry 2K linear and a trap vertical antenna. A total of 248 contacts were logged with stations from Japan, Malaysia, South Africa, England, Canada and the United States.

The TS *Golden Bear* is based at Vallejo, California. This 491-foot, 11,250-ton displacement ship was commissioned in 1940 under the original name of *Del Orleans,* a combination of cargo and passenger ship on Central and South America runs. It was acquired in 1941 by the U.S. Navy, renamed the *Crescent City,* and converted to an attack transport. By 1945 she had been awarded the Navy Unit Commendation and had won 10 battle stars.

Renamed the *Golden Bear* in 1970, the ship is a floating laboratory for students of the California Maritime Academy, both dockside at the Vallejo Campus, and during the annual 10-week training cruise into the far reaches of the South Pacific.

This activity was organized by Paul Turkheimer, WA6NKL. Emmet Ingram, WA6HIG, Communications Coordinator for SCRAN helped to set it up. Other operators were O. Bill Baldock, W6GYA, and W. R. (Tag) Taggard, W6ENO, a U.S. Maritime Officer and the *Golden Bear's* Chief Radio Operator. The ship's Commanding Officer is Captain John M. Keever. □

Liberty Cup Race excitement

The Liberty Cup Race, the first world class yachting event to take place in the New York/New Jersey Harbor in over 60 years, took place 30 June-03 July.

This international sailing regatta featured eight of the world's best blue-water captains from seven nations — the same countries that competed in the 1983 America's Cup — in a true match race series of 28 heats. The contestants sailed identical new fiberglass 30 ft. S2 9.1 yachts, and each raced against every other twice on an exciting windward-leeward course in a test of seamanship even more rigorous than the America's Cup itself, since individual yacht design was not a performance factor.

A race of this importance required a positive and reliable communications system and, as is often the case, Amateur Radio was called upon to fulfill those requirements. The Staten Island Amateur Radio Association (SIARA), being no stranger to public service events, accepted the invitation to participate.

Racing began Saturday, 30 June, and continued through 01-02 July, with the finals taking place on Tuesday, 03 July. The SIARA Communications Team — whose members included Ed O'Grady, KC2ZF; Bob Roschewsk, KA2PBT; Bob Mitilieri, N2EFT; George Rice Jr., NA2V; John Foray, N2DWA; and Warren Ziegler, KI1E — provided many services during the four days (i.e., race progress and results, coordination between Race Committee boats, weather information direct from the National Weather Service office at LaGuardia Airport, and even taking wind readings on the course itself).

Both the Liberty Cup and the SIARA's participation were progressing smoothly and routinely when, on the third day of the race, an emergency call to race headquarters led to a ship-to-ship-to-shore-to-helicopter-to-airplane odyssey for Carl Helfrich, a member of the U.S. team under skipper Ted Turner.

Helfrich's wife was in an Atlanta hospital, giving birth prematurely and complications had set in, requiring that Helfrich contact Atlanta immediately by phone.

Ed O'Grady, KC2ZF — acting as net control for the four-day event — contacted Bob Roschewsk, KA2PBT, who was aboard one of the committee boats, and informed him of the necessity to contact Helfrich immediately despite the fact that Helfrich was in the middle of the race! Roschewsk then boarded a high-speed inflatable boat and went directly to the primary judge's boat, conferred with the race director Graham Hall, and both men then sped alongside Turner's yacht while it was still in competition, and picked up Helfrich.

Realizing the urgency of the situation, O'Grady had arranged with the captain of *Empress Subaru,* a 160 ft. yacht sporting an automobile and helicopter on its top deck, to have Helfrich brought aboard to utilize the yacht's INMARSAT Terminal to place the required calls to Atlanta. From there, Helfrich was rushed by speedboat to lower Manhattan where the Port Authority of New York/New Jersey — notified by O'Grady — had a helicopter waiting.

In addition, O'Grady — a controller for Eastern Airlines — had called ahead to arrange passage on a flight from LaGuardia to Atlanta as well as to have the helicopter met on arrival. As a result of SIARA's efforts, Helfrich reached the airport in time for the 5:55 flight.

"It's great news," said Ted Turner, who swept his four races that day, using a pick-up crew member. "I'm glad everybody got together and did somehing like this for 'Bunky' (Helfrich)."

This was the first time SIARA had participated in a marine event, but the professionalism displayed should earn them a permanent spot at the Liberty Cup Races for years to come.

P.S. As of this writing, Helfrich advised both Mrs. and *Ms.* Helfrich are doing fine! □

Oregon parade and run

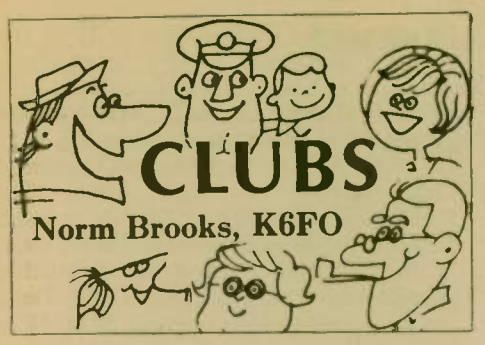
The Scotts Bluff ARES provided communications for the Oregon Trail Association during the annual Oregon Trail Days Parade in Gering, Nebraska, on 13 July.

The day started off at 8:30 a.m., with nine amateurs assisting parade officials in readying participants in four places for the 11:00 a.m. parade including manning an information point. By 10:30 a.m., three more amateurs were in place along the parade route, some with different chairmen integrating the different floats, bands, etc. into the parade route.

The ARES group also provided communications for the Don Childs Memorial Five-Mile Run during the parade.

During this annual run, 10 amateurs using hand-helds and mobile units were placed at strategic points throughout a course which ran from downtown Gering, west to Scotts Bluff National Monument, then north and east back to 10th Street to the finish.

The Scotts Bluff ARES repeater, WDØBQM (144.87/145.47) was used during both events —*James Weber, WDØBQM, DEC, Western Counties, Nebraska* □



Kauai ARC Field Day

Bill Baisley, KH6S

The Kauai ARC remains capable of establishing an emergency radio station anywhere on the island, independent of commercial power, within a very short period of time, whenever a situation develops that requires it.

This fact was proved on Saturday, 23 June, when a portion of Lydgate Park was transformed into an Amateur Radio emergency radio station for participation in the ARRL Field Day contest.

The station was on the air by 9:45 a.m., within an hour after the arrival of the last of its equipment. Two transceivers were operated continuously from that time until near the end of the contest period, 25 hours later.

In all, 26 Amateur Radio operators were involved in the effort, and over 1,100 other stations were contacted throughout the United States and Canada.

One of the two radio operating positions at the park was a "phone" or voice position using a linear-amplifier to give around 1,000 watts of output power and a 3-element beam antenna to aim and amplify that power even more.

The other radio position at the site was a "CW" or code unit which operated "barefoot" — that is, no high-power amplifier — and used a vertical antenna. Since CW signals can get through in conditions where phone signals cannot, a power amplifier was not really needed, but the vertical antenna is non-directional and does not amplify the signal itself so the CW position was at some disadvantage by comparison.

The Field Day sponsor member of the Kauai ARC was Jack Wada, whose call sign, KH6LG, was the one used by the station at the Lydgate Park site.

The club's perpetual project chief is Ryoko Sokei, KH6DLW, who made all the required advance arrangements and made sure all of the equipment was in readiness for the exercise. His able assistant was Gemi Pascua, KH6F, who has been doing that chore for five years now.

The chief operator was Juan Lorenzo, KH6JJC, who did much of the operating at the phone position.

Evillo Abreu, KH6DRT, did yeoman service on the key at the CW position, but received a great deal of help from a ham visiting from Maui — David Judd, NH6H.

Back in 1959, while a Kauai resident, Dave's father worked with Jack Wada and Ryoko Sokei in the original Field Day radio activities at the park.

Other operators who spent a lot of time at the operating positions include Vance Pascua, KH6KU; Joe Yoshimura, KH6KK; Sean Romero, WH6AVA; and an Oahu visitor, Mel Yoshioka, KH6TB.

Many old-timers also contributed significantly to the effort at the operating positions, including Sus Muraoka, AH6AW; Clarence Gardner, AH6CG; Larry Abreu, KH6DLU; and more.

— Garden Isle Newspaper; submitted by Rufus McCracken, KH6QL □

OBRA — a repeater group to brag about

Bob McGarvey, WB2EVF

Most repeater groups are just that. The members are concerned with chatting with their cronies on 2 meters and many never get on any other band. Their Amateur Radio horizons are by no means in the distance. However, one Central Jersey group which began around a repeater is a full-fledged, multi-faceted amateur organization.

The Old Bridge Radio Association (OBRA) is the group I have in mind. Walt Reigelsperger, KB2TX, is its president. It is involved in public service, DX and any phase of communications you can link with Amateur Radio.

During the late winter storms which battered the Jersey coast, the Old Bridge Amateurs proved portable amateur equipment could restore communications when everything was washed out or blown away. They kept authorities informed of land and seawall damage, weather conditions, isolated residents, potential dangers and rescue activities.

The OBRA 2-meter repeater (input 147.720, output 147.120) is for more than conversational use. It supports the Middlesex County Emergency Management Program on a regular basis, making its facilities available for a weekly net and participating in area emergency operations, simulated or real.

In June, the association participated in ARRL Field Day for the first time, using the site on Route 516. There will be many more Field Days for the OBRA, you may be sure.

Flipping through the boxes of QSL cards, I found one I was looking for. It was from KZ1HZ in Saudi Arabia, confirming a 1980 10-meter sideband contact. At the left top of the card was "HI BOB" and at the bottom "Opr. Chuck WA2QNW/HZ". The amateur in Jeddah I had been speaking with was Chuck Tames, one of the OBRA boys from the Old Bridge. They get around.

A few years back, before it became the patriotic thing to do, the OBRA knew about Liberty Island and the Statue of Liberty. A special event station, K2LI, was set up on the island and contacts made with amateurs anywhere where there was an antenna. It was a worthwhile tribute to the Lady of the Harbor, and you can't say it was ahead of its time. The message of the Lady is timeless. — *"Calling CQ", Sunday Home News, NJ* □

New Hawaii club

An Amateur Radio club, known as the Keolau ARC, was recently formed in Kaneohe.

Officers elected were Joseph Keola, KH6BFZ, president; Ed Abbot, KB3CQ, vice president; and Hank McCoy, WH6F, secretary-treasurer. There were 13 amateurs present. — *Submitted by Rufus McCracken, KH6QL* □

If your club is involved in any emergency situations, send the story and pictures to WORLDRADIO.

See your group in print — your story may help others be better prepared.

VISIT YOUR LOCAL RADIO CLUB.

ARIZONA

Tuscon Repeater Association
P.O. Box 40371, Tucson, AZ 85717-0371
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

Amador County Amateur Radio Club
P.O. Box 1094, Pine Grove, CA 95665, Pioneer Elementary School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WIY Rptr. — 146.835, 146.235.
Net Tues. 7:30 p.m.

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

Electronic Museum ARC
Foothills College, Los Altos
Last Monday/monthly - 7:30 p.m.
(except January and December)

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
3508 Gresham Ct., Pleasanton, CA 94566
Meets: Valley Memorial Hospital
Multi-purpose room, Livermore, CA
2nd Saturday/monthly - 9:30 a.m.

North Hills Radio Club
Meets: 3rd Tuesday/monthly — 7:30 p.m.
Carmichael Elks Lodge
5631 Cypress Ave. • Carmichael, CA.
Net 145.19 Thur. at 8:00 p.m.

San Fernando Valley ARC (W6SD)
Red Cross Building
14717 Sherman Way
Van Nuys, CA 91704
3rd Friday/monthly - 7:30 p.m.

San Gabriel Valley ARC
Bowling Green Clubhouse
405 S. Santa Anita Avenue
Arcadia, CA 91006
1st Tuesday/monthly - 7:30 p.m.

Santa Cruz County ARC
P.O. Box 238, Santa Cruz, CA 95061-0238
Last Friday/monthly — 7:30 p.m.
Dominican Hosp. Educational Center
K6BJ repeater 146.19/146.79

S. Counties Amateur Teleprinter Society (SCATS)
2nd Sat/monthly — alternates in L.A. & Orange Counties.
60 WPM RTTY Net, Wed. 8 p.m. on 146.10/.70 W6IWO/RPT
For info. call Howard Rose, N6CPP, (818) 997-1067

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

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

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

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

Sonoma County Radio Amateurs, Inc.
Box 116, Santa Rosa, CA 95402
Hank Davis, W6DTV (707) 823-7885
County Office of Emergency Service
1st Wednesday/monthly - 7:30 p.m. rpter 146.13/73

Southern Calif. Amateur Transmitting Society (SCATS)
Vine Elementary School
1901 E. Vine St.
West Covina, CA 91790
1st Monday/monthly - 7:00 p.m.

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

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

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

West Valley Amateur Radio Club
American Legion Hall Post #826
5320 Fallbrook Ave.
Woodland Hills, CA
2nd Thursday/monthly — 7:30 p.m.

West Valley A.R.A. W6PIY
Meets: Los Gatos Red Cross Bldg.
18011 Los Gatos - Saratoga Rd.
Los Gatos, CA 95030
1st and 3rd Wednesdays/monthly

Yolo Amateur Radio Society (YARS)
Rolind Mahan, AJ6P (916) 756-0882
Heart Federal S&L, Conf. Rm.
3rd & F Sts. (opposite Davis PD)
Davis, CA 95616

CONNECTICUT

Tri-City ARC, Inc.
P.O. Box 686, Groton, CT 06340
Meets: Groton Public Library
Rt. 117, Groton, CT
2nd Tuesday/monthly - 7:30 p.m.

FLORIDA

Dade Radio Club, Inc.
Museum of Science
3280 South Miami Ave.
Miami, FL 33133
1st and 3rd Tuesdays/monthly - 8:00 p.m.

Platinum Coast Amateur Radio Society
1150 S. Hickory St., P.O. Box 1004
Melbourne, FL 32902-1004
Meets: 2nd Monday/monthly at Melbourne Red Cross
Talk-in on 146.25/85 or 146.01/61 rptr.

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.

Vero Beach Amateur Radio Club W4OT
Walter Camuso, W1ESN, President
Meets second Thursday/monthly - 8:00 p.m.
American Red Cross Bldg.
2506 17th Ave. • Vero Beach, FL 32960

HAWAII

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

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, 2120-29th Street, Sacramento, CA 95818.

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.

Dupage Amateur Radio Club
Mid-America Savings and Loan
55th & Holmes (55th St. near RT 83)
Clarendon Hills, IL • 4th Monday/monthly 7:30 p.m.
(312) 971-1156 for more information

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

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

INDIANA

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

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

Northeastern Indiana ARC
Jim Sellers
P.O. Box 745, Auburn, IN 46706
Daily 6 p.m. net on 147.96/.36
2nd Tuesday/monthly - 7:30 p.m.

IOWA

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

MARYLAND

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

MASSACHUSETTS

Whitman Amateur Radio Club (WARC)
Pine Street, P.O. Box 48
Whitman, Massachusetts 02382
Call-in 147.825/225
1st & 3rd Mondays/monthly — 8:00 p.m.

MICHIGAN

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

MISSOURI

Heart of America Radio Club
American Red Cross
3521 Broadway
(816) 756-2365 x65
3rd Tuesday — 7:30 p.m.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG
P.O. Box 911, Dover, NH 03820
(603) 742-0130/332-8667
2nd Sunday/monthly - 7:00 p.m.
Dover Dist. Court. Talk-in 147.57

NEW JERSEY

Central New Jersey Chapter No 138, QCWA
Net: Ea Tue. evening-10:00 p.m. 147.645/147.045 MHz
Mtgs: Quarterly; Membership or more info:
Bob McKinley, W2OMR, Sec., 89 Stratford Rd.,
Tinton Falls, N.J. 07724 (201) 542-2113

NEW YORK

Long Island Mobile Amateur Radio Club (LIMARC)
146.25/85, 147.975/375, 223.22/.224 .82, 444.125/449.125
Membership: Woody Gerstner, WB2IAP, 42 Mohawk Ave.,
E. Atlantic Bch., NY 11561. Net Mon. 8:30 p.m. 146.25/85
Meets 1st Tues/8 p.m., H.B. Thompson, JHS, Syosset

Suffolk County Radio Club
Meets 3rd Tues. monthly 8 p.m.
Bohemia Recreation Center
Smithtown Ave., Bohemia, Long Island
More info! Dave Potter, W2GZD, (516) 472-2394

OHIO

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

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

NOARS-Northern Ohio Amateur Radio Society
P.O. Box 354, Lorain, OH 44052-3rd Mon. 7:30 p.m.
K8KRG — Home of the WW II Submarine USS COD
WB8JBM — Noars Contest Station — K8KRG/Repeaters: —
146.10/70; 144.55/145.15; 449.8/444.8; 223.10/224.70

OREGON

Oregon Tualatin Valley ARC
Beaverton Elks Lodge
3500 SW 104th Ave.
Beaverton, Oregon
2nd Wednesday/monthly - 7:00 p.m.

SOUTH CAROLINA

Trident Amateur Radio Club (TARC)
P.O. Box 73, Summerville, S.C. 29484-0073
Meet-Park Circle Presbyterian Church
North Charleston, S.C.
3rd Monday — 7:30 p.m./Nets — Tuesday 8 p.m.

TEXAS

Panhandle Amateur Radio Club, Inc. W5WX
Meets at Naval Reserve Center
2309 Line Ave., Amarillo, TX
2nd Tuesday/monthly 7:00 p.m.
Pres: Gary Rutherford, WB5MDJ

VIRGINIA

Eastern Shore ARC (ESHARC)
110 Church Street
Chincoteague, VA 23336
Repeater WA4TVS 147.855/.255
Net Mon. 9 p.m. Mtgs. as announced

Virginia Beach Amateur Radio Club (VBARC)
Open Door Chapel
3177 Virginia Beach Blvd., Va. Beach, VA
1st Thursday/monthly — 7:30 p.m.
For information (804) 497-1235

WEST VIRGINIA

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

Salvation Army HQ is station site

Members of the Clark County Radio Club, who conduct their weekly meetings and Amateur Radio license training classes at the Salvation Army Headquarters in Vancouver, Washington, recently completed the installation of an Amateur Radio station at that location.

The station, W7AIA, will be used for training, intercommunication and technical investigation by the club's Amateur Radio operators. In addition, the station will provide standby communications for the Clark/Skamania County area in the event of an emergency or disaster which might disrupt normally available communication facilities in the area.

Those who gave time and support to the project were: Gene Snow; Harry Carlisle, KA7QEP; Wade Kight, KA7HND, club president; Christian Engleman, W7QQ; Don Speth, WB1HGD; Darrin Snow, KA7PPH; Jack Hinton, KD7KDO; and Don Reibold, KC7WF.

Captain Cal Prouty, Commanding Officer of the Vancouver Salvation Army, and Chris Matsler, N7ANP, club vice president, also assisted in the installation of the new station. □

The Clark County Radio Club members who gave time and support to the Amateur Radio station project are, from left to right: (*Front row*) Gene Snow; Harry Carlisle, KA7QEP; Wade Kight, KA7HND, club president; and Christian Engleman, W7QQ. (*Back row*) Don Speth, WB1HGD; Darrin Snow, KA7PPH; Jack Hinton, KD7KDO; and Don Reibold, KC7WF.

Midway ARC assumes TRN management

On 15 September, the Midway ARC of Kearney, Nebraska, under the direction of its President "Mert" Feikert, WB0USW, took over sponsorship of the North American Teleconference Radio Net (TRN). "Mert" announced that Timothy Loewenstein, WA0IVW, will be the new net manager.

TRN links together over 150 gateway-stations (mostly VHF/UHF repeaters) across the United States and Canada to present high-quality technical and informational programs of interest to radio amateurs. When available for uplinking from the United States, the OSCAR-10 satellite also transmits the net to one-third of the Earth's hemisphere. It is estimated that a single TRN has had as many as 75,000 amateurs tuned in plus uncounted scanner listeners.

Past speakers on TRN have included Vic Clark, W4KFC, and Senator Barry Goldwater, K7UGA. A fact not generally realized is that the technology behind TRN allows any of the amateurs tuned in — whether in Alaska, Florida or New Brunswick, in their car, home or walking down the street with a hand-held radio — to talk to each other or to the featured speaker.

TRN is "amateurs learning to serve." The featured speakers provide amateurs with state-of-the-art information to inform and to inspire. While behind the scenes, amateurs perfect their skills to provide ad hoc radio/interconnect networks to serve the public in times of emergency or disaster.

The idea for TRN began with the work of Ed Piller, W2KPQ, and Charlie Kosman, WB2NQV. In the early '80s, Ed and Charlie began linking repeaters by telephone to provide technical presentations to amateurs as a joint project of the Long Island Mobile Amateur Radio Corps (LIMARC) and the Long Island Chapter of IEEE. However, with the telephone bridging equipment readily available to them, it was difficult to provide high-quality audio to and from all participating repeaters.

In late 1982, Rick Whiting, W0TN, a telecommunications engineer with extensive experience in developing teleconference capabilities for Honeywell and an early participant in the IEEE/LIMARC technical nets, became net manager. Rick made arrangements with Lou Appel, K0IUQ, of Darome Inc., to use Darome's highly sophisticated multi-point teleconference bridges to provide the "land line" links for repeaters (note that many of the repeaters are, in turn, linked by radio).

