World radio

Year 14, Issue 7 January 1985 • 85¢

Larry Stanton, KA6ZDA (left), and Jim White, N6JYG, listen for contacts from Alcatraz Island in San Francisco Bay. The occasion was a DXpedition sponsored by the Sacramento Amateur Radio Club, on Saturday, 27 October.

Father Marshall Moran, 9N1MM (center), shares a laugh with some Kansas City, Missouri amateurs at a dinner in his honor, arranged by the Kansas City DX Club. Turn to page 34 for more information on Father Moran's trip to the United States last fall. (*Photo by Larry Wilson, KØRWL*)

DXpedition to Alcatraz

Jim White, N6JYG

Many of the members of the Sacramento (California) Amateur Radio Club have long been envious of those amateurs who go on DXpeditions to rare and out-of-the-way places. Alas, that takes time, money, skill and moxie. At one of the club board meetings, the conversation turned to "What can we do on a smaller scale?"

Since many of the "real" expeditions go to rare islands; and there just aren't many islands in the Sacramento Valley, someone brought up Alcatraz Island, former site of the Alcatraz Prison. It sits there in the San Francisco Bay, just inside the Golden Gate.

Club secretary, Scott Jercich, KB6CCG, was appointed to look into an operation from that "rare island". Alcatraz is now a part of the National Park System, and permission was obtained from them for the "mini-expedition" to operate from there, but problems remained to be overcome.

First, there was no electric power in that portion of the prison where it was determined the operation could take place without interfering with tour groups that are scheduled hourly; thus, it would be a Field Day-type of operation. A portable generator solved that problem, but we were going over on the same boat that carries tour groups to the island, and the

(please turn to page 29)

ARRL incumbents ousted

Bill Pasternak, WA6ITF
Editor, *Westlink Report*

A pair of long-time ARRL Board members have been ousted from their posts as a result of the balloting in the League's 1984 divisional elections. The biggest upset occurred in the New England Division, where challenger Tom Frenaye, K1KI, unseated incumbent John Sullivan, W1HHR, in what many term the most "aggressive campaign in the history of ARRL politics".

Frenaye literally beat the bushes for votes and mounted what is best described as a "Reform Campaign", complete with a series of skillfully produced press releases to various amateur publications. Frenaye pointed openly to various problems he saw in the overall ARRL structure, such as his feeling that **QST** was being diluted in its overall value because of the many League special interest publications dealing with RTTY, DX, ATV and the like.

K1KI also harped on the lack of growth in the Amateur Service, while at the same time putting forth his opinion that the ARRL was trying to spread itself too thin by trying to undertake far too many projects. His opponent, incumbent Director Sullivan, never mounted a major campaign effort, with the end result being 2,752 votes garnered by Frenaye and only 1,398 for Sullivan. Obviously, K1KI's "message" was heard.

The second big surprise came in the Hudson Division, where Linda Ferdinand, N2YL, ousted incumbent George Diehl, W2IHA. This one came as a shock to many long-time "League watchers" who expected Diehl to win by a wide margin. Ferdinand had claimed that better representation for the northern portion of the Hudson Division was a major need, and those voting responded by giving her 1,940 votes to the 1,642 garnered by W2IHA.

Possibly the greatest "vote of confidence" ever given to an "appointed incumbent" was the result in the Southwestern Division, where incumbent Vice Director Wayne Overbeck, N6NB, was pitted against Karl Pagel, N6BVU,

(please turn to page 41)

New QSL Bureau address changes

3rd call area (all calls)
CCARS
PO. Box 448
New Kingstown, PA 17072-0448

4th call area (two-letter prefixes)
Sterling Park ARC
Call Box 599
Sterling Park, VA 22170

5th call area (all calls)
ARRL W5 QSL Bureau
PO. Box 44246
Oklahoma City, OK 73144

U.S. Virgin Islands (all calls)
Virgin Islands ARC
GPO Box 11360
Charlotte Amalie, ST. THOMAS 00801

VE5
VE5 QSL Bureau
B.J. Madsen, VE5ADA
739 Washington Drive
Weyburn, Saskatchewan
CANADA S4H 2S4

VE6
CRRL Incoming Bureau
N.E. Waltho, VE6VW
General Delivery
9714-94th Street
Morinville, Alberta
CANADA T0G 1P0

SWL
Mike Witkowski
4206 Nebel St
Stevens Point, WI 54481

– Submitted by Richard Palm, K1CE, ARRL Membership Services

CQ VHF contest returns

CQ Magazine, long-leading Amateur Radio publication for the contester, DX'er and award hunter, will soon return to VHF contesting after a decade-long absence.

The new annual CQ VHF WPX Contest will take place on the third full weekend each July, with the first running to be from 0000 GMT, 20 July 1985, ending 0000 GMT, 22 July 1985.

The contest will be patterned closely after the very popular CQ WW WPX Contest, which has grown to be the world's second largest Amateur Radio contest behind the CQ WW DX Contest.

Details on the new CQ VHF WPX Contest will appear in upcoming issues of **CQ**. □

Deadline extended

The deadlines for comments and reply comments on PRB-1 have been extended. The deadline for comments is now 24 December, and 25 January for reply comments. Comments should refer to #PRB-1, and should be sent to: Secretary, FCC, 1919 M St. NW, Washington, D.C. 20554.

PRB-1 was filed by the ARRL on 16 July, and requests the Commission to exercise federal preemptive authority over state and local zoning regulations which affect transmitters and antennas used by Amateur Radio operators. □

Worldradio

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January 1985 Vol. 14, No. 7

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

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

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

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

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Second-class postage paid at Sacramento, CA.

Military equipment sought

In recent years, the Australian War Memorial has commissioned a number of long-term aircraft restoration projects which are designed to help raise the general display standard of the Memorial's aircraft collection.

All will appreciate that projects like these are very costly, and as is often the case, it is very difficult to obtain original military fittings.

Amateur Radio operators purchased much of the surplus radio and radar equipment after World War II, and I am hoping therefore that members might be able to help us locate the following equipment.

Aircraft	Installation
B-25	BC-459A
	BC-458A
	BC-442A (Antenna Relay)
	BC-454A
	BC-453A
	BC-455A
	BC-966 (SCR 695)
	Command Set (SCR-274-N)
	BC-453B
	Liaison Set (SCR-287-N)
	Radio Set (SCR-522)
	Radio Sets RC 103 and AN/ARN-5 installation
	Marker Beacons RC-43 and RC-193 Radio Compass (SCR 269) and AN/ARN-7

In addition, we also require the many items of associated equipment such as amplifiers, control units, aerials, antennas and shockmounts.

I would be very interested to hear from any who feel they might be in a position to help us out.

Yours sincerely,
Mark Clayton
Acting Curator, Military Technology
for Director
Australian War Memorial
Canberra, ACT 2601
— *AMATEUR RADIO*

•••••

Pass it on . . . WORLDRADIO

DX stamps wanted

Are you saving cancelled DX stamps with no particular purpose in mind, or have you some dupes you don't want? Send them to Elmer Worth, KI3N (ex-K3YNN), at 946 Franklin St., Reading, PA 19602 for distribution to stamp-collecting patients at the Veterans Hospital up in Lebanon, Pennsylvania. Clean out your desk, and at the same time, help others. Good idea, Elmer.
— *Mid-Atlantic ARC, Villanova, PA* □

Papers wanted for conference

The American Radio Relay League will hold its 4th Amateur Radio Computer Networking Conference on 30 March 1985 in San Francisco, California. The conference will be in cooperation with the West Coast Computer Faire being held 30 March through 02 April.

The deadline for receipt of camera-ready papers is 01 March 1985. All papers should be mailed to Marian Anderson, WB1FSB, ARRL, 225 Main St., Newington, CT 06111. If you plan to present a paper, please request an author's kit and identify the title of your paper immediately. Proceedings will be sold at the conference and by mail from ARRL Headquarters.

Technical papers are invited on all aspects of amateur pocket radio and other forms of Amateur Radio digital communications via terrestrial, ionospheric, meteor-scatter and satellite media including AMSAT/OSCAR-10 and PACSAT. Topics may include network and system architecture, proposed standards, hardware, software, protocols, modulation and encoding schemes, applications and practical experience. □

YLISSB convention

The YL International Sideband System's annual convention will be held at Sugarloaf/USA, near Kingfield, Maine, on 27-30 June 1985. Accommodations are available for reasonable rates; RV parking.

Besides our regular business meetings, DX forum, etc., there are other activities planned, such as a tour of the Rangeley Lake area and a tour of Sugarloaf/USA with lunch at the top of the mountain.

For complete details and registration packet, please send SASE with 37 cents postage to: Phyllis Davis, P.O. Box 205, Presque Isle, ME 04769. — *Jeannine Cote, VE1BWP* □

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

International RTTY Art Competition

The Wireless Institute of Australia is running an International RTTY Art Competition as part of its 75th anniversary celebrations. Entries must not contain more than three overlinings, and be submitted with a hard copy printout and baudot tape.

Categories: a) Best hand-generated original submitted by its author outside VK; b) Best hand-generated original submitted by its author who is a VK; c) Best non-original hand-generated or computer-generated RTTY picture.

Entries close 31 August 1985, and must be sent to: WIA 75 RTTY Art Competition, Wireless Institute of Australia, 412 Brunswick St., Fitzroy 3065, Victoria, AUSTRALIA. □

CONTENTS

FEATURES

COLUMNS

South American ship visits Monterey

Amateur Radio recently struck another blow for international good will, this time in Monterey, California.

The "Buque Escuela de Guayas" or school ship *Guayas*, had anchored in the Monterey Bay while on a three-and-a-half-month training voyage from Guayaquil, Ecuador to Hawaii, California, Mexico and return to Guayaquil. Repairs and routine maintenance were being done prior to an official visit to San Francisco.

Learning of the ship's arrival, Bill Webb, NK6H, contacted Woody Reynolds, WB6UES, for assistance to determine if the crew of the *Guayas* would like to get messages to their families in Ecuador through Amateur Radio. (Woody is skipper of the *Acania*, an oceanographic research ship that works out of Monterey.) Going through the local Coast Guard Group, Woody got an affirmative answer from the *Guayas* and set up a meeting on the *Acania* to work out the details.

At first it was planned that the crew members would come to the Acania where there was a landline link to Bill's station in Monterey, and from there a radio link established to Ecuador where phone-patches would be made.

At the meeting, it was learned that this would not be feasible because the crew would not be able to leave the ship on 24 October because of their many duty requirements. Jose Bazzola, LU6DRY/W6, who was also at the meeting to handle interpreting needs, proposed that he get informal messages with addresses from the crew members and we could transmit these to Ecuador for further retransmission. All agreed. Jose also discovered at the meeting that there was an FT-101EE aboard the *Guayas*, but both the radio and antenna were inoperative.

That evening, Jose was able to contact an Ecuador station (Carlos F. Arosemena, HC2AIR) in Guayaquil and arranged for a schedule the next day. The next morning, Jose and Bill and an antenna donated by Jose were taken out to the *Guayas* at its anchor.

While visiting the radio room, Jose corrected the troubles with the radio and installed the replacement antenna he had brought. Getting close to the schedule time, Jose and Bill returned to shore and to Bill's station.

Little difficulty was encountered in establishing contact with HC2AIR by Jose as control operator. Passing the informal verbal messages was handled by Jose and greatly facilitated by his ability to speak Spanish. Some 25 messages were passed.

During the period of passing the messages, Carlos had Jose stand by for a moment. When he came back, he said he had been on the telephone with the local TV and radio broadcast stations who were on their way over to his home. It seems that Ecuador had not heard from the *Guayas* for several days, and people were concerned about the status of the ship since they were on the Hawaii to the United States leg of their voyage. So, it looks as if some mention will be made of this Amateur Radio contact in the local Ecuadorian news media.

Jose and Bill, who are members of the Naval Postgraduate School Amateur Radio Club in Monterey, were happy to be a part of this international goodwill effort using Amateur Radio. — *Submitted by William Webb, NK6H* □

Bakersfield ham files comments

Orval Terry Gaiser, an Amateur Radio licensee since 1961, holder of license N6UR, also holder of FCC First Class Commercial Radiotelephone License P1-11-57926 since 1970, broadcast engineer of 14 years, hereby submits these comments in support of the American Radio Relay League's REQUEST FOR ISSUANCE OF A DECLARATORY RULING to preempt state and local antenna ordinances that unreasonably inhibit effective, reliable communications by Amateur Radio.

1) I have lived in Bakersfield, California all of my life. Only in the past two years have I been awakened to the fact that my personal liberties of freedom of speech as guaranteed by the Constitution of the United States of America, to an extent, rest in the hands of local politicians.

To make a long story short, last year I applied to the City of Bakersfield for a Zoning Variance to raise my Amateur Radio antenna 35 feet. I first had to pay a $200 filing fee.

A public hearing before the Zoning Board of Adjustment went in my favor; however, in this hearing the city attorney tried to put in a condition that would give them (the Zoning Board) control of my Amateur Radio operation in the event of increased radio frequency interference with the taller antenna. Fortunately, the building department inspector got this condition dropped because he felt they were not in a position to determine levels of RFI. Unfortunately, the Public Works Director did instate a condition that a standard sidewalk would have to be installed across the front of my property, at my expense (later determined to be a cost of $500). I ask you, what connection would a sidewalk have to do with my Amateur Radio antenna and operation?

The decision of the Zoning Board was appealed by a neighbor. This issue then went to another public hearing before the City Council. The decision by the City Council did uphold the Zoning Board's decision to grant my variance for the additional 35 feet, but again the City Attorney did try and get a condition added that if it were proved there was increased interference by my taller antenna I would have to lower it back to the original height, even after spending $700 for the improvement. At no point was the safety issue a major factor as everything would be done with the approval of the City Building Department.

I feel I was very fortunate that the majority of this issue went in my favor. I am *outraged* that the matter of RFI, clearly stated in the Communications Act of 1934 as amended, falling under the jurisdiction of only the Federal Communications Commission, was wrongfully placed in the hands of the City Attorney and City Council — a group of people who are the most unqualified to deal with such a technical matter.

I request the Commission to issue a Declaratory Ruling exercising federal preemptive authority over state and local zoning regulations which affect transmitters and antennas used by Amateur Radio operators.

Respectfully submitted,
Orval Terry Gaiser, N6UR
Bakersfield, California □

HANDI-HAMS director visits Northeast

Alan Kline, KB1DJ

On Wednesday night, 17 October, the North Shore Repeater Association hosted a dinner for Bruce Humphrys, K0HR, and his lovely wife, Lynda. Bruce is the director of the Courage Center's HANDI-HAM System.

Al Hamilton, AG1F, was the coordinator of the dinner that was held at Augustine's Italian Restaurant on Rt. 1 in Saugus, Massachusetts. Handicapped amateurs Don Robson, KA1FCC, and Steve Rich, WA1DFL, were there, along with a small group of HANDI-HAM supporters. After the buffet dinner, Bruce explained his visit to the Northeast.

It was Bruce and Lynda's first trip to the East Coast to visit with handicapped amateurs and supporters of the HANDI-HAM System. They were also there to scout out possible corporate funding of educational grants that HANDI-HAMS might be eligible to get, or possible corporate sponsorship for a radio summer camp for the handicapped.

As Bruce's trip was a fund-raiser, the hams of the North Shore made various donations during the evening. The first donation came from Gene Hastings, W1VRK, and Don Poulin, W1MXC, of the Federation of Eastern Massachusetts Amateur Radio Associations (FEMARA). FEMARA had just sponsored the New England ARRL Convention at Boxboro. They made a $500 donation.

North Shore Ham Services gave $200 as a result of their fund-raising efforts from teaching code and theory classes. The North Shore Repeater Association gave a sizeable donation in honor of their educational director's retirement.

Everyone had a great time. The food was plentiful and the eyeball QSO's enjoyable. Everyone there had worked for the HANDI-HAM System for years and was glad to finally meet with Bruce. The evening ended rather late, as we all had much to discuss.

This reporter especially enjoyed the evening, as I was the unexpected recipient of a plaque that read, "To Alan Kline, KB1DJ -- A certificate of appreciation in grateful recognition of his outstanding achievements in teaching the handicapped members and students of the Courage HANDI-HAM System."

I was not expecting this tribute, as I have always taught the handicapped of my community out of love, not recognition.

As a radio amateur, I know there are few of us whose avocation and vocation become one and the same. It is many a ham's dream to get a job that pays him to be involved with Amateur Radio during the normal business day.

I recently interviewed one such ham. Bruce Humphrys, K0HR, is the director of the Courage Center's HANDI-HAM System. For those of you not familiar with the System, it is a vocational/recreational rehabilitation center in Minnesota that works with the handicapped.

The HANDI-HAM System has grown to an international organization of handicapped and non-handicapped amateurs who are solely interested in helping other handicapped people get their Amateur Radio licenses. It is the job of the non-handicapped amateurs to volunteer their time to teach, tutor and give exams to the handicapped, along with erecting antennas and instructing in rig use.

I recently had the pleasure of interviewing Bruce and his wife Lynda while they were on a business trip to the New England area. I asked Bruce why he was visiting New England, and he replied, "My job as director of the HANDI-HAM System is not only to make sure it runs smoothly, but to raise the necessary funds to run the progam, plus raise an additional amount of monies for the Courage Center itself."

Gene Hastings, W1VRK (left), and Don Poulin, W1MXC (center), presented Bruce Humphrys, K0HR, with a $500 donation for the Courage HANDI-HAM System.

The rest of the interview went like this:

KB1DJ: Bruce, I know that the System has a large budget. Can you give us hams an idea of what it is?

K0HR: Well, for 1985, our budget will exceed $450,000.

KB1DJ: That's a lot of money to come from the ham community. Where else do you get funding from?

K0HR: My job as a professional fund-raiser entails working with the private sector, the corporations, for available funds.

KB1DJ: What does that involve?

K0HR: Many large U.S. corporations have funds available for charitable organizations to apply for. It is my job to contact these businesses and see if their donation policies are compatible with the Courage Center's needs.

KB1DJ: I know how hard it is to raise money for any non-profit organization. Do you, as a professional fund-raiser, find it any easier?

K0HR: That's a tough one to answer. By nature, I am a very humble and reserved man. I try to look for corporations who will give donations without any strings attached to their requests that either the Courage Center of the HANDI-HAM System might feel uneasy to comply with.

KB1DJ: Where else do the funds come from?

K0HR: We are a United Way agency, so some monies come from them. Also, the Kiwanis International pays for the printing of the HANDI-HAM System quarterly newsletter. And lastly, from the private sector, which includes the hams.

KB1DJ: That does not sound like an easy task. What is the motivation?

K0HR: Well, . . .

Lynda: Alan, Bruce has been a ham since he was 12 years old and has always wanted to help others become hams. It was only natural that he combined his job and hobby.

K0HR: Lynda's right. I love hamming and I love to help the handicapped.

KB1DJ: Bruce, it sounds like you've been lucky enough to land a job we would all envy. You have accomplished so much with the HANDI-HAM System since you've been made the director. What is your future plan?

K0HR: I would like to have a summer Radio Camp for the members of the System in the East. We currently run two successful ones in California and Minnesota.

KB1DJ: I've read about Radio Camp in the newsletter. Is it just for prospective hams?

K0HR: No. Actually, we have a highly trained teaching staff that gives seminars in all facets of personal electronics, including computers, marine radio and communications. We supplement this staff with as many local hams as possible to do the teaching. The cost to attend starts at $100 and can be adjusted according to individual situations.

KB1DJ: Sounds great, I know many handicapped people who could learn a lot more about our hobby and operating at the camp, especially in a summer camp environment. How long is it, and where might it be held?

K0HR: It lasts for one week, Sunday to Sunday, and we are looking for a special summer camp to hold it at. The major camp requirement is that it must already be for the handicapped, such as an Easter Seal camp. Other requirements are that it be near a modern, wheelchair-accessible airport in the New York/New England area. A recent demographic study showed a high concentration of HANDI-HAMS in that region.

KB1DJ: One last question. What can we hams do to help the System?

K0HR: First, write to us and join the System. We always need one-to-one teachers and exam givers. We also need people to put up antennas and modify rigs for hams with special needs. Many local clubs don't know about our efforts; educate your own club. Get the local clubs in the habit of donating money and modern rigs to us.

KB1DJ: Bruce and Lynda, thanks for your time and concern for the handicapped. You have inspired many of us amateurs who already volunteer our time to the System to give more. □

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FCC allocates 900 MHz spectrum reserve

Bill Pasternak, WA6ITF
Editor, *Westlink Report*

Allocation of 41 MHz of the FCC's 900 MHz "Reserve Spectrum Pool" could have a domino effect into the Amateur Service. On Wednesday, 21 November, the Commission gave an early Christmas present to five of nine petitioners who had filed for allocations from the 900 MHz reserve. In what some observers view as a new era in FCC spectral allocation policy, only "service providers" and the U.S. government were recipients of any of the new or proposed grants.

Specifically, 12 MHz was given to a variety of Land Mobile services with the proviso that this allocation be divvied into 12.5 kHz "narrow-band" channels. This directive virtually mandates the use of either Amplitude Compandered SSB or the British "Microband-FM" types of technologies. The Cellular Telephone industry was the recipient of an additional 12 MHz, bringing their total allocation holdings to 52 MHz. Another 8 MHz was awarded to create a new Land Mobile Satellite Service, along the lines of a similar undertaking already being implemented in Canada.

This decision was probably more political in nature than any of the others, since the decision by Canada to proceed with their version of this service would have made the same spectrum unusable in the remainder of North America if the Commission had not approved this allocation.

The United States government was awarded a 6 MHz chunk of the 900 MHz "pie" for assignment to the Department of the Interior. Specifically, this spectral parcel will be utilized for the purpose of monitoring the water levels in dams. The broadcast industry was the recipient of the final 3 MHz, with its use being designated for studio-to-transmitter aural links (STL's) and for inter-city relay.

There were four losers in this latest spectrum allocation round, the most controversial being the FCC's decision to totally kill any access to 900 MHz by any personal radio users other than radio amateurs. Both the highly touted General Electric "Personal Radio Communications Service" (PRCS) and the very controversial "Muraphone Consumer Radio Service" petitions were denied.

The demise of the PRCS was almost assured on 01 November, when the General Electric Corporation informed the FCC that regardless of the outcome of the November 21st Allocations Meeting, General Electric would not be available as a hardware supplier during the 1985 fiscal year. General Electric had invested millions of dollars into the proposed service and user hardware, and could no longer continue to make such a large corporate investment without any assurance that they would see some cash return.

The Muraphone petition was for a modified form of the type of CB service currently operational in Japan. While it did not offer either relay technology or telephone interconnect, it would have provided some definite relief to the overcrowding of 11 meters, and would have made a large amount of spectrum available for personal communications needs of the general public.

Its defeat was probably based on the resentment generated among both 11-meter Class D CB users and UHF GMRS users. The Muraphone concept would have eliminated both in favor of the single 800 MHz allocation.

The big surprise was the FCC decision to kill the newly emerging "Airphone" service. Airphone would have been a method for airline passengers to make direct telephone calls while in-flight. Also getting the ax was a request for more spectrum for cordless telephones and similar consumer products.

Exactly what the long-range impact on the Amateur Service from this latest allocation round will be is hard to assess. It is obvious that those who were denied spectrum allocations from the 900 MHz reserve will now turn their focus elsewhere.

While it is conceivable that the Land Mobile Service may now be satisfied and might drop its attempts for the reallocation of 220 MHz for their use, it will be some time before we know exactly what action will be taken on the Land Mobile Communication Council (RM-4829) and the Sideband Technology Corporations (RM-4831) requests along these lines.

At the moment, manufacturers of cordless telephones and a vast number of personal/private radio user groups must reassess their needs and then formalize new requests. While nobody can predict what action these groups will take, at least one future and two present amateur allocations will probably be placed under close scrutiny. These are the current 50-54 MHz (6 meter) and 220-225 MHz (1¼-meter) bands, and the now formally proposed 902-928 MHz band.

Of the three, the 220 band could be the most secure since there are already two outstanding reallocation petitions for it now before the FCC. However, the severely under-utilized 6-meter and the yet-to-be-assigned 902-928 MHz amateur allocations might be the target of future reallocation rule making requests. If they do materialize, most will probably be for some form of structured private sector personal radio service similar to the Class E Citizens Radio proposal of several years ago.

Currently, it appears as if the number of individual service users making use of a designated spectral parcel or service is the primary criteria being used by the FCC in considering any reallocation requests. When you look at the fact that there are approximately 400,000 licensed amateurs vs. the potential of millions of users of another form of personal radio service, it may become quite hard for the U.S. Amateur Service to justify its hold on the many MHz of valuable VHF and UHF spectrum we now possess. □

Plane crash SET

Dave Schneider, WD0ENR

Early in the evening of 01 November 1984, a sheriff deputy reported that a twin-engine aircraft had crashed in a park on the outskirts of Mount Pleasant, Iowa. A check with the Federal Aviation Administration confirmed that the plane was carrying 15 passengers and hauling a radioactive isotope. Emergency personnel were alerted and the Mount Pleasant Amateur Radio Club was notified.

Only it didn't really happen. This was the scenario for a simulated emergency coded "Operation Firefly", which was staged by Henry County Emergency Preparedness Director Ed Farley.

Once the initial reports of the crash came in, Farley notified County ARRL Emergency Coordinator Bill Barber, KA0BTE. An announcement was put out on the Mount Pleasant 147.39 W0MME repeater, and Dave Schneider, WD0ENR, assumed the position of net control while Bill accompanied Farley to the crash scene.

First to check into the net was Gary McMeins, N0FIB. Gary was sent to City Hall to set up a 2-meter station at the Emergency Operations Center. He was joined by Ralph Davis, KA0TLX, and Mayor Ed King. As the exercise continued, Amateur Radio was the only link between the accident site and the mayor.

Don Campbell, W0SWY, was another operator checking in, and he was dispatched to the Community Mental Health Center where he handled health and welfare traffic. Also standing by if needed were Dean Frish, W0QJF, and Lee Hemmings, W0IHC.

At a critique held with all participating agencies afterward, Ed Farley said he was pleased with the quality of communications provided by the Mount Pleasant Amateur Radio Club.

Among the volunteers that played the roles of injured victims was Fred Neff, KA0PMW. □

Doctor saves crewman

On Saturday, 20 October, at about 8:00 p.m. Pacific DST, Bill Clasen, W6THR, in San Diego, California, monitored a medical emergency broadcast from a ketch underway north of the Northern Cook Islands in the Pacific. While the name of the vessel, its home port and destination are unknown, the Amateur Radio operator aboard, Wilbur Wridge, N7CIS, was requesting immediate assistance and advice from a medical doctor concerning treatment needed by an ill crewman aboard.

W6THR, though radio propagation was poor, was able to make contact with N7CIS on the 20-meter amateur band frequency of 14313 kHz. W6THR contacted a San Diego physician, Dr. Gene Lang, KD6UZ.

Dr. Lang was phone-patched to the operator aboard the sailing vessel. During a 15-minute conversation over a distance of thousands of miles, the doctor was able to assist N7CIS in identifying the nature of the crewman's illness. It was determined that proper medication was aboard for treatment and Dr. Lang provided information relative to dosage, frequency of administration of the medicine, etc.

A follow-up communication from the vessel four days later indicated that the crewman's condition had improved substantially and that his life was no longer in danger. Another example of Amateur Radio communications' value to the maritime community. — *Jerry Boyd, KG6LF* □

A ham's life in Papua New Guinea

Jim Smith, P29JS

My first arrival in Papua New Guinea (PNG) was in early 1975, after a lengthy trip from the United Kingdom. It so happened that this year was particularly important, since on 17 September, PNG became an independent country.

Until then, in terms of Amateur Radio and DXCC, two separate countries existed — Papua and New Guinea. No real distinction was ever made in call sign allocation, both areas being VK9. In addition, to confuse the issue further this same prefix was used in several "Territories" of Australia. It was always good fun working a VK9 and then keeping fingers crossed, hoping it was one you needed. It is also true to say that long-term residents of these various areas needed no special calls. Ray Hoare, VK9RH, was Norfolk Island, Bob Sutherland, VK9BS, was Papua, and so on.

Prior to independence, the Post and Telegraph Department had been gradually taking over more and more of the radio licensing structure from Australia. As an indication of this, the prefix P2 was introduced in order that identities be preserved. VK9BS became P29BS, VK9DJ became P29DJ, etc. These changes came into force on 01 January 1975.

To say that PNG is a diverse country would have to be the understatement of the year. A large island in itself (shared by West Irian to the northwest), it consists of hundreds of islands . . . many of them also large. The country has many different cultures and ethnic groups. It is said there are over 700 different languages, in addition to Pidgin — a sort of common language.

A central rib of mountains divides the mainland mass. Peaks reach in excess of 15,000 feet, and this forms the main division between what was Papua and New Guinea. As a result, one tribal group in one valley can be effectively cut off from another in a neighboring valley. Each group is almost unaware of each other's existence and has developed quite differently.

Some nine years later, as an independent country, PNG continues moving forward out of the stone age mentality, out of inter-tribal fighting, out of tribal control, towards the future. The transition has not been easy and problems exist. In particular, the movement of a reasonably simple and primitive people towards the bright lights of the cities. Hundreds of people in houses which do not exist, looking for work that isn't there.

Radio licensing is vested in the Post and Telecommunications Corporation. Whilst PNG does not have reciprocal licensing with every country, nevertheless it is true to say that many licenses are recognized. Frequency allocations are excellent, and in many cases quite different from Australia.

Probably the most significant event in recent years was the introduction of the Novice license. This license has limited HF allocation, an easier theory paper and a Morse code requirement of 5 wpm. The first Novice license was issued to Ron Pain, P29NRP, in March 1977. Ron has long since upgraded to a Full Call.

The result of the Novice license was many making a start in Amateur Radio, which may not have been possible for them previously. Most take the Novice status seriously and work towards Full Call privileges, battling with additional theory and Morse requirements.

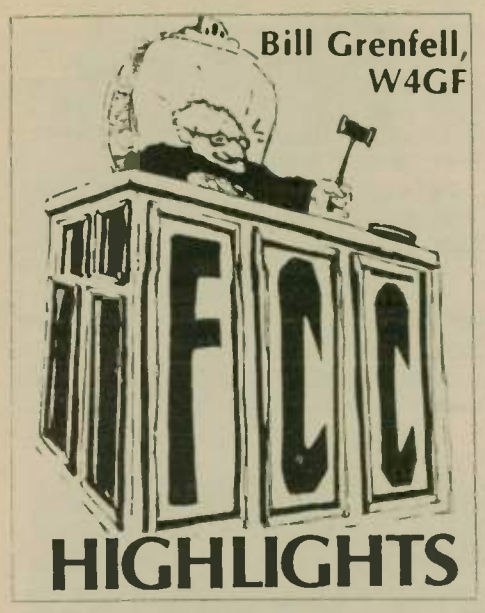
In addition, "Z" calls are also issued. These have full theory examination qualifications, but lack the Morse code. Many remain as "Z" calls from choice. They have no HF privileges, but prefer the challenge of VHF, UHF, etc. Content with 6-meter openings, satellite working and VHF/UHF studies, Rick Warnett, P29ZFS, is very well known in these areas.

PNG has quite a large Amateur Radio population, but like amateurs everywhere else, many are not active. Three "Nationals" have full calls: P29SK, P29LL, P29KP, and many are studying for Novice and Full Calls. The PNGARS is built on strong foundations. It has some problems, a reasonably migrant expatriate population and keeps the Society in a state of flux. However, this is an understood thing where people are on contracts, etc. An active QSL Bureau and regular meetings help to keep things together. However, many never get to attend a monthly meeting in the "Big Smoke", since many are "Up Country".

In terms of radio locations, PNG has many variations. From coastal areas such as Lae, Madang, Port Moresby, Rabaul, etc. Two major centres — Goroka and Mount Hagen — are both in the temperate highlands, at altitudes of over 4,000 feet. Some sites have to be seen to be believed, with their majestic scenery of breath-taking beauty.

Propagation from here can be quite unique — a near equatorial spot, a reasonable station, not forgetting a bit of decent sunspot activity, and one can be in business. Put a few dB's on for the P29 call sign, and I suppose one could say we have it made. Most of the Asian countries are easily worked — AP, BY, VS6, XU,

(please turn to page 14)



The comment deadline on FCC's PR Docket 84-874 Notice, proposing to allocate the 1900-2000 kHz band to radiolocation as a primary service, has been extended to 24 January 1985, and to 11 March for reply comments. ". . . General Docket 80-739 states that the purpose of allocating the 1900-2000 kHz band to the Radiolocation Service was to provide reaccommodation spectrum for radiolocation users that will have to move out of the 1605-1705 kHz band when AM broadcasting is implemented in that band."

The only reference to the fate of the Amateur Radio Service in the Commission's nine-page Notice of Proposed Rule Making (NPRM) is a quote of the US 290 footnote to the U.S. Table of Frequency Allocations as amended, as a result of the 1979 World Administrative Radio Conference (WARC '79). It reads: "In the band 1900-2000 kHz, amateur stations may continue to operate on a secondary basis to the radiolocation service, and in accordance with NG15 pending a decision as to their disposition through a future rule making proceeding in conjunction with the implementation of the standard broadcasting service in the 1625-1705 kHz band." (The NG15 provision for Loran sharing has been cancelled.)

Those wishing to file comments should mention PR Docket 84-874, send them to the Secretary, FCC, Washington, D.C. 20554, and include an original and five copies. However, one copy may be submitted for informal consideration. "All comments are given the same consideration, regardless of the number of copies submitted." (See last month's 'Highlights' for more background on this rule making.)

•

The legislation to make willful or malicious interference a statutory offense, which was introduced by Congressman Bates and Senator Goldwater in the last session of Congress, "died" without action. However, it is likely that they will re-introduce appropriate bills in the next session. (See last month's 'Highlights' for a quote of Senator Goldwater's S. 2975 bill.)

•

The entire 52-54 MHz segment of the 6-meter band was made available to Radio Amateur Civil Emergency Stations (RACES) during declared national emergencies, by Order of the FCC adopted 28 October 1984, effective 15 November 1984. This substituted "52-54" in the MHz column of Part 97 rule Section 97.185(b) for the previous 53.35-53.75 listing therein.

The action was in response to several petitions for reconsideration filed in the PR Docket No. 83-524 proceeding requesting inclusion of the entire repeater subband so as to provide for a smooth transition of existing repeaters from ordinary to a wartime mode of operation. The Commission took this action upon finding that the Interdepartment Radio Advisory Committee (IRAC) had no objections.

A previous action of FCC in Docket No. 83-524, effective 26 March 1984, provided a considerable expansion in HF and VHF frequencies available to the RACES during declared national emergencies.

•

A request for use of 7100-7300 kHz by a Northern Marianas Amateur Club was denied by the FCC. The club was referred to a Notice of Proposed Rule Making in Docket 84-706, wherein FCC proposes to change its broadcast rule 73.702(f) to permit U.S. broadcast stations on Saipan and Guam to operate on frequencies in the 7100-7300 kHz band.

The world radio allocations (WARC '79) allocate the band to Broadcasting in world Region 3, which includes Pacific insular areas under U.S./FCC jurisdiction as follows: Northern Mariana Islands; American Samoa; Guam; Baker, Howland, Jarvis, Palmyra and Wake Islands; and Kingman Reef (FCC rule section 2.106). (ARRL reports that their files show that Australia, New Zealand and the Solomons " . . . do indeed make this band available to amateurs on the condition that no interference is caused to International Broadcasting in the area.)" See last month's 'Highlights' for more on the Docket 84-706 matter.

•

On 10 October 1984, the FCC released a Notice of Proposed Rule Making concerning the availability and use of the 10, 18, 24, 420 and 902 MHz amateur bands as follows:

10.10-10.15 MHz — Proposed to be available to General, Advanced and Extra Class licensees with A1, F1 or A2J emissions, without the current special 200 watt power limit and without the current exclusion from use of the 10.109-10.115 MHz segment. Availability to the RACES is proposed. During the pendency of this proceeding, the temporary limit of 200 watts of transmitter power and the requirement for operation on a secondary non-interference basis prevails. However, the exclusion from 10.109-10.115 MHz segment is not continued.

18.068-18.168 MHz — The U.S. allocation " . . . provides that this band will remain an alternative allocation to the fixed service until 01 July 1989." During this period, all fixed service operations in this band which are recorded in the ITU master register will be reaccommodated. However, the ". . . United States government fixed operations in the . . .band would preclude any Amateur Radio usage of this band prior to 1989. Therefore, we are not proposing early amateur access to the 17-meter band."

24.89-24.99 MHz — The FCC advises it has been informed by the National Telecommunications and Information Administration (NTIA) " . . . that shared use of this band by the Amateur Radio Service with current United States government fixed operations would be acceptable, given the anticipated low level of solar activity during the next several years. Therefore, we are proposing immediate implementation of allocation of this band to the Amateur Radio Service and to the Amateur Satellite Radio Service."

The FCC proposes that use of 24.89-24.93 MHz be limited to A1 and F1 emissions, and that 24.93-24.99 MHz be used for A1, A3, A4, A5, F3, F4 and F5 emissions, as recommended by the ARRL. The entire band would be available to General, Advanced and Extra Class licensees. No special power limits are proposed. However, amateur operation in this band will ". . . be on a secondary basis to international fixed and mobile operations which have not yet been reaccommodated."

420-430 MHz — The FCC proposes to remove routine Amateur operation above line A (along the Canadian border) but a waiver may be granted " . . . based upon appropriate technical considerations."

902-928 MHz — The FCC proposes the band be available to all U.S. amateurs above Novice Class in all areas under FCC jurisdiction except for Colorado, Wyoming and U.S. possessions in Region 3. AØ through A5, FØ through F5 and type P emissions would be permitted.

FCC's Docket 84-471 NPRM advises ". . . interested persons may file comments on or before 17 December 1984, and reply comments on or before 16 January 1985." Note the Docket number on the comments, send an original and five copies (one copy is sufficient for "informal" participation) to the Secretary, FCC, Washington, D.C. 20554. "All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding."

•

The FCC has proposed to add A4, A5, F1, F3, F4 and F5 emissions to those (A1 and A3) which are presently available for amateur use in the 1800-2000 kHz band.

In this PR Docket No. 84-959 Notice of Proposed Rule Making (NPRM), which is in response to an ARRL petition to authorize RTTY (F1), the Commission noted its proceeding in PR Docket 84-874 (see above), proposing to allocate 1900-2000 kHz to the Radiolocation Service, and stated, "We wish to make it clear, however, that Amateur Radio licensees do not gain any equitable rights in the band. Thus, if this proposal results in final rules at a later date, investment in equipment by Amateur Radio licensees to operate with the additional emission modes should be made with full awareness of the fact that the rule making proceeding referred to above could affect the status of operation in the 1900-2000 kHz portion of the band."

Comments on PR Docket 84-959 should be filed on or before 20 December 1984 and reply comments by 22 January 1985.

•

As reported in last month's 'Highlights', the FCC denied some petitions for reconsideration of amateur station power limit rules. However, Section 97.67(b) was revised for clarification.

Section 97.67(b) now reads: "Each Amateur Radio transmitter may be operated with a peak envelope power output (transmitter power) not exceeding 1500 watts, except as provided in other limitations of these rules." The purpose was to " . . . clarify that the peak power output standard is subject to certain limitations and exceptions in Sections 97.61 and 97.67 of the Commission's rules."

•

A wholesale change in the emission designators in the FCC's rules, including the amateur rules (Part 97), was scheduled to be made sometime in November 1984. This is to conform the FCC's rules to use the designators adopted in the WARC '79. I have been assured that this will not change the emissions which amateurs presently may transmit.

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 November 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	NIØM	KDØSZ	NØFUC	KAØTPG
1	KX1D	KB1PS	N1DGX	KA1MET
2	NG2V	KD2JM	N2FEO	KA2WCA
3	KU3J	KC3PO	N3ECJ	KA3NGS
4	AA4FW	KI4UQ	N4KYW	KB4LVH
5	NS5S	KE5TE	N5HJX	KA5UVI
6	WC6Z	KG6LY	N6LEW	KB6GWR
7	NJ7U	KE7BD	N7GQB	KA7TYE
8	NK8A	KD8UO	N8GCC	KA8VLS
9	NC9A	KD9LM	N9EVG	KA9SOU
N. Mariana Is.	AHØD	AHØAC	KHØAG	WHØAAG
Guam	AH2T	AH2BA	KH2BR	WH2AEH
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6U	AH6FR	NH6CK	WH6BBE
Kure Is.			KH7AA	
American Samoa	AH8B	AH8AB	KH8AD	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAB
Alaska		AL7GG	NL7EL	WL7BEX
Virgin Is.	KP2L	KP2AT	NP2BE	WP2AEB
Puerto Rico	WP4E	KP4IA	KP4LK	WP4DUH

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The General/Technician amateur operator examination questions have been substantially revised. PR Bulletin 1035B dated November 1984, is the new Element 3 batch of questions which was available at the beginning of that month. It is expected that the VEC's will specify in advance which 1036B will be used for each exam opportunity until the exam candidates have had time to obtain it and become familiar with the new version. The earlier 1035B is dated October 1983.

•

The latest issue of volunteer examiner coordinator (VEC) instructions were issued on 01 October 1984, according to the *W5YI Report* dated 10/15/84.

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"VEC's are not to change any part of the text of any question in the 'exam question pool,' even if there is a problem with that particular question." . . . "The Commission acknowledges that there are problems with several questions in the pool and advises that a question that appears incorrect for some reason should not be used." . . . "FCC tells us that even correcting grammatical, punctuation or spelling errors is not an option available to the VEC." *(Westlink Report,* 11/02/84)

•

The number of new licenses and upgrades issued by FCC during the 12 months prior to October 1984 were:

New — Novice 17,392; Technician 730; General 476; Advanced 161; Extra 41; Total new licenses 18,800.

Upgrades — Novice to Technician 6,724; to General 1,876; to Advanced 213; to Extra 16; Total Novice upgrades 8,829. Technician to General 1,917; to Advanced 581; to Extra 6; Total Technician upgrades 2,504. General to Advanced 3,120; to Extra 241; Total General upgrades 3,361. Advanced upgrade to Extra 1,490. Total upgrades 16,184.

•

Anguilla was not included in the U.S.-St. Christopher and Nevis agreement permitting the exchange of third-party communications between amateur stations of the two countries, contrary to my report in 'Highlights' three months ago. St. Christopher (St. Kitts) and Anguilla are now allocated the V4 call sign block for their amateur stations. (Info from KV4FZ, N4FK)

•

A Florida amateur who filed suit claiming the FCC conspired to harass, harm and annoy him and for accepting complaints " . . . knowing the complaints were false or without any foundation," has now filed " . . . his voluntary dismissal with prejudice as to his counterclaim" in the U.S. District Court, Southern District of Florida, on 06 September 1984.

A neighboring amateur complained that Eugene Sykes, W4OO, was using high power in the 40-meter Novice band to deliberately interfere with his 20-meter reception. Sykes has been assessed a fine of $550 for transmitting with excessive power. (See 'Highlights' report four months ago for more details.)

•

Are you sure which call sign should be used when some other licensee is operating your station equipment? In 'Washington Mailbox', QST, August 1984, they answer a similar question ending with the statement, "Of course the control operator may simply use his or her own call sign at your shack to ID the operations."

Responding to challenges to that statement by several amateurs, the October 25th *ARRL Letter* reports the views of an FCC official with whom the quoted statement was checked: "Now that transceivers can be passed from hand to hand, the interpretation he has been using for some time is based on physical control being the important criterion. Thus, (he) believes that the call sign of the person having physical control of the station equipment may always be used." □

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• **Help a friend become a ham!** •

Vacation excitement

Phil Temples, K9HI ARRL Assistant SM, East Massachusetts

Vacation

It was to be the perfect vacation: two weeks of sun, the long, unspoiled Hatteras beaches, reading, relaxation, fishing, and most importantly, some long-overdue quality time spent with my wife, Barb WB9ERI. Amateur Radio would be there, of course, but it was to be very low on our list of priorities. Low, that is, until Barb and I found ourselves trading our services as communicators for safe haven in the face of hurricane Diana.

Our home-away-from-home, the Hatteras Cabanas, were small, pre-fab houses built on metal pilings and situated only a hundred yards from the beach. They contained all the creature comforts, but lacked the luxuries (or rather, distractions) of home: televisions and telephones. For this reason, a knock on the door signaled our first knowledge that most folks were evacuating the island. Although the evacuation was voluntary, we were informed what "could" happen if we stayed. The prospects sounded about as inviting as riding out a tornado in a mobile home!

Working vacation

The morning of 11 September, Barb and I began loading up the car. I happened to turn on my rig to the island's local 2 FM repeater. At that instant, I overheard Don Black, WB4FRB, and Danny Prince, N4AAY, discussing the need for an operational HF station at the National Weather Service at Cape Hatteras. I broke in and explained to them the fact that two homeless operators, equipped with a mobile HF station, were available and willing to help. Three hours later, Don, Danny, Barb, I and others established an operational station at NWS Cape Hatteras consisting of my Ten-Tec 580 Delta, Don's microphone, Danny's Heathkit matchbox, and a 100-foot random wire.

Steering currents (winds) in the upper atmosphere influence the speed and direction of storms and hurricanes. Among its many responsibilities, the Cape Hatteras National Weather Service measures these data with sophisticated measuring equipment sent aloft attached to large balloons. The information is then transmitted via computer over dedicated telephone lines to a nearby NWS facility, and on to the National Hurricane Center in Miami, Florida. Unfortunately, telephone service is notoriously unreliable (one cable carries the total telephone service to and from the mainland). Our primary "mission": to serve as a backup for the computer/telephone communications.

Impending disaster

Early on, Barb and I established separate logs for both the HF and 2-meter station. In them, we wrote not only communication we conducted, but as time permitted, other important communication between net stations. Several times we referred back to this extra information. The following are excerpts taken from our log.

ERI	2113Z	Raleigh/Durham NWS office operational, WD4MRD
	2125Z	All phone service Wilmington working. Heavy use
	2129Z	Need ham at Columbia, NC courthouse.
	2133Z	Wilmington NWS: Diana expected off coast of Wilmington, 8:00 p.m.
HI	2213Z	New NCS: AB4S
	2228Z	K4YNY: 5'-6' flooding in Jacksonville expected
ERI	2238Z	MARS on Alpha frequency
	2255Z	Radio contact w/NWS Raleigh/Durham, KA4HGP, established HGP and I copy each other well.
	2317Z	KA4FTH told Phil via 2M of a request on 75M to provide info about evacuation of Dare Co. I checked with NCS who said request was accurate; they await info.
	2328Z	John Parker (SEC, NC) telephone nr:898-7147 home
HI	2342Z	Power intermittent — phones OK in Wilmington 100 mph winds 25 miles south of Wilmington, says Oak Island Coast Guard.

ARRL message format delivers

Barb and I experienced, firsthand, the importance of handling messages in ARRL message format in an emergency situation: NCS called us with a request to supply information concerning evacuation procedures and shelter information for Dare County. The informal message contained neither addressee nor signature info. After querying net control, we eventually learned the call sign of the station, but not the name of the official or organization originating the request. After several phone calls to the sheriff and the local CD Emergency Operations Officer, we obtained the needed information and drafted this reply:

NR 3 P K9HI/4 19 NWS HATTERAS NC
0200Z SEP 12
WA4XYZ
SHELTERS IN DARE COUNTY OPENED 0130Z AT HATTERAS HIGH SCHOOL IN BUXTON AND HATTERAS CIVIC CENTER IN HATTERAS VILLAGE BT SHERIFF DARE COUNTY AR

We listed this message for WA4XYZ through net control. Unfortunately, WA4XYZ could not be contacted, and a change in net controls had occurred. As a result, NCS had no knowledge of where WA4XYZ was located; furthermore, NCS did not know what organization had originally requested the information.