The result was superb audio quality and a rapid growth in the number and distribution of gateway stations in the net. Lou will continue to be the bridge engineer behind the scenes in TRN's under the new net manager.

The pre-net audio on many TRN's has been interviews conducted by Steve Bauer, KC0HF, a highly talented and dedicated ham in Wichita, Kansas. A highlight of Steve's pre-net programs was his interview with astronaut Owen Garriott, W5LFL, for the March 1984 TRN.

Located midway between Boston and San Francisco (1,733 miles either way) the Midway Amateur Radio Club is the ongoing host of the Kearney Spring Amateur/Family Convention held the last weekend of March each year. This event draws amateurs and their families from throughout the Midwest. The Midway Amateur Radio Club hosted the Nebraska State ARRL Convention and the 1984 Midwest ARRL Convention. □

Four cycles or three?

Or two? Barbara Osofsky, KB2HM, had an article entitled "Four Cycles or Three?" in the summer bulletin of the Second Region Net. She thinks the present system looks great on paper, especially to us on the East Coast, but isn't really practical, and unfairly penalizes West Coast traffic handlers. What follows is partly a condensation of Barbara's thoughts, partly comments by your columnist. I believe her observations are well-made, however, so I'm willing to take the blame for all that follows.

Before the present system was adopted, the evening cycle (present Cycle Four) was the same as now, but the daytime cycle was quite different. There were two area nets daily, meeting at the same UTC time in all three areas, with Transcontinental Corps (TCC) sessions in between (as originally set up, the daytime cycle had a net to handle the TCC function but it was found that a TCC with individual schedules was more practical).

Some found that this resulted in being too late on the East Coast and too early on the West. As a result of meetings of the three National Traffic System (NTS) area staffs, ARRL headquarters decided to set up the present four-cycle system, with area nets scheduled for 11:30, 2:30, 5:30 and 8:30 local time, with region and section nets squeezed in between, region nets at 10:45, 12:30, 1:45, 3:30, 4:45, 6:30, 7:45 and 9:30, and section nets at 10:00 a.m., 1:00 p.m., 4:00 p.m., 7:00 p.m. and 10:00 p.m.

If fully implemented, this system would make it possible for traffic to pass both ways in a few hours at most. The trouble is that it has never been fully implemented. Normally, only Cycles Two and Four are used, and often it's hard to find enough amateurs to handle all the functions involved. Many nets do not have all the sessions indicated even for a two-cycle system. And often it is thanks only to iron men and women who are there every day, rain or shine, that even these sessions accomplish what they are supposed to do.

During the Simulated Emergency Test (SET), which will be a recent memory when this appears in print, in former years an effort was made to activate the full complement of NTS cycles, but with only marginal success. There just weren't the people available to do it in many places. This year, no such effort was made, but somebody in Newington decided to activate Cycles One and Three instead of Two and Four during SET. I'm writing this in September, so I don't know the result, but will be surprised if the change generates no confusion.

If someday we have enough amateurs interested in traffic handling to activate all four cycles on a daily basis, the system would indeed achieve its potential and would result in an efficient, effective nationwide traffic system, delivering traffic during the day within six hours or so of its filing, and giving overnight service for traffic filed in the evening.

That would be for both eastbound and westbound traffic, too. Actually, such service exists for westbound traffic, so we on the East Coast tend to think it's pretty good. But there's a loud chorus on the West Coast that disagrees. Cycle Two section nets meet at 1:00 p.m. local time, and so traffic put into them won't reach the area net until after 2:30 p.m.

When the TCC representative keeps the schedule with the TCC station in the Eastern Area at 3:30 p.m. Pacific Time, it's 6:30 Eastern Time. There are six region nets in the Eastern Area, and dozens of section nets.

The TCC representative is encouraged to bypass normal routes and put the traffic directly into section or region nets. But with so many section nets, if the load is at all sizeable, the representative will not be able to clear very much of the traffic before the region nets meet at 7:45 p.m. Most of it will have to go into the region and area nets, reaching the section nets in their late sessions after 10:00 p.m., or on the following day if the nets have no late sessions. In either case, the traffic will have to wait to be delivered on the following day, as it's not advisable to phone strangers after 9 or 10:00, unless it's an emergency.

A solution has been tried — activate Cycle One in the Pacific area, but it didn't help much, because the Pacific Area Net, Cycle One, meets at the same time as Eastern Area Net, Cycle Two, so it's difficult if not impossible for the TCC to get the traffic into the Eastern Area in Cycle Two; it has still to wait for the evening cycle. Some of the region nets in the Eastern Area meet at 3:30, but many do not, and in the latter regions, the only route is via the evening cycle.

Here is how Barbara would do it: Step 1 — eliminate Cycle Three from the NTS plan. This would change nothing except on paper, as we don't activate Cycle Three anyway. And it will allow more flexibility in planning, as there won't be any need to plan around a theoretical Cycle Three.

The Pacific Area Net has moved to 10:30 a.m. so as to be able to put traffic into the Eastern Area. The Eastern Area Cycle Two net could wait until 4:30 p.m. if desired, thereby making an hour available between Pacific and Eastern Area Nets to provide for TCC functions. And the Pacific Area Net could meet again in the afternoon, if desired, to handle traffic coming from the East, say 3:30 p.m., followed by the second session of the region nets. This plan would be quite adequate in normal times.

But how about emergencies? Barbara says that on the upper levels, NTS is such a unified system that it is almost impossible to institute a special session of one net without running the entire cycle. But this is not true of section nets. Most emergencies are local in nature.

She says, "If there is a serious flood in New Jersey or a tornado in Oklahoma, [what affects the] handling of the traffic from the area is the ability of the amateurs in the stricken area to get the traffic out, not the ability of the Pacific Area Net to handle traffic.

"Calling up an entire NTS cycle must waste valuable manpower, and unless someone can come up with a way to get section nets in California going at 4:00 p.m. in a non-emergency (for them) situation, the extra cycle will accomplish nothing."

She suggests personnel would be better employed to provide additional staffing for existing nets. The stricken area may well want longer sessions, but there is no need for everybody else to have longer sessions too. Rather, provide additional liaison stations, as we now do during the December rush or for fair traffic. Set up special schedules with individual stations to take the traffic and put it into the system outside the stricken area. The TCC Directors can usually arrange this.

This question illustrates once again the wisdom of the advice that procedures should be allowed to develop rather than be legislated from on high. The best course to follow in an emergency is usually the one most rational people would take anyway. And if one's normal routine procedures will handle the emergency, use them; don't think that because it's an emergency, you have to do something else. There's no merit in generating confusion.

Let the NTS do what it does best — handling individual messages from everywhere to everywhere, somewhat like the post office. When you have a lot of traffic to or from a few points, set up special schedules to take care of it. If you depend on the NTS, you may overload the system and delay everybody's traffic, and yours won't be handled as effectively as it would with special schedules because of all the relays involved in NTS routing.

Packet Radio

The question remains, how much longer will most traffic be handled by manual

(please turn to page 41)

Two-Land results

Here are the results for 1984: Although we slightly missed our 90-day target, this year's results are certainly on a more timely basis. Award certificates are now in process and should be forwarded shortly.

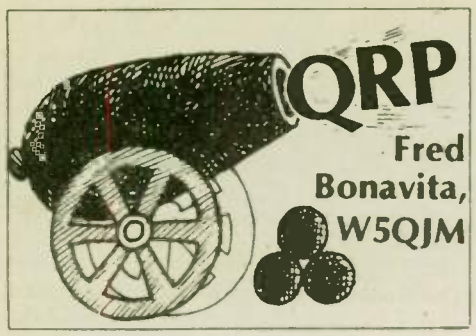
Gloucester County ARC again thanks you for your participation and looks forward to seeing you again next year.

In Two-Land

Call	County	#QSO's	QSO pts.	Multipliers	Score
NC2V	Salem, NJ	618	1290	198	249,480
W2EZ/M	Various, NJ	138	413	41	16,933
WA29SQ/M	Various, NJ	84	252	54	13,606
K2HPV	Gloucester, NJ	102	216	58	12,528
N2CQ	Gloucester, NJ	63	189	49	9,261
AB2W	Gloucester, NJ	51	102	32	3,466
KD2EZ	Mercer, NY	56	112	26	2,912
WB2IPX	Cayuga, NY	30	79	19	1,501
K2DNN	Chemung, NY	20	60	19	1,140
K2PF	Somerset, NJ	9	25	6	150
W2CC	Bergen, NJ	1	2	1	2

Outside Two-Land

Call	County	#QSO's	QSO pts.	Multipliers	Score
KA1CLV	MA	27	81	21	1,701
W5WG	LA	29	60	19	1,140
W8RYP	OH	21	63	18	1,134
NØCLV	KS	29	75	17	1,275
K1VUT	MA	18	47	15	705
W5NR	TX	10	30	10	300
WA7FKD	WY	10	30	7	210
KØHQE	IA	6	18	6	108
K9JIG	WY	7	14	7	98
K8KIR	MI	6	18	5	90
W3IJT	WV	5	10	5	50
KA7T	ID	6	9	3	27



Add South Africa to the roster of nations where QRP interest is growing and which are membes of the World QRP Federation.

Although only slightly more than a year old there, the QRP movement in South Africa has generated new interest in homebrewing (while helping salvage the 10.1 MHz band) and has been through two contests, which attracted a fair amount of interest and participation.

Radio ZS, the official journal of the South African Radio League (SARL), has published several articles about low-power operating, including homebrew QRP transmitters and transceivers, and more are on the way. The magazine also says the prime time for QRP'ers is 1730-1800, Mondays through Fridays; 0800-0830 and 1200-1230, Saturdays; and 0930-1000 Sundays, all South African Standard Time and on 40 meters.

Garth Beresford, ZS6ARK, of Johannesburg, one of the leaders in the QRP movement in South Africa, says activities there are under the direction of the ZS6TJ Club.

Interest in low-power operations was generated through a series of talks to the club by Brian Austin, ZS6BKW, a senior lecturer at a local university, and Graham Lambert, ZS6HV, a development engineer for a mining company. It has spread to other areas of the sprawling nation.

"That was just over a year ago," Garth says, "so we are relatively new on the scene."

The South African group has adopted the internationally recognized QRP power levels and frequencies, where possible. For instance, since the 40-meter band there is only 7.0-7.1 MHz, the QRP CW frequency is 7.030 MHz, while the sideband frequency is 7.090 MHz.

The ZS6TJ Club is promoting QRP through two kits it offers based on designs by Brian and Graham in Radio ZS last year. The first is a 10.1 MHz transceiver, and the second is a 40-meter CW transmitter with about 2 watts output.

Says Garth: "The committee of ZS6TJ decided that QRP was one of the last remaining areas where home construction was still attractive, so the kits have been designed for construction on the kitchen table.

"Another problem we have here is that it is becoming increasingly difficult for an individual to purchase one-off components. So, using the bulk-buying power of the (club), kits of parts were purchased for resale to the individual constructors. The popularity of the kits exceeded all expectations, and so far, the (club) had to reorder twice."

Graham and Brian said — and Garth agreed — a main reason for designing and offering a kit for the 10.1 MHz transceiver was to encourage operation on the band.

There has been some grumbling in Amateur Radio ranks in South Africa over the decision to limit the 30-meter band to CW and RTTY, they noted in the introduction to their construction article.

"In countries like South Africa, where the active CW population amongst the amateur community is very small, this decision has resulted in the band being almost neglected, much to the annoyance of those who would like to use it for SSB," Graham and Brian said.

Contests, which are structured by SARL, have been of the "sprint" variety — staged for a few hours on a Sunday afternoon on 40 meters. There are the usual bonus points for low-power output and for being crystal-controlled, but winners are also eligible for prizes, such as the commercially made SWR/power meter awarded in the June contest.

To encourage crystal-controlled stations' participation and to make it easier for them to compete, South African QRP'ers have come up with three new "Q" signals:

QMD — I will listen from my frequency down.

QMU — I will listen from my frequency up.

And, to end needless duplications in contests, *QBF* — Have we worked before? Or, conversely, we have worked before.

Sounds like something that ought to be considered for contest work in this country. □

Hope we can serve you. Your comments and suggestions are welcome.

Chris Wilson

Esther Given, W6BDE

The recent Olympic Games were a challenge and inspiration to everyone whether contestant, spectator or volunteer. We were impressed by the hours of practice to perfect each athletic endeavor. We were exuberant as these young people accomplished the seemingly impossible feats of athletic excellence. We shared the smiles and tears of joy evidenced on the winners' platform or the lack of tears but distress of defeat of those whose goal was out of reach. Whether Special Olympics or the XXIIIrd Games, we all marvelled at the sportsmanship of the contestants, and we all found a rekindled spark of patriotism when the flag and national anthem of any winner's homeland saluted the person and honor attained.

QCWA is proud that many of its members volunteered to assist in the communications programs which were needed to guarantee the success of the events. Often, Amateur Radio services volunteered to the overall success of a major undertaking go unsung and do not come to the attention of the general public. Most people don't stop to wonder who monitors meets, marathons, locates lost children, keeps traffic moving, accompanies the torch for 9,000 miles or makes it possible for the contestant to talk to home.

We should all feel great pride that amateurs all over our nation were QRV, trained and practiced in the required communications arts. They too belong on a very special winners' platform and we salute them.

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The Quarter Century Wireless Association is composed of many of the world's most experienced Amateur Radio operators. Its members have followed the progress of wireless communication from its inception to its endless journey into universal infinity.

QCWA membership fosters a great reservoir of knowledge and boasts a proud history of accomplishments. Eighteen thousand Amateur Radio operators with 25 or more years of licensed experience have joined the ranks since QCWA was initiated in 1947. At the present time, QCWA's active membership is approximately 10,500. Of the 54 charter members enrolled as of 31 December 1947, 17 are still living.

The first chapter was established in 1951 by a QCWA group in Cleveland, Ohio. Today, 151 chapters are scattered around the globe, most of them within the continental United States. Statistically, individual QCWA membership has averaged 40.5 new applicants per month over the 37 years of QCWA activity. This year, between 14 March and 05 June 1984, QCWA welcomed 238 new members — almost double the overall average.

Hopefully, this column is serving to bring QCWA's purposes, goals and membership advantages to its readers. To those who have responded with new or reinstated membership we say "enjoy"! To those eligible readers who were licensed 25 or more years ago, write QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061 for an application.

•

QCWA's 1984 annual election produced a most gratifying response. A new type of ballot was supplied each member in the form of a postage guaranteed postcard which made voting convenient, simple and preserved the secret ballot system.

El Paso Chapter #64 handled processing of the 5,338 ballots received from over 50 percent of the voting membership. The poll closed 31 July and the chapter had the results tabulated and reported to QCWA Headquarters by noon, 01 August. El Paso Chapter is to be highly commended for its prompt and efficient service to QCWA.

The successful candidates for two-year terms as director were Lew McCoy, W1ICP; Esther Given, W6BDE; Wade Holland, W4AZT; Hugh Winter, W5HD; and John Kanode, N4MM.

•

QCWA Headquarters reports a gratifying response to its request for QST's. A number of gifts have been received and are being processed, catalogued and shelved. It is anticipated that the Headquarters library will contain issues of QST from 1925 through the current issue. However, any copies prior to 1929 are still requested as they can be used as trade material for copies not on file.

Headquarters is also looking for pre-WWII Callbooks, especially those of the 1930's. Anyone wishing to donate any of these publications should contact QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061. □

Maureen Pranghofer, KFØI

Roxanne Evans

Mike Shaw, KD5CB, was sitting in the bedroom of his West Austin (Texas) home when the message came over his ham radio: a Louisiana hospital needed a cornea to transplant into the eye of a 16-month-old girl.

Shaw relayed the message to the Austin Lions Club Eye Bank, which had just received a cornea from the family of a Georgetown child who had died.

Within hours, the cornea was flown to New Orleans and transplanted into the eye of Jamona Anderson, said Eleanor McMain, director of the Southern Eye Bank of New Orleans.

The happy ending marked another success for Shaw, whose blindness is no deterrent to helping others see.

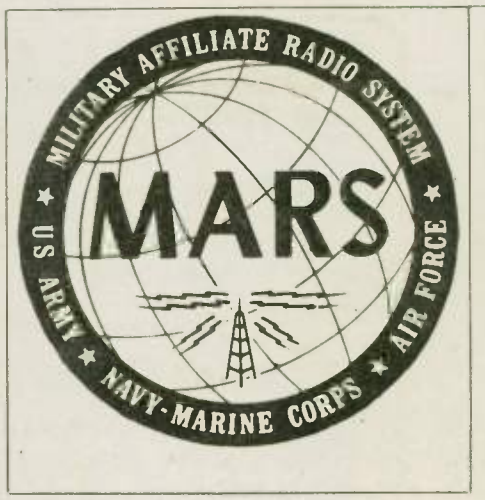
Shaw, 28, sits in his bedroom each day to listen to three broadcasts from around the country. The broadcasts contain messages from eye banks that are looking for eyes or corneas, or have eyes available.

The broadcasts at 6:45 and 8:00 a.m. and 8:00 p.m. contain messages such as, "Kansas City needs two eyes under the age of 50, fresh tissue," and give a phone number, Shaw said.

He said a sighted friend got him interested in volunteer monitoring five years ago, and he thinks he is the only person in Austin monitoring the broadcasts regularly. Shaw doesn't know how many people have received eyes because of his help.

"I enjoy it," he said. "It's good to have something to do. I don't want people to be in the shape I am in. This is a seeing world, and people ought to be able to see."

— American-Statesman, Austin TX □



Air Force MARS Field Day

Some Field Day totals: HARC made 1,050 contacts, Maui 800, Kauai 1,000, Air Force MARS 800.

Rufus McCracken, KH6QL, submitted the following regarding the MARS Field Day activities:

"Air Force MARS Field Day manager, Peter Demmer, KH6CTQ, reports one of the best years ever at Bellows AFS this year.

"Although Murphy's Law played a big role in setting up the 464-foot rhombic antenna that swings from 40-foot masts, plus a few other Murphy problems, a great emergency experience was enjoyed by all. Almost 800 contacts were made, mostly on 15, 20 and 40 meters with a few on other bands.

"Power was generated by a windmill (taking advantage of the steady trade winds of windward Oahu) specially designed by Demmer. It charged a set of batteries used in relays — while one was in use to power the entire station, the other was being charged.

"State MARS Director Bill Santiff, KB4P, and Demmer were assisted by Ed Dryer, KH6OF; Mike Gibson, KH6ND; Joe Keola, KH6BFZ; Jeff Komori, KH6JUZ; Rufus McCracken, KH6QL; Tom Teruya, KH6BM; and Eran Agmon, WH6R, in setting up and tearing down the Field Day station. There were many local and mainland visitors."

— Submitted by Rufus McCracken, KH6QL □

DON'T FORGET . . .

Include first and last names with call signs.

Amateurs disprove 'red tape' myth

Richard Viehe, KM9E

In early 1984, many people told us that Amateur Radio could not make it through the "red tape" of a military installation. With the hard work of many amateurs, we have proved this "myth" to be untrue. In only a few short months, we have made several giant steps forward at Ft. Benjamin Harrison, Indiana.

We knew there were many hams, both military and civilian, on our post. Most of them were operating on the Indianapolis area repeaters because we had none or were inactive. Talk was circulated about putting up our own repeater, and interest built quickly. We located amateurs we did not even know existed.

An official request was made to locate our repeater on the tallest building in the post area. In our request, we stressed how we could be of public service to the community (weather watches, event communications, disaster situations, and of course, another activity to offer the personnel located on post). In addition, it was pointed out that the equipment would cost them nothing. Several meetings and one month later, we received approval from all the necessary organizations concerned.

We chose a UHF repeater for several reasons. UHF has a better penetration capability through buildings, and it was a new band for most of the amateurs, making it even more exciting for them. The frequency coordinated was 448.25/443.25 MHz, and the ID'er would read KM9E/R Ft. Ben.

On 27 June 1984, the first amateur repeater in the history of Ft. Harrison was placed in service. UHF activity of amateurs on and off post has grown greatly since the repeater has gone on the air.

Shortly after the repeater went on the air, the Post Communications Commander requested communications assistance for Family Day (17 August 1984). This is a day when all the family members of military and civilian personnel are invited out to the post for the day.

Through the use of the repeater, we provided communications for the 10K Fun Run in the morning. In addition to net control, hams were located on the lead bicycle, in the ambulance following the run, and at all the water points.

In the afternoon, we provided communications at the operations center for the event chairman and all the remote sport event sites. Seven operators were provided: Bob Summers, K9CXS; Beverly Stewart, WB9RET; Jerry Baker, KA4SYK; Steve Hombach, WB9IBT; Francis Barron, N9CKK; Dennis Bauernfiend, WB9ZNZ; and Richard Viehe, KM9E. Even before the event ended, we were approached by the Ft. Harrison "Volksmarch" chairman and asked to provide communications for his event the following month!

As a follow-up, the Harrison Post took pictures of us working the event, and printed a lengthy article about our new repeater system. To say the least, the day was a total success.

Shortly after the event, we were granted permission to install a phone patch and to raise the antenna, as the original height was only 10 feet above the roof. At the same time, we were asked to provide an instructor to teach Morse code to the personnel under the Communications Command. What a terrific opportunity for good P.R.! Plans are being made to accommodate this request presently.

Recently, we requested to teach the first Amateur Radio Novice class ever offered at Ft. Harrison. Not only were we granted permission to teach the class, we were given a large classroom free of charge and all the supplies necessary to teach the class! In the future, we have hopes of chartering a new club including these new Novices as members.

At the beginning of 1984, we were hardly known to the Ft. Harrison officials. Through the efforts of many, we have established ourselves as an important part of the community. We have had to go through "red tape" procedures, but we opened many doors in the process. Now we have gained the respect, trust and full support of our post officials. Imagine where Amateur Radio can be in five years at Ft. Harrison!

We have demonstrated that "red tape" need not be fought. Many military installations have little or no amateur activity for their personnel. It's up to us to stimulate this activity. Nothing can be gained without an effort, and just look at the benefits we can enjoy! I hope every installation will have the success we have enjoyed.

Special thanks go to LTC. J. Thomas Nettling, WD4NSD; Dennis Bauernfiend, WB9ZNZ; and SFC Jerry Baker, KA4SYK, who have given many hours of labor and effort toward the accomplishment of our common goals at the Soldier Support Center, Ft. Benjamin Harrison, Indiana.

We are very proud of our accomplishments at Ft. Harrison, and hope to stimulate others to increase amateur activity at their particular post. □

VIP

(continued from page 10)

can communicate directly with the Forest Service dispatcher in Fresno or with the Bass Lake District Office to report any fires or emergencies.

Our patrolmen (hams) keep in touch with the command center with their 2-meter mobiles while patrolling, to report any problems they may encounter. The command center can then relay any emergencies over the Forest Service radio channels, getting immediate action where and when necessary.

During the summer, the amateurs have reported at least six abandoned campfires that could have broken out into something major if they had not been spotted. The Forest Service has indicated that had we not been there instructing campers in properly maintaining and extinguishing campfires and patrolling the area, the potential for wildfires might have been much greater. They are most appreciative of our efforts, and so far, this program has been a complete success due to the following amateurs who have participated in this program:

Charles Reeks, KA6APP; Carl Baker, WA6ASO; Robert Jaehnig, KA6BVR; August Grom, W6BW; Lee Wood, KQ6C; Roger Mitchell, N6CDD; Sally (WD6CHB) and David (K6DNY) Chambers; Robert Guldstrand, N6EPJ; Robert Robinson, W6GME: Mary Wood, KA6HHJ; KG6HP; Ed Snyder, K6ICK; Charles Allessi, W6IEG; Thelma Robinson, W6JBH; Ken Cexton, K6LFR; Grant Storey, W6NTK; Merrill Sidman, WA6NWP; Stan Hall, W6OWT: Roy Eastman, W6VCL; and Robert Maples, W6YNX. □

Traffic

(continued from page 38)

relaying? Packet systems, electronic mailboxes and the like, and maybe facsimile too, will see increased usage in Amateur Radio.

Think how repeaters have multiplied in the past two decades. Actually, packet switching systems are not as complicated as repeaters. Then traffic won't require three, six, 12 hours or more, but will cross the country in a matter of minutes.

But won't that mean we will all need terminals? Not necessarily. It wouldn't be hard to program a packet switching machine to use CW, and in the interest of greatest value in emergencies, it would be unwise not to do so. □

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For the active CW operator, there is nothing more fun than operating with the "Doctor DX" CW DX simulator. For the person who has never liked CW, Doctor DX will show you what real fun is. Doctor DX has something for everyone from the aspiring Novice to the experienced Amateur Extra Class licensee. And you need no FCC license to operate Doctor DX!

With Doctor DX, all you need is a Commodore-64 computer, a key (or keyer), and a TV set. There is no need for an expensive transceiver, amplifier and antenna farm to enjoy the thrill of working "rare DX." No more TVI or dead bands! Doctor DX is more than the most sophisticated CW trainer ever developed, it is your DXpedition ticket to anywhere in the world at a very affordable price.

Doctor DX simulates real H.F. CW band conditions. All the stations you will work are generated by the computer. As you tune up and down the particular band you have selected, you will hear realistic sounding stations in contact with other stations (some within your skip zone). There is also the normal QRN and QRM one would expect to hear in the real world. All call letters heard are totally random (subject to the country's callsign assignment rules). The prefixes are weighted according to the Amateur Radio population density, with 304 possible countries represented. The speed of stations operating in the lower portion of the bands is much faster than those operating in the upper band segments. The "operators" are also more polished in the lower portion of the bands.

Radio propagation (programmed for each band) represents what you would expect to hear on a good propagation day at the peak of the sunspot cycle. The propagation follows the internal real-time clock that you set before beginning operation. All the simulated stations you hear (with proper prefixes) are at distances you would expect to hear for the time of day and band selected.

You can learn and enhance your CW operating skills with Doctor DX. Doctor DX will not reward bad habits. AEA even offers an awards program to owners of Doctor DX that work all zones, 100 countries, 5 band Dr DXCC, or Doctor DX Honor Roll.

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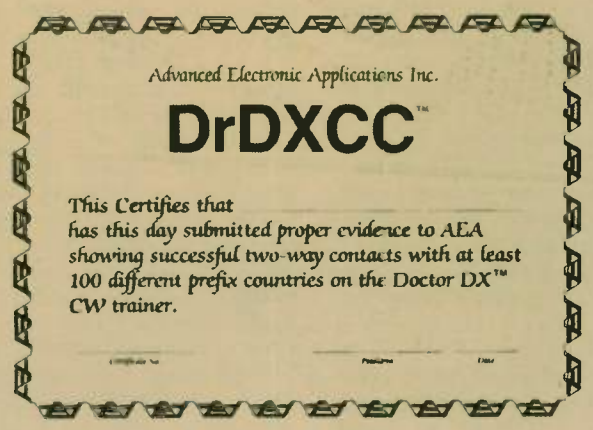
Doctor DX™ Challenge

BY AEA



DOCTOR DX CONTEST BOX

TOP SPRINT SCORES	TOP MARATHON SCORES
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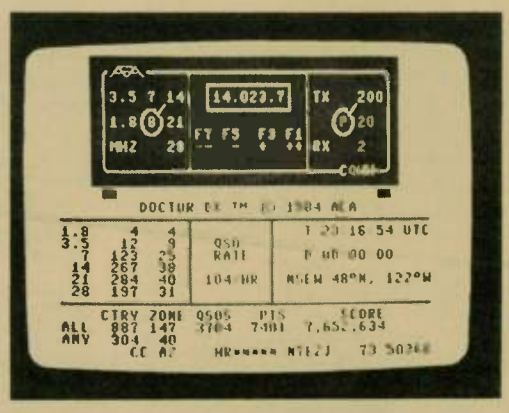
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

WILL YOUR CALL APPEAR HERE?



For good clean, competitive fun, Doctor DX™ shows your score and QSO rate for continuous monitoring of your improved CW operating skills. The DDX-64 can be a vehicle for fairly settling those club rivalries by competing with your friends under identical operating conditions.

AEA also has two on-going CW contests that you can enter with Doctor DX as your own schedule permits. The AEA SPRINT CONTEST is a timed non-stop eight hour event and the AEA MARATHON CONTEST is a timed 24 hour non-stop event. The top 5 contest scores will be published in our future advertisements and upgraded periodically as new higher scores are achieved.

In addition to the two AEA contests, we are offering award certificates for achieving certain milestones. You will be automatically alerted when you have achieved these milestones by a display at the bottom of the monitor screen.

AEA DrDXCC is achieved when you have worked 100 different countries, regardless of the frequency band or the amount of time operated. DOCTOR DX WAZ can be earned by working all 40 CQWW zones of the world, without regard to the band or duration of operating time. The DOCTOR DX HONOR ROLL is reserved for top notch operators capable of working 250 countries without regard for band or operating time. Additional endorsement awards are available for each additional 10 countries worked up to 300 (out of 304 possible) countries. AEA 5 BAND Dr DXCC is a very difficult award to achieve. It requires working 100 countries on each of five different bands, without regard for the amount of operating time.

Each award can be obtained by filling out a photocopy of the award application form (supplied) along with the score information and qualifying check sum from your screen display. Please enclose $3.00 to cover handling costs for each certificate ($1.00 for Honor Roll endorsements). Awards will only be granted to owners having a Doctor DX warranty card on file.

There is no need to ever be bored with your hobby again just because the bands are dead or you are apartment bound. Try Amateur Radio's own version of Solitaire - DOCTOR DX.

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AEA Brings you the Breakthrough!

Back in my August column, I asked for a little help and input in making a decision about offering rooms to SSTV'ers for next year's Dayton Hamvention. I have had a block of rooms at the Holiday Inn North for the past two years. This year, for the first time, that hotel is requiring a substantial deposit to reserve a block of rooms. They would have my deposit for eight months before the Hamvention.

The response I received was not as I expected. Only a few people bothered. However, I was on the spot and had to sign the contract and come up with the deposit by 31 August. Based on the low response and other circumstances (see below), I have decided *NOT* to offer a block of rooms for the 1985 Dayton Hamvention. I'm afraid you are now on your own. For the few people who did send me a postcard, I forwarded your request to the Holiday Inn North. If they decide to honor them, you should have heard from them by now.

It's not panic time by any means. If you've been to Dayton within the last three years and put your ticket stub in the prize hopper, you'll receive — probably in early February — a Hamvention flyer that will enable you to get a room at some hotel. You can, of course, make your own individual reservations at any time at your choice of hotel.

Remember, we still don't know where or when or if any SSTV activities will occur. At this time, I know I will not have any official part in next year's Hamvention. In fact, it is doubtful I will be able to attend.

What's available?

In last month's column, I mentioned some of the ways to get into SSTV, including getting started by purchasing good used equipment. I stated that I had written all SSTV companies for up-to-date product information. I have mentioned the names and addresses of all of these companies in previous columns, or you can find their ads in this and other amateur publications.

By far the largest SSTV equipment company is Robot Research. They make the 450C and 1200C color SSTV scan converters plus a color SSTV upgrade kit, the 400C, for older Model 400's. They also make the 800C a RTTY/CW/Color SSTV graphics TU. A kit is also available to upgrade older Model 800's to color SSTV graphics. These products are available through Amateur Radio dealers throughout the world.

Effective 01 September, Microcraft Corporation is no longer marketing their VS-1000 B&W scan converter. Marketing of this SSTV product is being taken over by Northern Information Technology Inc. of Illinois. They also manufacture commercial SSTV gear, and their ads should be out soon.

COMMSOFT Corporation continues to market their PhotoCaster color SSTV system for Apple II computers. They recently introduced a new high-resolution color graphics board called PhotoViewer. They offer both boards plus manuals, software, camera, tripod and RGB filters in a specially priced package called PhotoImager.

Dick Kinney of Ohio and Magnum Inc. of Florida continue to offer low-resolution B&W SSTV packages for TRS-80C owners. vicCOMM has a similar package for VIC-20 and Commodore-64 owners. Dynamic Specialties Inc. still has SSTV front-end PC boards available for TRS-80C and similar computers. Multimode Corporation also has SSTV front-end boards plus SSTV high-resolution display boards for the CoCo. They should be coming to market with some new IBM PC-related products soon.

Interface Systems of Texas is no longer making color conversions for the old Robot 400 and is out of business, as such. I talked to Sam Mormino in August and he had still made no decision if he would make a color conversion for VS-1000 scan converters.

QM Electronics has been out of business for about a year. Clay Abrams, K6AEP's Amateur Radio Software has been out of business for several months now.

As far as I know, that is the up-to-date status of all U.S. SSTV companies and their equipment. I apologize for the brevity of this report.

In the future

Color and high resolution have come to SSTV. With the new Robot 1200C scan converter, a high-resolution color SSTV picture can be transmitted anywhere in the world in *only 36 seconds!* The quality of that picture will rival that of the broadcast TV picture you get from your local TV station.

The new Robot composite color SSTV format has proved to be of excellent quality, efficient, and works reliably. It can send and receive the highest quality color SSTV picture in the shortest amount of time.

Other systems with 102-second RGB color sequences are just too long for one picture, especially when the 1200C can send the same quality picture in about one-third the time. Other line sequential formats have been around for some time and just don't work reliably. If it had been possible, they would have been fixed by now.

SSTV technology has now passed by the inexpensive home computer. They never became complete stand-alone SSTV systems, lacking a camera interface. Even 64K machines lack enough memory for Hi-Res color pictures.

Now that Clay Abrams is out of business, who is to write new software for home computers? The inexpensive home computer is destined to be an auxiliary or secondary piece of SSTV equipment. It will be used for many years, but more so interfaced to a sophisticated high-resolution scan converter.

The 8-second RGB color SSTV format provides a darn good color picture. Many SSTV'ers around the world can copy color SSTV using this format. I think it should be considered a standard for regular-resolution color SSTV. Robot's 12-second composite is comparable.

For high-resolution color SSTV, I'm ready to declare Robot's 36-second composite *THE* standard. For efficiency and quality it can't be matched. Purveyors and users of other formats will, of course, disagree. Some have been calling their 51-second line sequential format high resolution. It isn't. Why bother, on our crowded bands, to take 102 seconds to send one picture when it can be done with the same quality and resolution, in only 36 seconds?

New venture

During the summer, I had a chance to travel in the East and around the Midwest. I got to stop by and visit many SSTV'ers. Quite a few SSTV'ers have stopped by my farm here in Michigan and spent time in my shack.

Most of you know I am semi-retired and have a lot of free time. I spend a lot of time on the air and that helps me keep up on things pertaining to SSTV. During my travels this summer, I came upon an opportunity I couldn't pass up.

I have entered into a new part-time business venture. It has nothing to do with SSTV or any part of Amateur Radio. It will, however, occupy plenty of my time over the next six to eight months. I also have a number of unfinished things to do around the farm — some outdoors this fall, and many indoor tasks this winter. All of this adds up to the fact that I will have little, if any time for SSTV for quite a while. I know I'll rapidly lose touch with what is going on in SSTV and with many SSTV friends. I will no longer be able to do a responsible job in writing this column.

Therefore, I have decided that this will be my last SSTV column for **Worldradio**. I have enjoyed writing this column for the past two-and-a-half years or so. Mostly, I'll remember the many SSTV friends I made through writing this column. I'll try and get on the air when I can. 73's to you all! □

Church

(continued from page 15)

Toledo Scale Company employee, is the operator. He was ordained a Baptist minister in 1975.

Pastor Taylor, heard as the Country Parson on Sunday mornings from 6:00 to 8:00 a.m. over WIOT-FM (104), said his ecumenical supporters — called Gos-Pals, an adaptation of the word gospel — donated much of the $3,500 for equipment and installation costs.

Share bond beyond Radio

Amateur Radio operators share a bond beyond the radio band.

Robert Daney, retired communications superintendent for the city of Toledo and a member of Blessed Sacrament Catholic Church, gave the ministers advice on equipment purchases.

Robert Taylor, W8CBA, a member of Somerset United Methodist Church, and not related to Pastor Taylor, helped Root wire the station.

Taylor, lead radio maintainer for Conrail, based at the Central Union Terminal, is also president of the local Quarter Century Wireless Association (QCWA) chapter.

For several years he conducted phone patches from his home Radio to Honduras, where two American missionary families could communicate with their sons who were students at Medical College of Ohio here.

— The Toledo Blade, OH; submitted by Robert Taylor, W8CBA □

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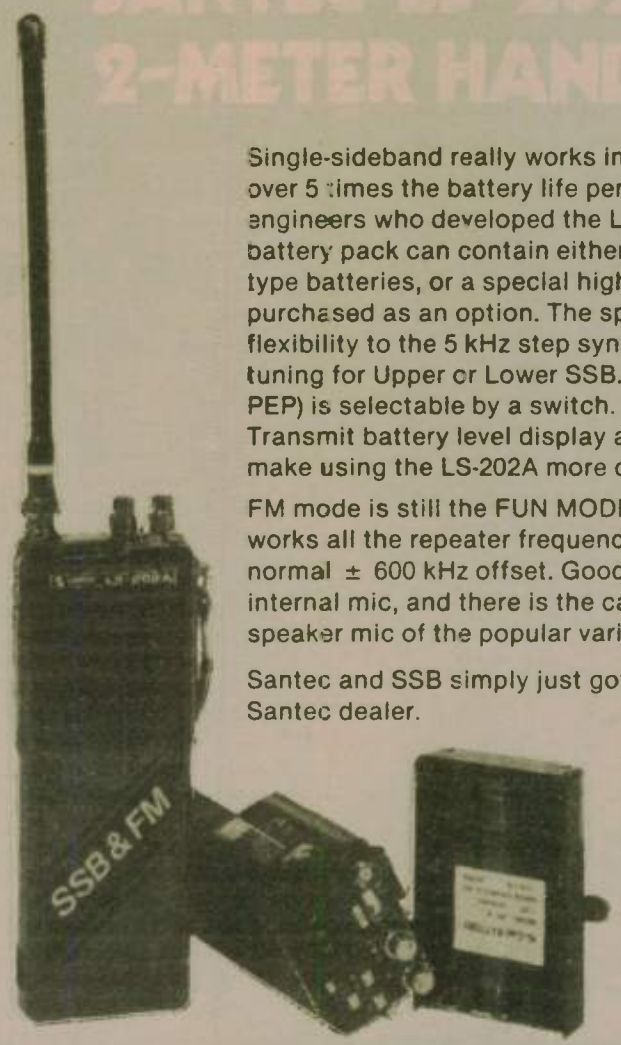
SANTEC LS-202A SINGLE-SIDEBAND & FM 2-METER HANDHELD TRANSCEIVER



Single-sideband really works in nonrepeater situations and has over 5 times the battery life per battery charge according to the engineers who developed the LS-202A. The slide-on, locking battery pack can contain either Ni-Cd 'AA' cells or 'AA' alkaline-type batteries, or a special higher voltage Ni-Cd pack can be purchased as an option. The special VXO and RIT circuits add flexibility to the 5 kHz step synthesizer to provide continuous tuning for Upper or Lower SSB. High (2.5 W PEP) or Low (0.5 W PEP) is selectable by a switch. Lighted receive 'S-Meter' with Transmit battery level display and thumb-wheel switch lighting make using the LS-202A more comfortable.

FM mode is still the FUN MODE to many people, and the LS-202A works all the repeater frequencies from 144 to 148 MHz with the normal ± 600 kHz offset. Good, crisp audio comes from the internal mic, and there is the capability of using an external speaker mic of the popular variety.

Santec and SSB simply just got better. See one today at your Santec dealer.

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Technical Talk

SPECIFICATIONS	SSB/FM
Freq. Range	144.000-147.995 MHz
Synthesizer	5 kHz Steps + VXO
Modes	USB (A3J), LSB (A3J), FM
Voltage Range	6-12 VDC
Current Drain	30 mA RX Standby 750 mA TX Peak
Power Output	2.5 W PEP (9 V) 3.5 W PEP (10.8 V)
Receiver Bandwidth	2.4 kHz (– 6 dB) SSB 15 kHz (– 6 dB) FM
Sensitivity	0.25 uV (12 dB S/N) SINAD
IF Frequencies	10.695 MHz SSB, 10.695 MHz and 0.455 MHz FM
Spurious	– 60 dB

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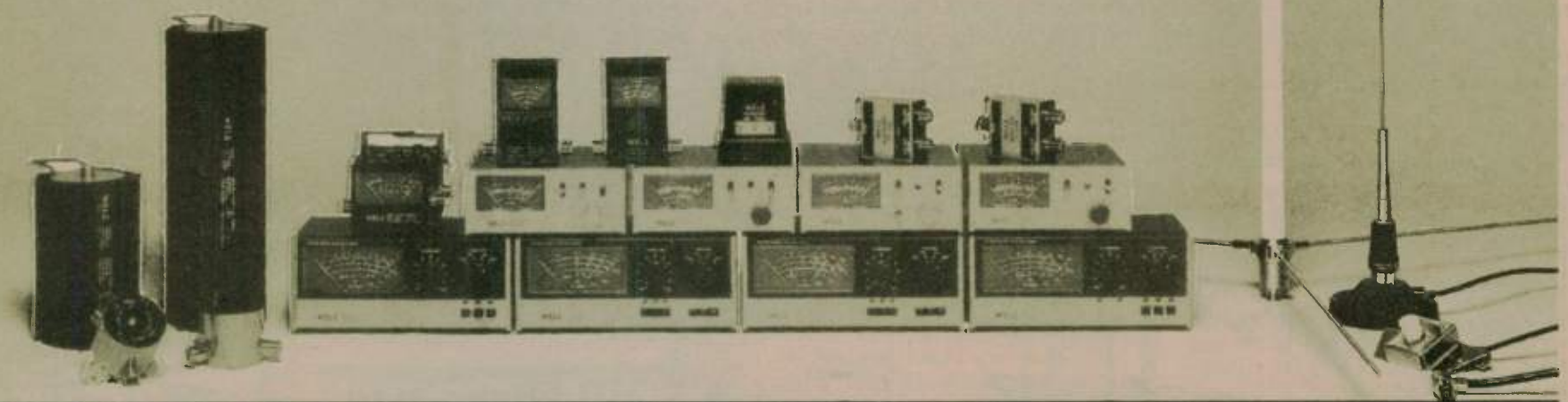

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Aerials

Lil Paddle

Oh, pshaw! *The Newington News* has done it again.