The moral of this story: *always* include the third party's organization and title in both addressee and signature (even if you don't have time to send it in formal fashion). Don't rely solely on amateur call signs; in a communications emergency, NCS changes frequently, as do the net members' operators/call signs.

Often when inter-agency communications is necessary, several forms of written messages are encountered. We heard one or two messages in RACES format, but we adhered strictly to the ARRL radiogram format. Here is an actual exchange of inter-agency communication:

NR 4 P K9HI/4 18 NWS HATTERAS NC SEP 12
CIVIL DEFENSE HQ AREA A
WA4XXX
BT PLEASE INFORM ME OF STATUS OF MAINLAND HYDE COUNTY SHELTERS TO AID IN PREPARATION OF HURRICANE LOCAL STATEMENT BT WALLACE DE MAURICE OFFICER IN CHARGE NWS CAPE HATTERAS OP NOTE NEED REPLY BY 0145Z
***
NR 6 P WA4XXX XX (NO PLACE OF ORIGIN) 2120 LOCAL (NO DATE)
-NO ADDRESSEE
MAINLAND SHELTER REPORT MATAMOSQUEET SCHOOL DAVIS SCHOOL ENGLEHART OPEN AT SIX PM X - AREA A EOC HAL WALKER

Conclusion

Wilmington, North Carolina residents bore the brunt of hurricane Diana's fury. She later passed over Cape Hatteras, but only as a tropical storm and with no winds in excess of 60 mph. Minor flooding occurred, but no injuries or serious damage resulted. The computer phone lines stayed operational, and we never relayed steering current data. It was clear to us, however, that Wally DeMaurice, the officer-in-charge, was ever-aware and ever-thankful of our presence and of our backup capability.

Barb and I relayed numerous inter-agency messages similar to the messages depicted earlier. We handled third-party traffic on behalf of the Dare County Sheriff's Department, the U.S. Coast Guard, and the National Weather Service. Persons of these organizations were visibly impressed with the variety of organizations represented by Amateur Radio.

Epilogue

Wally DeMaurice is considering the purchase of a complete Amateur Radio station in lieu of leasing expensive backup telephone lines. Amateur Radio received valuable public exposure: both Barb and I were interviewed and filmed by several television stations and newspapers. We've decided to vacation next year in New Mexico, where hurricanes are less common.

Most importantly, Barb and I forged lasting relationships with some special people, who, after seeing us not as typical tourists, but rather, as caring people with some unique skills, opened their hearts and homes to us. What more can you ask for from a hobby?

— Submitted by James Hatherley, WA1TBY, Editor of ***THE NETWORKS*** □

Lake County exams

The Lake County Amateur Radio Society will sponsor FCC license examinations on Saturday, 19 January 1985, 10:00 a.m., at the Kelseyville High School, Live Oak Drive, Kelseyville, California.

This is the first of Lake County's volunteer examiner-administered tests. The VE team is ARRL-accredited, offering Novice to Extra Class elements. A completed 610 form, copy of current license and a $4 check to ARRL/VEC must be received by 19 December 1984.

For more information, contact Marilyn Johnson, KB6AMP, 1825 Mellor Dr., Lakeport, CA 95453; (707) 263-4213. □

500th weekly net

On Wednesday, 15 August 1984, the Tri-Town Radio Amateur Club sponsored their 500th consecutive weekly 2-meter FM net. Nicknamed the 49'er net, the net was begun on 06 November 1974 by Ben Butkus, WA9RFO.

Ben served as permanent net control for many years until his "retirement" in 1983.

Food for thought.

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

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Move it where?

Don Freeman, KC7LX

I want to move my repeater building to a new and higher location! How many times have you heard *that* remark? A lot I'm sure. Every organization, club or individual is always looking for that new repeater site that will give the machine the extra amount of coverage that is lacking from the existing site.

No problem moving the site, right? Just secure the right permits, and construct your new building on top of the building or mountain top. But what if the proposed new site is located only 100 feet from the old location, *and* you want to move the existing building intact?

This was the problem that presented itself to Larry Oakley, W7AAA, and his repeater located between Reno and Carson City, Nevada, on top of McClellan Peak at 7,200 feet. Larry had the idea that the building at the old site could be used and moved intact to his new location. The building sits on a concrete pad and is constructed of wood. It measures 8′ × 8′. The approximate weight of the building with the insulation and electrical wiring is one ton.

Now, the problem of how to move this building up a rugged, rocky mountain with no roads to the top. Like most amateur operations, cost of the move was a prime consideration. Hiring a helicopter to move the building was quickly dismissed, and new construction at the site was to be used only if the building could not be moved and used in its intact state.

First order of business was to take two construction workers with an electric-powered jack hammer and chisel out an area for the new foundation the same size as the existing site. No easy chore in the hard rock and high wind that Murphy brought along this day. Also completed on the same day were the concrete forms for the foundation.

On the next available day, a cement truck from nearby Carson City was driven as far up the mountain as possible and three cubic yards of concrete were then loaded into plastic buckets and then hand-carried the rest of the way to the site.

After waiting two weeks for the concrete to dry the day for moving the building arrived. Armed with a supply of lumber and a Dodge 4×4 with a power winch, the seven workers confronted the task.

First, all bolts holding the building to the slab were removed. Then 2″ × 4″ × 8′ studs were attached to opposite sides of the building in a horizontal position. These are to be used as lifting arms so that the building can be raised from the foundation. More 2″ × 12″ × 12′ lumber was nailed to the side which faced the mountain toward the new site. This lumber was to be used as runners over which the structure was to be pulled on its side up the mountain.

The next action was to raise the building from the foundation by placing two people on each corner and lifting. With Larry W7AAA; Don Freeman, KC7LX; Jim Henderson, KF7E; Clif Conradt, WA7HVY; Rick WA7TWO; and Norm and Mike (two friends of Don's), the job was accomplished very quickly, although with several moans and blue words.

Larry Oakley, W7AAA (left) stands next to the repeater building that was moved to the top of McClellan Peak, Nevada. Don Freeman, KC7LX, is on the right.

Next the Dodge 4×4 was driven to the top of the mountain and the cable of the power winch was uncoiled down to the old site one hundred feet below. A heavy chain was attached to both sides of the building and brought up to a V-point above the building. This configuration helped to spread the stress over most of the building instead of only one point.

The winch was then used to pull the building over on its side and pulled up the mountain on the runners added earlier. With the help of other 2″ × 12″ × 12′ pieces of lumber as skid pads for the runners to keep the side off the rocks and some help by the workers to keep the structure straight, it went up the hill with minor hesitation.

Once on top of the peak, the building was righted to the upright position and placed on the new foundation by the crew using the Armstrong method once again. Lastly, all the added lumber was removed and the old building was now on the new site in one piece with the only damage being a few minor scratches to the paint. Total time for this operation on this date was six and one-half hours.

W7AAA/R is now fully operational on 144.85/145.45 and is the only 2-meter repeater in northwestern Nevada able to operate without commercial power in event of failure. The battery is trickle-charged to keep it at full power.

We hope our trial and error method of building moving will help you if you decide to go looking for a higher site. □

Got QRM?

Dave Atkins, W6VX

Before getting into a stalemate on who should yield the frequency during a QSO, consider some of the following.

Problem A, phase I

Station X is working station Y. Z opens up with a QRZ?, even though he may not hear the QSO in progress on frequency. Hearing no reply, Z starts a CQ.

Or b) Calls another station on schedule.

Or c) Tests his antenna for load.

Station Y, who asked Z for a QRX or a QSY, may now assume a few assumptions:

a) Z is not hearing me because his receiver is on sharp band-pass.

b) Z has his RIT off frequency.

c) Z's noise level is overriding my signal.

d) His RF gain is turned down.

e) Z is careless, or is waiting for his receiver to warm up, or is operating split-frequency and does not care anyhow. In short, Z is an inconsiderate LID!

By this time, it's station X's turn to continue with Y who complains of the QRM.

Problem A, phase II

Station Z hears Y, and realizes X is too weak to come through so Z moves off the QSO.

Or b) Z does *not* hear Y for several of the above reasons, so X and Y move over.

Problem A is resolved without any name calling. Bravo! Minimum hurt feelings and time wasted.

Problem B, phase I

Stations X and Y, continuing on frequency after being QRM'ed, Y says Z "is a LID!" Z realizes the accusation is unfounded. He meant no QRM, so he tells X and Y to "push off".

Or b) Z pretends he is unable to hear *either* of them and continues. If he is calling on schedule, (phase I, problem A, situation b) and hears his scheduled signal answer, and if he goes ahead without any attempt to move over for X and Y, then there are at least three LID's on frequency. Now things are a mess. Z finds his QSO is not going smoothly. If his sched station asks Z for a QSY and nothing works, it's pure masochism all around. Maximum time wasted. Plenty hostility.

Problem B is one that has happened to many a well-intentioned (good guy) ham. It is one of the hardest situations wherein to keep your cool — that is, a scheduled QSO, set up a day before, or maybe a week before. It is a prime example. If you enjoy misery (bad guy), do not read the following:

Problem B, phase II

Make a checklist and post it in front of your ON switch.

1) Receiver (transceiver) ON.
2) Select band desired.
3) Select dummy load and test rig.
4) Select proper antenna.
5) Find a clear spot, and ask QRL ? or QRZ ? (Remember the question mark. Pause for reply.)
6) Reset to frequency.
7) Check RIT.
8) Check time.
9) If a QSO is on frequency or not, ask for QRL ? again. If there is, ask politely for a break. Explain quickly your intention to QSY when the schedule is established.

Conclusion

Remember that all (or nearly all) zero beat intrusion may not be deliberate QRM. Give yourself a chance to enjoy the game of Amateur Radio. Any other conclusions you jump to "may be your own," so choose a good one. It can make the difference in QRM. □

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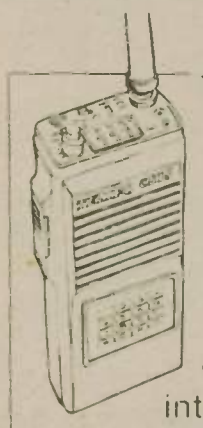

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A ham's life

(continued from page 7)

YB, 9V, all within the proverbial "spitting distance." Long-path openings round the equator have to be heard to be believed.

As P29JS some years ago, I was very active — in excess of 70,000 QSO's. Plus, the 220 Net kept me pretty busy. In addition, several exotic DXpeditions were undertaken, thus proving that PNG is not a remote backwater. Port Moresby has an excellent international airport, and a long and memorable history, as Jackson's Airport was famous in WWII.

Regular daily flights to Australia and other areas can get one into the main traffic steam fairly easily. In fact, both Papua and New Guinea were deeply involved with pioneer flying in the early days. It is not a forgiving country for the flyer. Often, conditions can be marginal in minutes, especially for the smaller aircraft. Accidents happen, and the edge can be very small between safety and disaster.

I am back in PNG (with Civil Aviation) for a short time, and have been lucky to retain my PNG identity, so will be looking for a QSO with you — perhaps on the 14220 Net. 73, Jim Smith, P29JS □

Festival fun in the 'Garlic Capital'

Roy Engehausen, AA4RE

The small town of Gilroy, California was invaded by hordes of people on 01-03 August. The cause was the 6th Annual Garlic Festival. "Garlic Capital of the World" is the city's unofficial slogan since most of the aromatic bulbs grown in the United States is done within a 50-mile radius. The city limits also include several processing plants for the production of the various forms of dehydrated garlic: salt, flakes and powder. The festival was first held in 1979 and 20,000 people attended. Last year the throng was estimated at 120,000 for the three-day event.

The Garlic Festival is an all-volunteer event with the proceeds going to the local non-profit organizations. This year, over 2,500 people donated the efforts to charity. Naturally, Amateur Radio was present.

Ron Pierce, KB6BVR, was this year's committee chairman for all communications. The size and complexity of the event preclude any one radio service from being able to handle the workload. This year, there were four CB channels, three business band channels, two public safety channels, and two amateur frequencies in use. Roy Engehausen, AA4RE, the local Emergency Coordinator (EC), organized the ham effort.

147.60 MHz simplex was used within the festival grounds, while the 147.825 MHz repeater of the Garlic Valley VHF Society was used for talk-in and traffic advisories for visitors. Ed Parr, KA6SXW, an assistant EC for Gilroy, manned the communications trailer within the festival headquarters complex for all three days. The city of Gilroy also had a communications trailer (on loan from Sunnyvale) which contained public safety, business band and amateur equipment. Jerry Harvey, K6TFB, from the Santa Clara County communications department acted as police and fire dispatcher while AA4RE headed the amateurs providing 2-meter and business band operations. Francis Blake, WA6WBN, headed up the team providing service to the parking lot headquarters.

The festival site is 24 acres of park with an 87-acre parking lot and a small hill between those two places. Amateur Radio provided the most important communications since it was the only service capable of reaching the complete area. The amateurs, therefore, tied the other radio networks together. Thus, when a radio equipped parking lot attendant required police assistance, the message was passed on CB to the net control thence via Amateur Radio to the public safety trailer and the appropriate action was taken by the police dispatcher there.

The system worked almost flawlessly. Over a thousand messages were handled this year on all frequencies.

Lessons learned for next year were to coordinate call signs between the various radio nets. One station had three different call signs depending on which net it was talking on. The result was sometimes confusion. The Red Cross switched the first aid net from a shared CB channel in previous years to a business band frequency and communications reliability improved 100 percent. However, a shortage of radios resulted in some holes in the coverage in the parking lot. Next year, the control station for the parking lot will also have a first aid radio.

Other amateurs assisting were Bob Brentnall, WB6ZVW; Scott Loftesness, W3VS; Wendell Carmen, KA6DAD; and Mike Weaver, KA6YFB. Special thanks to the Pacheo Pass REACT for their help in manning the various control stations and to the Gabilan Amateur Radio Club lead by Harry Schumann, K6HWR, who handled communications for the Garlic Gallop (a 10KM run) and the Garlic Bike Tour. □

John Spellman, governor of the state of Washington, signs a proclamation declaring 10-16 September 1984 "Amateur Radio Week". Behind him, from left to right, are: Reade Apgar, N7AGG, State RACES Volunteer Liaison; Kurt Heidergott, K7UU, ARRL Washington Section Technical Coordinator; Ken Anderson, WB7QNT; Eva Anderson, WB7QNS, ARRL Washington Section Affiliated-Club Coordinator; Hugh Fowler, Director, Washington State Department of Emergency Management; Earl Appleby, W6IIH, ARRL Washington Section Emergency Coordinator; Jimmie Hocutt, Communications Officer, Washington State Department of Emergency Management; and John Brown, W7CKZ, ARRL Washington Section Public Information Officer and State Government Liaison.

Contact Worldradio for hamfest prizes.

PHOTO BY MICHAEL CLAPP

1985 OREGON STATE HAM CONVENTION

(ARRL N/W DIVISION status pending)

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'For better or worse'

Wells Chapin, W8GI

This is a true story. It will give wives of amateurs ideas; husband hams will praise and berate it; young men in love will profit by it; and divorces may be prevented by it.

This story starts with the minister saying to the little woman, "Do you take this man to be your lawful wedded husband? Do you promise to love honor and obey?" Then he adds, "I now pronounce you ham and wife."

The story now jumps to 41 years later. This same wife who has spent 41 years with an avid amateur is now sitting in the living room of their cozy little antenna-covered cottage, along with her OM. (How she got him away from his rig this long to sit and talk we'll never know.)

He speaks, "Honey (notice he still calls her "honey" after all these years, and she suspects something). He says, "I'm thinking of writing an article on wives of Amateur Radio operators and their trials and tribulations. Have you any words of wisdom?"

This was the wrong thing to ask, as it released a flood of remarks, some not printable here. Things got so interesting, and she got so excited to be able to speak her piece, that they forgot to turn on the bane of the living room, the one-eyed monster, the cyclops of this era, and the foe of all hams — television.

Her first words were, "Boy, if I had known what I was getting into, I would have married that guy with the mustache that tickled me to death — it would have been the lesser of two evils." And then with a glint in her eye and a smile on her face (she was probably thinking of the guy with the mustache), they took off on a long discussion. Her first reaction was sort of bitter and a little self-critical for having been so stupid to get tied into Amateur Radio. After the storm subsided, she mellowed and allowed as maybe Amateur Radio had put a little sunshine in her heart, and she really contributed to the following.

Her first remark went right to the point and was very revealing. She said, "I didn't mind when you were on phone because I could hear and understand what was going on, but that code jibberish got me, as every time I saw a smile on your face I wondered if you were talking about that strip-teaser you used to squire around, or that dizzy blonde you used to drool over."

They tried to think back 41 years, but it was difficult, so they both took another shot of Geritol to reactivate their minds.

They were in love. He had hair 41 years ago, and she was beautiful — as she still is (but heavier in the nice places). The first years were exciting. They enjoyed their little antenna-covered cottage. His ham rig was in the bedroom. Things were wonderful; she didn't pay much attention to the ham equipment in the early days of their marriage — she was all eyes for him. She had learned to live with interference on the telephone, and she believed that her husband was a regular voice on *Dr. Kildare*, as this character seemed to be on the program all the time, and she had long since gotten used to the guy CQ'ing on her AC-DC kitchen radio.

Then, as her husband grew older, turtles would whiz by him, and she lovingly referred to him as a WOW (worn-out wolf). She began to ask insidious questions such as: "What is that thing on your operating table? I don't remember seeing that before. How much did it cost? What are you going to buy next?" etc.

Well, needless to say, it began to look like the ham rig was just too handy for viewing purposes. Besides, sometimes it is difficult to have your two first loves in the bedroom at one time, so one had to go. The basement seemed a logical place, so the selling job started. "Honey, wouldn't it be better if I moved this stuff to the basement — you would have room for your sewing machine." Of course, with a suggestion like this he got quick approval, and down to the basement he went.

Now, the basement wasn't the ideal place, but it served its purpose to isolate the viewing of new units. Then a new problem erupted — have you ever tried to have a QSO with the kids roller-skating on the concrete in the background? This was a new type of QRM.

The new arrangement in the basement was ideal, but he still had the problem of sneaking equipment into the house, unseen. Have you ever seen a guy come home on a sunny day with a raincoat on? Raincoats are large enough, so it's very easy to carry in the new keyer, unseen. All of a sudden, my friend was interested in his wife's "comings and goings" so he could get an opportune time to carry in that big unit.

Invention of stories became second nature for him. That new large unit on the operating table was being tested for a friend. He had another unit on approval. Someone gave him the power supply. He needed this unit to test experiment for something at work.

Then a terrible catastrophe happened. A ham friend (so-called) visited them and brought his wife. This visiting amateur's dear wife let the cat out of the bag when she told about the deal she had with her ham husband. Whenever he bought a new piece of gear, he had to buy her an item of like value. She went on to tell about her new fur coat, new purse, and so on and on.

Wow — was my friend caught in a corner. His goose was cooked — he had to agree to the same deal. The first thing that happened in the household was that his wife said the basement corner was too dark and he ought to have more light there. While she didn't say it, what she

meant was that she couldn't make a proper inspection of the equipment in the dark.

My ham friend was at his wits' end — this sure was a costly deal. What next? What should his strategy be now? Then our genius got the answer like a bolt from the blue. Why not make her a ham and then buy the equipment for her? It worked, but he had to do a real soft-sell sales job almost overnight. Teaching her the code brought new closeness and love to their marriage, and love blossomed anew. Now, instead of running off to hamfests alone, he has company. Every hamvention is now a ham honeymoon.

This really is a true story. When I see you, I'll introduce my wife — the XYL and ham. Try it on your own wife — she might like it!

Beethoven's fist

Dan Schechter, AKØS

Everyone is aware that Beethoven's fifth symphony in C minor, opus 67, begins with a long string of Morse code V's. It may come as a surprise, however, that this same symphony also has the Morse code letters U, M, T, N, F, K, S, A, X, H, I, R, O and J, as well as the numerals 5, 4 and Ø, the prosign AA (used in formal NTS traffic to separate lines in an address), and numerous long strings of dits such as are used by Novices to indicate their errors. This last item would seem to suggest that the great composer was aware he was not making any sense.

Like many Novices (we have no evidence that Beethoven was an accomplished telegrapher, and what follows suggests the opposite), he had a very poor fist. The speed of his sending changes randomly, as do the duty cycle and the dit to dah ratio. At one moment it sounds like a "bug" gone berserk, with the dits too short and the dahs too long, and at the next moment, the dits and dahs are so nearly the same length that it is difficult to distinguish between them. All of this makes for very difficult copy. It is not surprising that he got so few replies.

In all of the thousands of public performances of this otherwise admirable piece of music, I have yet to hear of any listener responding from the audience with an audio oscillator and code key.

In addition to Beethoven's poor fist, there is the matter of his signal quality. Good code should be keyed on a pure sine wave without modulation or harmonics. But the Morse code in Beethoven's music is keyed onto an audio signal that would make even a novice kit-builder blush. The audio tone is so burdened with harmonics that one wonders if he could hear at all.

Not only is the audio fundamental full of harmonic energy, but most of the time there are several independent audio tones simultaneously, each of which is laden with harmonics of its own.

To make matters worse, these carriers are often sending different things at the same time. It is a real morass of QRM. I advise those of you who are just learning the code to listen to this symphony only as an example of how not to operate.

Then there is instability of frequency. We have all heard chirpy signals on the bands, but Beethoven's takes the cake. One would almost think he didn't care.

Be forewarned: If you plan to listen to Beethoven's code you will need to set your audio filter to its widest possible setting, or, better yet, leave it out of the circuit altogether. Extremely wide audio bandwidth is necessary due to the great range of audio frequencies present. Like those mysterious signals you sometimes hear on 80 meters which chirp their way into your QSO from one side, drift quickly through and out the other side, only to reappear in five or 10 minutes moving past again in the opposite direction. These are somewhat predictable in the regularity of their instability, but Beethoven's signal jumps around in a thoroughly unpredictable manner.

As to the question of what this eccentric German intended to say, I am at a disadvantage. Like so many Americans, I suffer from a severe mental handicap: unilingualism. Perhaps the hams at 4U1UN could tell us if there is any intelligible message in Beethoven's music. But I am skeptical. The few letters I have copied are mixed in with so much nonsense and so many error signs that even if Beethoven was trying to say something, it is probably lost forever. Of course, it is entirely possible — even likely — that I have missed some letters. They could hold the key.

Maybe those guys who run 60 wpm on 14.049 could pick out something I have missed. Or maybe there is some RTTY in there mixed in with the Morse code. Beethoven was certainly an enigmatic character, and who knows but if we could only copy that fist we might learn something.

I hope I have moved some of you to give thought to this serious question. Very 73, and I hope to work you on the bands.

Michigan FCC exams

The volunteer examiners of the Grand Rapids Amateur Radio Association, Inc., in cooperation with the ARRL, will conduct Amateur Radio examinations in Grand Rapids, Michigan on the following dates:

Friday, 15 February 1985; Friday, 21 June 1985; Friday, 18 October 1985; and Friday, 21 February 1986.

An FCC Form 610 with check/money order (no cash) for $4 made out to ARRL/VEC should be mailed to: ARRL/FCC Amateur Testing, c/o Mike Bottema, K8EX, 930-92nd St. SE, Byron Center, MI 49315.

Old dogs *can* learn new tricks

Edward Spasek, WA6ZEY

Forty years ago, I was a Marine Corps CW operator doing a tour of duty at Navy Radio Station NPG in San Francisco. I sat on a circuit between San Francisco and Bremerton, Washington that required the operator to be able to send and receive at a minimum speed of 35 wpm involving the use of a semi-automatic key like the Vibroplex bug. A few weeks before reporting for duty, I had received my Amateur Radio operator's and station license, but any hopes of getting on the air were dashed by the attack on Pearl Harbor.

For one reason or another, I didn't set up my own station until 22 December 1980, by which time my sending and receiving was pretty rusty since I stopped operating after the war. During the intervening years, electronic technology made great strides and one of the interesting by-products, that intrigued me was the iambic keyer. I had seen ads for it in the various publications, but an article by Lew Fay in QST ("The Iambic Gambit," July 1981) inspired me to buy one.

When I received it, I was disappointed that the manufacturer had failed to include any instructions on how to learn to use this electronic marvel that automatically makes dashes as well as dots. Fortunately, Fay's article contained some excellent tips. After working with the iambic keyer for several weeks, I've come up with some of my own thoughts and ideas that I believe will also help others who decide to try their hand with it.

For those of us who learned to use the Vibroplex bug, adjusting to a new mode of sending is, to say the least, a tricky experience.

I suspect that for those amateurs who go directly from the hand key to the iambic keyer, the transition is easier, while the bug operator has to alter his technique. (I've heard of one bug operator who, rather than retrain his right hand, trained his left hand on the iambic keyer!)

There are seven letters of the alphabet that lend themselves to the squeeze technique: C, F, K, L, Q, R and Y. In addition, the following characters can be easily squeezed off; AR, AS, BK, KN, SK and the period. You may even figure out more combinations.

With the bug, it's possible to be a little heavy-handed with the dash side of the paddle. Holding the paddle down a mite too long on the dot side of an iambic quickly results in a flurry of dots; and then a too sudden or ill-timed movement of the paddle on the dash side can result in a series of abbreviated and fuzzy dashes.

As in all things, constant concentration is the key. Once mastered, the iambic is the ideal for near perfect sending. As Fay says: "Squeezing off letters on an iambic is such a soothing and restful exercise one could miss half the fun of CW for want of a few hours of oscillator practice." However, maybe it's because of my age (I bet I'm older than the average amateur), I find it is taking me quite a few hours of practice and, as of this writing, I'm still far from being comfortable and confident with my iambic. But I know that persistence in any endeavor eventually pays off, so I practice every day — and I have completely abandoned the great old Vibroplex bug lest the continued use of it and its special technique confuse me on the iambic.

For a bug operator, it's easy to slip from squeeze action on certain letters to paddle action, so it's important to monitor your sending constantly and immediately correct the inappropriate action. (An excellent training aid is a tape recorder to check your sending from time to time.)

During my learning experience, I found it's easy for a bug operator to slip from squeeze action to paddle action, particularly with such letters as Q and Y. In your experience, you'll probably have your own hang-ups. I find also that at higher speeds with five and six letter code groups, it is easy to stumble when the letters alternately require a rapid change with each letter from squeeze to paddle action such as KAFER or KAL3Q.

If one wishes to go even faster, I guess the keyboard is the answer. For me, the keyboard almost removes the element of the individual since it's the typewriter which makes perfect character for each letter, number, etc., automatically. One might as well go to the teletype machine.

In the final analysis, "Practice makes perfect" in mastering the iambic, but that great professional football coach, Vince Lombardi, said it even better. "Practice doesn't make perfect, *perfect* practice makes perfect." Once you've learned to send with the iambic, I'm sure you will realize a sense of satisfaction in acquiring another skill that will add more enjoyment to your CW operating experiences.

'The Freeloader'

by The Old Mans' Assistant

It seems like only yesterday that I was a mean little kid myself, enjoying listening to Red Skelton on our big broadcast radio as he played the roles of the mean little kid and Freddie the Freeloader. Then, as now, Red refused to use bad language. He poked fun at life through the eyes of the parts he played; it was OK to be less than perfect; in fact, it was normal! But he would not be pleased with the way things have turned out in our club.

It is probably not correct to talk about just our club. Life in general has turned around from the good ol' days to the present state of the art of "living". Nowadays, when we have an election, the candidates, club officers and a very small handful of others come out for the very important business of deciding the destiny of the rest of the organization. It happens in the biggest of elections and the smallest, all across the board. When a project develops that requires some participation by members of the group, it is usually the same members that do the hardest parts. It used to be fashionable to be a veteran who had risked all to save our way of life; today the majority of young people shun the chance to serve God and country.

The opening paragraph of Part 97 of the Rules governing Amateur Radio lists five different things we amateurs are presumably supposed to be doing to justify our use of so many different modes on so many hundreds of frequencies. Some of you apparently don't remember having read them, or have forgotten your responsibilities under this paragraph.

Briefly summarized, they include: being of value to the public by providing emergency communications; contributing to the advancement of the state of the radio art; advancement of skills in the communications and technical phases of the art; expanding the reservoir of trained operators, technicians and electronics experts; and enhancing international good will. Granted, the five things will not apply to everyone, everywhere. But some of us have not tried to fit into *any* of those molds, preferring self-service instead of public service.

The club that sponsors the newsletter for which this is written has some 500 members, who utilize five VHF/UHF repeaters with very wide-area coverage. Thanks to the repeaters they support with funding, many public service events are successfully conducted each year, usually heavily subsidized by amateurs from other clubs because of the poor turnout from the members themselves, and usually only because club leaders have to grovel for help!

Some members enjoy the pleasantries of putting more mileage on their microphones than on their cars, serving their rather large need for companionship, or their unduly large need to expound on every topic under the sun. By not serving the public at any time, or supporting the several other parts of 97.1, they are a form of "Freeloader". They quite naturally will object to this characterization, and show their "mean little kid" side.

We hope they continue to support the club with funding, but we really need support with other aspects, such as technical help, volunteers for public service events, and running for office.

We hear complaints that we go to the well too often, and it is running dry. The workers are tired of doing all the work and want some help. There are those who can help in no other way because of physical disabilities, funding limitations or family problems, but they are few in number, and we can easily make allowances for them.

The rest are another matter entirely. They are the ones who cause the hard workers to use bad language. Red Skelton would not be proud!

— Gerald Murphy, K8YUW □

The birth and death of the QSL

Marv Mahre, W0MGI

We've all seen how crazes hit the country — hula hoops, skateboards, etc. — but that's nothing new. It's always been that way.

Have you ever wondered why everybody seems to have a collection of family postcards? It's because in our father's or grandfather's day, the national craze was exchanging and collecting picture postcards. In the decade from 1906 to 1916, *one billion* postcards went through the U.S. mails each year. So, it's little wonder tht a goodly number of them were stashed away in attics.

That same period (1906-1916) also just happens to be the time Amateur Radio began to flourish. With everybody thinking up every possible variation of a greeting card, a new one was born . . . the QSL. Now, a couple of generations later, the boom in picture postcards is long gone, survived only by Christmas greeting cards and our ham QSL.

I posted my first QSL card for only a penny, but recent quantum jumps in postage rates have raised the cost to 15 cents, making Johnny Ham think twice before confirming routine contacts. Time was when many amateurs literally covered the walls of their shacks with QSL cards; but no more . . . real wallpaper is far less expensive!

— Ground Wave, St. Paul, MN □

• Silent Keys •

Cy Kahn

Thousands of licensed amateurs will remember the late Cy Kahn, W6PXH, with gratitude for the friendly and valuable help received across the counter during the 37 years he worked at Henry Radio, Los Angeles. He always found time to answer technical queries in detail, was wise in his advice and inevitably kind with our "dumb" questions.

Cy had started in Amateur Radio during the spark gap days in New York City. His enormous talent took him into vaudeville where he reached headliner status as a ballad singer. For the rest of his life, he retained his delightful show-business personality, ready with a joke, often a clever pun.

A few years ago cancer took his voice, but it didn't stop him. His manipulation of an electronic device to make speech possible was remarkable, and his friends soon forgot he was using it. He devoted time to helping other patients learn his tricks.

At the memorial service, the following tribute was read in person by Ted Henry, W6UOU:

"We are remembering a special friend. But more than that, we are honoring a remarkable life. For Cy's life was indeed a storybook tale of success.

"By the time he was 30, he had reached the top. As the saying goes, he had it all — the power of money, the cheers of his audiences, the respect of his peers. He worked and walked with names that are only legends to us — Benny, Burns, Foy, Chaplin and many more. Few of us knew him in that life.

"He came to us later, during the time he was winning his personal battles. He found love and contentment with his dear Inkie. He made peace with himself, and he chose to spend his days with us.

"For over 40 years, Cy and I shared a mutual admiration society. We were from different worlds, but we held the same profound convictions about the basic ideals of living. Cy well understood how I cherished the dream that my children and my children's children may grow to live in a better and kinder world. I hope he understood that it is men like himself, the 'good guys' of our society, who build the peaceful caring community which can make that dream come true.

"We all knew Cy well — sharp of wit, full of good will, bursting with talent. He was a good friend to us all, and to me much more — a true and loyal friend through all those years. There will never be another Cy in my life. It saddens me that he has gone away. He will always be in my memory."

The service was held 20 September 1984 and was attended by many Amateur Radio operators. — *Lenore Jensen, W6NAZ* □

Ode to Silent Key

Bill Clarke, WA4BLC

Life for the wife of an Amateur Radio operator can be very lonely. Their husbands spend endless hours in seeming solitaire, talking to others like themselves via their radios. But someday:

QRT

The dials on your radio are unmoved, the speaker silent, and the ash tray clean for all time to come.

All those hours you sat in that old green chair, talking to unseen voices, filling the ash tray to overflowing.

You talked near and far, and had friends you never met. You traveled the world over from your chair.

Jealous of your fun, and bitter of your time away from me, I always knew where you were.

You've become a Silent Key now, gone on to meet those unseen voices from the past.

Yet in the stillness I can hear your chair squeak, smell your tobacco, and hear faint voices calling from afar.

— Foundation for Amateur Radio □

• People reaching People •
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Etorre's observation — The other line moves faster.

Please see page 9

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DON'S CORNER
Another year has gone by. I would like to thank all of our customers, new and old, for keeping us in mind this past year. I hope that Santa is good to you this Christmas and that the New Year brings prosperity to you and your family.

MERRY CHRISTMAS AND HAPPY NEW YEAR FROM DON AND THE CREW

Special Events

Jamb-O-Rama

Chuck Eder, W6LOE

The Golden Empire Council, Boy Scouts of America, conducts a weekend campout every other year. This year it was called a "Jamb-O-Rama." Featured this year were a Merit Badge Midway, World Friendship Games and the "Jamboree on the Air". (See "Jamboree On The Air", October Worldradio, page 16.)

The Boy Scouts camped with their troops and generally participated in the events with their unit. A major feature of the Jamb-O-Rama this year was the Jamboree on the Air (JOTA).

Several local amateurs were involved with setting up the stations at Cosumnes River College, Sacramento, California, on Saturday, 20 October. Larry Weygandt, KL7JQ, was chairman, and Bob Workman, WB6VYH, vice chairman and Chuck Eder, W6LOE, assisted. Three bands were used for the JOTA demonstration and contacts: 40, 20 and 2 meters for local contacts.

Boy Scout (with white hat) speaking into mike is Sam Marinelli, Troop 226, Sacramento. He's chatting with "Rollie" Hightower, WB9HVD, of Macomb, Illinois, on the 20-meter band. On the right is operator Chuck Eder, W6LOE.

Seated at the radio, wearing the "Smokey the Bear" hat, is Larry Weygandt, KL7JQ, of North Highlands. Larry is with the U.S. Coast Guard, McClellan Air Force Base, and was chairman of the JOTA set-up.

Jamboree on the Air (JOTA) is a worldwide scouting exercise in Amateur Radio communications with its headquarters in Geneva, Switzerland. The operation is designed to let Scouts experience Amateur Radio, talk with other Scouts, and to act as a demonstration involving two or three of the scouting merit badges.

Several other Scout stations were contacted, but the longest contact made with over 25 Scouts experiencing a contact was made with "Rollie" Hightower, WB9HVD, in Macomb, Illinois. His cooperation and interest were superb.

The scheduled Sacramento Valley Simulated Emergency Test (SET) was on the same day, and they set up in the JOTA area to further enhance the communications demonstration. On 2 meters, Lou Ann Keogh, KB6HP, made fine conversation and many contacts with Scouts. Lou Ann demonstrated great perseverance, interest and a great showing of 2-meter capability.

The Sacramento area JOTA effort was just one of hundreds throughout North America. Located in the Dallas/Fort Worth area is the National Scouting Headquarters station, K2BSA. This writer attempted a contact, but the pile-up was tremendous and I gave up. □

Jaycees celebrate 63rd anniversary

A special event station will be held on Saturday, 12 January, commemorating the 63rd anniversary of the Tuscaloosa Jaycees. KE4TN will operate from 1300Z to 2300Z on that date and will be offering a very nice 8½"× 11" certificate to all contacts.

To receive the certificate, send your QSL card only (no SASE needed) to the Tuscaloosa Jaycees, P.O. Drawer L, Tuscaloosa, AL 35404 or to Fletcher Long, KE4TN, 5724 Kew Lane, Tuscaloosa, AL 35405. □

Share your knowledge with your fellow amateur and Worldradio reader

Snowflake madness

Michigan Technological University ARC and the Copper Country Radio Amateur Association announces a radio celebration of our Winter Carnival festivities in the northernmost part of Michigan's Upper Peninsula.

Tech's Winter Carnival is probably the most spectacular winter festival in America with snow sculptures, ice hockey, dog sled racing, skiing and other festive events.

In association with the Copper Country Chamber of Commerce, we are issuing a certificate to all amateurs who make contact with any participating in the Copper Country between 0000 UTC, 29 January, and 0000 UTC, 05 February 1985.

Only one contact is required to get a certificate. Frequencies are: *RTTY* — 3.630, 7090, 14.095; *CW* — 3.705, 7.085, 7.125, 14.085, 21.085, 28.185; *Phone* — 3.930, 7.285, 14.305, 21.385, 28.500. On CW, listen for CQ WC.

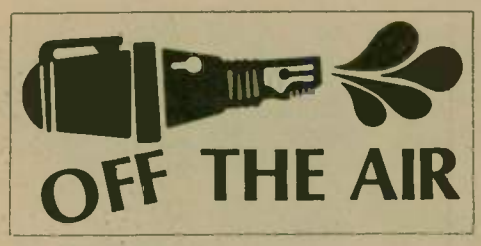
Send your QSL along with $1 to cover postage and handling to: Howard Junkin, N8FHF, 106 W. South Ave., Houghton, MI 49931. □

SET and packet radio

On Saturday, 20 October, during the local SET, the Palo Alto Area (California) Chapter of the American Red Cross successfully used five packet radio systems to send simulated disaster traffic. Four cities in the San Francisco Bay area were connected to the Palo Alto Red Cross for a demonstration of the feasibility of incorporating a hard-copy point to point message system.

"Fantastic, I wish we had your capability," said Captain Espanosa of the Mountain View Fire Department. Other similar comments were received from city of-

(continued on next page)



Atari computer log?

I was wondering if you or your readers could tell me where I could get a computer log for an Atari 800XL.

SHELBY WYNN, KB4GSU
Rt. 1, Box 318
Thornton, KY 41855 □

Ham Radio videotape library grows

I've just finished looking through your paper. It's refreshingly different from the traditional magazines. I am here taking advantage of your invitation to send in news and information.

Several months ago I became interested in videotape programming, through some activity where I am employed. While talking about Field Day one evening, the video technician expressed interest and offered to bring out the mini-cam to take some shots of the activity.

During the next year, we put together a half-hour videotape all about Field Day. It was presented as a pre-Field Day program for a joint meeting of our local Amateur Radio clubs the following May. Later, after encouragement from the group, the tape was sent to the ARRL and was shown at the 1982 World's Fair.

Unfortunately, making videotapes about Amateur Radio was not the reason I was employed; but fortunately, about then, cable TV came to town, and with it a public access channel. Well, public access was just what the doctor ordered! They trained me to use their equipment and were pleased to air on the local access channel the productions I was to put together. Other hams have helped out, and today we have a growing library of videotape productions about Amateur Radio.

After airing the productions on the local cable, we have taken them to other area radio club meetings and even to Dallas' HAM-COM. In all cases, the programs are well received.

It seems to me that it's not always easy to get an interesting and modern program on Amateur Radio, but there is so much to our hobby. The Amateur Radio fraternity needs to recognize that the ready availability of home video systems provides an exciting new medium for public information presentations and club meeting programs. The days of out-of-order slides and broken films can disappear. Any club can now have its own library of videotape programs to be shown at any time. Many members now have either VHS or Beta videotape capability.

I envision a day when many amateurs across the country will be involved in activity such as this, exchanging videotape programs with each other, and sharing them with many groups.

The amount of subject matter available is limitless. Just a few telephone calls in the Dallas-Ft. Worth area have led us to amateurs who are expert in many areas. Most have been willing to share their enthusiasm before the cameras. Certainly our productions are not top quality like Roy Neal turned out for the space shuttle voyage of W5LFL. Our productions are indeed amateur.

It seems to me that now we need to somehow make other Amateur Radio clubs across the country aware of what videotape can offer to Amateur Radio. Such tapes are also great for viewing by more general audiences like schools, clubs, civic organizations, Scouts, hobby groups and churches. Now we can easily show the rest of the world what Amateur Radio is all about.

The following is a list of our programs.

Earth calling Columbia

(35 min. 1983)

The STS-9 mission of the space shuttle *Columbia* was the first time Amateur Radio equipment was permitted on board the spacecraft. Mission specialist Dr.

Special Events

(continued from page 20)

ficials in Palo Alto, Los Altos and Sunnyvale.

Hardware used consisted of Tucson Amateur Packet boards, Texas Instruments Silent 700 series printing terminals, and a variety of 2-meter radios. Two of the sites used handi-talkies as the primary radios, connected to fixed antennas on the city buildings. A 12-volt portable Packet system was also tested and worked very well.

Having the hard copy to review at the critique was the icing on the cake, compared to previous voice nets that had to rely on notes or playing of voice tapes.

Packet radio is definitely in our disaster plan for future drills and the *REAL THING. — Submitted by Ted Harris, N6IIU* □

Owen Garriott, W5LFL, was the Amateur Radio operator. Monitor the activities of a local Amateur Radio club as they prepare for, and participate in, this historic event.

Field Day fever

(35 min. 1981)

An exciting look at the sights and sounds of the amateur's annual Field Day event. This tape discusses Field Day as an emergency preparedness exercise, as a contest, as an outing and as a group activity involving most aspects of Amateur Radio. The program was seen by visitors to the 1982 World's Fair.

Push to look

(45 min. 1983)

An audio-visual travelogue of amateur television in action. Slow scan, video storage and retrieval, fast scan, color, computer graphics and repeaters are explained and demonstrated by active amateur television enthusiasts.

Transceivers and computers

(50 min. 1983)

Amateurs demonstrate their applications of home computers to work CW and RTTY, to make calculations and predictions, to manage award programs, to prepare for and conduct contests, and even to totally remote control an Amateur Radio station.

This is Amateur Radio

(20 min. 1982)

A panel of five active amateurs discusses Amateur Radio: what it is all about, how one gets started, popular aspects of the hobby and its impact on the local community. A 2-meter telephone autopatch is demonstrated.

A two-station Field Day

(20 min. 1983)

A fun look at the local radio club as it operates two stations, one phone and the other CW (Morse code), in the annual Field Day event. An inside look at the trials and tribulation of participating in this 24-hour marathon of Amateur Radio.

North Texas contest club

(40 min. 1984)

An interesting look at Amateur Radio contesting through the eyes of a national award-winning club. Follow the activities of amateurs who are avid contesters. Get a close-up look at these amateurs, their stations, and especially their antennas.

Amateur Radio, Texas-size

(20 min. 1984)

Many amateurs say N5AU is the largest Amateur Radio station in the world. The 20-acre antenna farm boasts of some 30 towers decorated with numerous antennas arrayed on all parts of the world. The shack has six operating positions plus space for computer, repeater and QSL'ing. Behind it all is a fascinating man who loves talking about Amateur Radio, especially contesting.

High-frequency propagation

(in process)

Amateur Radio's cunning ability to communicate over long distances has always interested many people. How are such long-distance communications possible? John Hawkins, K5NW, has been chasing DX stations for many years and has won many awards. In this tape, John discusses the crucial roles the ionosphere, the sun, the seasons and the frequency play in making long-distance propagation possible.

Keys to our past

(planned late 1984)

Byron McEwen, K5RW, a collector of wire and wireless telegraph keys, gives us an intriguing glimpse into our past. Inside Neal's "museum" are over 210 individual pieces. There are some 100 different "bugs", making it one of the largest bug collections in the world. An assortment of spark, wireless, radiotelegraph, landline and submarine cable instruments is also on display.

Bugcatchers

(planned spring, 1985)

Mobile Amateur Radio is made possible only by a good antenna. On the high-frequency bands, this is not always a simple matter. Jimmie McCarter, N5DDC; Henry Allen, WB5TYD; Bill Smith, WB5PMZ, and other amateurs have worked out an eye-catching mobile antenna that they jokingly refer to as the BUGCATCHER. The effectiveness of this HF mobile antenna is awesome.

I would like to hear from other amateurs who are interested in this subject.

H. PAUL CLAMPIT, K5TCK
2217 Anders
Mesquite, TX 75150 □

Oregon team station studies propagation

Mary and I (KA7FEF/KA7FEE) are a team station. Very briefly, I am an ex-WWII radio op with an "If someone made it: I can fix it" mentality. Mary has an FB background in astronomy, particularly in solar and lunar activity and magnetic phenomena. Our stations are modest: Novice power, dipoles, verticals, and for myself, QRP mobile. So you can see, from the beginning we looked for any propagation aids which would help us.

John Nelson, a long-time RCA forecasting engineer (recently deceased, May '84) had worked out an effective propagation method, utilizing heliocentric (sun-centered) aspects.

Late in 1980, we learned of his work and the book he wrote for amateurs — *The Propagation Wizards Handbook.* John Nelson was with RCA for 45 years as a radio op and forecasting engineer (propagation analyst).

In 1961, he delivered a research paper on his developing solar theories at the University of Naples for a group of NATO scientists, sponsored by NASA, where many of his forecasting successes took place.

The details of his work are better dealt with by an SASE to this station or your own study, but briefly, the main outlines are:

"He learned that sunspots were not entirely random; that there was a relationship, especially between the positions of the six inner planets in our solar system and sunspots. The worst radio storms took place, he found, when Jupiter and Saturn were 90 degrees to each other, or in a straight line (180 degrees) with the sun and, in addition, when Mars, Venus, Mercury and the Earth, itself, were in similar configurations." (Recall your Novice days, when you learned about magnetic flux relationships between inductive bodies.)

We spent a year testing his heliocentric method of analyzing planetary relationships as they apply to radio quality.

In correspondence with Nelson, he confirmed our suspicions that his propagation column in 73 was abbreviated and that his private consultative service uses more aspects for a more exact forecast.

The point of this note is to show how much, as individual amateurs, we can contribute to radio science, and as a small tribute to John Nelson's work. Like all of you, we have developed an international correspondence with many amateurs. The real test of any new idea is to try it out.

With the help of Luiz Augusto Rodrigues da Cruz, PY7AHJ, in Recife and other Brazilian amateurs, we set up a program we followed for about one-and-a-half years (September '82 to January '84) to try forecasting for conditions in Brazil, 6,000 miles away. Our efforts originally were only 60 percent accurate, but with the addition of some geocentric and lunar aspects, the predictions rose into the 80's.

OM Cruz sent QST's on 40 and 2 meters with the forecasts; it was also referred to in the print media. For our purposes (Brazilians and Oregonians), it was worthwhile. We gained insights into propagation conditions at our widely different locations, learned some of the fundamental problems involved *and advanced the cause of international understanding* . . . with no tools but paper, pencil, a table or two and some ear scratching. We encourage you to try!

JOHN MacKENZIE, KA7FEE
Portland, Oregon □

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

PUBLIC SERVICE

Public service — how important is it?

Bruce Woodward, N9UMH

This song of my childhood has much meaning that can apply to the Indiana ARRL Section today. Make no mistake about it, there are many — both inside and outside of Amateur Radio — who would change the nature of Amateur Radio and look lovingly at our frequencies as so much wasted spectrum. If it were not for the continuing job we do in the area of public service, public awareness of these activities and the support of the agencies we serve, we would not enjoy the favorable image we now have.