Pray tell, who is minding the store? A recent article by Tug McGraw, in speaking about the dipole antenna said, "It is good for just one amateur band when it is fed with coaxial cable."

Could it be that the entire professional staff was on holiday when that article came in from the frozen lands?

Since I am old enough to be the grandmother of some of the people on the technical staff, possibly they will extend me the courtesy of listening.

A 40-metre antenna will work just fine on 15-metres! It has to do with the law of: odd quarter-wavelengths. (For graduates of the Ricky Crash school, odd numbers are 1, 3, 5, 7, 9, etc.)

In the normal everyday, garden-variety dipole, there is one quarter-wavelength of wire on each side of the centre connector. You will also obtain resonance with three quarter-wavelengths of wire on each leg. Here are some numbers. At 7 MHz, a quarter-wavelength is 33.42 feet. At 21 MHz, a quarter-wavelength is 11.14 feet. Now, multiply the 11.14 times three and you have 33.42. As you see, there are three quarter-wavelengths (15M) on each leg of the 40M dipole.

The information in the paragraph above is no deep dark secret as it has even been written about in technical books issued by the Connecticut chaps.

Let's go another step. A quarter-wavelength at 4 MHz is 58.5 feet. And a quarter-wavelength at 28 MHz is 8.35 feet. Divide 8.35 into 58.5 and the answer is 7. There you see that there are seven 28 MHz quarter-wavelengths in every 4 MHz quarter-wavelength.

Just as you can operate on 15 with a 40 antenna, you can operate on 10 with a 75 antenna. And, as Walter used to Cronk, "That's the way it is!"

Next month in this space, we'll have some thoughts from the papers of the late Tal Minsik who designed clandestine transmitting antennas for the OSS.

And, for those who keep insisting that antenna tuners "fool" the transmitter, we present the following words of wisdom from John McAulay, WA6QPL.

•••

It has been my intention to write to you for some time, primarily to offer my congratulations for the excellent and thought-provoking series of articles by you and your colleague. I trust that you will be kind enough to pass this along to him (assuming that you two do correspond).

I finally decided that it (writing to you) would be the definite thing to do after my reading of the July '84 article regarding the "plate fooler" comment and the burning question of whether a match can, indeed, work both ways (ye gods, where do they come from?).

So I sat down at this very machine and prepared a letter which included a two-page dissertation on how one might best respond technically to such folks. Alas, that letter was never mailed, for prior to its completion, the August issue reached my eyes, and I was treated to Mr. Maxwell's paper. Inasmuch as that paper covered essentially all that had been written in my letter to you, you were spared the bother of redundancy — I simply circular-filed my letter.

However, not all of my points were covered by Maxwell, and I trust you will be willing to read mine which remain. First of all, even for old-timers, antenna tuning has been antenna tuning for quite a while. I refer to Henney's *The Radio Engineering Handbook*, Third Edition, McGraw-Hill, 1941, in which the late Ed Laport defines *antenna tuning* as "The act of resonating an antenna system to some frequency other than a natural frequency by means of reactive devices." (Found on page 629 . . . this information might well appear the same in the 1933 First Edition of the book, but that edition is not in my library.) Laport then, interestingly, defines *antenna loading* as "Lumped reactances connected in the antenna system for the purpose of antenna tuning."

By the way, it is my personal preference to view the "antenna system" as everything between the final source of RF power in the transmitter and the natural medium (usually free space) to which the antenna is coupling that power. In my view, therefore, the antenna system includes the Pi-net* in the transmitter housing — a concept which I was gratified to see is evidently shared by Mr. Maxwell. My definition, of course, applies to a transmitting antenna system and needs minor modification when applied to a receiving antenna system.

While it warmed my heart to see Maxwell's statement that when properly coupled, the entire antenna system is made resonant, a concept which seems to be little appreciated among amateur operators, I do take mild exception to the line: "By conjugate matching, the reactance of an antenna operating off resonance is cancelled at the feedpoint, and the antenna draws current as if it were resonant, because *now it is resonant*!"

While this is certainly — or at the least, perhaps — a workable way of phrasing things, I would prefer to note that conjugate impedance matching is just that — *impedance* matching, not just washing out the antenna's reactance. I also make the teeny-weeny point that in so doing, we have not really made the antenna itself resonant, but we have rather — as Maxwell accurately stated in the previous sentence — resonated the *system*.

We also have, of course, through conjugate impedance matching, provided an environment in which the antenna *resistance* is matched to the transmitter's final active device's plate, collector, drain (or whatever) resistance. Optimum power transfer strikes again.

I don't mean to be "picky-picky," but I'm afraid that a lot of my misconceptions early on (and, no doubt, some which remain) were enhanced by the occasional "simplified" explanation . . . but anyway, by golly, if that's all that could be argued about in Maxwell's paper, then it surely has to be rated superior.

Speaking of resonance, I gather from the August column that you folks may soon attack more of the alleged authorities who turn out to be, on close (or even not-so-close) inspection, to be truly of the "let's be sure to get the lightning rods charged" school of skyhookery. I truly hope that one of your attackees might be the author of a not-too-long-ago **QST** article, a supposedly learned professional who concluded that a certain antenna type couldn't really work well because it was not resonant.

I suppose I deserve a scathing reprimand for not having written a scathing rebuttal to this insanely preposterous conclusion, but somehow I would rather personally address those authors with whom I agree. Maybe that's why I write so few letters to authors. (By the way, I spent a number of years in broadcast consulting — I occasionally resort to the wild exaggeration, "I've built more radio stations than you've ever heard!" when intimidation seems in order — and I do believe that most amateurs would by mystified to learn that resonant AM broadcast antennas are almost as scarce as Russian athletes at the '84 Olympics.)

Well, that's about it. As you might gather, I'm a real antenna nut, and it pleases me to report that your articles frequently leave me laughing. I hope you do understand that the two really do go together.

I certainly respect your anonymity, as I know how frustrating it can be to try explaining something face-to-face only to hear, "oh, no, that's not right!" It must be pleasant, though, to be able to do it all in writing.

My best to you, Kurt, and the upcoming Bruce. I look forward to my enjoyment of "AERIALS" for a long time to come.

Regards,
John A. McAulay, WA6QPL

P.S. If it's a postcard that comes in response reading, "Sir, you are a buffoon," you may feel free to ignore the last paragraph above.

P.P.S. I just opened my bag of September's "Cue Street," and oh, the gagging over page 30! The series should be renamed "First Steps *Sideways* in Radio".

DeMaw is another who believes transmitters to be sentient! But for him, it's only so in other than "some types of systems." I sure wonder which types! How the hell do you "fool" a transmitter? Or make it *think*? Perhaps through some arcane ritual such as burning a chicken in the full of the moon while twiddling the knobs . . . I suggest that W1FB could do well to relabel his antenna tuner "Chicken Igniter."

* — *Or whatever else (tank, half-wave filter, etc.)*

•••

(Some criticise the aerial columnists for writing under aliases. Their reply is, "Tis better to write the truth under a disguise than (as others do) write hooey under their real name.) □

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

What's new in Yagi antennas?

Peter Onnigian, W6QEU

So you thought a Yagi antenna could be improved with minute variations of element spacing and length did you? Would you believe the Yagi antenna inventors went through this process of determining best values way back in the 1920's and published a comprehensive technical article in June 1928 — that's 56 years ago!

Hidetsugu Yagi

Born in Sendai, Japan in 1890, Hidetsugu Yagi graduated from Tokoku Imperial University and then went to England, where he studied and worked with John Fleming, who is credited with the diode detector.

Yagi continued with his education by working for a time with Barkhausen in Germany, where he worked in Dresden on beeble current engineering, now known as radio!

He returned to Japan in early 1914 as war broke out in Europe, via a short professorship at Harvard. While a professor at the College of Engineering, Tohoku Imperial University, Yagi learned, from a returning Japanese naval officer, of Albert Hull's magnetron invention in the United States. One of Yagi's engineering students was able to produce relatively high frequencies with the Hull magnetron.

Yagi returned to the United States in 1930 and taught high frequency techniques at the General Electric Research Labs. He was able to combine the production of VHF energy with suitable directive antennas.

Until about 1928, all antennas were of the broadcast type — that is, relatively omni-directional. Yagi had discovered the parasitic directional antenna, while Hull had developed the magnetron. So a suitable communications system operating higher than 30cm (1,000 MHz) was off and running by 1930!

During World War II, Yagi worked at the Osaka Imperial University where he was director of the radar systems lab, which developed many what were then new radar techniques. He went back to Tohoku University in 1946 and continued his teaching position for several more years before his retirement in Sendai, Japan.

Hidetsugu Yagi died on 19 January 1976. His tombstone bears the following calligraphy: "It is not a man but a brute who is not grateful to one's parents or others. I hope I am a human being worthy of the name."

Dr. Yagi was the first Japanese elected to the grade of Fellow in the American IRE (now IEEE — Institute of Electrical and Electronic Engineers), in 1929.

Shintaro Uda

Prof. Yagi had a student and collaborator, Shintaro Uda, while teaching at Tohoku in the 1920's. Uda did much of the physical work under Prof. Yagi's direction on the parasitic antenna. Thus, both received credit for their innovation.

Officially, the antenna was called a Yagi-Uda array. Uda was dropped for brevity and it became popular to simply call it a Yagi.

Dr. Uda also began teaching at Tohoku and made many contributions in the field of centimeter power generation, oscillating magnetrons during World War II. He died in Sendai, on 18 August 1976.

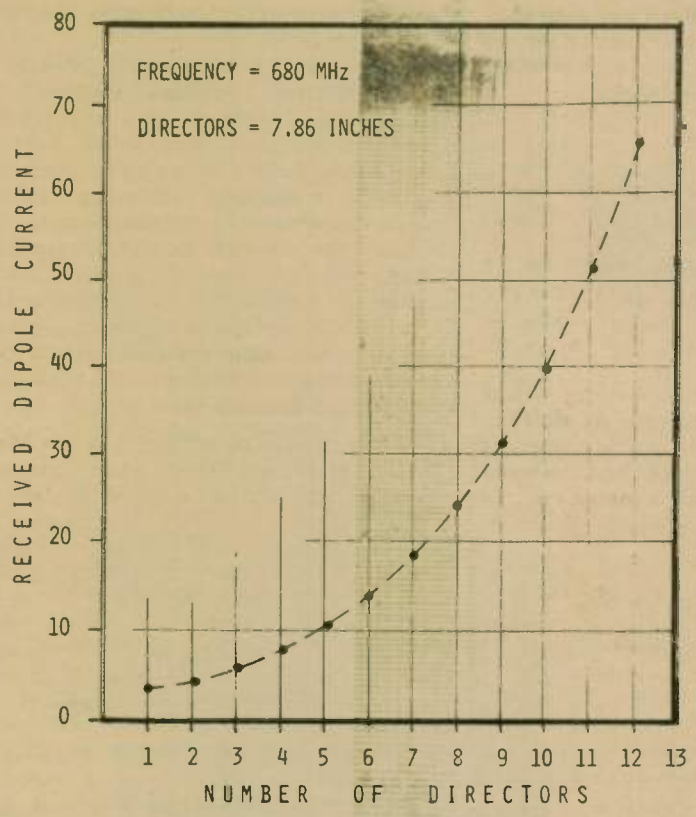

Figure 1 **— Yagi-Uda measured data taken in 1928 showing the increase in gain as the number of 0.45-wavelength directors were increased.**

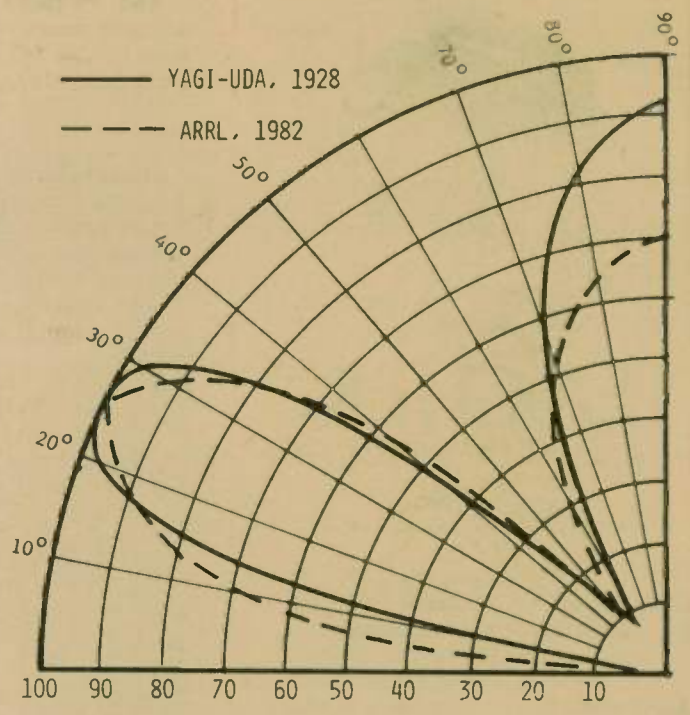

Figure 2 **— Comparison between Yagi 1928 measured ⅝-wavelength-high antenna and 1982 ARRL theoretical, perfect earth pattern, for same height.**

VHF equipment development

During the late 1920's, engineers in Europe, Japan and the United States were developing electronic equipment operating in the unknown region above 30 MHz. In Germany, Barkhausen and Kurz had increased the frequency of RF to 830 MHz with a plate voltage of 350 volts in a triode oscillator. Kinjiro Okabe, working in the Tohoku Imperial University, along with Yagi and Uda, was able to get useful levels of RF up to 2,500 MHz.

After this wide range of frequency power was available from 30 to 2,500 MHz, a strong need arose for a useful method of propagating it. Enter Assistant Professor Shintaro Uda at Tohoku, where Okabe was working along with Prof. Yagi.

During 1925 and 1926, these were working not only on the RF source but a good means to radiate it. Most of the early work was done on 4.4 meters (68 MHz).

Nearly all of the earlier work which has been recorded, was done on 68 MHz. It is a manageable length, where a half-wave is 7.25 feet (2.2M) long.

From the several papers published by the technical societies of the time, it is very interesting to note that the antenna development work was carried on empirically. Reflector and director lengths were changed, and the resulting effects were charted.

Yagi and Uda soon learned that an element slightly longer than a half-wave became a wave reflector, and one slightly shorter was a wave director. Initially, three reflectors placed equi-distant from the radiator formed a triagonal reflector. They quickly learned that the number of wave directors had a significant effect on the forward gain and that a second or third reflector was not useful when placed in line.

The original technical paper by Dr. Yagi in June 1928 included charts showing the effects of the transmitting and receiving antennas with the following variables: height of the transmitting and receiving antennas above ground; variations in the length of the directors, and their number; variations in the length and placement of the reflectors.

This first published article also included a measured polar plot of a Yagi-Uda antenna with a half-power beam width of about 8 degrees in the

(Continued on next page)

TEACHER

Alan Kline, KB1DJ
P.O. Box 54
West Lynn, MA 01905

"Thank you" is a phrase meaning a polite expression of one's gratitude.

The greatest "thank you" an instructor can get is from his students. Once you've helped a new Novice put up a working antenna, get on the air and make that first CW QSO, they never stop saying thank you. But I have found that we instructors need more "thank you" 's. We need our fellow club members to recognize our efforts, too.

As volunteer teachers of Amateur Radio, most of us don't get paid. In many cases, it even costs us to teach the class. I have found that by thanking each and every participant in the teaching process, they are always willing to do that little extra when asked.

Over the years, I have given a monthly oral educational committee report at every one of our repeater club's meetings. Even when I was out of town, I would send in the report on a cassette tape. Each and every amateur that helped out was verbally thanked in front of the whole club.

At the end of each teaching year, I select an "Instructor of the Year". That amateur must show me he has unselfishly given of his time to help teach Amateur Radio.

He is not always the one who graduated the most new Novices or upgraded the most Generals. He may have worked with three or four members of the HANDI-HAM System.

The ham I select is given a reward for his efforts at our annual ladies' night meeting. This way, he can bring his XYL to see him in his hour of glory.

The reward can be money that is surplus to our teaching activities, some appropriate piece of ham gear that I know he needs, or a donation to HANDI-HAMS in his name.

How did this award start? Well, after organizing my first few classes, more than 10 students took the time out to send me a thank-you note for having the classes and especially for having one particular instructor help them get their tickets.

The first award was presented to Bud Hartman, WA1YFZ. He was presented with a cash present of $100. As he was our club's Field Day chairman, he — in turn — asked that the money be added to our Field Day account.

One of our next winners was John Maglio, KJ1J. He was presented with a new Cushcraft 440 MHz beam antenna that I knew he needed, as he had won the repeater club's annual raffle of a new ICOM 440 MHz rig.

The next year, Fred Trecartin, N1BTF, was the recipient of a used Heathkit Linear. As the value of that prize exceeded our normal budget, he added his own money to it to make up the difference.

This past year, Dex Wheeler, W1TUM, was our chosen instructor. As he is vice president of another local ham club, I wanted his own club to be aware of his efforts. They were having their annual end-of-the-year banquet and were in need of more raffle prizes, so I saw an opportunity to have him recognized and thanked.

The condition of my donating two raffle prizes for their banquet door prizes was that they read my statement — "This tower climber's safety belt and wood stepladder is donated to your door prizes in honor of your club's vice president's unselfishness in the giving of his teaching time."

The stepladder was actually a small wooden stepstool that makes a great ladies' prize. The tower climber's safety belt is also a good door prize, as there never seems to be one around to borrow when you need one.

These amateurs were very pleased, as all my other "Instructors of the Year" have been. But you might say, "We can't go out and spend money on gifts like that. Our repeater group or club can't afford it." Well, I never could really afford to let my class money be spent that way either, so I have always horse-traded for my rewards. Here's some ideas how you can, too.

The first $100 I parted with was taken directly from the income of the students paying to attend the classes. But it was during a time when we didn't make an annual donation to HANDI-HAMS and we had no high school club stations to support. Most of our expenses were met and the $100 was surplus, so I spent it.

After that, I realized I needed all the income we could raise, by the tuition method, to support our many educational activities. The antenna, linear, stepstool and safety belt were donations to my HANDI-HAM efforts. They were given to me as returns for favors I did for them.

The 440 MHz antenna came from a sympathetic Cushcraft salesman who liked my work with the handicapped. The linear came from a large donation of ham gear from a local ham changing jobs to Europe. He cleaned out his shack into my shack. Most of his gear was 1960's Heathkit.

Many Novices got good deals, but I kept his SB102 and SB220 Linear for our own use. I decided the "Instructor of the Year" needed the linear, so he paid me the $100 difference I thought it was worth, we awarded it to him as his prize and donated the $100 to HANDI-HAMS.

The SB102 became the main rig at one of our new high school stations. Later it was traded up to a newer ICOM. Trades and dealings like this have become commonplace. I really believe everyone benefits.

The safety belt and stepstool came from my own sample cases, as I work as a climbing equipment manufacturer here in the East. We always seem to find a raffle prize when needed at the last minute.

Another way I thanked my team of annual instructors was to invite them out to a cocktail party at my QTH. It gave them a chance to get together as a group and discuss our educational year and also pursue our non-ham relationships as good friends.

When I invite them over, it always includes their wives. That way it is more of a social evening than just another Amateur Radio night out with the boys. Too many times, I've been out socially at another ham's house, and it turned into a DX session in one room and the XYL's watching TV in the other.

The final way I have found to thank my fellow hams for helping me out with teaching is to mention their names in the media. Whether it's in this **Worldradio** column, one of my **73 Magazine** articles, or just our local club newsletter, amateurs love to see their names and call signs in print.

So remember, whether you personally call every instructor involved and express your thanks for their help in teaching the classes or have a thank-you party for them, thank them in front of your whole club. □

Yagi

(*continued from page 47*)

vertical plane. The horizontal plane pattern was not shown, but assuming conventional beam widths, the antenna had a gain of about 12dB over a dipole, using 7 elements!

Figure 1 shows a typical set of data taken as a result of the measurement of the effects of the number of directors on the received current. The measurements were taken with the Yagi and a variable set of directors. At a distance was a dipole with an RF milliammeter at its center. The frequency used was 680 MHz. All the directors were 200cm long — about 10 percent shorter than the half-wave driven element.

Director lengths after 56 years have been refined to 5 to 7 percent on a half-wavelength. The resulting Yagi-Uda antenna input impedance was unknown, and apparently only attempts were made to load it for transmitting oscillator matching. Open-wire transmission line was used but apparently not matched to the receiver input circuitry.

Antenna radiation patterns

Yagi also displayed in his 1928 article, measured horizontally-polarized vertical-elevation patterns as a function of the antenna's height above ground. The frequency was 260cm (115 MHz). His text data states that the resulting patterns were the result of the soil acting as a reflecting mirror for RF energy. He does not indicate what effect the type of class of soil has on this reflection, which we have since learned is quite important.

What is very startling is that eight of these vertical plane patterns are shown by Yagi, with heights above ground being 1/8, 3/8, 5/8, 7/8, 1/4, 3/4, 1/2 and one wavelength. Five of these eight elevation patterns are identical to those shown in the 14th edition of the 1982 ARRL Antenna Book! (page 2-18) The other three have some slight variance, probably due to the reflection qualities of the Japanese soil at 115 MHz. Remember, the ARRL patterns are based on perfect ground and are theoretical. The soil conductivity and dielectric characteristics undoubtedly played a part.