Even though many amateurs acknowledge this great need for continued public service, they do not understand that it is vital for them to be involved. Most amateurs are so involved in doing their thing that they cannot seem to budget their time realistically. I hear so often, "I would help if someone would give me something to do."

The first step you must take in getting involved is to contact your county Amateur Radio Emergency Service (ARES) Emergency Coordinator (EC) and ask to join ARES and participate in emergency preparedness. It is quite possible that you know this person personally, that he is a member of the club you belong to, and he has contacted you at some earlier time to join and has now given up on you. If this is the case, you need to initiate the renewal of support of public service by contacting the EC.

If there is no EC in your county, you could apply to the Section Emergency Coordinator (SEC) to become the EC for your county. Actually, the job of EC is vital to the county organization, and is a necessary first step in establishing a county-wide organization.

The position of EC is not a job to be afraid of. You need only put a little time in to building an organization. Once you have been appointed EC you must look around for others in your county to help you in emergencies. After you find these people (and they do exist even though you think you are the only ham in the area), it seems only logical to form a local radio club based on the need for emergency communications. This often leads to the need for a local 2-meter repeater supported by the club.

This growth and accelerated activity for Amateur Radio is fun, and everyone involved gains from it both in service and personal satisfaction. There are so many groups in Indiana that have followed this pattern of growth that I could not name them all.

There is a sadder pattern that now occurs in many cases. The EC, for one reason or another, gives up the job, or if he still holds the title he does nothing to foster the organization. Then the county loses its EC, and the club decides that the only activity they want to be involved with is the local repeater.

When severe weather threatens, the people in the county must go to a repeater where the organization is still active and alive. More importantly, getting information for the National Weather Service is next to impossible, thus lessening Amateur Radio's ability to perform. Fortunately, there is a hard-core group of very dedicated amateurs who make the system work even when it is severely crippled by inactivity.

This leads to my favorite saying which I have on my desk on a small wooden plaque: "I've done so much with so little for so long, now I can do anything with nothing." If you are an officer or member of one of the repeater clubs, or just an amateur in one of the counties where there is no EC, you will not escape for we have a great number of very dedicated people at the state level who will be looking at your situation and will do all in their power to make you aware of your responsibility to Amateur Radio.

Public service and service to Amateur Radio is more than just emergency communications. The new Volunteer Examiner program; the Amateur Auxiliary to the Field Operations Bureau of the FCC program; the Public Information Assistant program; the Government Liaison program; the Affiliated Club program; the Special Service Club program; the Official Relay Station for the National Traffic System; the Technical Coordinator and speaker — all do their part to make and keep Amateur Radio alive and well. Believe me, there is a place for everyone and someone to help you and answer your questions wherever you are and whatever the question.

I often hear the statement, "Amateur Radio is, after all, just a hobby." I shudder when I hear it. It means someone is not taking his hobby seriously, and is uninformed or misinformed about who is doing what to whom. Amateur Radio is a priceless possession, as you would soon find out if you, for some reason, lost the privilege. Fortunately, the ARRL is interested in the hobby and to aid in the present and plan for the future of Amateur Radio. The ARRL is a fact, not a fantasy, as one would have you believe. Whether you participate for fun and fellowship or as an obligation to public service or both, what you do is important to all.

— *Indiana Section ARRL Letter, Indianapolis, IN*

MAY DAY on the road

Bobbie Lander, N4HDH

After many calls on the SARA repeater, on 13/73, Lou Boehlein answered my MAY DAY call. Having a flat tire in Bradenton and needing someone to make a local call for me to Walter informing him of my distress, was comforting knowing the 2-meter rig was available! Was that a relief! Did not even have to leave the car. Just to know that at least Lou is monitoring the repeater most of the time sure is a comfort to us gals who are traveling alone at times.

A million thanks, Lou. Just a little sorry it had to be the 13/73 repeater and not our own club repeater. Get with it guys; we need full-time monitors!

— *Sarasota ARA, FL*

Ernie Bracy, W1BFA, operating CT1REP at Estoril Air Traffic Controllers Conference, in Estoril, Portugal.

Left to right: Nikola Lusic, YU2XX; Ernie Bracy, W1BFA/YU2; Borivoje Dordevic, YU2JG; and Marco — all members of Klub ANTE-JONIC.

Shriners hospital awaits station

Lenore Jensen, W6NAZ

Little patients in the Shriners Hospital for Crippled Children, Los Angeles, soon will benefit from an Amateur Radio station being installed in the facility.

Members of the Al Malaikah Amateur Radio Shrine Club are busy assembling rigs and antennas for installation as soon as the radio room is ready. Children will be invited to observe Amateur Radio in action and also participate in phone patches to their parents in outlying areas. The door to the room is large enough to allow entrance via a gurney, as many of the children are unable to walk.

The 89 members of the four-year-old club are enthusiastically preparing for the new venture, just as they have provided communications between officials at the benefit Shrine Circus, All-Star Football games, various parades and ceremonials, the Chili Cook-Off and many Masonic and civic activities. Club President for '84 has been Frank Hasper, WA6JEY, with Phineas Icenbice, W6BF, taking over in 1985. The originator of the club is Everett McMullin, W6DSY, who holds the prestigious rank of Past Potentate. The group is ARRL-affiliated.

A second radio room is also being prepared, this one in the Temple itself, "high up in one of the onions" near the roof. The men have established a class in Amateur Radio at the Masonic Home for Boys in Covina, California. Already at least one boy is licensed.

The good works continue.

Worldwide fraternity

Ernie Bracy, W1BFA

Proof, if needed, that Amateur Radio is a worldwide fraternity can be found in such worldwide nets as the International Air Traffic Control Net. This net, orginated by Walter Endlich, PA0GJA (Euro-Control, Netherlands) and Ernie Bracy, W1BFA (Federal Aeronautics Association, USA), some years ago for the purpose of keeping air traffic controllers in touch with each other throughout the world, has grown considerably in size during the last few years.

Over 900 different station operators checked in to the net last year, most of whom have some connection or interest in aviation, but not exclusively so. Many air carrier pilots, private pilots, aviation electronics personnel, aviation communications people and weather observers are included in the group. Associate members made up of just interested parties are also welcomed.

The net operates on 14.277 MHz daily, seven days each week, between 1000 and 1200 UTC. All continents have participated.

International conferences of air traffic controllers accommodate Amateur Radio operations, and net control W1BFA has often been moved to such places as Split, Yugoslavia; Amsterdam, Netherlands; Estoril, Portugal; etc. It is in these countries that one learns of the great fraternity Amateur Radio supports.

For example, in Split, Yugoslavia, the local radio club supplied the equipment and set up the antenna on the hotel roof for the operation of 4N0ATC (a special call acquired through the efforts of YU1PST and others). The licensing of W1BFA/YU2 for operation at 4N0ATC was another achievement. The Klub ANTE-JONIC in Split supported the operation for the entire week of the Air Traffic Controllers Conference.

In Estoril, Portugal, another splendid cooperative spirit was obtained through the efforts of CT4UE and the Rede Dos Emissories Portugueses who supplied equipment, license privileges and assisted with the installation for the operation of CT1REP by W1BFA at the conference hotel, where the net control was maintained daily.

Lasting friendships are always made and the hospitality received throughout the world is something that only those with the common bond of being radio amateurs can provide or comprehend.

For those who intend to take advantage of reciprocal privileges of operating overseas, just one word of caution: start your negotiations early — i.e., several months in advance, and comply with the paperwork requirements carefully. The privileges and the pleasures are well worth any effort expended.

High Speed Club

Come up to the High Speed Club (HSC) frequencies, 25 kHz from the lower band edges (3575 kHz additionally), and contact as many members as possible. Use telegraphy speed of 25 wpm or higher and show your ability to read and key this speed perfectly. Use your best operating technique, if possible BK (QSK). Be courteous and fair.

Always note the unwritten laws of Amateur Radio and ham spirit. The use of keyboards, decoders or computers is not allowed.

After a few contacts, ask the member to send you his recommendation for HSC membership. Only two-way CW contacts for at least 30 minutes minimum will be valid for test QSO.

After having five recommendations in your possession, send them with your application to Ernst Manske, DL1PM, HSC secretary. All applications should contain a statement that you did not use keyboard, decoder or computer during the five test QSO.

Enclose 5 -DM or 8 IRC's to cover costs. Applicants in West Germany also have to state they are members of the "DARC". There is no more payment for life membership.

HSC secretary DL1PM, Ernst Manske, Ansgarstr. 14, D 2105 Seevetal 11, WEST GERMANY.

HSC member lists are available at the same address for an SASE or 1 IRC.

General information about HSC

HSC was founded in 1951 as a community of interests within the "Deutscher Amateur Radio Club" (DARC). Today we have members in 50 countries (DXCC list) and all six continents. HSC is a member of the "European CW Association" (EUCW) and cooperates with other CW clubs.

Our club station, DL0HSC, transmits the "HSC bulletin" the first Saturday of each month at 1500 hours UTC on 7025 kHz in English and 2100 UTC on 3555 kHz in German. That way you get informed about activities, new members and other news.

To advance activity, HSC issues two awards for working members: "Worked High Speed Club" (WHSC), and to commemorate our 30-year jubilee, the new

"HSC Jubilee Award" (HSCJA). Ask Hans Falz, DL6DP, for details. His address is: im Wingert 4, D-6580 Oberwoerresbach, WEST GERMANY.

Aims of HSC

All members of the HSC strive for a high standard of CW operating ability

1) to improve the art of this mode,

2) to encourage others to improve their behavior and operating skill on the air, and

3) to cultivate friendship between amateurs of all nations.

Bylaws for HSC members

The image of HSC depends solely on *your* behavior on the air. Therefore, it is mandatory that the accuracy of your code signals is guaranteed at all keying speeds, including letter and word spacing. Accuracy is more important than speed.

Your operating technique should always be an outstanding example to others. Your behavior, especially to newcomers, should be considerate and courteous at all times.

After observation, sponsor only those who comply with these rules. □

Government buys 2M repeater

Sonny Bartron, N4DBA

The March 1984 tornadoes started the ball rolling. County officials in Sampson County, North Carolina, finally accepted the fact that they couldn't do the job alone; they needed help. The Amateur Radio operators of both Sampson and Cumberland Counties responded immediately with both personnel and equipment, ready to be of service wherever necessary in whatever capacity county officials thought best.

Only one major problem surfaced; although manpower and 2-meter equipment were readily available, the lack of a local repeater made it virtually useless once you got out of simplex range.

The Sampson County Emergency Coordinator (EC), Ermon "Judge" Godwin, WA4LZD, along with other local amateurs Earl Eason, WA4WGM, Jimmy Surles, KA4LKF, and Pat Dixon, K4OAR, met with Elliot Rich, Sampson County Director of Emergency Services. Together they formed a package to present to the Board of Commissioners.

The Board unanimously approved the allocation of $2,000 in county funds to be applied toward the purchase of a new 2-meter amateur repeater, to be installed at the 200-300-foot level of the county communications tower in Clinton, North Carolina. The Federal Emergency Management Agency (FEMA), from their Birmingham office, then agreed to match the county funds, for a total of $4,000.

This repeater will give complete coverage of Sampson County, and extend communications into parts of other surrounding counties as well. The repeater will be under the control of the area amateurs, with priority given to civil preparedness and emergency situations.

A frequency coordination request has already been submitted and the repeater is expected to be on the air by April 1985, barring complications.

This will be one of the first repeaters in North Carolina purchased entirely with government funds, showing great progress in the field of cooperation between members of the Amateur Radio community and government officials on both the local and national levels. □

New 2-meter repeater in Tennessee

Jim Moffatt, WD4SMW

Amateur Radio operators have been assisting in emergency situations such as floods, tornadoes and other natural disasters to get messages through. Recently, during the invasion of the island of Grenada, Amateur Radio was the only link to the outside world.

A new amateur very high frequency (VHF) 2-meter repeater is soon to go on the air to assist the over 2,000 Amateur Radio operators in the tri-state area (Arkansas, Mississippi and Tennessee) with their emergency communications. The new repeater is the latest design in state-of-the-art computer-assisted VHF equipment. It features voice-synthesized identification and digitally-controlled message ports. The device is owned by Delta Amateur Radio Club and will use the Delta Club FCC call sign, W4BS.

The new equipment was turned on by remote control at the club's monthly meeting Tuesday, 11 September, 7:00 p.m. Steve Terry, WB4IZC, and Andy Anderson, K4ZLC, will perform the honors as well as explain to Memphis area amateurs the functions and digital controls of the new machine.

After its inauguration, the W4BS repeater will be used as central frequency for the National Weather Service SKYWARN emergency net. Also, the 146.22/146.82 MHz frequency will be used every evening at 8:30 local time to accumulate rainfall data for the National Weather Service. Future plans include a weekly computer net, Morse code training and other innovative concepts.

All radio amateurs and others interested in this exciting event are invited to attend.

Additional technical information may be obtained by contacting Steve Terry, (901) 795-4032, or Andy Anderson, (901) 365-4633. □

AWARDS

Worked-All-Tucson Award

The OPRC is reactivating the Worked-All-Tucson Award. The award, started in the '60's, has been inactive for some time. The rules, published in *Solid Copy* for March 1971 (except for the repeater clause, added by the Board), are as follows:

1) Fifty stations, anyone in Tucson and environs (Tucson mailing address).
2) Twenty-five stations, for anyone outside Tucson but in Arizona.
3) Fifteen stations, for anyone outside Arizona, but inside continental United States.
4) Five contacts, for anyone outside the contiguous 48 states.

No repeater contacts. No time limit as to when contacts were made. Any mode within the amateur bands. Contact Gail Peterson, N7BXX, for more details.
— *Old Pueblo RC, Tucson, AZ* □

Results of 1984 Howdy Days

Doris Bedford, K4AOH, was the YLRL member winner of the 1984 Howdy Days contest, sponsored by the Young Ladies' Radio League. A close runner-up was Martha King, WD4NKP. Other member winners are listed below, in order of points earned (highest first):

Shirley Hooper, WD8MEV; Jeannine Cote, VE1BWP; Karla Holmes, WA1UVJ; Harriet Micensky, WB0ZQZ; Elsie Muller, KA2EDQ; Lovelle Pedersen, WB0JFF; Christa Elksnat, DJ1TE; Florence Reitzel, KU7F; Geraldine McKenzie, AG1U; KD7YB; CT1YH; Carol Noack, KK5L; Charlotte Ertelt, K5AVX; Cecilia Zwack, WA2NFY; Susan Ludemann, KA6SOC; W.A. Davies, VK4BSQ; Erika Tesch, DF4JX; and Diana Hughes, G4EZI.

The YLRL non-member winner was SV1VH. Check logs were Martha Silver, NY4H, and June Braunz, KM8E. □

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

Chris Wilson

Dennis Smith, dean of Trumbull Campus at Kent State University (center), accepts a scholarship donation from Hamfest Chairman Frank Fitzhugh, KD8KJ (left), and Dave Walters, KZ8T, president of the Warren Amateur Radio Club.

Amateur Radio club donates to Kent

Kent State University Trumbull Campus is the recent recipient of a $1,200 scholarship donation from the Warren Amateur Radio Club.

The money was raised from the organization's annual Hamfest, which is held at the campus every August. In accepting the check from Frank Fitzhugh, KD8KJ, Hamfest Chairman, and Dave Walters, KZ8T, president of Warren Amateur Radio Club, Campus Dean Dennis Smith said. "We are pleased with the continuing support of community groups such as the Warren Amateur Radio Club who realize the benefits their scholarship donations bring to students from the local area."

This is the sixth consecutive year that the campus has received a substantial scholarship donation from the Warren Amateur Radio Club. □

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VFN 50th anniversary certificate

An 8″ × 10″ certificate is being offered by the Virginia Fone Net (VFN) in commemoration of 50 years of continuous traffic net operation on the 75-meter band to handle traffic into, through and out of the state of Virginia. The net has a membership of approximately 150 registered and numbered licensed amateurs. Membership information may be obtained from any net control or will be furnished with your certificate, if requested.

To obtain this handsome multi-colored certificate, applicant must make two-way contact with 25 or more VFN members on any band except during net operation, in which case contacts will not be accepted. Net time is daily on 3.947 MHz at 1600 and 1930 EST.

Send your log of information as to call of station worked, time, name and VFN number of stations worked to: Bill Redmond, K4IEC, 917 Rockspring Dr., Winston Salem, NC 27105 along with summary log. Contacts will be verified from your list.

Include $1 (American) for handling along with information and a #10 SASE, or $2 for a "flat pack" envelope. All certificates will be serial-numbered and hand-lettered with recipient's name and call. Contacts and request must be made between 30 September 1984 and 30 June 1985.

Members are asked to keep a log of those stations requesting contact information for verification. □

Congratulations!

Yes, congratulations are due Ted Sharp, K6UYK, who's been elected to the National Soaring Hall of Fame, located at Harris Hill, Elmira, New York.

Ted has served as treasurer of the Soaring Society of America for 25 years and is an enthusiastic participant in the hobby of sailplane flying. He has also been a trustee of the organization's museum since it was founded.

In addition, he is Net Manager of DRNG — the daytime Region Net #6 (cycle 2) of the National Traffic System. His net meets at 9:45 a.m. and 3:30 p.m. on 7275 kHz and welcomes visitors.

Ted is a retired Lt. Commander of the United States Navy. — *Lenore Jensen, W6NAZ* □

Use plain stamps

Do you sometimes have the feeling you don't always receive all your QSL's? Here is a suggestion I would like to offer.

Don't use fancy or showy stamps on outgoing mail. Some amateurs feel that by doing so, the person who receives your QSL will be more inclined to reciprocate. In theory, this may be true. In actual practice, postal clerks in some countries (notably Argentina and Brazil) have been known to intercept such letters before they are delivered and either keep the stamps for their own collection or sell them to dealers. The cards are thrown away!

It's for this reason that Vatican City, for instance, known for its beautiful stamps, usually has a plain-looking postage meter impression affixed to especially important mail going to certain nations.
— *Tri-County Amateurs, Dixon, IL* □

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CP-1 Cigarette Lighter Cord	9.50
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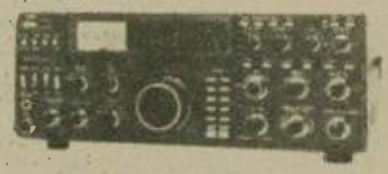

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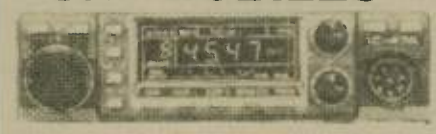

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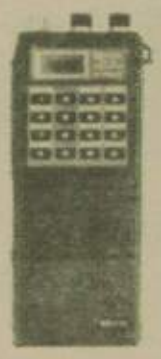

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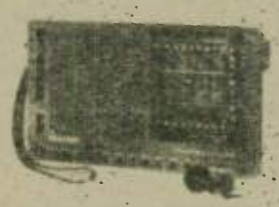

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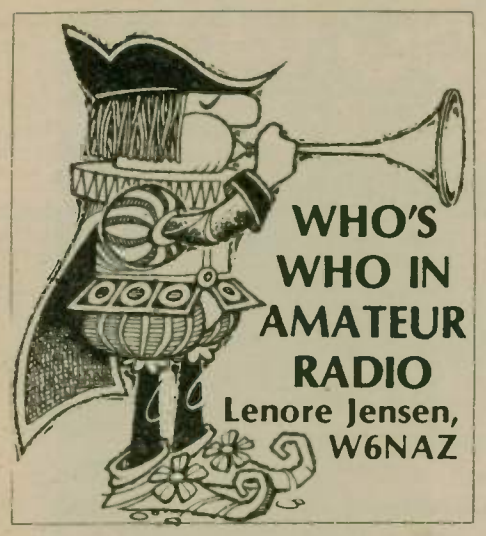

Dentist Martin Entine, WB4EYM, is accustomed to challenges, but there was one time when he ran into a beauty.

"It was the 4th of July," he recalls, "and a senator came to Philadelphia where I had my practice. He was suddenly struck with a terrific toothache, and a hospital sent him to me. His special problem was that he was to give a very important speech in four hours."

The dental situation was routine, but at its completion when the patient leaned over the little basin we all know too well, suddenly Marty was amazed to see the man's glass eye fall into it, breaking into many fragments. "The senator was distraught because of his impending important speech and looked to me for help. It occurred to me that possibly my experience making dentures could somehow be used. I wondered if the clear plastic material I had could be colored white with talcum powder. It could."

He then found that the iris of the original artificial eye was still intact so, encouraged, he carefully glued together the glass bits, took a mold of the sphere, filled it with plastic and added some red threads to simulate fine arteries, positioned the iris and "baked" the device.

"Possibly for the first time, an artificial eye was made from plastic. It wasn't perfect but the senator went happily on to his speech."

Because one of Marty's hobbies is making 16mm films, he decided to do a documentary called *Fabrication Insertion of Plastic Eyes.* (In worldwide competition at the Cannes International Surgical Film Festival, it won honorable mention.)

Valley Forge Military Hospital people heard about it, inviting him to come show the film. "They were at that time setting up a whole department and finally developed the process used today."

His films and his innovative ideas have made him a world traveler, having been asked to lecture in many countries. The first invitation was back in 1951, when there was to be an International Medical Congress in Sao Paulo, Brazil. A team of physicians had been touring seeking suitable speakers for the upcoming event. One of them suffered a toothache and was sent to Marty who used his own technique of opening up the tooth and gum, removing the infection and sewing up after, thus saving the tooth in 25 minutes. He had made a film on the subject which they wanted to see.

"Before I knew it, I was invited to Brazil in three months. I wanted to be familiar with Portuguese, so I used the sleep-learning method and was able to deliver the opening address in their language."

Our Embassy personnel down there was anxious to know about the method he had used. Later, he used it to learn Spanish when he was invited to teach at the University of San Marcus in Lima, Peru (as a Fullbright professor). "My family went with me, and we became a prototype for the Peace Corps. We lived in circumstances comparable to a Peruvian dentist, reported daily to the Embassy and did all we could to 'sell America' to our new friends."

Marty received a commendation from President Kennedy for his work.

Amateur Radio came into his life as a result of friendships established in countries visited and his hope of keeping in touch. Encouraged by his friend, William Bornmann, W3VXN, Marty earned his first ticket in 1966 and delighted in his overseas contacts.

Martin Entine, WB4EYM, D.D.S., FACD, FICD, FAGD, etc. . . . ***(Photo by Bob Jensen, W6VGQ)***

"Radio was of enormous help during the time I was working on cancer research, and I kept in touch with the head of such study in Israel so we could discuss its progress." Marty went five times to that country to lecture at Hadassah Hebrew University in Jerusalem.

He also participated in an investigation into a possible anti-cancer agent as an assistant professor in radiation therapy and cancer research at Hahnamenn Hospital and Medical School.

He's also lectured in England, Italy, Indonesia, Thailand, Malaysia and very recently in China. Marty's traveled to many other countries making filmed documentaries — Russia, Romania, Africa, Australia, New Zealand and New Guinea. Three of his dental teaching films have won medals at Cannes.

Though considered a superior dentist and specialist in total mouth rehabilitation, (practiced 45 years in Philadelphia), Marty has wide medical interests. "Like the time I was associated with the famous Dr. Charles Bailey, the heart and lung surgeon. I was called upon to make an *external* artificial lung for a cancer patient."

He also did specific extensive research into dental caries (decay), which he believes comes from a specific germ "and not only from sugar."

Adventures galore occurred during his travels. "Like the time in the Negev desert when I asked our driver to stop so I could take pictures of what seemed to be a perfect example of a Christmas card — even to a donkey, camel and everything — in front of a quaint building. Before I knew it, I was surrounded by Arabs brandishing daggers. Eventually the sheik arrived (in his Cadillac) and I learned I had blundered onto his harem! Happily, he was understanding and invited our entire party to a dinner."

"Another time when I had been invited to lecture at a South American country, I found myself landing in the middle of a revolutionary outbreak and spent a nervous hour in front of bayonets until I was cleared."