Figure 2 shows the Yagi and the ARRL patterns for antennas ⅝-wavelength above ground. The Yagi pattern was made in 1928, and the ARRL pattern was printed in 1982 from data gathered many years ago. The similarity is awesome! The ARRL data was taken from the 14th Antenna Handbook, page 2-18, and normalized from DB to linear.

The unbalanced low-impedance coaxial cable was not invented in the 1920's. Yagi and his co-workers used balanced open-wire lines to feed these antennas. It had the advantage of balanced currents, and the polar radiation patterns show the resulting symmetry.

With the advent of coaxial cable in the mid-1930's, low-impedance feed systems came into vogue. This raised problems of matching and balance, which were finally resolved with baluns.

Conclusions

So, to answer our own question, "What's new in Yagi antennas?", we must simply say — not much! The Yagi-Uda team discovered, in 1928, all the effects of parasitic reflectors, directors, their spacing, length and effects on pattern and gain. These basic facts have been well confirmed over the past six decades and perhaps slightly refined with the advent of computers.

Only the method of feeding these

antennas has improved over the years. Unbalanced low impedance coaxial cable is now used universally, with a balun to provide the low impedance balance feed.

Dr. Yagi and Dr. Uda are to be remembered for their great contribution to the antenna art. We as amateurs can attest to the validity and usefulness of their discovery 56 years ago, and should be grateful to them.

Dr. Gentei Sato, who is now a professor of electrical engineering, Faculty of Science and Technology at Sophia University, Tokyo, was one of Prof. Yagi's as well as Prof. Uda's earlier students, and later became a colleague. Dr. Sato was elected to Fellow in IEEE this year, has several antenna patents, and as a result of his earlier training with Yagi-Uda, has made great technological advances with television broadcasting antennas in Japan.

This writer is indebted to Dr. Sato for his help and background information for this brief article. □

Legal Forum

(continued from page 4)

sent use by the U.S. Navy, who has primary use of the band for its radar, and the radio amateurs, who have secondary use of the band.

When the Commission gets a petition for rule making, it can do several things. First, they could find that the proposal has no merit at all, and they could dismiss the matter at hand. That happens to a lot of petitions filed with the Commission. When the Commission gets a petition that appears to have some merit, they give it an RM number. Once they do that, they have to list a public notice in the FCC releases, which come out daily, giving the public a 30-day period to comment on it plus a 15-day reply comment period. After that, the Commission can again dismiss the petition. If they don't, they will list some action on their own.

They can file a Notice of Inquiry, which asks the public to comment on whether the proposal has any merit or not, or they'll issue a Notice of Proposed Rule Making, which in effect says that based on the petition and the comments received it seems to be a good enough idea that we ought to propose to make the requested rule change. After that, the comments are again received with time periods for comments and replies. Only then does the Administrative Procedure Act allow the Commission to go ahead and change the rules. This gives you plenty of opportunity along the line to make comments on petitions you don't like.

There are a couple of things to remember with respect to any comments you may file: The Commission *does* read each and every submission of comments. You will recall — in the No-Code proceeding — there were over 5,000 comments, and the sheer number was impressive to the Commission. Don't just say you don't like the idea — make a sensible argument. Maybe it's an argument they have not heard before. The matter is whether the argument is persuasive. Don't feel that just because you're an individual, your comment won't have any weight. The persuasiveness is important.

If you file comments in response to a Petition for Rule Making, a Notice of Proposed Rule Making or an Inquiry from the Commission, you've got to serve a copy on somebody. In the case of a petition for Rule Making, you're required to file a copy of your comments on the petitioner, and that person is always listed in the public notice that gives you the RM number. Your failure to do that means your comments won't be considered. It has to be done prior to the time you file your comments. It's really important.

A lot of 220 comments will be thrown out, no matter how well put together they may be, simply because a copy was not served on the petitioner. In the case of reply comments, you must serve a copy to those parties to whom you're replying.

As an individual, you will have to keep abreast of what is going on by following the amateur press. *The W5YI Report*, *Westlink Report* and the *ARRL Letter* will keep you up to date on these petitions. There is a short fuse between the time the Commission issues an RM number, and the time the comments are due.

In the FCC Rule Book, there is a detailed description of what to do in Chapter 2, even including a sample form to use in submitting your comments. File comments and do it right.

Do you still need to file 14 copies? No. An original alone is OK, but if you file an original and five copies, each Commissioner will have his own copy. □

(Continued next month)

Hams in hot pursuit

Dino Papas, WB6FZN

Recently, some of the local Fayetteville, North Carolina amateurs assisted in the pursuit of a stolen taxi cab. On Saturday, 25 August, at about 9:30 p.m., John Hess, KA2GKR, discovered a Fayetteville cab driver who had been robbed and had his cab stolen from him. He then made a general call on the Cape Fear Amateur Radio Society club repeater, WB4YZF, for assistance and was answered by Hutch NØDWU.

Hutch relayed the information to the Fayetteville police and to the taxi cab company. John drove the cab driver to a rendezvous with waiting police, and we then learned that the police were in hot pursuit of the robbers. The cab was subsequently wrecked and the criminals pursued on foot.

We can be sure that the quick action of these hams aided immensely in the timely capture of the bad guys! □

Hams fill in during phone outage

Frank Marks, KB7FE

About 10:30 p.m. on Friday, 17 August, Larry Carston, N7GCC, phoned Thunderbird Samaritan Hospital (Phoenix, Arizona) to see about having his sick daughter seen. Receiving a recording indicating that the hospital phones were out of order, he drove over to the hospital emergency room (ER). Only upon arriving did he discover that not only the hospital phones were not working, but over 47,000 phones had gone out of order when a failure occurred in the central switching office in the northwest part of Phoenix, also affecting part of Glendale.

With his automobile parked near the ER entrance, Larry used his 2-meter mobile rig to begin forming an emergency communication net on the Arizona Repeater Association's 147.84/24 repeater which was closest to the hospital. Within the hour, at least nine amateurs were either at the hospital command post (soon moved inside the ER door), mobile in the affected area, or at home manning their unaffected telephones. At least six additional amateurs arrived during the long night to supplement or relieve others.

Faced with the phone company's best estimate of 2:30 p.m. the next afternoon as the latest time for full restoration of service, the group settled in for a long ordeal.

I was called at about 11:15 by Graham Lloyd, AJ7I, Maricopa County Emergency Coordinator, to come up on net. As it developed, I had the only 2-meter phone patch in the group, so I remained at my station making phone patches to the hospital. This procedure proved to save considerable time, afford much greater accuracy in the passing of critical medical data, and in one case, provided the only possible way of receiving direct verbal authorization for requested urgent service from the patient's insurance plan provider.

The whole operation proved to be incredibly efficient. Net discipline was superb. There was no interference and hardly any calls from stations wanting to know what was going on. Even more impressive was the fact that the involved repeater is one of only two open 2-meter autopatch repeaters in Phoenix. The dial tone only came on once and that was surely an accident. Interestingly, neither Larry nor several others had ever been involved in that kind of an operation before.

Many of us learned for the first time something of the urgency, complexity, seriousness, extent and even the excitement of what to many physicians, nurses and ER personnel is a daily routine. Fortunately, Larry is a respiratory therapist at Thunderbird and very familiar with ER work. Kay KA7SWF is an RN and Dwayne KA7SDI is an operating room technician at St. Joseph's Hospital in Phoenix.

Among other things, phone patches were made to order and arrange delivery of urgently needed blood; request ambulance service for transfer of critical patients; receive authorization for admittance and treatment of patients; consult with attending physicians and specialists; reach employees, doctors and even the hospital administrator either to speak to the hospital staff or to come in; check with physicians' answering services; call other hospitals; call the family of an automobile accident victim; signal telephone-activated pagers; troubleshoot a malfunctioning CRT terminal over the air; call outside laboratories to pick up rush specimens; and check with the phone company for information needed by the hospital to stay ahead of the problem.

By the time phone service was restored, around 5:45 a.m., some 23 phone patches, several rush automobile trips and a fair number of additional phone calls had been successfully made.

Lives saved? Additional suffering prevented or alleviated? We'll never know for sure. But by the time we wrapped it all up at 7:00 a.m., we were not only tired but felt pretty good about the part Amateur Radio had again played in keeping such an important community operation functioning.

Larry's daughter? A midnight patch to his home revealed that the crisis had passed and little Jackie was doing fine.

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Characters: Alphabet, Figures, Symbols, Special Characters, Kana.
Built-in Monitor: 5" high resolution, delayed persistence green monitor — provides sharp clear image with no jiggle or jitter even under fluorescent lighting. Also has a provision for composite video signal output.
Time Clock: Displays Month, Date, Hour and Minute on the screen.
Time/Transmission/Receiving Feature: The built-in timer enables completely automatic TX/RX without operator's attendance.
Selcal (Selective Calling) System: With this feature, the unit only receives messages following a preset code. Built-in Demodulator for High Performance: Newly designed high speed RTTY demodulator has receiving capability of as fast as 300 Baud. Three-step shifts select either 170Hz, 425Hz or 850Hz shift with manual fine tune control of space channel for odd shifts. HIGH (Mark Frequency 2125Hz)/LOW (Mark Frequency 1275Hz) tone pair select. Mark only or Space only copy capability for selective fading. ARQ/FEC features incorporated.
Crystal Controlled AFSK Modulator: A transceiver without FSK function can transmit in RTTY mode by utilizing the high stability crystal-controlled modulator controlled by the computer.
Photocoupler CW, FSK Keyer built-in: Very high voltage, high current photocoupler keyer is provided for CW, FSK keying.
Convenient ASCII Key Arrangement: The keyboard layout is ASCII arrangement with function keys. Automatic insertion of LTR/FIG code makes operation a breeze.
Battery Back-up Memory: Data in the battery back-up memory, covering 72 characters x 7 channels and 24 characters x 8 channels, is retained even when the external power source is removed. Messages can be recalled from a keyboard instruction and some particular channels can be read out continuously. You can write messages into any channel while receiving.
Large Capacity Display Memory: Covers up to 1,280 characters. Screen Format contains 40 characters x 16 lines x 2 pages.
Screen Display Type-Ahead Buffer Memory: A 160-character buffer memory is displayed on the lower part of the screen. The characters move to the left erasing one by one as soon as they are transmitted. Messages can be written during the receiving state for transmission with battery back-up memory or SEND function.
Function Display System: Each function (mode, channel number, speed, etc.) is displayed on the screen.
Printer Interface: Centronics Para Compatible interface enables easy connection of a low-cost dot printer for hard copy.
Wide Range of Transmitting and Receiving: Morse Code transmitting speed can be set from the keyboard at any rate between 5-100 WPM (every word per minute). AUTOTRACK on receive. For communication in Baudot and ASCII Codes, rate is variable by a keyboard instruction between 12-300 Baud when using RTTY Modem and between 12-600 Baud when using TTL level. The variable speed feature makes the unit ideal for amateur, business and commercial use.
Pre-load Function: The buffer memory can store the messages written from the keyboard instead of sending them immediately. The stored messages can be sent with a keyboard command.
"RUB-OUT" Function: You can correct mistakes while writing messages in the buffer memory. Misspellings can also be erased while the information is still in the buffer memory.
Automatic CR/LF: While transmitting. CR/LF automatically sent every 64, 72 or 80 characters.
WORD MODE operation: Characters can be transmitted by word groupings, not every character, from the buffer memory with keyboard instruction.
LINE MODE operation: Characters can be transmitted by line groupings from the buffer memory.
WORD-WRAP-AROUND operation: In receive mode, WORD-WRAP-AROUND prevents the last word of the line from splitting in two and makes the screen easily read.
"ECHO" Function: With a keyboard instruction, received data can be read and sent out at the same time. This function enables a cassette tape recorder to be used as a back-up memory, and a system can be created just like telex which uses paper tape.
Cursor Control Function: Full cursor control (up/down, left/right) is available from the keyboard. Test Message Function: "RY" and "QBF" test messages can be repeated with this function.
MARK-AND-BREAK (SPACE-AND-BREAK) System: Either mark or space tone can be used to copy RTTY.
Variable CW weights: For CW transmission, weights (ratio of dot to dash) can be changed within the limits of 1:3-1:7.
Audio Monitor Circuit: A built-in audio monitor circuit with an automatic transmit/receive switch enables checking of the transmitting and receiving state. In receive mode, it is possible to check the output of the mark filter, the space filter and AGC amplifier prior to the filters.

CW Practice Function: The unit reads data from the hand key and displays the characters on the screen. CW keying output circuit works according to the key operation.
CW Random Generator: Output of CW random signal can be used as CW reading practice. **Bargraph LED Meter for Tuning:** Tuning of CW and RTTY is very easy with the bargraph LED meter. In addition, provision has been made for attachment of an oscilloscope to aid tuning.
Built-in AC/DC: Power supply is switchable as required; 100-120 VAC; 220-240 VAC/ 50/60Hz + 13:8VDC.
Color: Light grey with dark grey trim — matches most current transceivers. **Dimensions:** 363(W) x 121(H) x 351(D) mm: Terminal Unit.
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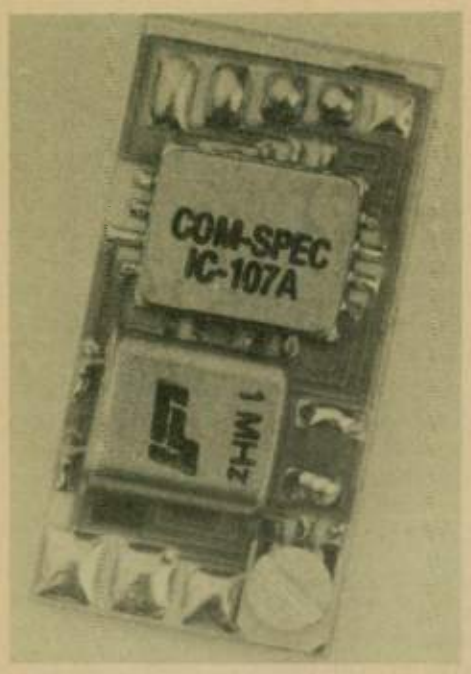
**Dual Amtor: Commercial quality,* the EXL-5000E incorporates *two completely separate modems* to fully support the amateur Amtor codes and *all* of the CCIR recommendations 476-2 for commercial requirements.

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

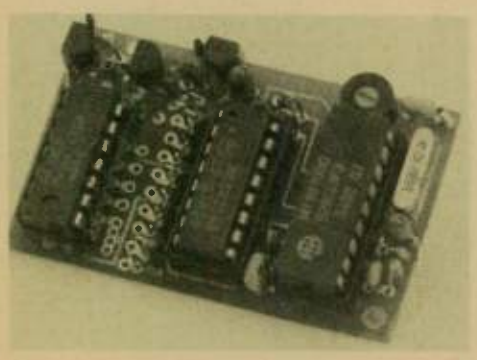


Super-small encoder

Communications Specialists of Orange, California recently announced what is now the industry's smallest CTCSS encoder.

The SS-32HB measures only .5" × 1.0" × .15" and will fit into any portable requiring send-only CTCSS. The unit may be programmed to any of the 32 standard sub-audible tone frequencies by bridging solder pads on the board. Price is $29.95.

Contact Communications Specialists, Inc. 426 West Taft Ave., Orange, CA 92665; (800) 854-0547; Local (714) 998-3021. A catalog is available upon request. □



DTMF decoder

Communications Specialists of Orange, California has introduced a very small, simple, yet high-quality DTMF decoder.

The DTD-1 is a dual-tone multi-frequency decoder which will provide a latched or momentary open collector output for single-function operations. It is capable of decoding any one of 5,040 four-digit codes and operates exceptionally well in bad signal-to-noise environments. The DTD-1 measures just 1.25" × 2.0" × .4" and sells for $59.95.

For more information, contact: Communications Specialists, Inc., 426 West Taft Ave., Orange, CA 92665; (800) 854-0547; Local (714) 998-3021. A catalog is available on request. □

Linear amplifier

Here is the linear amplifier you've been waiting for. The TITAN 425 Linear Amplifier delivers the full new legal power limit of 1500 watts PEP SSB output and 1500 watts of full break-in power for QSK CW or AMTOR. This cool-running dependable design delivers the punch to be heard under any band condition. And it is brought to you by the leading American supplier of HF amateur equipment with the same kind of reliability you've come to expect from Ten-Tec gear.

TITAN 425 consists of two sections, amplifier and power supply. The amplifier is styled to match modern transceivers and is extremely compact for its ratings. The amplifier section contains all operating controls and indicators. The power supply is housed in a utility type hide-away enclosure.

Amplifier

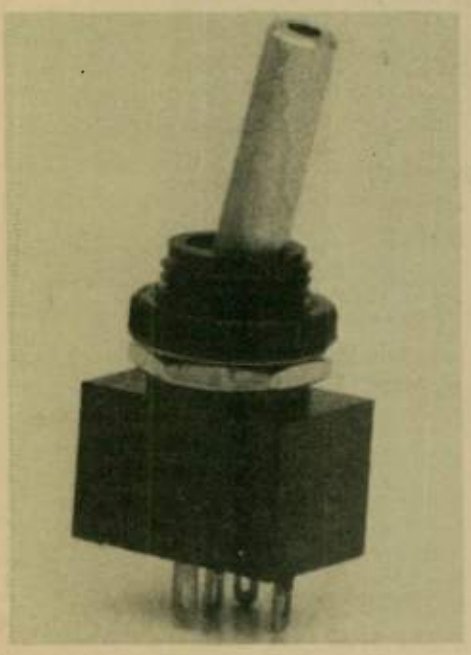
Two Eimac 3CX800A7 triodes, the newest design from Eimac, in a ducted forced air system, operating in a grounded grid configuration easily provide rated output power with up to 65 percent efficiency. Maximum input power of 3kW (2kW CCS) requires only 100 watts of drive power. A high-low plate voltage switch assures optimum efficiency at lower power (1kW output) for tune-up or RTTY and SSTV. Three LED status indicators display Standby, Wait or Operate mode and a fourth LED alerts you when the input is overdriven. Two panel meters provide full time indication of plate current and switch selected choice of plate voltage, grid current, forward power or reflected power. Peak power is indicated on a 10-element LED bar graph display. Band coverage of 1.8 through 23 MHz amateur bands is standard. Export model extends coverage to 29.7 MHz.

The power supply

Conservatively designed for cool operation under full load, the circuit employs a tape-wound Hypersil transformer for minimum weight and size. Primary power of 220-250 volts at 20 amps is standard. 115-volt operation is possible but not recommended when operating full power. Fuses provided for primary circuit and plate current. Protective interlocks are provided on the AC and high voltage lines.

Specifications: *Amplifier* — 5-1/4"H × 15-1/4"W × 15"D; *Power supply* — 8-1/4"H × 13-3/8"W × 10-1/4"D. Amplifier is 17 lbs.; power supply 45 lbs. Amateur net price is $2,485. Available fall of 1984.

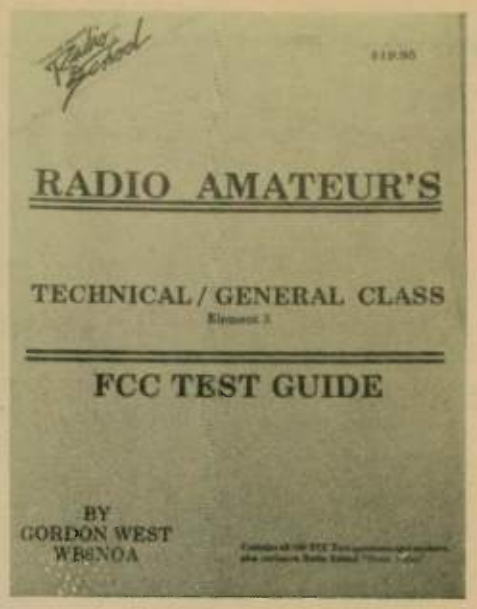
For more information, contact Ten-Tec, Inc., Sevierville, TN 37862. □



Toggle switch

The DS-414 2P, 3 amp, 125 volt AC, SPST (on-off) toggle switch features a red LED mounted within the tip of the bat handle and is priced at $1.14 in lots of 1000 pcs. The DS-415 2P, green, is priced at $1.21 in lots of 1000 pcs.

For more information, contact Eagle Switch, 709 N. Memorial Parkway, Huntsville, AL 35801; (205) 534-1006. □



Tech/General Class FCC test guide

Gordon West's Radio School announces the first-of-its-kind, 500 test questions and answers guide for the new volunteer-administered Element 3 examination. All 500 test questions plus multiple choice answers are listed in this 8" × 11" test guide. The exact questions plus the exact distractors (wrong answers), and the exact correct answer, are listed word for word as they will be found on the ARRL and *W5YI Report* volunteer examinations. While independent examinations will use the exact same question and the exact answer, the three incorrect answers may vary.

"This test guide is similar to an FAA pilot's manual. This will take the surprise out of any examination upgrade — every question and every right and wrong answer are in the book exactly as it will appear on an ARRL or *W5YI Report* examination," comments Gordon West, well-known writer and instructor.

In addition to each question and answer are "study notes" that list references on where the questions are derived and the answers found in more detail. Since most questions and answers were developed by the ARRL, most references apply to ARRL publications and to their exact page number. There are also study notes that indicate formulas and how to solve for them after each question is given.