His enthusiasm for his camera also resulted in being detained in a police station in Romania, accused of being a spy. He was able to convince them, finally, it just wasn't so. (Marty was making a documentary on Dr. Ana Aslan's Longevity Clinic. He even took the treatment, "and I'll let you know later how it works.")

In contrast, he had the honor of meeting Pope Pius XII as one of the representatives of the American Dental Association during a convention held in Rome.

Now, with his wife, Millie, he is "semi-retired" and still practicing in Ft. Lauderdale, Florida. He can look back on a full career which included 25 years as Chief of the Department of Dentistry at Kensington Hospital, Philadelphia; as guest lecturer at Temple University; as a Fellow in both the American and International Colleges of Dentistry, as well as both the Academy of General Dentistry and that of Oral Medicine. (Marty's credits fill many pages!)

However, awhile back, on a cruise with the Holland American Line and talking with the captain, it turned out the crew needed a dentist as there were so few hours available in various ports. The captain invited Marty to think about it. The result is that the line's ships now have modern dental offices and Marty alternates with other dentists, going on cruises (Millie along, of course), being ready to solve the dental problems of the crews and some passengers.

He's always busy at home editing his many documentary films (with time out to watch the NBC Nightly News, as his son John is one of the producers).

Dr. Martin Entine is thus added to Amateur Radio's illustrious list of notable, interesting members. Hope you'll hear WB4EYM on 20. □

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

Chris Wilson

STATION APPEARANCE

George X. Sand, W4EOB, of Fort Myers, Florida is our January Station Appearance winner, and will receive a free year's subscription to **Worldradio**. Following is his own description of his shack.

The 40″ × 78″ operating table (with cutout for operator's chair) is of 3/4″ plywood and was mounted atop an old office desk that has two drawers on either side with additional storage space beneath.

The desk is movable (six 2½-inch rollers, three on each side) so it can be pulled away from the wall for maintenance. Atop the desk, as shown, is a main control panel, 28 inches high, with three individually removable 31-inch-wide panels of ½-inch plywood, covered with brown (grain-effect) formica — as is also the desk top finish.

This main control panel is for low-band equipment: Kenwood TS-830S with SM-220 station monitor, rotor control for the Cushcraft 4-element tribander mounted on a 50-foot E-Z-Way tower in the yard outside. The bottom panel is set at a slight angle for operating convenience (as are the two other bottom panels) and the switches and jacks in the lower right-hand corner permit selection of automatic Vibroplex or Vibrokeyer keys, either with or without electronic keying. Atop the center panel sits the Dentron Clipperton L linear and laying beside it an ICOM 2AT HT.

The left-wing panels of the operating console are reserved for 2-meter equipment, which includes a Yaesu CPU-2500R transceiver with switchable KLM 160-watt amplifier. The Swan WMD-6200 SWR/power meter is digital (unlike the twin meters on the low band panel) and operates from 50 to 150 MHz. To the right of this digital meter is the rotor control for a homebrew 16-element collinear array for 2 meters.

To the right of the rotor control is a 20 amp power supply for the 2500R. A 50-amp (230V) power supply for the KLM is mounted out of sight at the rear (for adequate ventilation). An outside telephone and a Heath HD-15 phone patch are also on this panel. The right wing panels are reserved for fast-scan TV gear (presently being assembled).

To the extreme left of the picture, beneath the window, is a coaxial patchcord panel that permits selection of the tribander, the 2M array, a 2M vertical (Ringo Ranger) and four dipoles cut to frequency for 160, 80, 40 and 30 meters (all homebrew, like their supports, buried PVC conduits, etc.). This patch panel, along with a large panel-switched relay, completely isolates the antennas and primary power sources (110V and 230V) when the station is not in use (lightning, etc. protection).

The operator has been an amateur since about 1930 and holds the Extra ticket, along with commercial General Radiotelephone and Radiotelegraph Operator Certificates. He has had marine, aircraft, broadcast and international radio experience. His XYL, Lou KA4YAB is a Tech. □

Dave Moore, WD6LDH (foreground), finds out what it's like to be on the other end of a pile-up while operating on Alcatraz Island, 27 October. W6AK is Sacramento Amateur Radio Club's call.

Art Hartwell, WA6YZD

Alcatraz

(continued from page 1)

public carrier would not transport gasoline for the generator. Scott then got in touch with the U.S. Coast Guard, who agreed to drop off the generator and gasoline for us. We were set.

The appointed day, Saturday, 27 October, arrived and seven operators were up bright and early for the trip. Included in the group, with Scott KB6CCG in charge, were Larry McCartin, KH6ITY; Larry Stanton, KA6ZDA; Jim Britton, WB6NRR; Jim White, N6JYG; Art Hartwell, WA6YZD; and Dave Moore, WD6DLH.

Operations were scheduled for 80, 40, 20 and 15 meters, both CW and SSB, plus 2M FM. Some problems did occur that limited activity severely, mostly because of front-end overloading on the 20-meter operation when 15-meter CW was on, so nearly all of the 15-meter activity was on phone.

It was a revelation to most of the ops to be on the other end of a "pile-up" for a change, and they all admit it was a learning experience and a lot of fun. Several hundred contacts were logged, and the certificates have gone to the printer. QSL route via Scott Jercich, KB6CCG, 2720 Tierra Grande Circle, Sacramento, CA 95827.

The weather was exceptional for the day, with the notorious fog thankfully absent, and visibility was of picture postcard quality. So much fun was had, some of the club members are thinking about making it an annual event.

Let's see, now, there is Farallon Island . . . and maybe Clipperton. □

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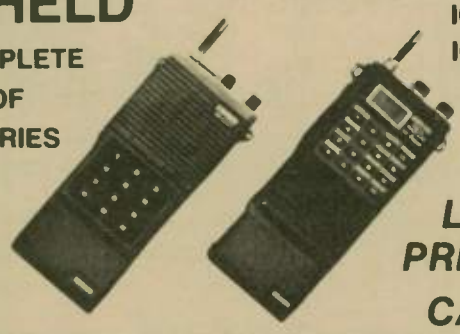

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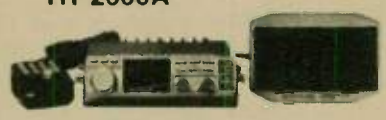

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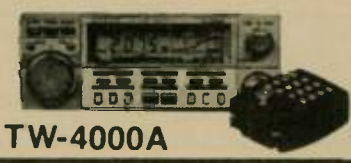

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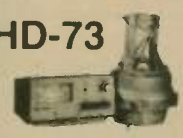

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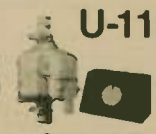

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Activities Calendar

22 - 25 December	I Brasil Halasz/ Pinheiro QSO Party
23 - 26 December	II Brasil Halasz/ Pinheiro QSO Party
30 December	Canada Day Contest
25 - 27 January	CQ World Wide DX Contest (160M CW)

W-100-N

243. YB0BZZ Erlangga Suryasarma
244. KR9A Wilfred F. Berg
245. VE3GQV Kenneth J. Smith

Ken Smith, VE3GQV, is the fifth Canadian to qualify for this award. The other four Canadians include Wilfried Antheunis, VE3FEA (#148); Cora Kappert, VE2AFU (#152); Steven Bamber, VE3JPJ (#158); and Vic McKinney, VE4AEX (#194).

Erlangga Suryadarma, YB0BZZ, is the third Indonesian to qualify for Worldradio's Worked 100 Nations Award, and belongs to several IARU societies, such as the ARRL, RSGB, NZART and WIA. He is also a member of AMSAT. The other Indonesians who hold this award include Niko Indarto, YB2BLI (#210), and Soegeng Wijono, YB2BOT (#235).

Mellish Reef (VK9)

The DXpedition to Mellish Reef by the Down Under DX Contest Club has come and gone. The team operating with the call VK9MR was very active in the October CQ World Wide DX Contest. The operators included A.J. Brucesmith, VK2AD; VK2CIA; Leslie Cullen, VK2WU; VK3CE; and VK5ARQ; they had three stations on the bands. CW operation had been planned both prior and following the contest.

One DX editor from the East Coast was somewhat disappointed with the fact that the DXpedition was picked for a contest weekend. This could be understandable if the ones needing Mellish Reef for DXCC were beat out by big-gun contesters for just another multiplier. But then again, the DXpedition was manned by a contest club, and evidently that was the purpose of the DXpedition.

I worked them on 10 and 15 meters with little or no effort at all, (although I would have been delighted to snatch VK9MR on 80 or 40 meters). Let us not dictate to DXpeditions as to when they should plan their operations. QSL's and donations, (if you so choose), may be sent via Leslie Cullen, VK2WU, Box 31, Winmalee 2777, NSW, AUSTRALIA.

Surinam (PZ)

The little South American country of Surinam, formerly Netherlands Guiana, is well represented by PZ1DV, who has been found on several bands, both CW and SSB. This station has been worked on 75 meters on 3.892 MHz at 0415 UTC. This ought to be of interest to DX'ers with a General Class ticket as that is much higher in the band than most DX stations operate.

If you check 20 meters near 14.007 MHz between 2100 and 2300 UTC, or 21.012 to 21.032 MHz on 15 meters between 1600 and 2200 UTC, you might catch PZ1DV, or even PZ1DT, who has been reported during the same time period.

If you need Surinam on 80 meters CW, look for PZ1AP who has been worked on 3.508 MHz at 0100 UTC, or PZ2AC, who sits on the band edge on 3.500 MHz around 0300 UTC.

Two of the above stations have also been reported on 40 meters CW. Check 7.002 MHz around 0500 UTC for PZ2AC, or look for PZ1DV, who has been reported on 7.028 MHz at 0300 UTC and again at 1000 UTC on 7.014 MHz.

If you prefer 20 meters SSB, look for PZ5ES, who has been found on 14.243 MHz after 0045 UTC.

Two young DX'ers from different continents pose at the Bavarian QTH of Gerhard Jaeger, DF2RG (right). Yoshi Kozuma, JA2MTO (left), was on a seminar trip in Europe and decided to visit some old friends in Bavaria. Both DX'ers are members of the Japanese DX Family Foundation. ***(Photo submitted by DF2RG)***

Mauritius (3B8)

Only three stations from Mauritius have been reported recently, and all 40-meter activity. The place to look for these stations is the lower 10 kHz of the CW portion of the band from about 0130 UTC. Look for 3B8CD, 3B8CF and 3B8DB. 3B8CD has also been reported as late as 1400 UTC on 7.011 MHz.

Mongolia (JT)

If you still need Zone 23 for your WAZ award, you need this one. On 75 meters, JT0AO has been reported often and has been found near 3.796 MHz from 1100 UTC. On 20 meters, JT1BG has been worked on 14.210 MHz around 0145 UTC.

CW operators should look for JT0EC who shows often between 14.012 and 14.038 MHz from 1200 to 1400 UTC, or JT0DJT, who has been on 14.025 MHz at 1700 UTC.

Chad (TT8)

Chad has been well represented by the efforts of TT8CW, reported to be operated by two French operators — Jacques Calvo, F6GXB, and Alain Faron, F6AJN (formerly FB8ZQ). They have been found on both modes, SSB and CW, on at least four bands. Check 7.003 MHz around 2100 UTC, 14.005 MHz between 2045 and 2230 UTC, and 21.004 MHz between 1600 and 1700 UTC.

This station has also been in list operations on 21.336 MHz around 1700 UTC and active in the INDEXA Net on 14.236 MHz at 2000 UTC.

Macquarie Island (VK0)

Macquarie Island continues to be one of the harder-to-work ones, and what may be a real prize is that if you land this one within the next 12 months, it will be with a YL operator. Denise Allen, VK0YL, recently transferred from Willis Island to Macquarie as a weather observer.

As reported in *QRZ DX*, she will be active on all bands plus 6 meters with use of a TS-120S. On 6, she will be using a borrowed FT-680 and Lunar amplifier. The QSL route for contacts made with VK0YL may be sent via Ken McLachlan, VK3AH. Of course, the turn-around time on the QSL duties will be dependent of logs when propagation and Denise's duties will allow.

Somalia (T52)

Jukka Koistinen, OH2JL, was reported to have arrived on or about 25 October for a stay of about six weeks. He was signing with the call T52JL, the same call he used about a year ago. QSL's for this one via the OH bureau or direct to OH2JL, Naulatie 3 B 3, SF 01650 Vantaa 65, FINLAND.

Fernando de Noronha (PY0F)

Two stations were reported active around the time of the October CQ World Wide DX Contest. These stations, PS7AAW/PY0F and PS7LP/PY0F, were reported to have restricted their operation to lists on 14.236 and 21.335 MHz.

From about 24 November, Tony Kittler, PY2AJK/PY0F, was scheduled to be active for a period of about seven days.

If you missed the above DXpeditions, mark your calendar for the month of January, as Andre Sampaio, PY7CW expects to be on the island operating as PY0CW.

Reported in *The DX Bulletin*, PY0FN

from the island was worked on 14.187 MHz around 2300 UTC on 11 October.

St. Vincent (J88)

At least three stations have been reported active from St. Vincent. J88AQ has been found on 15 meters SSB between 21.279 and 21.300 MHz from 1900 UTC, and on 10 meters if propagation permits, as he has been worked on 28.595 MHz around 2000 UTC. This station does a little CW work as he has been reported on 7.008 MHz from 0300 UTC.

The other two, J88AH and J88BI, prefer CW as indicated from the various reports. J88AH has been reported on 7.012 MHz at 0500 UTC, 14.002 MHz at 2130 UTC and 21.017 MHz at 1700 UTC. Only one report was found for J88BI, and that was on 14.029 MHz at 2040 UTC.

United Arab Emirates (A6)

A station signing A61AA has been reported active from this country since about 24 October. The operator is D.A. Shepherd, G3LCS, who is using commercial equipment and a log periodic antenna fixed in a northerly direction. The QSL manager for this one is R. Brown, G3LQP.

Malta (9H)

From 16 through 31 October, *The Long Island DX Bulletin* reports LA2TO was in Malta operating as 9H3DN. He was to be active in the October CQ World Wide DX Contest along with some of the local amateurs.

QRZ DX states that the calls 9H3DH, 9H3DI, 9H3DJ and 9H3DK were operated by DF8ZH, DL1RK, DL1ZQ and DF4ZL, respectively. All QSL cards for the German DXpedition should be sent via Ferdinand Kuppert, DF8ZH, Heppenheimer Str. 70, D 6090 Ruesselsheim 5, WEST GERMANY.

Other activity from Malta includes 9H1ED and 9H1EU found on 75 meters. 9H1ED was on 3.795 MHz around 2100 on 24 October, and 9H1EU was on 3.783 MHz an hour later on 21 October. On 20 meters CW, 9H3ZJ was worked on 14.065 MHz around 1400 UTC on 20 October.

Qatar (A7)

Reports are scarce for this one, but early in October on 75 meters A71AD was on 3.795 MHz from 0300 UTC worked the east coast of North America.

Faroe Islands (OY)

OY3H was busy on 14.007 MHz from 2145 UTC the end of October while OY6FRA was on earlier in the month near 14.059 MHz at 1400 UTC working the central regions of the United States. These were the only two reports we were able to find for the Faroe Islands. Perhaps DX'ers do not consider them rare enough to report, or DX editors don't find them rare enough to print. That can be unfortunate for the beginning DX'er who would be happy to work anything.

Turkoman (UH8)

With propagation the way it is, most of the central Asian Soviet Republics will become harder to work. During the entire month of October, only one UH8 type was reported and that one via *The DX Bulletin*. UH8AAC was worked on 7.006 MHz around 2400 UTC on 06 October by an East Coast DX'er.

Tadzhik (UJ8)

Also reported in Jim Cain's DX bulletin was UJ8JL, was was worked on 14.024 MHz around 1400 UTC on 06 October (probably the same East Coast DX'er). That, too, was the only one reported that month.

Papua New Guinea (P29)

Some time back, Jim Smith, VK9NS, went back to Papua New Guinea on an assignment to help pay for his Heard Island DXpedition. During his free time, Jim is busy operating as P29JS — the same call he used prior to relocating to Norfolk Island, (remember the P29JS net). He has been quite busy giving 40-meter contacts to the deserving DX'er. Look for P29JS near 7.007 MHz beginning about 1130 UTC, although he has been reported on as early as 0900 UTC. Jim also operates SSB and has been up on 15 meters on 21.262 MHz around 0130 UTC. I worked Jim on 21.296 MHz at 0043 UTC on 14 October and three minutes later, 8 kHz down in frequency, I worked Kirsti VK9NL, his XYL, who remained behind on Norfolk Island.

Also busy on 40 meters from PNG is P29KY, who has been reported at least two times — 7.002 MHz at 1220 UTC and 7.004 MHz at 0900 UTC, two days in a row. P29JM has been found on 21.290 MHz around 2100 UTC; down on 80 meters, P29PR was worked on 3.503 MHz around 1200 from the East Coast the last day in September (perhaps the same East Coast DX'er).

160 meters

While the rest of the bands may be in a sorry state, the top band shows some promising DX. We have pulled the various 160-meter reports from the DX newsletters and have listed them below. Some of these reports were from the October World Wide DX Contest. As always, frequencies and times are in kHz and UTC.

CE8ABF	1835	0300
D44BC	1835	0200
EA3VY	1832	0500
EA8AAU	1855	0400
F6BKI	1850	0600
FG7AM	1832	0300
FO8PR	1830	0600
FW0BX	1837	1000
GD4BEG	1838	0500
GI3OQR	1822	0400
GW3YDX	1832	0600
HB0NL	1834	0500
HI8DAF	1838	0100
HI0MF	1844	0400
HK0BKX	1823	0200
HK0HEU	1835	0415
HP3FL	1830	0500
HZ1AB	1827	0200
KD7P/KH2	1827	1300
KJ9W/KH2	1826	1130
KH6CC	1832	0600
KL7AF	1805	0700
KL7GKY	1835	1100
LU5WP	1831	0530
LZ1KDP	1833	0300
LZ2BE	1834	0400
OK2BWM	1834	0400
OK2PGU	1833	0400
PJ2FR	1831	0200
SM6EHY	1837	0500
SV5OX	1835	0230
SV0AA	1825	0215
T32AF	1825	0600
TG9AL	1835	0600
TI2CC	1828	0500
UB5ZAL	1836	0400
UT5AB	1832	2400
UO5GQ	1850	0400
VE3OJY	1837	2230
VK3BEE	1813	1200
VK5KL	1807	1100
VK6HD	1807	1245
VK9ZA	1830	1100
VP2EC	1817	2400
VP2MIX	1825	0300
VP2MO	1839	0100
VP9AD	1829	2400
XE1ME	1835	0425
XE1WAC	1815	0445
Y39XO	1835	0430
YB5ASO	1832	2200
YU1EXY	1834	0400
YU2IF	1830	0400
ZK1XC	1832	1000
ZL2ANF	1805	0800
ZL2ANR	1828	1000
ZL2BT	1831	0700
ZL2SG	1805	0630
ZL3AG	1831	0700
ZL3GQ	1805	1030
3D6AK	1823	0300
3X4EX	1835	0600
4X4NJ	1827	0300
6Y5IC	1835	0500
7X5AB	1840	0400

If you want to take the time, you will see there are quite a few countries here and of interest if you are working toward 160-meter DXCC.

To add to the above list, Wolf Bedrich, Y39XO, is active each Saturday. He is only running 15 watts. Guam is represented by Robert Winters, KD7P/KH2, who is on daily from 1200 to 1300 UTC at the above frequency.

If you need Greece on this band, check around 1835-1840 kHz for SV5OX. He is usually there after 0230 UTC. And from Israel, 4X4NJ makes it a habit to visit the band between 1832 and 1834 kHz from 0100 UTC.

The Long Island DX Bulletin reports that Paul Kerby, 3D6AK, is active on CW from Swaziland on Sundays between 0300 and 0400 UTC in the 1823-1835 segment. Paul has been known to show on other days.

Prefixes

Our Canadian neighbors recently threw in some more interesting prefixes, and if you were active in the October World Wide DX Contest, you should have picked up a few. The special prefix is to honor the Centennial of the Prime Meridian Conference that established the adoption of GMT and to commemorate the work of Sir Sanford Fleming. These prefixes, XN1 through XN8, SL1 and XL2, and XO1, are the same as VE1 through VE8, VO1 and VO2, and VY1. The Canadians may use these prefixes through 13 December. The suffixes of the calls remain the same.

6D1FIC is a special event station located in Irapuato, Mexico, celebrating the International Cervantes Festival. *QRZ DX* reports that this is the first time that prefix has even been used. The way it is said, Bob Winn, W5KNE, the newsletter editor, questioned this. I checked my WPX file and found that I had worked 6D1AA several years ago, and more recently, 6D1MEX, in the 1978 World Wide DX Contest.

Other prefixes reported in *QRZ DX* include 9I20 to celebrate the 20th anniversary of Zambian independence; in Nigeria, for the celebration of their 24th anniversary, amateurs used the special prefix of 5N24.

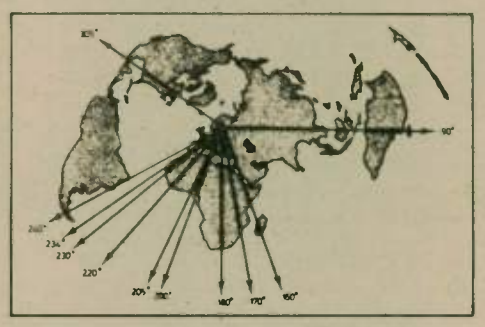
During the Baghdad International Fair in November, the operators from YI1BGD used the special call of YI0BIF. QSL cards for this one go via YI1BGD, Scientific Center, Box 5864, Baghdad, IRAQ.

In El Salvador, to celebrate the XI International Fair being held in San Salvador at the same time, members of the Radio Club YSDX operated the special event station HU11FI at the fairgrounds. The club had also been assigned HU1DX during the same time period for special operations throughout San Salvador.

Great Circle Maps

Norm Brooks, K6FO, one of our local DX'ers, suggested including Great Circle Maps from different parts of the world as a part of this column. Norm finds these maps fascinating and believes you readers would appreciate them also.

Therefore, our first Great Circle Map is that of its center at Helsinki in Finland. See how Martti Laine, OH2BH, points his antenna to come into your house. Incidentally, for a short write-up on Martti, see "How's DX" by Ellen White, W1YL, in the November 1984 issue of QST.



Map courtesy of Radio Finland

A day with 9N1MM

The following story was lifted from the Kansas City DX Club's newsletter, which was written by John Chass, W0JLC, the club's president.

A day with 9N1MM

I had the distinct pleasure of acting as host for Father Moran, 9N1MM, while he was in Kansas City. Keeping up with this 77-year-old dynamo was both challenging and interesting.

Father Moran arrived early in the morning on a flight from Chicago. I was expecting a lot of baggage, but to my surprise, was greeted with two small carry-ons. In a few minutes we were deep in conversation and headed toward the QTH.

Father advised me that he had over 160,000 contacts during his stay in Nepal and that he was the first Caucasian to enter the country in 1948. A U.S. citizen and Jesuit missionary, Father went to India to finish his schooling and became a Catholic priest in the '20s. He worked in India and established a school in the '30s. He had made several trips to Nepal by invitation of the king and finally took up full residence in 1948 for the purpose of starting a school for boys. In 1952, Father obtained permission to operate as 9N1MM and has been active ever since.

We arrived home and got Father settled in his room. After some light refreshments, we viewed a one-hour VTR on Father's station, the school, local scenery (including some unbelievable shots of Mt. Everest from a plane), and general activities and festivals from Katmandu.

Father's school is located about 10 miles from Katmandu. I was surprised that the average temperature in Katmandu was 60 degrees Fahrenheit (due to the location of Nepal from the equator). Father's QTH is about 6,000 feet above sea level, which accounts for the cooler temperatures.

Father Moran, 9N1MM (left) is presented with a gift from the Nanaimo DX Association by Ernie Harding, VE7GDX, during his visit to Nanaimo on Vancouver Island, on 12 September. The visit was hosted by the Nanaimo Amateur Radio Association and the Nanaimo DX Association, consisting of a dinner and meeting featuring Fr. Moran's talk and slide show. "Fr. Moran is a delightful character with a wonderful sense of humour and his visit was enjoyed by all," writes Ernie Harding, VE7GDX.

Father's shack is exclusively Drake with a TH-6 tribander. When I queried about CW and low-band activity, I received the following reply.

Yes, 9N1MM does have a CW key, but it's reserved for guests. (Father Moran is an avid SSB operator and prefers this mode.) As far as 80 and 40-meter operation, Father commented that for years he had 80 and 40-meter slopers up. On 80, Father commented that the image from broadcast stations and other commercial broadcasts makes the band useless. On 40, signals just don't seem to penetrate the mountains. After five years, he removed the 80 and 40-meter slopers.

Father checked into the missionary net on 20 meters in the early afternoon and made several contacts. From there it was off to tour Kansas City. The three-hour tour encompassed the sights of Kansas City while the conversation was centered on Nepal. Nepal is exactly halfway around the world from Kansas City, with a 12-hour time difference. The population is around 16 million. Mt. Everest is Nepal's most famous landmark.

It is virtually impossible for an outsider to get a ham license in Nepal (but Father does need help in operating his station). Nepal has a sovereignty which is headed by a king. Only 5 percent of the homes have running water of any kind. Until five years ago, very few tourists went to Nepal. Now with jet service to Nepal, about 100,000 tourists visit yearly.

We returned from our city tour and previewed the slides for the presentation at the dinner that evening. We had a great evening at the special dinner meeting, and the conversation and food was great. We returned home rather late, but Father was up bright and early the following morning. About 10:00, he boarded a flight for Topeka.

Father was on tour till early November, with over 25 stops on his agenda. If you were able to catch him somewhere else, I hope you made it a point to do so. He's an extremely interesting ham and individual.

NOTE: If anyone is interested, round-trip airfare to Nepal is around $3,200 with unlimited stops to and from. You can go via Europe and come home via Asia.

We often use items that have been printed in the various DX club newsletters we receive. We would appreciate being included on your DX club's mailing list. Your club might just have an interesting item to share with **Worldradio** readers.

Worked German Large Cities

With the lack of good propagation, perhaps now is the time to check your QSL cards to see what DX awards you may qualify for. From time to time, we include an award of some sort in this column. Readers who have been with us prior to 1978 will remember that I used to be the Awards Editor for **Worldradio**, and continued to prepare that column for several months after assuming the role of DX Editor.

Worked German Large Cities, is an award sponsored by DIG, a German paper-chasers club. This award is offered to all licensed radio amateurs who can prove contacts with German cities (those cities with a population of 100,000 and over). The award is available in three classes: *Class 3* — 10 cities; *Class 2* — 20 cities; *Class 1* — 30 cities.

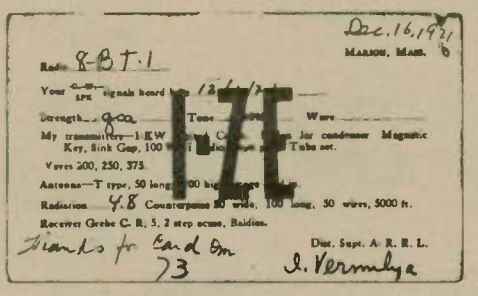
The requirement for European amateurs is double the above amounts. The award is available for mixed mode or CW only. All contacts must have been made since 01 January 1962. To apply for this award, send a list of contacts, certified by two licensed amateurs that you have the QSL cards in your possession, with a fee of 7 DM, (or 10 IRC's) to the award manager; H.W. Schutte, DB3OR, P.O. Box 810660, D3000 Hannover 81, WEST GERMANY. The award is also available to SWL. Ten IRC's sounds rather high, and we would suggest you either try to get hold of the 7 DM, an international money order, or throw in two "green stamps".

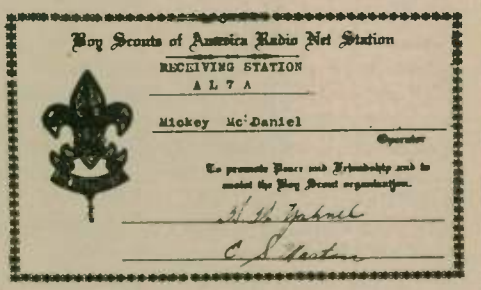
Antique QSL Department

Although this is not a DX QSL card, it is the oldest we have seen. This month's gem was submitted by Bob Baird, W9NN. Bob made the contact with 1ZE of Marion, Massachusetts, back on 01 December 1921. Bob writes, "I. Vermilya was a famous amateur — pre-War I. His first call was 1HAA. Friend of H.P. Maxim. Only the *real* O.T.'s will remember him very well.

"I was 8BTI in Dayton until I moved to Illinois in '27 and changed to 9NN."

In the October and December issues, we listed QSL cards that came from Roy Weisbach, W9UX (ex-W9PST, 9UU), now a Silent Key. Bob W9NN says he used to work Roy many times on spark and that this brought back good memories. That is one of the purposes of the Antique QSL Department — to bring back memories to the old-timers and show the new-timers what things used to be. And, stay tuned — we just received another batch of W9PST/W9UX cards from Bob Truhlar, W9LNQ. We will be running them shortly.





The other card is not for a station in Alaska. The card for AL7A was submitted by Mick McDaniel, W6FGE, who writes:

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 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".

FEBRUARY 1985

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	17.8	24.1	26.6	9.8	21.1
0200	13.3	20.9	26.5	9.7	17.5
0300	9.7	17.6	22.6	9.5	15.1
0400	11.8	15.2	19.3	7.7	13.8
0500	10.9	13.6	16.8	6.8	13.5
0600	10.8	13.1	15.2	7.8	13.8
0700	10.9	12.1	14.6	10.5	14.5
0800	11.0	11.5	14.3	11.5	14.2
0900	10.7	11.4	13.7	11.4	13.3
1000	10.1	11.9	13.5	11.3	14.8
1100	9.4	12.6	14.0	11.0	12.5
1200	9.3	12.3	13.8	9.9	11.1
1300	10.9	11.2	12.1	10.7	12.8
1400	14.3	10.7	11.1	14.0	17.6
1500	18.0	12.6	13.9	18.0	22.3
1600	20.8	13.6	16.0	20.6	24.9
1700	22.9	12.7	14.4	18.5	25.9
1800	24.6	12.0	14.0	16.1	26.7
1900	26.0	12.4	16.0	13.8	27.8
2000	26.6	14.7	19.7	11.8	28.6
2100	26.5	17.6	22.7	10.9	28.9
2200	25.0	22.2	23.6	10.3	28.8
2300	22.7	25.6	23.8	9.7	27.7
2400	20.6	25.9	24.8	9.8	24.9

"In the early 1930's, the Boy Scouts of America, under the direction of H.W. Yahnel, W2SN, were promoting SWL'ing in the BSA troops/ranks by issuing 'Official' BSA Receiving Station Licenses to interested Boy Scouts.

"At the time, about 1933, I was a Boy Scout and applied for a 'license' and soon received the call AL7A — which translated meant ALBANY (OREGON), Seventh call district and the A was for the first station license issued in Albany, Oregon. (Probably still the only one!) Anyway, this license and my interest in SWL'ing and radio soon caused me to drop out of scouting and become a ham, (W7FGE 1935)."

Mick recently worked the "new" AL7A, Lee Williamson of Alaska. He wonders if there are anymore old BSA types out there who were officially licensed.

QSL information

Ron Szama, LU2A, reports through *QRZ DX* that all QSL cards for the AZ5ZA, LU5ZA, LU5ZI and LU5ZR operations have been sent out. He will be turning over all logs and QSL cards to the Radio Club of Argentina at P.O. Box 97, 1000 Buenos Aires, Argentina. Lots of mail simply disappears down there. (The average postal worker in Argentina makes about $80 per month.) Ron will handle your cards personally via P.O. Box 100, 1428 Buenos Aires, ARGENTINA.

Most DX'ers obtain their supply of IRC's (International Reply Coupons) at reduced prices from the various QSL managers. They are usually available in quantity at 40 cents each. This is a happy medium price considering that they cost 65 cents to purchase at the post office and worth only the price of a first class surface stamp when redeemed at the post office.

We recently came across two sources, and there is a good chance the supply may be gone by now. But it wouldn't hurt to try contacting Norm Koch, K6ZDL, at P.O. Box 1351, Torrance, CA 90505. Norm offers IRC's in minimum lots of 50 at 40 cents each. Include an SASE with your order.

Terry Baxter, N6CW, also offers IRC's for sale at 40 cents each, postpaid. No minimum number was given. Terry can be reached at 4639 Katherine Pl., La Mesa, CA 92041.

June Braunz, KM8E, writes that she is the QSL manager for Diane Meyer, EL2EF, in Monrovia, Liberia. KM8E's address is 1218-60th St., Rt. 1 Pullman, MI 49450.

Wayne Gingerich, W6EUF, spent a month in Europe visiting amateurs in eight countries and operated as W6EUF stroke HB9, HB0, SM0, and OH2, 3, 5 and 0. Wayne asks that anyone needing a QSL card should request a card(s) via his Callbook location: 2301 Canehill Ave., Long Beach, CA 90815.

QSL routes

AI5P/TF	—W3HNK	HZ1HZ	—N7RO
AP2ZA	—W6NLG	J5WAD	—UA4PW
BT8CD	—JR1HHL	JY8YD	—DL8YD
BV0W	—W4WJ	K4YT/DU	—KE3A
BV0YL	—JG1QGT	K8AQM/VE2	—KA8SEW
C30BBC	—F6EGG	KA2DIV/V2A	—WB4OSN
CE8ABF	—LU8DRM	KD7P/KH2	—KS7L
CE0GBL	—WB3CQN	KH0AC	—K7ZA
CN8EJ	—F5LW	LU1UDZ	—LU7UBA
CT2CQ	—W4PKM	LU1ZI	—LU2CN
CU5BOH	—CT1BOH	NH6J/NH8	—JE1JKL
CY9SPI	—VE3FXT	ON8SB/A	—PA3CZA
DJ0SB/C6	—DJ0SB	P44A	—K1AR
EA9NW	—EA4BGL	P46S	—K3UOC
EL2AT	—OE3NH	PJ8DSS	—SM5AQD
F5RV/TK	—F5RV	PS7AAW	
F0AHY/FC	—DL4FF	PY0F	—PT7BZ
FW0BX	—ZL1AMO	PS7LP/PY0F	—PT7BZ
GD4WBY	—KA1JKN	PY4WAS/PU8	—PY4WAS
HG19HB	—HA5KKG	PY0CW	—PY7CW
HH2B	—N4WW	PY0FN	—PY7VEB
HH2Q	—I2YAE	PZ5ES	—N8DE
HH5CB	—K9WJU	T52JL	—OH2JL
HH5JS	—KC6JH	TG9HH	—N5HH
HL9WK	—KA1CWK	TI1C	—K6VNX
HP1XKR	—JA7AGO	TL8TX	—K0VZR
TR8DM	—F3CY	ZS3HL	—KE1A
TR8DR	—W2PD	1Z9A	—W7PHO
TR8JYC	—REF Bureau	1Z9YL	—W7PHO
TT8CW	—F6GXB	3X4EX	—N4CID
UI2M	—UZ1ZZZ	4U39UN	—W2MZV
V2ARS	—K8BA	4V2C	—NQ4I
VE2USA	—AC8W	5N24AMA	—5N8AMA
VI3WI	—VK3WI	5R8AL	—WA4VDE
VK0YL	—VK3AH	5W1DZ	—WB2LVB
VP2MLD	—WB2LCH	5W1EJ	—W0WP
VP2MW	—G3RRS	5W1EZ	—JE1JKL
VP8AOB	—K0JW	5Z4MX	—SM3CXS
VP8ASR	—G4GHP	6D1FIC	—K9AUB
VP8BAI	—GM4RPO	6Y3M	—KT3M
VP8LF	—G3VPW	8P6GG	—N4CTC
VQ9AC	—KA3EDN	8P6MZ	—WA2OGR
VQ9DG	—WA3HUP	9H1EL	—LA2TO
VS6TA	—N4PN	9H3DN	—LA2TO
W6TEX/C3	—W6TEX	9J2BO	—W6ORD
YI0BIF	—YI1BGD	9J2TJ	—N8JW
YZ3F	—YU3MX	9M2AV	—W4SKE
ZF2BN	—W4HET	9M2HB	—N4FFN
ZK1XC	—PA3BFM	9V1NR	—W4SKE
ZK1XD	—PA3BFM	9V1TL	—W4SKE

C53FY —P.O. Box 160, Banjul, GAMBIA
CE0AA —P.O. Box 700, Santiago, CHILE

CM2QP	—P.O. Box 1, Havana, CUBA
CO2GB	—P.O. Box 9, Havana 1, CUBA
CT2FN	—P.O. Box 12, Flores Island, AZORES
D68WB	—P.O. Box 542, Grand Comoros, REPUBLIC OF COMOROS (via FRANCE)
FH8CB	—P.O. Box 50, F97610 Mayotte Isle, FRANCE
HC1SK	—P.O. Box 8283, Quito, ECUADOR
HI8RCD	—P.O. Box 1157, Santo Domingo, DOMINICAN REPUBLIC
HI0MFP	—P.O. Box 2191, Santo Domingo, DOMINICAN REPUBLIC
HK6KKK	—P.O. Box 880, Pereira, COLOMBIA
HU1IFI	—P.O. Box 05-43, San Salvador, EL SALVADOR
PZ1DT	—P.O. Box 2163, Paramaribo, SURINAM
PZ1DV	—P.O. Box 9006, Paramaribo, SURINAM
PZ8AR	—P.O. Box 566, Paramaribo, SURINAM
ST2SA	—P.O. Box 1533, Khartoum, SUDAN
TL8GE/ST0	—Y. Delatouche, P.O. Box 8, F78570 Andresy, FRANCE
XN3XN	—Canadian DX Association, P.O. Box 333, Listowel, Ontario N4W 9Z9 CANADA
XT2BR	—P.O. Box 116, Ouagadougou, VOLTAIC REPUBLIC
YB4FU	—P.O. Box 27, Banka Island, INDONESIA
ZS3GB	—P.O. Box 5165, Tsumeb 9000, NAMIBIA
5B4NG	—P.O. Box 1492, Nicosia, CYPRUS
9J2WS	—P.O. Box 710009, Mansa, ZAMBIA
9Q5RN	—P.O. Box 12646, Kinshasa, REPUBLIC OF ZAIRE

Contributors for this month include DF2RG, DJ9ZB, K3IXD, K3ZR, W6EUF, W6FGE, K6FO, KM8E, W8MEP, W9LNQ, W9NN, Kansas City DX Club, Southern California DX Club, Radio Finland, *The DX Bulletin*, *The Long Island DX Bulletin* and *QRZ DX*. No copies of *DX News Sheet* were received this month, so we assume that RSGB has dropped us from their distribution list.

Here at N6JM we finally hit 100 countries — worked that is — on 40 meters with a contact with VP2VCW. Now we

(please turn to next page)

AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

AMSAT annual meeting

More than 200 participants attended the annual meeting of AMSAT at the AMFAC Hotel in Los Angeles on 10 November 1984. They came from as far away as Tasmania. Australia, New Zealand, England and all parts of the United States.

The meeting was opened by John Browning, W6SP, Chairman of the AMSAT Board of Directors. The Program Chairman was Dr. Cleon Vowell, AD6P. Dennis Dinga, N6DD, was Facilities Chairman.

Ten papers were presented in all. Over the next several months we will discuss each of them in depth in this column. They ranged from "Advanced Gateway Concepts" through "Phase IV and Future Projects", stopping along the way at "JAS-1", "Project Companion — Amplitude Compandered Sideband", and "Computers and the Satellites".

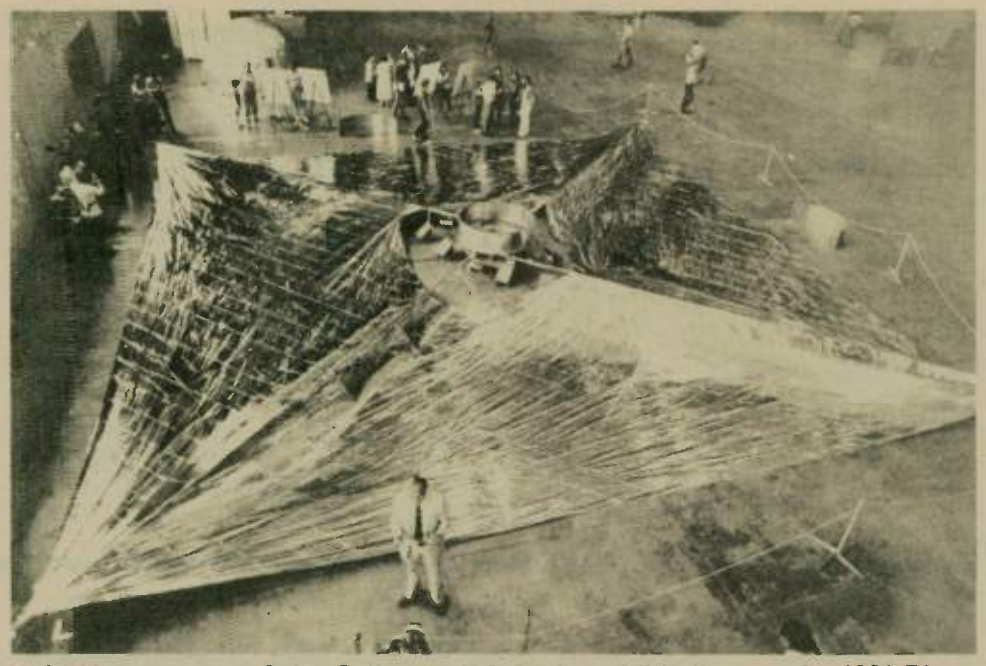
Moving spacecraft on solar photons

One session which we will discuss here is the "Solar Soil Project; presented by members of the World Space Foundation, Mark Bergham, Robert Staehle and Chauncey Uphoff, with an assist from John Champa, K8OCL.

One of the significant space science projects which bit the dust in the Reagan Administration's early budget cuts was the Solar Soil Project. This NASA Project at JPL was to, among other things, rendezvous with the Halley Comet. The World Space Foundation, The Planetary Society and AMSAT are now jointly involved in carrying forward the project.

The plan is to place Amateur Radio and possibly ATV equipment in a solar soil to observe the coma, nucleus and tail of Halley's comet and transmit telemetry and images back to earth on amateur space frequencies.

Solar Sailing is accomplished when the photon energy of the sun impinges on a very thin reflective membrane-like soil and moves it along very much in the manner of sailing in the water. In the extremely low gravity of the space environment and the absence of restricting atmospheres, the solar soil is propelled along by the action-reaction principle as the photons strike the sail and are reflected off the sail surface.



A 2,500-square foot Solar Sail unfurled on the exhibit floor at the 1981 Planetary Society's Planetfest. See text for details. *(Photo by Richard Dowling, World Space Foundation)*

Photo-simulation of World Space Foundation Solar Sail model, with Earth as it might appear in a late mission phase, leaving Earth's orbit. *(Photo by METAVISION, World Space Foundation)*

Accompanying this column is a photograph of an unfurled solar sail shown at the 1981 Planetfest in Pasadena, California. It extended 2,500 square feet. In the center of the unfurled sail of aluminized Mylar is the ring around which the sail is wound in its stowed position and into the center of which will be installed the Amateur Radio and TV apparatus expected to transmit views of comets, asteroids and other astronomical phenomena, and telemetered data about these space objects.

A launch opportunity from a space shuttle in 1988 is being discussed with NASA who have resumed their interest.

AMSAT/OSCAR-Phase IV

Vern Riportella, WA2LQQ, presented a paper on the future of AMSAT's spacecraft. An ambitious proposal has been put forth to launch six geosynchronous satellites into orbits about the Earth.

There will be three pairs positioned at 120-degree points about the equator. One pair will be over Europe, probably east of the Prime Meridian. The second pair will be over Equador, and the third over a point between Japan and Australia. Each of the pairs will be redundant and the second of a pair will take over in the event of failure of one of the pair. Each satellite will be equipped with channelized transponders in one of the amateur space bands with access by tone pad signals.

It is projected that amateurs anywhere in the world will be able to access the transponders and through a linking system make contact with any other amateurs wherever they are situated. The frequencies discussed were at 13cm.

What advantage the proposed system would have over the existing satellite systems is expressed in the fact that all you would need is an antenna fixed in place and directed at the satellite. No rotors, no looking up of tables to know where to point, and no need to calculate orbital parameters. Once your station is set up, it stays.

MARCE will fly GASCAN again

The Marshall Amateur Radio Club's Getaway Special No. 007 Experiment Cannister was working fine when it was checked out on the ground following the landing of the NASA Shuttle STS-41G in October. However, only the weakest of signals from the GASCAN had been reported during the flight.

In view of the many problems the STS-41G had to deal with on this mission, there were certainly good reasons for the poor reception. The spacecraft's attitude had to be adjusted so that the GASCAN's antenna, which was atop the MARCE experiment cannister in the shuttle's equipment bay, would have an optimum space-to-ground transmission path when the bird passed over the stations trying to receive the signals from the experiment package.

You may recall that in order for the best path to ground to be achieved, the shuttle must fly belly-up. We're looking forward to the follow-on flight of the MARCE GASCAN with considerable interest.

Is Mode-L uplink frequency illegal?

W.D. McCaa Jr., K0RZ, has queried the FCC on the use of the Mode-L band frequencies for AMSAT/OSCAR-10. He believed that an oversight may have resulted in the failure to include the 1260-1270 MHz band in the WARC 1979 agreements on the Amateur Satellite Service.

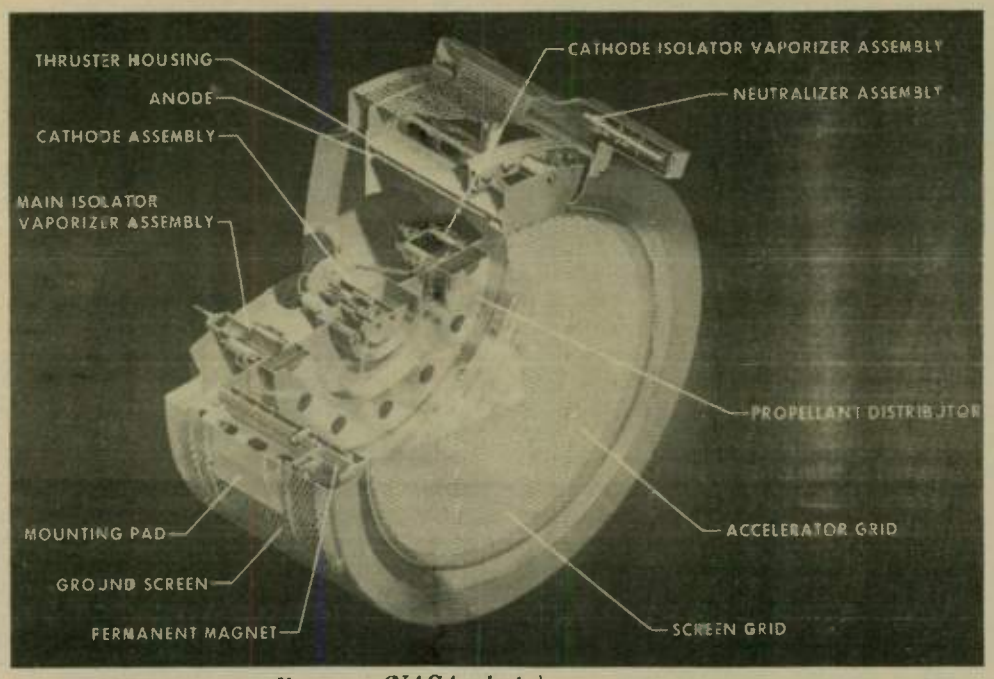
John Johnston, Chief, Personal Radio

DX World

(continued from page 35)

can concentrate on 80 meters and though we are halfway there, we will have our work cut out for us. It will be work as we only run 100 watts to an inverted "V" antenna. I think I am going to have to come up with another antenna scheme.