The test guide also has several pages of instructions to the applicant on where to locate a volunteer exam coordinator, and how to sign up for a local volunteer examination test. Also included are the necessary test forms plus examples of the answer sheet. Pertinent FCC rules and regulations are included in this handy reference manual.

"We are happy to be the first with this type of reference guide," comments West. "We have provided enough room on our pages that students can take notes on those questions they may need some extra study on. This format allows students to go over and over the material until every question and every right and wrong answer is down pat," adds West.

Radio School also produces code test tapes to prepare students to pass the General as well as the Extra Class code portions of their examinations.

The Radio School Technician/General Class FCC Test Guide is available for $19.95 plus $3 postage. California residents add 6 percent sales tax. Code test tapes are also available for $19.95, all from Radio School, Inc., 2414 College Dr., Costa Mesa, CA 92626. □

VE exam sets

Gordon West's Radio School announces 10 sets of Element 3 Technician/General Class examinations available to accredited volunteer examiners. Each of the 50-question sets of 10 examinations meet FCC written examination requirements. Each examination set has also been approved for *W5YI Report* — National Volunteer Examination Coordinator Examiners.

Each question and the appropriate distractor and correct answer have been developed by the ARRL for distribution into the volunteer examination program. The Radio School questions and answers follow a different sequence from the ARRL-approved exams to provide a variety for the volunteer examiners.

Code tapes are also available for volunteer examiners to administer the code test. Each code tape precisely follows the FCC format in code test tone and dit-dah interval generation.

The 10 sets of Technician/General Class written tests are only available to accredited volunteer examiners. The volunteer examination code test tapes are only available to accredited volunteer examiners.

The 50-question tests are available for $9.95 plus $3 postage for the complete 10-set. Test tapes are available at $9.95 plus $1 postage.

Volunteer examiners wishing these confidential examinations should send a photocopy of their accreditation plus the appropriate remittance to Radio School, 2414 College Dr., Costa Mesa, CA 92626. □

New Melco distributor

Melco Inc. — maker of 10M, 6M, 2M, 220 and 440 repeater lines — announces the addition of JRW Electronics, 1123 Upland St., Chester, PA 19013 to its worldwide family of distributors. JRW Electronics is prepared to repair anyone's repeater in their laboratory and has a 24-hour hotline for your convenience. □

RF TRANSISTORS, MICROWAVE TRANSISTORS

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
2N1561	$25.00	2N5920	$ 70.00	40608 RCA	$ 2.48	BFY90	$ 1.50	2N4416	2.25	181-3	15.00	A2X1698	POR	EFJ4017	24.00
2N1562	25.00	2N5921	80.00	40673 RCA	2.50	BLW60C5	15.00	2N4427	1.25	210-2	10.00	A3-12	14.45	EFJ4021	24.00
2N1692	25.00	2N5922	10.00	40894 RCA	1.00	BLX67	12.25	2N4428	1.85	269-1	18.00	A50-12	24.00	EFJ4026	35.00
2N2857	1.55	2N5923	25.00	60247 RCA	25.00	BLX67C3	12.25	2N4430	11.80	281-1	15.00	A209	10.00	EN15745	20.00
2N2857JAN	4.10	2N5941	23.00	61206 RCA	100.00	BLX93C3	22.21	2N4927	3.90	282-1	30.00	A283	6.00	FJ9540	16.00
2N2857JANTX	4.50	2N5942	40.00	62800A RCA	60.00	BLY87A	7.50	2N4957	3.45	482	7.50	A283B	6.00	FSX52WF	58.00
2N2876	13.50	2N5944	10.35	62803 RCA	100.00	BLY88C3	13.08	2N4959	2.30	564-1	25.00	A1610	19.00	G65739	25.00
2N2947	18.35	2N5945	10.00	430414/3990RCA	50.00	BLY89C	13.00	2N5016	18.40	698-3	15.00	AF102	2.50	G65386	25.00
2N2948	13.00	2N5946	12.00	3457159 RCA	20.00	BLY90	45.00	2N5026	15.00	703-1	15.00	AFY12	2.50	GM0290A	2.50
2N2949	15.50	2N5947	9.20	3729685-2 RCA	75.00	BLY92	13.30	2N5070	18.40	704	4.00	AR7115	20.00	HEP76	4.95
2N3118	5.00	2N6080	6.00	3729701-2 RCA	50.00	BLY94C	45.00	2N5090	13.80	709-2	11.00	AT41435-5	6.35	HEPS3002	11.40
2N3119	4.00	2N6081	7.00	3753883 RCA	50.00	BLY351	10.00	2N5108	3.45	711	4.00	B2-8Z	10.70	HEPS3003	30.00
2N3134	1.15	2N6082	9.00	615467-902	25.00	BLY568C/CF	30.00	2N5109	1.70	733-2	15.00	B3-12	10.85	HEPS3005	10.00
2N3287	4.90	2N6083	9.50	615467-903	40.00	C2M70-28R	92.70	2N5160	3.45	798-2	25.00	B12-12	15.70	HEPS3006	19.90
2N3288	4.40	2N6084	12.00	2SC568	2.50	C25-28	57.00	2N5177	21.62	3421	28.00	BAL0204125	152.95	HEPS3007	25.00
2N3309	4.85	2N6094	11.00	2SC703	36.00	C4005	2.50	2N5179	1.04	3683P1	15.00	BF25-35	56.25	HEPS3010	11.34
2N3375	17.10	2N6095	12.00	2SC756A	7.50	CD1659	20.00	2N5216	56.00	3992	25.00	B40-12	19.25	HP8003	10.00
2N3478	2.13	2N6096	16.10	2SC781	2.80	CD1899	20.00	2N5470	75.00	4164P1	15.00	B70-12	55.00	HFET2204	112.00
2N3553	1.55	2N6097	20.70	2SC1018	1.00	CD1920	10.00	2N5583	3.45	4243P1	28.00	BF272A	2.50	HP35821	38.00
2N3553JAN	2.90	2N6105	21.00	2SC1042	24.00	CD2188	18.00	2N5589	9.77	4340P3	18.00	BFQ85	2.50	HP35826B	32.00
2N3632	15.50	2N6136	21.85	2SC1070	2.50	CD2545	24.00	2N5590	10.92	4387P1	27.50	BFR21	2.50	HP35826E	32.00
2N3733	11.00	2N6166	40.24	2SC1216	2.50	CD2664A	16.00	2N5591	13.80	7104-1	28.00	BFR90	1.00	HP35831E	30.00
2N3818	5.00	2N6267	142.00	2SC1239	2.50	CD3167	92.70	2N5596	99.00	7249-2	10.50	BFR91	1.65	HP35832E	50.00
2N3866	1.30	2N6304	1.50	2SC1251	24.00	CD3353	95.00	2N5636	12.00	7283-1	37.50	BFR99	2.50	HP35833E	50.00
2N3866JAN	2.20	2N6368	30.00	2SC1306	2.90	CD3435	26.30	2N5637	15.50	7536-1	30.00	BFT12	2.50	HP35859E	75.00
2N3866JANTX	3.80	2N6439	55.31	2SC1307	5.50	CD3900	152.95	2N5641	12.42	7794-1	10.50	BFW16A	2.50	HP35866E	44.00
2N3866JANTXV	4.70	2N6459	18.00	2SC1424	2.80	CM25-12	20.00	2N5642	14.03	7795	15.00	BFW17	2.50	HXTR2101	44.00
2N3866AJANTXV	5.30	2N6567	10.06	2SC1600	5.00	CM40-12	27.90	2N5643	25.50	7795-1	15.00	BFW92	1.50	HXTR3101	7.00
2N3924	3.35	2N6603	13.50	2SC1678	2.00	CM40-28	56.90	2N5645	13.80	7796-1	24.00	BFX44	2.50	HXTR5101	31.00
2N3926	16.10	2N6604	13.50	2SC1729	32.40	CME50-12	30.00	2N5646	20.70	7797-1	36.00	BFX48	2.50	HXTR6104	68.00
2N3927	17.25	2N6679	44.00	2SC1760	1.50	CTC2001	42.00	2N5651	11.05	40081 RCA	5.00	BFX65	2.50	HXTR6105	31.00
2N3948	1.75	2N6680	80.00	2SC1909	4.00	CTC2005	55.00	2N5691	18.00	40279 RCA	10.00	BFX84	2.50	HXTR6106	33.00
2N3950	25.00	021-1	15.00	2SC1945	10.00	CTC3005	70.00	2N5764	27.00	40280 RCA	4.62	BFX85	2.50	J310	1.00
2N3959	3.85	01-80703T4	65.00	2SC1946	40.00	CTC3460	20.00	2N5836	3.45	40281 RCA	10.00	BFX86	2.50	JO2000	10.00
2N4012	11.00	35C05	15.00	2SC1947	10.00	DV2820S	25.00	2N5842	8.45	40282 RCA	20.00	BFX89	1.00	JO2001	25.00
2N4037	2.00	102-1	28.00	2SC1970	2.50	DXL1003P70	22.00	2N5847	19.90	40290 RCA	2.80	BFY11	2.50	JO4045	24.00
2N4041	14.00	103-1	28.00	2SC1974	4.00	DXL2001P70	19.00	2N5849	20.00	40292 RCA	13.05	BFY18	2.50	KD5522	25.00
2N4072	1.80	103-2	28.00	2SC2166	5.50	DXL2002P70	14.00	2N5913	3.25	40294 RCA	2.50	BFY19	2.50	KJ5522	25.00
2N4080	4.53	104P1	18.00	2SC2237	32.00	DXL3501AP100F	47.00	2N5916	36.00	40341 RCA	21.00	BFY39	2.50	M1106	13.75
2N4127	21.00	163P1	10.00	2SC2695	47.00	EFJ4015	12.00								

* R F TRANSISTORS *

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
M1107	$16.75	MRF458	$20.70	NEO2160ER	$100.00	SD1009	$15.00	MRF221	10.00	MSC1720-12	225.00	PT8709	20.00	SD1095	15.00
M1131	5.15	MRF464	25.30	NEO21350	5.30	SD1009-2	15.00	MRF223	13.00	MSC1821-3	125.00	PT8727	29.00	SD1098-1	30.00
M1132	7.25	MRF466	18.97	NE13783	61.00	SD1012	10.00	MRF224	13.50	MSC1821-10	225.00	PT8731	25.00	SD1100	5.00
M1134	13.40	MRF472	1.50	NE21889	43.00	SD1012-3	10.00	MRF227	3.45	MSC2001	30.00	PT8742	19.10	SD1109	18.00
M9116	29.10	MRF475	3.10	NE57835	5.70	SD1012-5	10.00	MRF230	2.00	MSC2010	93.00	PT8787	25.00	SD1115-2	7.50
M9579	6.00	MRF476	3.16	NE64360ER-A	100.00	SD1013	10.00	MRF231	10.00	MSC2223-10	245.00	PT8828	25.00	SD1115-3	7.50
M9580	7.95	MRF477	20.00	NE64480 (B)	94.00	SD1013-3	10.00	MRF232	12.07	MSC2302	POR	PT9700	25.00	SD1115-7	2.10
M9587	7.00	MRF479	8.05	NE73436	2.50	SD1013-7	10.00	MRF237	3.15	MSC3000	35.00	PT9702	25.00	SD1116	5.00
M9588	5.20	MRF492	23.00	NE77362ER	100.00	SD1016	15.00	MRF238	13.80	MSC3001	38.00	PT9783	16.50	SD1118	22.00
M9622	5.95	MRF502	1.04	NE98260ER	100.00	SD1016-5	15.00	MRF239	17.25	MSC72002	POR	PT9784	32.70	SD1119	5.00
M9623	7.95	MRF503	6.00	PRT8637	25.00	SD1018-4	13.00	MRF245	35.65	MSC73001	POR	PT9790	56.00	SD1124	50.00
M9624	9.95	MRF504	7.00	PT3127A	5.00	SD1018-6	13.00	MRF247	31.00	MSC80064	35.00	PT31083	20.00	SD1132-1	15.00
M9625	15.95	MRF509	5.00	PT3127B	5.00	SD1018-7	13.00	MRF304	36.00	MSC80091	10.00	PT31962	20.00	SD1132-4	12.00
M9630	14.00	MRF511	10.69	PT3127C	20.00	SD1018-15	13.00	MRF306	50.00	MSC80099	3.00	PTX6680	20.00	SD1133	9.50
M9740	27.90	MRF515	2.00	PT3127D	20.00	SD1020-5	10.00	MRF313	11.15	MSC80593	POR	RE3754	25.00	SD1133-1	10.00
M9741	27.90	MRF517	2.00	PT3127E	20.00	SD1028	15.00	MRF314	29.21	MSC80758	POR	RE3789	25.00	SD1134-1	2.50
M9755	16.00	MRF525	3.45	PT3190	20.00	SD1030	12.00	MRF315	28.86	MSC82001	33.00	RF35	16.00	SD1134-4	12.00
M9780	5.50	MRF559	1.76	PT3194	20.00	SD1030-2	12.00	MRF316	55.43	MSC82014	33.00	RF85	17.50	SD1134-17	12.00
M9827	11.00	MRF587	11.00	PT3195	20.00	SD1040	5.00	MRF317	63.94	MSC82020M	130.00	RF110	21.00	SD1135	10.25
M9848	35.00	MRF605	20.00	PT3537	7.80	SD1040-2	20.00	MRF412	18.00	MSC82030	33.00	S50-12	23.80	SD1135-3	12.00
M9850	13.50	MRF618	25.00	PT4166E	20.00	SD1040-4	10.00	MRF420	20.12	MSC83001	40.00	S3006	15.00	SD1136	12.50
M9851	20.00	MRF626	12.00	PT4176D	25.00	SD1040-6	5.00	MRF421	25.00	MSC83003	82.00	S3007	10.00	SD1136-2	12.50
M9860	8.25	MRF628	8.65	PT4186B	5.00	SD1043	12.00	MRF422	38.00	MSC83005	70.00	S3031	22.00	SD1143-1	10.00
M9887	2.80	MRF629	3.45	PT4209	25.00	SD1043-1	10.00	MRF427	17.25	MSC83026	POR	SCA3522	5.00	SD1143-3	17.00
M9908	6.95	MRF641	25.30	PT4209C/5645	25.00	SD1045	3.75	MRF428	63.00	MSC83303	POR	SCA3523	5.00	SD1144	4.00
M9965	12.00	MRF644	27.60	PT4556	24.60	SD1049-1	2.00	MRF433	12.07	MSC84900	60.00	SD345	5.00	SD1145-5	15.00
MM1500	25.00	MRF646	29.90	PT4570	7.50	SD1053	4.00	MRF449/A	12.65	MT4150	14.40	SD445	5.00	SD1146	15.00
MM1550	10.00	MRF648	33.35	PT4577	20.00	SD1057	10.00	MRF450/A	14.37	MT5126	25.00	SD1004	15.00	SD1147	15.00
MM1552	50.00	MRF816	15.00	PT4590	5.00	SD1065	4.75	MRF452/A	17.00	MT5596(2N)	99.00	SD1007	15.00	SD1188	10.00
MM1553	50.00	MRF823	20.00	PT4612	20.00	SD1068	15.00	MRF453/A	18.40	MT5768(2N)	95.00	SD1007-2	15.00	SD1189	24.00
MM1607	8.45	MRF846	44.85	PT4628	20.00	SD1074-2	18.00	MRF454/A	20.12	MT8762	25.00	SD1007-4	15.00	SD1200	1.50
MM1614	10.00	MRF892	35.50	PT4640	20.00	SD1074-4	28.00	MRF455/A	16.00	NEO2136	2.00	SD1007-5	15.00	SD1201-2	15.00
MM1810	15.00	MRF894	46.00	PT4642	20.00	SD1074-5	28.00	SD1202	$10.00	SD1304-8	$ 2.50	SD1451-2	$15.00	SRF1427	$50.00
MM1810	15.00	MRF901 3 Lead	1.00	PT5632	4.70	SD1076	18.50	SD1212-8	4.95	SD1305	3.00	SD1452	20.00	SRF1431	40.00
MM1943	1.80	MRF901 4 Lead	2.00	PT5749	25.00	SD1077	4.00	SD1212-11	4.95	SD1307	3.00	SD1452-4	24.00	SRF1834	40.00
MM2608	5.00	MRF902/2N6603JAN	15.00	PT6612	25.00	SD1077-4	4.00	SD1212-16	4.95	SD1308	3.00	SD1453H1	20.00	SRF2053-3	60.00
MM3375A	17.10	MRF902B	18.40	PT6619	20.00	SD1077-6	4.00	SD1214-7	5.00	SD1311	1.00	SD1454-1	48.00	SRF2092	50.00
MM4429	10.00	MRF904	2.30	PT6708	25.00	SD1078-6	24.00	SD1214-11	5.00	SD1317	8.00	SD1477	35.00	SRF2147	22.00
MM8000	1.15	MRF905	2.55	PT6709	25.00	SD1080-7	7.50	SD1216	12.00	SD1319	2.50	SD1478	21.00	SRF2225	15.00
MM8006	2.30	MRF911	2.50	PT6720	25.00	SD1080-8	6.00	SD1219-4	15.00	SD1345-6	5.00	SD1480	53.00	SRF2264	25.00
MM8011	25.00	MRF965	2.55	PT8510	15.00	SD1080-9	3.00	SD1219-5	15.00	SD1347-1	1.00	SD1484	1.50	SRF2265	100.00
MPSU31	1.01	MRF966	3.55	PT8524	25.00	SD1084	8.00	SD1219-8	15.00	SD1365-1	2.50	SD1484-5	1.50	SRF2281	5.00
MRA2023-1.5	42.50	MRF1000MA	32.77	PT8609	25.00	SD1087	15.00	SD1220	8.00	SD1365-5	2.50	SD1484-6	1.50	SRF2371	15.00
MRF134	10.50	MRF1004M	31.05	PT8633	25.00	SD1088	22.00	SD1220-1	9.50	SD1375	7.50	SD1484-7	1.50	SRF2347	50.00
MRF136	16.00	MRF2001	41.74	PT8639	25.00	SD1088-8	22.00	SD1220-9	8.00	SD1375-6	7.50	SD1488	22.85	SRF2356	38.00
MRF171	35.00	MRF2005	54.97	PT8659	25.00	SD1089-5	15.00	SD1222-8	16.00	SD1379	15.00	SD1488-1	28.00	SRF2378	16.00
MRF208	11.50	MRF5176	24.00	PT8679	25.00	SD1090	15.00								
MRF212	16.10	MRF8004	2.10	PT8708	20.00	SD1094	15.00								

* OUR STOCK CHANGES DAILY SO CALL IF THE PART YOU NEED IS NOT LISTED

We Can Cross Reference Most RF Transistors, Diodes, Hybrid Modules And Any Other Type Of Semiconductor.

"All parts may be new or surplus, and parts may be substituted with comparable parts if we are out of stock of an item."

TERMS: DOMESTIC: Prepaid, C.O.D. or Credit Card
FOREIGN: Prepaid only, U.S. Funds, Money Order, or Cashier's Check Only.

C.O.D. Acceptable by telephone or mail. Payment from customer will be by Cash, Money Order, or Cashier's Check. We are sorry but we cannot accept personal checks for C.O.D.'s. C.O.D.'s are shipped by air only and thru United Parcel Service.

CONFIRMING ORDERS: We would prefer that confirming orders not be sent after a telephone order has been placed. If company policy necessitates a confirming order, please mark "CONFIRMING" boldly on the order. If problems or duplicate shipments occur due to an order which is not properly marked, the customer will be held responsible for any charges incurred, plus a 15% restock charge on the returned parts.

CREDIT CARDS: We are now accepting MASTERCARD, VISA, AND AMERICAN EXPRESS

DATA SHEETS: When we have data sheets in stock on devices we will supply them with the order.

DEFECTIVE MATERIALS: All claims for defective materials must be made within 30 DAYS after receipt of the parcel. All claims must include the defective material (for testing purposes), a copy of our invoice, and a return authorization number which must be obtained prior to shipping the merchandise back to us. This can be obtained by calling (602) 242-8916 or sending us a postcard. Due to Manufacture warranties we are unable to replace or issue credit on items which have been soldered to or have been altered in any way. All return items must be packed properly or it will void all warranties. We do not assume responsibility for shipping and handling charges incurred.

DELIVERY: Orders are usually shipped the same day they are placed or the next business day, unless we are out of stock on an item. The customer will be notified by post card if we are going to backorder the item. Our normal shipping method is UPS or U.S. Mail depending on size or the weight of the package. Test Equipment is shipped only by air and is freight collect, unless prior arrangements have been made and approved.

FOREIGN ORDERS: All foreign orders must be prepaid with a Cashier's Check, or Money Order made out in U.S. FUNDS ONLY. We are sorry but C.O.D. is not available to foreign countries and letters of credit are unacceptable as a form of payment. Further information is available on request.

HOURS: Monday thru Friday 8:30 a.m. to 5:00 p.m. Saturdays 8:30 a.m. to 4:30 p.m.

INSURANCE: Please include 25¢ for each additional $100.00 over $100, UPS ONLY. All insured packages are shipped thru UPS only. If you wish to have it shipped through the post office there is a $5.00 fee which is additional to the shipping, handling and insurance.

OPEN ACCOUNTS: We regret that we do not issue open accounts.

ORDER FORMS: New order forms are included with each order for your convenience. Additional order forms are available on request.

PARTS: We reserve the right to substitute or replace any item with a part of equal or comparable specification.

POSTAGE: Minimum shipping and handling in the U.S., Canada, and Mexico is $3.00 for ground shipments, all other countries is $5.50. Air rates are available at the time of your order. All foreign orders please include 25% of the ordered amount for shipping and handling. C.O.D.'s are shipped AIR ONLY.

PREPAID ORDERS: Orders must be accompanied by a check.

PRICES: Prices are subject to change without notice.

PURCHASE ORDERS: We accept purchase orders only when they are accompanied by a check.

RESTOCK CHARGES: If parts are returned to MHZ ELECTRONICS, INC. due to customer error, the customer will be held responsible for all fees incurred and will be charged a 15% RESTOCK CHARGE with the remainder in CREDIT ONLY. The following must accompany any return; A copy of our invoice, return authorization number which must be obtained prior to shipping the merchandise back. Returns must be done within 10 DAYS of receipt of parcel. Return authorization numbers can be obtained by calling (602) 242-8916 or notifying us by post card. Return authorizations will not be given out on our 800 number.

SALES TAX: ARIZONA residents must add 6% sales tax, unless a signed ARIZONA resale tax card is currently on file with us. All orders placed by persons outside of ARIZONA, but delivered to persons in ARIZONA are subject to the 6% sales tax.

SHORTAGE OR DAMAGE: All claims for shortages or damages must be made within 5 DAYS of receipt of parcel. Claims must include a copy of our invoice, along with a return authorization number which can be obtained by contacting us at (602) 242-8916 or sending a post card. Authorizations cannot be on our 800 number. All items must be properly packed. If items are not properly packed make sure to contact the carrier so that they can come out and inspect the package before it is returned to us. Customers which do not notify us within this time period will be held responsible for the entire order as we will consider the order complete.

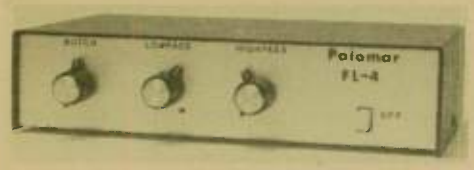
OUR 800 NUMBER IS STRICTLY FOR ORDERS ONLY (800) 528-0180. INFORMATION CALLS ARE TAKEN ON (602) 242-8916 or (602) 242-3037.

MHz electronics

2111 W. CAMELBACK ROAD
PHOENIX, ARIZONA 85015
For information call: (602) 242-3037

Toll Free Number
800-528-0180
(For orders only)

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.



Universal audio filter

Palomar Engineers has announced a new universal audio filter. Model FL-4 is for SSB/CW/RTTY and features switched capacitor filters. A 10-pole low-pass and an eight-pole high-pass can be moved anywhere in the 200-3500 Hz range to form a sharp band-pass filter at any frequency and of any bandwidth. A notch filter is also included.

It connects to the receiver phone jack and provides 2 watts of audio to drive a speaker. The on-off switch bypasses the filter when not in use. It operates from 15VDC. $139.95 plus $4 shipping. Optional 115VAC adapter $9.95.

For further information, contact Palomar Engineers, Box 455, Escondido, CA 92025. □

24/12-hour clock

The MFJ-106 clock meets the demands of the serious ham operator. It has a 24/12-hour display, is synchronizable with WWV, and has a 9 volt battery backup. The MFJ-106 also features an ID timer that alerts every nine minutes, after setting, up to one hour and 59 minutes. You can also use this feature as a snooze alarm to get those extra minutes of sleep you always want but rarely get. With the observed timer feature, you can set the clock to zero and time any event up to 24 hours.

The MFJ-106 has a large .6″ and LED readout and a sloped face for easy across-the-room reading. It operates on 110VAC, 60 Hz and is housed in an attractive silver cabinet that matches any radio shack decor.

The MFJ-106 24/12-hour clock with ID timer can be ordered from MFJ for $19.95 plus $4 shipping for each unit. Send a check or money order to: MFJ Enterprises, Inc., 921 Louisville Rd., Starkville, MS 39759. OR use the toll free number, (800) 647-1800, and charge to your VISA or MasterCard. Order several today! □

HAMLOG

HAMLOG is an Amateur Radio Logbook program written in BASIC, which will handle an unlimited number of logbooks of up to 250 entries each, depending on your computer memory and length of entries.

The HAMLOG MENU includes ADD, REVIEW, SAVE, LOAD, CSAVE, CLOAD, PRINT (with optional printer) and SEARCH (by call sign only).

Each entry consists of CALL SIGN, NAME, LOCATION, REPORT, FREQUENCY, DATE, TIME and OTHER COMMENTS. You may ADD TO or DELETE any entry at any time.

In the cassette version (V2), the unique "POSITIVE TAPE LOADING SYSTEM" estimates and displays loading time in minutes, and gives an on-screen marker as each entry is loaded.

HAMLOG is available in three versions: V1-Disk only, $14.95; V2-Cassette only, $12.95; and V3 (includes both disk and cassette capability), $19.95.

HAMLOG will be available for the TRS-80 Models I, III, IV; TRS-80 Color Computer; Commodore 64; Apple; and IBM PC. (Please specify model and memory.)

For more information, contact D&D Software, Rt. 2 Box 47, West, MS 39192; (601) 289-6592. □

LCD pen-type tester

The Checkman DM1350 Autoranging LCD Pen Tester features 4 DC volt ranges (2V/20V/200V/2000V). 4 AC volt ranges (2V/20V/200V/2000V), four resistance ranges (2K/20K/200K/2000K) and continuity test. The data-hold function allows one to lock the reading and the continuity test features audio sound.

The unit is complete with case, test lead, clip and batteries. Price is $44.95 (1 pc), $42.95 (3 pcs), $40.95 (10 pcs).

For more information, contact World Distributors, Inc., 709 N. Memorial Parkway, Huntsville, AL 35801; (205) 539-0441. □

Micro MasterTapes

Ham MasterTapes has announced the start of production of the long-awaited Micro MasterTapes series of videotapes, which will cover each of the major desk-top microprocessors currently manufactured in the United States. Release of the first tape is scheduled for late November 1984.

Larry Horne, N2NY, executive producer of Ham MasterTapes and Micro MasterTapes selected the ARRL's convention in New York City as the forum to disclose the release of the revolutionary new training tapes.

"My 33 years of experience in helping newcomers get a start in the wonderful hobby of Amateur Radio has given me an unusual insight into the effective teaching of high tech topics," Horne said. Larry is also host of the acclaimed weekly cable television series *Network Two New York*.

"Ham MasterTapes was our testing ground, our prototype to try out wholly new ideas in using video as a teaching medium. We were very pleased at the response from this highly sophisticated market.

"For every four individuals who have upgraded to Technician-General since January, we have sold one set of Ham MasterTapes. Surprisingly, we have even sold many tapes overseas, where the amateur licensing situation is quite different. We will be able to use the expertise we acquired in producing and marketing Ham MasterTapes in the new series of instructional tapes for the major micros, such as the Apple II's, Macintoshes, IBM PC's, Tandy 80's, and Commodore 64 series."

The series will follow the same successful format of Ham MasterTapes, utilizing three actors who participate in a question-and-answer mode of exchanging information, as well as on-screen graphics and text that can be freeze-framed for note-taking.

"More than 7.5 million desk-top computers will be sold in the United States this year," Larry Horne, N2NY, said. "We expect to have at least the same penetration into this market as we have in the Amateur Radio field. We'll be using the same highly professional team of directors, film editors and crew from Rutt Video, and will reproduce the same superb technical quality tapes that Ham MasterTapes is famous for. A crack team of technical writers will script each tape, which — like Ham MasterTapes — will be available both in VHS and Beta (NTSC, SECAM and PAL). Every computer owner in the country, and certainly every new purchaser of a computer, will find our tapes tremendously helpful. We're experts in the video information field and we expect phenomenal success with our new series."

The three-part, six-hour Ham MasterTapes were shot at the Rutt Video facilities at Shearson-Lehman American Express, 125 Broadway, New York City, and Horne said he anticipated using the same facilities for the new series.

For more information, contact Ham MasterTapes, 136 E. 31st St., New York, NY 10016; (212) 673-0680, 685-7844. □

Ohm-Brew Answer

"OHM OHM ON THE RANGE"

Desktop/portable repeater

The Spectrum Communications SCR77D is a new "Desktop/Portable" repeater. The first of its kind on the amateur market, the 77D, was developed in response to customer demand over the past several years. Its compact, low-power configuration makes it ideal for "local" use (within a 0-20 mile radius, depending on antenna and terrain). It may be used at a fixed location, or portable/mobile. Use it "portable" at the scene of a disaster, or to provide increased coverage for mobiles and HT's at a parade or any other public service event.

The SCR77D can be mounted in a vehicle which can be parked on a high hilltop for temporary coverage as needed. Take it "mountain-topping" with a 12V battery pack.

Autopatch and 'PL' are available "built in". AC power supply is built in, plus jacks for 12VDC power. Full duplex base station applications, such as computer data links or export "rural telephone", are also ideal for the SCR77D. Standard models include 10 watt UHF unit with built-in duplexer and a 15 watt VHF unit with external duplexer.

Spectrum also manufactures a complete line of 10-150 watt deluxe microprocessor-based (as well as basic) rack mount repeaters which are in use throughout the world.

For more information, contact Spectrum Communications Corp., 1055 W. Germantown Pk., Norristown, PA 19401-9616; (215) 631-1710. □

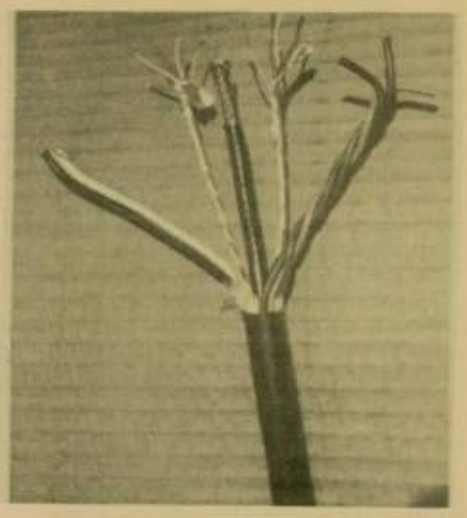
Kleen line conditioners

Electronic Specialists announces their KLR series of portable line conditioners designed to protect sensitive computer equipment. Available for 250, 500, 1000 and 2000 watt loads, the KLR line conditioners deliver 120 volt at 3 percent regulation for 90-140 volt input variations.

With 3 percent THD sine wave output, the KLR series offers input spike suppression, transformer surge suppression, wide-band pre-filtering and isolated winding line noise elimination.

250 watt units at $292 and 500 watt units at $391 are enclosed in a 7″ × 14″ × 8″ decorator-styled case. A larger decorator case (9″ × 17″ × 10″) houses the 1000 watt model at $562 and the 2000 watt unit at $977. Delivery from stock.

For more information, contact Electronic Specialists, Inc., P.O. Box 389, Natick, MA 01760; (800) 225-4876. □



Combination cable

Nemal Electronics International of North Miami, Florida has introduced a new addition to its line of direct burial combination cable for use in TVRO installations.

Nemal Type 4 Satellite Control Cable is the first combination cable available to the satellite industry containing an RG-6/U, 18 gauge, 95 percent copper-shielded signal cable. SCC-4 also contains two conductors of 12 gauge, three conductors of 18 gauge, three conductors of 20 gauge shielded plus drain wire, and three conductors of 22 gauge shielded plus drain wire.

All Nemal satellite control cables utilize a patented direct burial polyethylene jacket as well as tinned copper drain wires. Nemal also offers a complete line of over 500 types of cable, connectors and SMATV products.

Please call or write for additional information: Nemal Electronics International, 12240 NE 14th Ave., North Miami, FL 33161; (305) 893-3924. □

Metz antennas

The Metz line of commercial and maritime antennas has been serving the communications industry for over 15 years. The Metz antenna is a distinctive type of vehicular and/or maritime antenna that has no look-alikes. Each Metz antenna features a patented stainless steel base loading coil with a stainless steel whip. Various whip lengths match over 10 discrete frequency antennas.

All whips screw onto the rugged SO-239 connector (similar to a coaxial cable barrel connector). Several varieties of mounts with and without coax are available to complement any Metz installation.

Dual banders

Metz Corporation is proud to announce three new members of the Metz family called "dual banders." Quite simply, one antenna operates on two different frequencies.

The AM/FM dual-bander is ideal for marine and automotive stereo entertainment receivers. The gleaming stainless steel loading coil and yard-long stainless steel whip will complement any installation. The AM/FM dual-bander offers outstanding reception capabilities on the AM broadcast band from 500 to 1700 kHz.

Built into the same coil is a matching network to tune in FM entertainment frequencies between 88 and 108 MHz. The extra-long whip antenna helps reduce multi-path signal fading as well as picket-posting.

The AM/FM dual-bander allows for noise-free reception of all broadcast signals, even when you are over 100 miles away from the transmitting station. The coil also features shunt-fed feeding to eliminate the buildup of wind static on the antenna system.

For maximum entertainment radio range, the Metz AM/FM antenna cannot be surpassed.

For shortwave reception, the new Metz shortwave/FAX antenna is ideal for casual shortwave listening or for commercial weather facsimile recorder reception. This specifically wide-tuned antenna pulls in shortwave signals between 3 and 30 MHz. A unique tuning system within the stainless steel coil also offers peaked reception of United States and foreign weather facsimile broadcast stations.

This antenna is ideal for marine applications when tied into a shortwave receiver or tied directly into a weather facsimile receiver. For the shortwave enthusiast, the antenna may be mounted directly on the shortwave receiver or remotely in an attic. For mobile homes, the antenna is mounted on any aluminum surface for maximum reception of shortwave, military,

Amateur Radio, marine and weather facsimile transmissions.

The Metz combination citizens band/scanner antenna allows for long-distance transmission and reception range on 27 MHz CB, plus long-distance scanner reception on low-band, high-band, and at UHF frequencies, too. All that is necessary is a two-position coaxial cable switch that will either select your CB set or your scanner to be fed into the CB/scanner antenna.

A unique tuning section allows for an extremely good match to all 40 channels on citizens band. In the scanner receive mode, the antenna looks like an in-fed helf-wave receive system on most scanner bands. It actually offers gain over quarter-wave whips at ultra-high frequencies. The sleek stainless steel appearance of the CB/scanner antenna makes this a distinctive addition to any vehicular or home installation.

Lifetime warranty

All Metz antennas are covered with a lifetime replacement warranty. The practically indestructible stainless steel antenna will provide years of trouble-free service in single antenna applications or in situations where two antennas are required, with one Metz antenna covering both frequencies.

See the stainless steel Metz antennas at your local communications specialist dealer. □

Microlizer

Heath's new HD-1986 Microlizer is designed to improve the quality of transmitted speech and provide a better match between microphone and transceiver.

This microphone equalizer fits in series with a microphone and transceiver using a standard four-pin microphone jack and 1/4″ phono output jack. It has continuously variable frequency controls to provide a ± 12dB (boost and cut) at 490 Hz and 2800 Hz. A gain control permits the user to increase or decrease the microphone signal fed to the transceiver for maximum efficiency and cleaner operation. The Microlizer can be bypassed to allow direct connection between microphone and transceiver by simply turning off the power switch.

The HD-1986 Microlizer is battery-powered and features a low profile which makes it ideal for mobile operation (requires 9-volt battery, not included). A front panel LED will briefly light when the unit is turned on to indicate that the battery is still good.

The HD-1986 Microlizer is just one of over 400 products offered in the new Heathkit Catalog. To receive this colorful catalog *FREE OF CHARGE,* write Heath Company, Dept. 150-405, Benton Harbor, MI 49022. In Canada, write Heath Company, 1020 Islington Ave., Dept. 3100, Toronto, Ontario, M8Z 5Z3, CANADA. Free catalogs are also available at over 70 Heathkit Electronic Centers in the United States and Canada. Consult telephone directory white pages for the nearest store.

Heath Company and Veritechnology Electronics Corporation are wholly-owned subsidiaries of Zenith Electronics Corporation. Heathkit Electronic Centers in the United States are units of Veritechnology Electronics Corporation.

Product availability, specifications and prices are subject to change without notice. □

Delaware QSO Party

The Delaware ARC will be sponsoring the Delaware QSO Party on 10-11 November, with the same rules as last year. Stations may be worked once per band and per mode for QSO and multiplier credits. Operating time will be from 1700 GMT, 10 November to 2300 GMT, 11 November.

Exchange: QSO number, RS(T) and QTH. County for DE stations, ARRL section or country for others.

Suggested frequencies: *CW* — 1805, 3750, 7070, 14070, 21070, 28070; *SSB* — 1815, 3975, 7275, 14325, 21425, 28650; *Novice* — 3720, 7120, 21120, 28120.

Scoring: Delaware stations score 1 pt. per QSO. Multiply total by the number of ARRL sections and DX countries worked. Others score 5 pts. for each Delaware station worked. Multiply total by the number of Delaware counties worked on each band and each mode (maximum of 36 multipliers possible). There are three DE counties — Kent, New Castle, Sussex.

Awards: Appropriate awards will be given to top scorers. In addition, a certificate will be awarded to all stations working all three Delaware counties. If you work all three counties and want the "WDEL" award, send two 20-cent stamps and an address label.

Mailing deadline for logs is 17 December. Send Charlie Sculley, AE3H, 103 E. Van Buren Ave., New Castle, DE 19720. Send SASE for a copy of the results. □

Sherlock Holmes Award

The International Police Association Radio Club (IPA-RC) is organizing a contest which may enable participators to work the Sherlock Holmes Award and Trophy. The contest is open to all radio amateurs and SWL's.

The contest will be held 03-04 November: *CW* on Saturday, 03 November, 0600-1000 and 1400-1800 UTC; *SSB* on Sunday, 04 November, 0600-1000 and 1400-1800 UTC.

Categories: Single-, Multi- and SWL operator

Frequencies: All bands from 80 to 10 meters (without WARC bands). Special IPA-RC frequencies (±) 25 kHz. *CW* — 3.575, 7.025, 14.075, 21.075, 28.075 MHz; *SSB* — 3.650, 7.075, 14.295, 21.295, 28.575 MHz; *DX* — 3.775, 3.800, 7.075, 7.100 MHz.

Call: CQ IPA CONTEST

Exchange: *Non-IPA-RC members* — 59(9) 001; *Non-IPA-RC members (U.S.)* — 59(9) 001 MI (Michigan); *IPA-RC members* — 59(9) 001 IPA; *IPA-RC members (U.S.)* — 59(9) 001 IPA MI. Stations may be worked once per band.

Scoring: CW and SSB will be scored separately, with separate awards. Each QSO will count 1 pt. Each QSO with an IPA radio club member counts 5 pts.

Multiplier: Each IPA section (outside of USA) and each U.S. state counts 1 multiplier on each Amateur Radio band where at least one IPA radio club station of the adequate country has been worked. All other countries do not count for the multiplier.

Result: Scoring points × multiplier points of all bands. The result per radio band must be calculated, yourself.

Logs: Entries must be postmarked no later than 31 December 1984, and sent to the Award and Contest Manager, Anton Kohten, DK5JA, P.O. Box 40 01 63, D-4152 Kempen 1, WEST GERMANY.

Awards: The contest winners — three operators with the highest score — receive a certificate and are honored in the Award Chronicle of the IPA. Special scoring will be made for: IPA members, non-members, SWL members and SWL non-members.

For more information, logs and rules, send SASE to Tom Jenkins, WA8VDC, 4828 Elm, Newport, MI 48166. □

VK vs. The World

Sponsored by the CW Operators QRP Club, this contest is directed to all CW enthusiasts worldwide who elect to tackle that extra challenge. Contestants may work DX or their own country for scoring. QRO stations are invited to participate, but must submit contest logs with *QRP stations only*, to qualify for the QRO section of the contest. QRP stations must sign QRP for identification.

The contest will be held 17-18 November, for a total of 48 hours (0000Z, 17 November to 2400Z, 18 November). Mode is CW only. Contest call is CQ QRP. Bands used will be 160 to 10 meters (not WARC).

Sections: *Station categories* — (QRP) Single Operator, multi-band or single-band; (QRP) Multi-Operator, multi-band or single-band; (QRO) Single Operator, multi-band or single-band. *Period categories* — (Full period) 48 hours; (Half period) *any* 24 consecutive hours, within the 48 hours allowed for the contest.

Exchange: *All stations* — six digits comprising RST followed by serial number, commencing with 001 up to 999, then commencing again.

Scoring: *QRP stations* (indicated output power into antenna *not* exceeding 5 watts) — each contact shall score points based on the following table:

Up to 1 watt	6 pts.
Over 1 watt - 2 watts	5 pts.
Over 2 watts - 3 watts	4 pts.
Over 3 watts - 4 watts	3 pts.
Over 4 watts - 5 watts	2 pts.

QRO stations (using more than 5 watts output to antenna) — 1 pt. per contact (QRO/QRP only allowed).

Multipliers: Every contact in a different IARU Zone counts as a multiplier on each band.

Bonus score: Field stations using battery/solar/wind/hand-generated power (motor generators excluded) multiply the grand total score by 1.5. (Station to be erected *not before* the day prior to contest date.)

Conditions: Stations may be contacted once only on each band, in each 24-hour period. Separate log sheets required for each band. Each logged QSO to show date/time (GMT), station worked, exchange (sent/received), multiplier, power output, points claimed. Grand total score = total points from all bands × total multipliers from all bands (× bonus score).

All entries must have a front summary sheet showing: calculation of grand total score, name and address, call sign, signature and declaration: "I certify that all entries in my contest log sheets are true and honest."

Entrants are requested to include a brief description of station equipment, and any comments/suggestions. Field stations are requested to include a brief description of operations/location/conditions, etc.

Certificates: To the QRP Single Operator and Multi-Operator in each country with the highest grand total score in each section. To the QRO operator in each country with the highest grand total score in each section. To the highest scoring CW Operators QRP Club member in each section.

Send entries to Contest Manager, P.O. Box 109, Mt. Druitt, NSW 2770, AUSTRALIA. Contest Manager must have entries by 26 February 1985. □

Telephone Pioneer QSO Party

Calling all Telephone Pioneer radio amateurs. The John D. Burlie Chapter No. 89 invites all Telephone Pioneer Amateur Radio operators in the United States and Canada to participate in the 20th Annual Telephone Pioneer QSO Party, 01-03 December. Independent Telephone Pioneers of America (ITPA) members are welcome to participate.

The QSO party will start at 1900 UTC, 01 December, and will end at 0500 UTC, 03 December.

Fifteen "bands" are defined for use during the QSO party. These are (MHz):

*1.8: 1.800-2.000	7.0: 7.000-7.150
3.5: 3.500-3.775	7.2: 7.150-7.300
3.9: 3.755-4.000	14.0: 14.00-14.20
14.3: 14.20-14.35	29.0: 28.5-29.7
21.0: 21.00-21.25	50: 50.0-54.0
21.3: 21.25-21.45	144: 144-148
28.0: 28.00-28.50	220: 220-225

UHF: above 420

*(An ARRL 160-meter contest runs at the same time as our QSO party.)

Any station representing a different chapter from the contestant may be contacted on any or all of the 15 bands for a maximum of 15 pts. per station, with no more than 1 pt. per band. Any station in the *same* chapter as the contestant may be contacted *once* for a maximum of 1 pt. per station: this contact may be on any band.

Phone user: Call "CQ Telephone Pioneers". **CW and RTTY User:** Call "CQTP". Please observe good sportsmanship. Share frequencies with low-power stations. Give way to established nets.

Suggested Phone frequencies: (MHz) 3.895-3.935; 7.255-7.295; 14.265-14.305; 21.355-21.395; 28.685-28.725; 50.10-554.00; 144.100-148.00 contacts via repeater or simplex are valid.

Suggested CW and RTTY frequencies: (MHz) 3.555-3.595, 7.055-7.095, 14.055-14.095, 21.055-21.095, 28.055-28.095, 50.00-54.00; *Novice/Tech.* — 3.725, 7.125, 21.125, 28.125; *RTTY* — 3.630, 7.100, 14.100, 21.100, 28.100.

Scoring: Total score equals contact points times chapters contacted. *NOTE:* Only 1 multiplier may be taken for each chapter worked. The maximum multiplier is 98 (TPA chapters 1-98), plus no more than 10 ITPA chapters.

Exchange: Contact number and chapter number (ITPA club or chapter name).

Reporting: A commemorative QSL card will be sent to each person who submits a log. If possible, return log sheets via your Amateur Radio club coordinator. Send logs showing date, time station worked, chapter name and number, contact number and your claimed score, postmarked no later than 15 January 1985, to: Ted Phelps, W8TP, c/o John D. Burlie Chapter No. 89, Telephone Pioneers of America, 6200 East Broad St., Columbus, OH 43213. □

40M, 75M World SSB Championship Contests

The 4th Annual 40-Meter World SSB Championship Contest, sponsored by 73 Magazine, will be held on 12 January, 0000Z-2400Z.

Rules: Work as many stations as possible on 40-meter Phone during the specified times of allowable operation. The same station may be worked *once*. Crossmode contacts will not count. Single operator stations may operate a total of 16 hours. All the multi-operator stations may operate the entire 24-hour period. Off periods must be noted in your log(s) and on your summary sheet. Off periods are *no less than 30 minues each.*

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

Operator classes: (A) Single Operator, Single Transmitter, Phone only; (B) Multi-Operator, Single Transmitter, Phone only.

Exchange: Stations within the continental 48 U.S. states and Canada transmit a RS report and state, province or territory. All other stations, including Alaska and Hawaii, transmit RS report and DX country.

Points: 5 QSO pts. for contacts with W/VE stations located within the continental 48 U.S. states and Canada. All other contacts score 10 pts. each. List points for each contact on your log sheet.

Multipliers: 1 multiplier pt. is earned for each U.S. state (48 maximum; a District of Columbia contact may be substituted for Maryland multiplier), each Canadian province or territory (13 maximum), and DX country (excluding the continental United States and Canada).

Final scores: Total QSO points × total multiplier points = claimed score.

Contest entries: Each entry must include a contest log, a dupesheet, a contest summary, and multiplier check list. We recommend that contestants send for a copy of the contest forms. Enclose an SASE to the contest address listed below.

Each entry *must be postmarked* no later than 12 February 1985.

Disqualifications: Omission of any required entry form, operating in excess of legal power, manipulating of contest scores or times to achieve a score advantage or failure to omit duplicate contacts which would reduce the overall score more than 2 percent are all grounds for immediate disqualification. Decisions of the contest committee are final.

Awards: Contest awards will be issued in each operator class in each of the continental 48 U.S. states, Canadian provinces and territories, and each DX country represented. A minimum of 100 QSO's must be worked to be eligible for contest awards.

To obtain entry forms, or to submit an entry, forward an SASE to: 40-Meter Contest, Dennis Younker, NE6I, 43261 Sixth St. E., Lancaster, CA 93535.

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The rules for the 4th Annual 75-Meter World SSB Championship Contest, also sponsored by **73 Magazine**, are identical to those of the 40-Meter Contest, except for the following:

Operating time is 0000Z-2400Z, 13 January. All entries must be postmarked no later than 13 February 1985. And to obtain entry forms or to submit entries, forward SASE to: 75-Meter Contest, Jose Castillo, N4BAA, 1832 Highland Dr., Amelia Island, FL 32034. □

Connecticut

The SOUTHCENTRAL CONNECTICUT AMATEUR RADIO ASSOCIATION (SCARA) will hold its 5th Annual Electronics Show and Flea Market on Sunday, 11 November at the North Haven Recreation Center on Linsley Street, North Haven, Connecticut. The show will feature the latest in Amateur Radio, computer and electronics.

Admission for the event is $1.50 all day, children under 12 free with an adult. Tables are $10 in advance for the main hall and $12 at the door. Reservations are strongly advised. Set-up is at 8:00 a.m. for vendors; doors open at 9:00 a.m. for the show and close at 3:00 p.m. A special exhibit area with set-up security arrangements for new equipment vendors will be made available.

Food will be available all day at the event. Talk-in will be on W1GB, 146.01/146.61.

Checks should be made payable to SCARA and sent to Tony Vanacore, AK1O, P.O. Box 81, North Haven, CT 06473. Send SASE for confirmation, directions, etc. Call (203) 484-4175 (home) or (203) 239-5321 ext. 311 (days) for further information. □

Indiana

The 12th Fort Wayne Hamfest, sponsored by the ALLEN COUNTY AMATEUR RADIO SOCIETY, Inc., will be held on Sunday, 11 November, at the Allen County Memorial Coliseum, Coliseum Boulevard (U.S. 30) at Parnell Avenue.

All classes of radio exams will be given. Send your Form 610 and SASE to: VEC, FWRC, P.O. Box 15127, Fort Wayne, IN 46885 by 26 October.

Advance tickets $3; $3.50 at door. Tables $8; premium tables $20. *No table sales at door!* Ticket and table deadline 20 October.

Large indoor flea market and commercial vendors, and hear the infamous "Ham Band" again under the direction of Luke Matthew, WB9EWJ. Vendors set up 5:00 a.m. to 7:00 a.m. Public, 8:00 to 4:00. Talk-in on .88.

For tickets, tables or more information, contact: Hamfest Chairman AC-ARTS, P.O. Box 10342, Fort Wayne, IN 46851. Or call Dave Smith, KA9FFT, at (219) 493-2439. Y'all come!

Massachusetts

The HONEYWELL 1200 RADIO CLUB, sponsor of 147.72/12 repeater, and the WALTHAM AMATEUR RADIO ASSOCIATION, sponsor of 146.04/64 repeater, will hold their annual Amateur Radio and electronics auction on Saturday, 17 November, at the Honeywell Plant, 300 Concord Road, Billerica, Massachusetts Exit 27 off Route 3. Snack bar and bargain parts store. Doors open at 10:00 a.m. Free admission and parking.

Talk-in on both repeaters.

For more information, contact Doug Purdy, N1BUB, 3 Visco Rd., Burlington, MA 01803. □

Michigan

The OAK PARK HIGH SCHOOL ELECTRONICS CLUB presents the 15th Annual Swap N Shop on Thanksgiving Sunday, 25 November, at Oak Park High School, Oak Park, Michigan.

Admission is $2; tables (8 ft.) are $6. Refreshments and door prizes. Hours: 8:00 a.m. to 4:00 p.m. East and west doors open at 6:00 a.m.

For more information, send SASE to: Herman Gardner, Oak Park High School, 13701 Oak Park Blvd., Oak Park, MI 48237; or call (313) 968-2675. □

New York

RADIO CENTRAL ARC presents the 6th Annual "Ham-Central" — an all-inside flea market and hamfest. The event will be held Sunday, 25 November — Thanksgiving weekend, at the giant 12,000-square-foot main social hall of Temple Isaiah, 1404 Stony Brook Road, Stony Brook, Long Island.

Doors will open at 7:30 a.m. for sellers and dealers; at 9:00 a.m. for general admission. Closing time will be 3:00 p.m. There will be seminars and question-and-answer sessions on DX'ing, OSCAR and antennas; plenty of free parking; food and drinks.

General admission is $3; XYL's and kids under 12 free. Table spaces are $7 for full 8 ft. table space; includes one free admission. Spaces will go fast; bring your own tablecloths. *HAM-RELATED ITEMS ONLY!*

Talk-in on 144.550/145.150 and 146.52.

For reservations and additional information, contact Bob Yarmus, K2RGZ, 3 Haven Ct., Lake Grove, NY 11755; (516) 981-2709 after 6:00 p.m. Mondays through Fridays. □

Ohio

The MASSILLON ARC will sponsor "Auctionfest 84" on 11 November, at the Massillon Knights of Columbus Hall off Route 21 from 8:00 a.m. till 5:00 p.m. Sellers set up at 7:00 a.m. Admission is $2.50 advance and $3.50 at the door. Many tables available at $7 per 8-foot space. Refreshments available; sit-down dinner. Plenty of free parking. Auction starts at 11:00 a.m.

Talk-in on W8NP, 147.78/.18.

For advance registration and info, contact MARC, 920 Tremont Ave., SW, Massillon, OH 44646. SASE please. □

Pennsylvania

The FOOTHILLS ARC will hold its 16th annual hamfest at St. Bruno's Church in South Greensburg on Saturday, 03 November. Tickets are $2 or three for $5. Indoor flea market tables are $5. Refreshments, food and prizes.

Mobile check-in on 147.78/18.

For further information, advance tickets or tables, contact Ron Naviglia, WA3HOL, 205 Old Meadow Dr., Greensburg, PA 15601, or write FARC, P.O. Box 236, Greensburg, PA 15601. □

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The R.F. HILL ARC will hold its annual indoor Winterfest on Sunday, 04 November, at the Sellersville, Pennsylvania National Guard Armory. Doors open at 8:00 a.m. Entry is $2. Non-ham spouse and children are free when accompanied by a paying ham.

Food is available on premises, and many restaurants are nearby. The Armory is located approximately five miles from the Pennridge Airport, halfway between Philadelphia and Allentown, near the junction of PA routes 309 and 563.

Talk-in will be on 145.19(R), 146.88(R) and 146.52 (simplex); call is W3AI. This annual event attracts amateurs and commercial vendors from New Jersey, Delaware and Pennsylvania.

Vendors may reserve space by writing P.O. Box 29, Colmar, PA 18915 or calling (215) 721-0278. Those telephoning should expect to have their calls returned collect during the evening. Space is approximately 6 feet-by-6 feet indoors and one parking space width frontage outdoors. Indoor space is $6 each and outdoor space is $4 each. Purchaser of a vendor space receives a single admission. *Vendors must supply their own tables.*

There is no discount for advance purchase of entry, so buyers are encouraged to purchase admission at the gate. □

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RTTY JOURNAL — Now in our 32nd year. New Beginners Handbook — $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.

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.

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.

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.

NEED PARTS, tubes, manuals for early radar sets AN/TPQ-3 and AN/TPS-3. York, P.O. Box 365, Fontana, CA 92335.

QSLS. QUALITY AND FAST SERVICE FOR 24 YEARS. Include call for free decal. Samples 50¢. Ray, K7HLR, Box 331, Clearfield, UT 84015.

COPY SATELLITE PHOTOS, WEATHER MAPS, press photos on our full size 18" wide facsimile recorders. We provide the equipment and information to get you started. FAX Guide, $1.00. ATLANTIC SURPLUS SALES, 3730 Nautilus Ave; Brooklyn NY 11224. (212) 372-0349 — Ask for ED, WA2FBY.

CHASSIS AND CABINETS kits. SASE, K3IWK.

SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

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CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC, each Saturday, Sunday, Monday and Thursday on 7060 kHz, starting 2000Z. Each Tuesday and Friday on 14060 kHz, starting 2000Z. Speeds range from 20 to 60 wpm.

KENWOOD TS-180S with factory WARC band mods, DFC, CW and second SSB filter, PS—30, Shure 44 desk mike, SP—180, both manuals $550. Azden PCS—2000 $140. Stan K6MA, (408) 736-8358.

B&W #14 AWG ANTENNA WIRE, 140 foot rolls, $10 each. B&W Phonepatch, Model 3002W with speech preamp/limiter, $125 each. Brand new, in original boxes, shipped UPS prepaid. Send check to Peter Onnigian, W6QEU, 1236 40th Ave., Sacramento, CA 95822. (916) 392-8964.

HATS WITH NAME AND CALL, $4.95 plus $1.50 shipping. Fourteen colors, SASE for information. SPECIALTY PRINTING, Box 361, Duquesne, PA 15110.

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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.

HAMS FOR CHRIST — Reach other hams with a Gospel Tract sure to please. Clyde Stanfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.

SELL NEW COILS AND VARIABLE CAPACITORS. B & W type 3035 coils, 198uH, $9.50 each. Miller type 2152 variable capacitors, 40-1,000pF, rated at 1,500 volts, $32 each. Groth type TC-3S turn counters with spin dials, for ¼ inch shafts, $13 each. All items brand new, in original boxes, shipped prepaid by UPS. Send check to Peter Onnigian, W6QEU, 1236 40th Ave., Sacramento, CA 95822. (916) 392-8964.

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in 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.

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NEW DRAKE TR7/DR7 — $1195. R7/DR7 — $1195. Dentron GLA1000 — $315, GLA1000B — $350. TA36 — $250. Hy-Gain 105BA — $115, 155BA — $149. TH3 mk 3 — $185. ORGANS AND ELECTRONICS, Box 117, Lockport, IL 60441 (815) 838-1580.

JAMES MILLEN COMPONENTS — Many types available. Inquire SASE. Ralph, KA1FAA, 16 Hansom Road, Andover, MA 01810.

NOTICE NOTICE: Your ads seen daily by new people for a 4-week period on our Computer Bulletin Board. Very Low ad rate. Call (201) 962-4956 to view ads at no charge. Full details, send large SASE to NARWID BBS, 61 Bellot Road, Ringwood, NJ 07456.

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UNBELIEVABLE! NEW BEARCAT 201, aircraft band, programmable, loaded! Under $200.00. New wide band Regency scanner, MX7000, 25-1.2 GHz, lowest price — $450.00. Write for flyer, info, J.C. RADIO, Box 5, Hunt St., Osgood, IN 47037.

ATTENTION KENWOOD & ICOM OWNERS: Informative separate newsletters! 5th year. Back issues available. Send 37¢ SASE for free brochure to INTERNATIONAL RADIO, INC., 364 Kilpatrick Ave., Port St. Lucie, FL 33452; (305) 335-5545. MC/VISA accepted.

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"DEUTSCH FUER AMATEURFUNK" — German for Amateur Radio. 90-min. audio cassette and test. $8.95 ppd. DANRICK/SOUNDEVENTS, 213 Dayton Ave., Clifton, NJ 07011.

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FOR SALE: SAVE YOUR ANTENNAS, new wind speed indicator complete 0-100 miles/hour incl. shipping $67.50. WB6DXU, 1426 N. Avon St., Burbank, CA 91505. (818) 842-5983.

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YAESU 101ZD, FC-902 antenna coupler, Shure mike. Extras: Narrow CW filter installed, blower, AM card installed. Commercial dummy load, 100 ft. coax & more. $600. Thomas Henry, 713 Alvis Ln., Norcross, GA 30093; (404) 921-8925.

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NOVICE CRYSTALS 7.1-7.15 mHz FT-243 type *only*. 3/$5, 7/$10, 25/$20 (our selection of frequency) postpaid USA. Dealer inquiries welcome. Many 1000s available. E. TAYLOR, W7BYF, 2921 Loyola Dr., Davis, CA 95616.

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WANTED — old radio transcription discs. Any size, speed, subject. Send full details & price. W7FIZ, Box 724, Redmond, WA 98052-0724.

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COMMERCIAL/AMATEUR RADIO REPAIR — all major lines. Quick turnaround. Factory-trained. First Class licensed. 30-day warranty. CASCADE COMMUNICATIONS 1-503/245-4795.

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WANTED. IC'S, transistors. Good clean electronic parts. Send list. ALLSEN, PO Box 94, East Rockaway, NY 11518.

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WRIGHTAPES: (Since 1976) Unconditionally guaranteed Morse Code Practice on 60 min. cassette tapes. Beginners 2-tape set 5 wpm $7.90. Also 3, 4, 5, 6-8, 10, 9-11, 12-14, 14, 16-20, 22, 24-28 wpm. Specify Plain Language or Code Groups. Also plain lang. only 30-35, 35-40, 45-60. FCC type tests: 5-6, 11-12, 11-17, 13-14, 20-24 wpm. Call signs: 20-24. Nos.: 5-22, 13-18, 18-24. Check, M/C, VISA, $3.95 ea. PPD 1st Class USA, Mex., Can., (Elsewhere add $2 per tape). Instant service. Ph: (517) 484-9794. WRIGHTAPES, 235 E. Jackson T-2, Lansing, MI 48906.

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FOR SALE: Yaesu FT-301AD transceiver, FP-301-D power supply, FV-301 external-VFO, FC-301 antenna tuner with built-in SWR and power meter, Shure 526T mic, very good condition $650.00. KA7KZD, Star Rt. Box 106, Kooskia, ID 83539. (208) 926-4998.

PRIVATE PARTY needs parts, tubes and manuals for early radar sets AN/TPQ-3 & AN/TPS-3. York, P.O. Box 365, Fontana, CA 92335.

ELECTRONIC PARTS BY MAIL since 1954. Free flyer. BIGELOW ELECTRONICS, P.O. Box 125, Bluffton, OH 45817.

YAESU FT-901DM with CW filter. Mint, $475.00. Kenwood TR-2500, like new. $175.00. WB7V00, (602) 298-4820.

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LEARN THE CODE — A course for family members and friends who don't know the difference between a dot or a dash. Monday through Friday, 0630-0700 California local time, 3865 KHz ± A2/A3/LSB, January through December. K6RAU. Starts first Monday of each month.

INTERNATIONAL DX ASSOCIATION — Hams helping hams. Write for details. IDXA, 1902 Jamestown, Ct., Arlington, TX 76013.

COMPUTER OWNERS! Now featuring large selection of software and accessories for VIC-20, Commodore 64, Atari, Timex/Sinclair, TRS80C Home, games, Amateur Radio, top quality, hundreds sold internationally. SASE for catalog and discount coupon. AMATEUR ACCESSORIES, 6 Harvest Ct., Rd 7, Dept. WR, Flemington, NJ 08822, (201) 782-1551, after 6:30 pm. Eastern.

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Amateur Radio's NEWSpaper — WORLDRADIO. Latest info. One year subscription (12 issues) only $10. WORLDRADIO, 2120-E 28th St., Sacramento. CA 95818.

KENWOOD 520S with Autek filter. CW filter installed, $450. N6HSN, (916) 489-1462, 2607 Park Hills Dr., Sacramento, CA 95821.

TI99/4-4A BASIC, Extended Basic, Assembly Language Programs. CW receive/transmit, CW practice, DX log/call locator, Amateur call locator, SSTV keyboard, 1010 record, WAS, programs for Hamkids. Write Sam Moore, AC5D, Box 368, Stigler, OK 74462.

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Shown here is a display case at a Salem, Massachusetts museum. In the lower right-hand corner is a 1902 coherer receiver; the label on it was made by a Boston Navy Yard printer. Another coherer is sitting on top of the box (center). *(Photo submitted by Art Ericson, W1NF)*

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