So, from a little pistol here, have a Merry Christmas and a good New Year. Good luck with your DX'ing this season. Very 73 de John, N6JM. ☐



Ion engine cutaway diagram ***(NASA photo)***

Branch. Special Services Division, of the FCC advised McCaa that 1269-1270 MHz, Mode-L uplink frequency for AMSAT/OSCAR-10, *was* in the band allocated for Amateur use in the WARC (1979) agreements, but Part 97 of the Commission's Rules has not yet been amended to make those frequencies available to stations in the Amateur Satellite Service.

Ion drive spacecraft

Science fiction buffs used to write about "ion engines". JPL put in more than a decade of effort to develop an ion propulsion engine for NASA. It was intended to propel an instrument package to a rendezvous with the comet Halley in 1986.

The Reagan administration's budget-cutting eliminated this worthwhile scientific endeavor along with many others. Now the Russians and the European Space Agency are working on a Comet Halley Rendezvous Project, among others. American scientists expect to have a science package on the Halley Rocket.

The basic principle of an ion propulsion engine, as planned in the NASA/JPL project, included a mechanism to produce thrust by using the energy of the sun to vaporize fuel, charge it electrically by ionization, and accelerate the resulting ion plasma to propel a rocket to tremendous speeds with a high voltage. In one version of the plan, the high voltage was to be generated by silicon solar panels.

In the Lewis Spaceflight Center's PIX spacecraft, high voltage solar cell devices were tested in the space environment. The PIX Spacecraft was a companion payload with AMSAT/OSCAR-8 aboard the Delta Rocket which carried them aloft in 1978.

What makes the ion engine so attractive as a propulsion system for a spacecraft is that its nominal thrust of only .08 pounds for each engine is realizable in the vacuum of space where there is a negligible gravitational field giving a fuel efficiency 10 times that of a conventional rocket. The ion engines can be clustered for greater thrust.

In the proposed Halley Mission, a rocket of this type with 10 to 12 mercury ion engines was contemplated. No one was thinking in terms of *Star Wars* when the project was wiped out! The engines built for the initial tests lasted longer than 10,000 hours (416 days). Tests of even longer duration have been reported.

The solar panel arrays to provide electric power were roll-out arrays of the type recently tested aboard a shuttle. Such fold-up and roll-out solar electric arrays using new solar cells, fully extended to their potential span of 150 meters (492 feet), are capable of 100kW of power.

The Reagan administration's budget-cutting axe eliminated this project along with a great many other science space projects which would have greatly enhanced American scientific prestige throughout the world.

Instead, now the European Space Agency, the Soviet Union and Japan are going to deploy spacecraft into the vicinity of the Halley Comet. American scientists are going to have some science packages aboard some of these international studies of a phenomenon that takes place only once in 76 years.

I do not believe it has occurred in this instance, but I have heard that science projects have a way of continuing. A recent MIT Technology Review article devoted considerable space to this phenomenon in academic research projects. □

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

Around the Air Force MARS circuit

Langley MARS going mobile

Jim Johnson, AFA2JP, from the Langley Air Force Base Support Team, reports that the team has recently pooled its private finances and purchased a used van. The vehicle required some moderate work to make it roadworthy. The kingpins were replaced and both brake and exhaust systems were overhauled. Next on the list is interior and exterior body work.

When the vehicle passes the scrutiny of its dedicated workers who regularly turn out evenings and weekends, the communications equipment will be installed and it will provide A6A2LA (the Langley Base Station call) a mobile site communications capability to be used during exercises, emergencies and civic support functions.

The group thanks a particular local area garage owner and several of his employees for donating the use of tools and service bay facilities.

Jim says the project is on schedule and 22 percent under budget.

Pennsylvania Army and Air Force MARS get-together

The Pennsylvania State Air Force and Army MARS groups had a joint meeting on 05 August at the Carlisle Barracks Officers' Club, U.S. War College, Carlisle, Pennsylvania according to John Dyckman, AFA1LF.

This joint meeting began at 0900 hours, with opening ceremonies, introductions and award presentations. The group was addressed by both Air Force and Army State MARS Directors. Following the luncheon at the club, separate Army and Air Force afternoon sessions took place.

It is hoped that this is the forerunner of many such meetings and eventual closer ties between the groups.

— Paul Turkheimer, AFA6YS/WA6NKL

Going to Tokyo?

If assistance on Amateur Radio matters is required whilst in Tokyo, amateurs are advised that the Tokyo International Amateur Radio Club meets on the last Friday of each month at 8:00 p.m. at the Okura Hotel Executive Lounge.

The secretary of TIARA can be contacted via Box 119, Akasaka, Minato Ku, Tokyo 107, JAPAN.

Keith Wilkinson, ZL2BJR, is also available to assist via GPO Box 1748, Tokyo 100-91 JAPAN.

— Keith Wilkinson, ZL2BJR; AMATEUR RADIO, AUSTRALIA □

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Pass it on . . . WORLDRADIO

Feedlines afloat

Let's start out this new year with an extremely important aspect of any Amateur Radio installation — your feedline run. Whether your coax is in your home, to be run within a motorhome, or stretched out below decks in a boat, this article will give you some good, basic pointers for coax consideration.

Coaxial cable

Coax cable dates back to the 1930's and may have originally been developed by Bell Telephone Laboratories. It was the job of coaxial cable to carry the RF (radio frequency) energy from the transmitter to the antenna, and from the antenna to the transmitter. Coaxial cable is a shielded transmission line in which one (inner) conductor is mounted coaxially inside the other (outer) conductor. Due to skin effect, radio frequency current is carried on the outside surface of the inner conductor and the inside surface of the outer conductor. This keeps the energy within the cable from escaping, except out the ends where you want it.

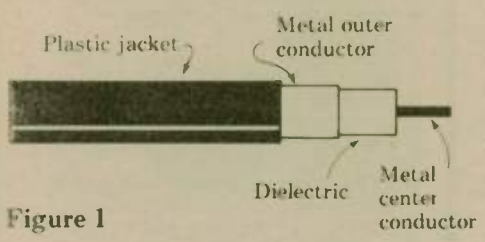


Figure 1

Figure 1 (courtesy Decibel Products, Inc.) describes the mechanical elements of a piece of Amateur Radio coaxial cable. There are many possible materials that can make up the inner conductor, the outside braid, the outside plastic jacket and the inner dielectric. Different sizes of coaxial cable may offer the radio energy an easy or sometimes a hard path to follow.

Generally, the larger and more expensive coaxial cable will offer radio energy less resistance with less loss than smaller, inexpensive cable. This is because there is more cross-sectional area of conductor material to carry the current. Conductor losses are a direct function of the conductivity of the conductors, too, with most coaxial cables consisting of copper or copper and aluminum.

Coaxial cable impedance (usually 50 ohms) is a function of the ratio of the diameter of the inner and outer conductors. Since most Amateur Radio transceivers have an output of 50 ohms, you normally only choose 50 to 52 ohm impedance coax cable. This immediately rules out using discarded cable TV coax (72 ohms), as well as that huge CATV coax cable that came to you one night that is also rated near 72 ohms.

Another important consideration for coax cable in a marine environment is its moisture-proof capabilities. Coaxial cable jackets made of only plastic will eventually leak moisture. "Non-contaminating" coaxial cable jackets made of polyvinyl chloride will resist the threats of moisture, providing the coaxial cable ends have been properly terminated and sealed.

The inner dielectric can also provide a nice home for moisture, or repel moisture. Foam and air-core coaxial cables will allow moisture, through capillary action, to travel up and down the inner core and outside copper braid. Non-contaminating coaxial cable with a solid PVC dielectric will keep moisture from getting to the center conductor. It will also help decrease the capillary action of moisture along the ouside braid.

While we don't see much of it anymore, there are some coaxial cables that are not only solid dielectric but also back-filled with a sticky "goo" that completely covers the outside braid within the PVC jacket to completely repel the advances of moisture. While this may be the ultimate coax, it's messy to work with and pretty hard to find these days.

Which coax to choose?

Now let's get down to actual coax numbers and nomenclatures to assist you in choosing the right feedline for your particular marine, mobile home, camper and home installations. You should be cautioned only to purchase coaxial cable from reputable Amateur Radio dealers — CB-type coax is out of the question. Although CB radio coaxial cable may carry a "RG" (Radio Government) specification, the CB cable manufacturers produce a cheapened version of this coax that doesn't actually meet the original government specs.

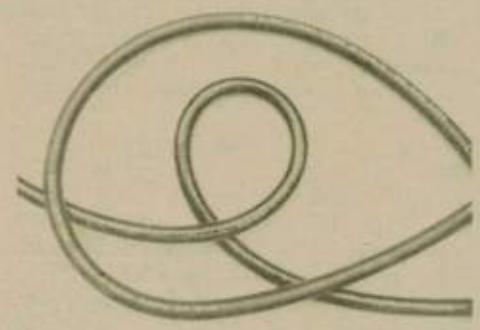
When we say "cheapened version," we mean that they skimp on the number of individual center conductors and they also skimp on the number of individual conductors that make up the braid of the copper shield. Most CB coax is quite

Form a 1-foot loop at the end of the coax.

leaky because of the huge gaps in the braid. It also distorts and causes impedance mismatches when the cable is flexed to any extent. Using CB coaxial cable is as risky as dropping your boat in the water with **all** of your through-hull valves wide open.

Cross off RG-58/U, the small coaxial cable, for anything you might choose. While this cable is fine for test leads only, why not go the next size up and choose RG-8/X? This slightly larger-than-smaller cable is fine for interconnecting cables, jumpers and extremely short HF mobile runs between a transceiver and a small, solid-state, linear amplifier. Good-quality RG-8/X (sometimes called miniature RG-8/U) takes the regular PL-259 antenna connector, but the slightly larger diameter UG-176/U reducer. This reducer is as common as apple pie, and you can purchase it anywhere.

Why not go for the slightly larger-than-smaller cable with tremendously higher power capabilities and lower leakage?



RG-213 coax is less flexible than foam coax.

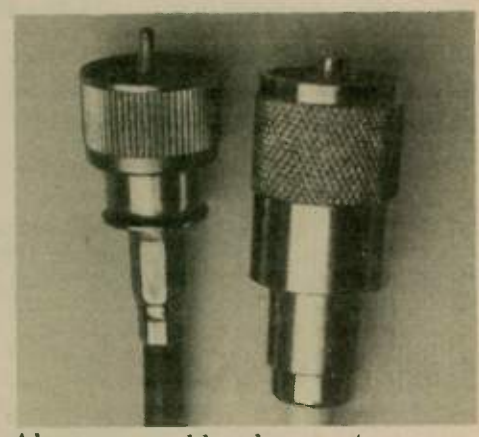
If you're talking about a run over 20 feet, your next choice is the larger coaxial cable called RG-213/U. This is exactly the same size as RG-8/U, but the RG-213/U number signifies a type IIA, non-contaminating, plasticized, synthetic resin, protective (black) jacket that will resist abrasion and will not be damaged by UV sunlight rays.

You can run this cable in the bilge and even have it submerged in water without the chance of contamination or leakage. At home, you can bury this cable, too. It should last a minimum of 20 years before replacement is recommended. Regular coaxial cable without this special jacket and PVC interior may only last up to two years — another case against CB-type feedlines.

While the larger RG-213/U is almost twice as expensive as the smaller RG-8/X (59 cents versus 29 cents per foot), it's still the better choice for runs over 20 feet. Up to 100 feet can be run with miniscule losses on high frequency and only minor losses up to the 2-meter band. At 2 meters, 100 feet only exhibits about 2.3dB loss. Down on high frequency, a 100-foot chunk of RG-213/U only exhibits 0.5dB loss.

You can buy RG-213/U from almost any Amateur Radio store or from numerous mail order companies that advertise in Amateur Radio magazines. This cable is seldom offered by local CB radio chain stores.

RG-213/U takes a regular PL-259 coaxial cable connector without the need for any reducers. When you strip it back in preparation for the plug, you will see what I mean by a good, healthy center conductor and a 98 percent shield braid.



Always use soldered connectors.

Finally, for home installations only where moisture will not be a problem, satellite enthusiasts who operate at 430 MHz should choose the new Belden 9913 air-core coaxial cable. This cable is almost identical in size to RG-213/U, but offers dramatically lower attenuation at UHF frequencies — in the order of only 1dB per 100 feet!

This cable is easy to run, and is normally terminated with a type "N" connector. The braid is made up of aluminum, and the center conductor is solid and barely fits inside a PL-259 connector if you decide to run this type of plug.

This cable is not suited for the marine environment unless you take extraordinary steps to seal off the coaxial cable ends and to keep it high and dry.

Next month we'll look into the physical steps of running coaxial cable aboard a powerboat, sailboat, in a motorhome or at home. There are some tricks we can take with the cable to ensure that almost every last watt makes it from the bottom to the top and back again. Winter is the perfect time for swapping out old, tired cable.

The Sport of Contesting

Contest history made in Alaska

David Epstein, KL7LO

For the first time in Alaskan ham history, computers were utilized for the purpose of accomplishing the tremendous administrative workload which accompanies a multi-multi effort in the CQ World-Wide DX Contest.

Wilse Morgan, KL7CQ, makes a yearly appearance in the "Contest of Contests," CQ WW DX phone, the last full weekend of October; unfortunately, it was also taking him practically a year to get out all the QSL cards. With thousands of contact affirmations involved, many man-hours were spent going through log-sheets, hand-inscribing each card, and arranging for sorting by the ARRL DX QSL Bureau. There had to be a better way.

And a better way was found! With the assistance and hard work of Ken Slauson, WB7SFO, and David Oglesby, AL7EJ, a computer program — appropriately named "LOGBOOK" — was written and put into action during the contest. LOGBOOK took care of duping, logging, QSLing and compiling the contest results. David and Ken, who work for the Anchorage time-sharing firm of Van Amburg & Associates, prepared the program in their spare time (amounting to several hundred man-hours), and — along with Don Howell, KL7IFK (a local BLM employee) — provided loaner CRTs, keyboards, telephone modems and computer time.

Roger Hansen, KL7HFQ (with headphones on), operating 20-meter position, and David Epstein, KL7LO, exercising "LOGBOOK".

KL7CQ decided that this contest effort was going to be big in more ways than one. It became Anchorage's ham social event of the month. Approximately 50 local radio amateurs and radio amateurs-to-be (students in KL7CQ's ham classes) made appearances during the contest weekend to get in some hamming and/or computer time. A watch list was prepared and provided for someone "on the boards" every hour of the contest. For some, it was the first time in front of a microphone or keyboard, and there was ample opportunity to "cut one's teeth." Propagation conditions were basically "stink-o" in Alaska that weekend (especially on 10 and 15 meters); however, everybody made at least one contact.

LOGBOOK was a resounding success! Its utility really shone through in the task of duping; the minute a contact was made, it was entered into the computer. If, by chance, we happened to run across the same station later in the contest, LOGBOOK would immediately let us know we had worked that station before, saving us — and possibly the other station — the embarrassment of maybe being disqualified from the contest.

By the time the contest was over, all the QSL cards had been prepared and sorted. QSL information was printed by the computer onto pressure-sensitive labels which, in turn, were pasted onto the reverse of KL7CQ QSL cards! It couldn't have been any simpler! After having given the computer a few more commands, WB7SFO produced an in-depth analysis of our weekend of contest activity, including all information necessary for the report to CQ Magazine.

The weekend would not have been the success it turned out to be without the concerted efforts of Betty's Catering Services, Inc., owned and operated by Betty Rhodes, KL7AP. She saw to it that all of the contest participants had plenty of delicious food and drink to consume every hour of the fray. All of us gained approximately five pounds as a result. And when we got tired from calling "CQ Contest" into a very absorptive ionosphere, we could retire to the comfort of Ed Tucker, KL7DU's luxurious motorhome, which was wheeled into position Friday afternoon, and which saw use during the entire 48 hours.

"How you gonna keep 'em down on the farm after they've seen Paree?" We will never again have to resort to the wretched pencil! Anyone interested in the intricacies of WB7SFO's and AL7EJ's computer programming efforts is encouraged to contact them for further information. □

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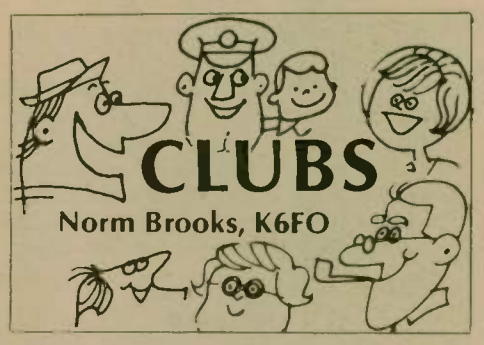
If you are involved in any emergency communications incident, send story and photos to *Worldradio*, 2120-28th St., Sacramento, CA 95818.



The following information was taken from the August issue of the Indiana Section ARRL Letter, Indianapolis, Indiana.

Let's have a newsletter

Excellent idea! Every Amateur Radio club is encouraged to have one. There are several things you can do to help get one going in your club. You must keep in mind however, most club newsletters are one-man shows. They are put together month after month by one individual who takes pride in the job and likes it. You have to find that person. It may be you. It is also a lot of work. The better it is, the more work it takes.

The first thing you want to do is decide what you want your newsletter to accomplish. A newsletter can do many things. Each club's newsletter will be unique, accomplishing their needs. The list that follows will give you an idea of some of these purposes.

The items you select from this list, or any other ideas that may come to mind will make up your clubs unique newsletter. The longer the list, the harder it will be to obtain new information, the longer it will take to type, and the more pages it will take to print the newsletter.

The best advice at this point is, don't try to overdo it at first. Some of the best newsletters published have a very short list of purposes and can be printed on the front and back of one or two 8½" × 11" pages.

1) *Meeting notice.* In many situations, this may be the only reason you need. Certainly, this is one of the most predominant reasons for starting a club newsletter.

2) *Announcements of upcoming events.* This almost always follows along with meeting announcements, however there are organizations that do not have formal meetings that have a need to keep their members informed about: public service events, hamfests, DX opportunities, contests, special event stations, nets and other similar items. This may then be the only purpose of the newsletter, or it may be one of many purposes.

3) *Reporting on events.* This is a nice addition to a newsletter that helps encourage future participation in an event, or similar events. Amateurs are no different in this aspect than anyone else; they like to see their names in print.

4) *Reporting on Amateur interests.* This is really a catch-all element. You may need to provide your membership with information on pending legislation, personalities and what they say or do, FCC activities, information on DX countries, history of some aspect of Amateur Radio, travel in respect to Amateur Radio. There are lots of ideas for this purpose.

5) *Technical reporting.* This area might include "how to" types of information, detailed instructions, equipment reviews, or other similar items. This can be used to gain additional participation in your newsletter. Don't overlook computers.

6) *Swap shop-type reporting.* Someone always has something they need, want to trade or sell.

7) *Editorializing.* This is a good way to get points across, to let others know how your club feels about a subject. It could include letters to the editor and guest editorials.

8) *The lighter side.* This can be cartoons, jokes, cute sayings, or anything along this line. It could be recipes, travel logs, vacation ideas, or about anything you can dream up.

Now that you have a purpose for your newsletter, it's time to decide the depth of coverage you want from each element. But that's the subject for the next installment. Watch for it in the next letter. Until then, think about why your club needs a newsletter, and who you have that will give the time and effort to produce it. □

Script for Friday Lunch Net

Calling the Boulder City Friday Noon Lunch Net. Calling the Boulder City Friday Noon Lunch Net. Net control is _____ (feel free to insert your call sign). The purpose of this net is to provide Boulder amateurs with a well-balanced diet. If there is anyone with special dietary requirements, please call now.

Are there any comments from the local food and drug administration? Call now.

At this time we'll take check-ins, Avocado through Lemon. When you call, please indicate if you have any suggestions for a restaurant today.

(Quickly write down all call signs, sort out doubles as best as you can. After a reasonable time, acknowledge all calls and suggestions.)

At this time we'll take check-ins, Avocado to Zucchini. Anyone, please call.

(Again, write down all call signs and suggestions. Quickly tally up your results. Then acknowledge all calls.)

Today we will meet at the _____ in/on/at_____ at 12:00.

(You will probably hear a comment like, "Where in the (QRM/QSB) is the _____?" Try to find someone who can explain how to get there.)

Any late check-ins, comments or announcements?

(Silence.)

— Rocky Mountain VHF Society, Inc., Boulder, CO □

VISIT YOUR LOCAL RADIO CLUB.

ARIZONA

Arizona Repeater Assoc., Inc. (ARA)
P.O. Box 5291
Phoenix, AZ 85010
4th Thursday/monthly except July/Dec. 7:30 p.m.
4250 E. Camelback Rd., Suite 475-K

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

CALIFORNIA

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

East Bay Amateur Radio Club
Salvation Army Center
Rheem Ave. & 36th Street
Richmond, CA 94804
2nd Friday/monthly — 8:00 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
P.O. Box 3262, Auburn, CA 95604
Office of Education Bldg.
360 Nevada St., Auburn, CA 95603
2nd Friday/monthly — 1930

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

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

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

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

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
P.O. 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.

ILLINOIS

Bolingbrook Amateur Radio Society
532 Sheffield Rd.
Naperville, IL 60565
(312) 369-0747 / call in 147.93/33
3rd Monday/monthly — 7:00 p.m.

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

For information on how to get your club listed in this column, plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

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.

Six Meter Club of Chicago - K9ONA
Rptrs. 146.37/146.97 448.300/443.300
Info net - Tues. 9:00 p.m. 146.37/97
Annual Hamfest 2nd Sunday in June
Santa Fe Park, Willow Springs, IL

INDIANA

Fort Wayne Radio Club
Ron Koczor, K9TUS
P.O. Box 15127, Fort Wayne, IN 46885
The Salem Church
3rd Friday/monthly — 7.30 p.m.

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

Quannapowitt Radio Assn. (QRA)
United Methodist Church
Vernon St.
Wakefield, MA 01880
4th Friday, September-May at 8:00 p.m.

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

MICHIGAN

South Eastern Michigan A.R.A.
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15
Grosse Pointe North High School
Building C, Cafeteria Commons
Info. Contact WB5YOK (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

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

Staten Island Amateur Radio Assn. (SIARA)
P.O. Box 495
Staten Island, New York 10314
Third Friday/monthly — 8:00 p.m.
Rm. E-118, College of S.I. — Sunnyvale

Westchester Amateur Radio Association (WARA)
Scarsdale Village Hall
Scarsdale, New York 10583
Bernard Dubbs, President, WA2FSR
1st Wednesday/monthly — 8:00 p.m.

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

Southern Peninsula Amateur Radio Klub (SPARK)
Repeater 146.13/146.73 - K4DHO (804) 851-5573
Salvation Army Community Center (Big Bethel Rd.)
P.O. Box 4128, Hampton, VA 23664
1st and 3rd Tuesday/monthly — 7:30 p.m.

Virginia Beach Amateur Radio Club (VBARC)
Open Door Chapel
3127 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.

Ham stations displayed at dedication

Richard Bauer, N9DKO

On Sunday, 14 October 1984, the Tri-Town Radio Amateur Club participated in the dedication of the new Hazel Crest, Illinois Village Hall. At the request of village officials, three different working Amateur Radio stations were placed on public display utilizing radioteletype (RTTY), voice and Morse code (CW). Operations took place on all amateur frequencies, with contacts made with local amateurs as well as several as far away as the East Coast.

Ed Morrission, Director of ESDA for Hazel Crest, provided Tri-Town with a spacious operating area. Captain Dan Gunderson, WB9ACN, and his men from the Hazel Crest Fire Department assisted the club in gaining access to the roof so that antennas could be erected. Operations began shortly after 11:00 a.m. and continued past 5:00 p.m. Written hand-out material was provided to all station visitors.

The following club members participated in this event: Waldo Gunderson, WA9WLN; Mike Lowden, N9CRA; Dan Gunderson, WB9ACN; Greg Barron, N9DDU; Rich Bauer, N9DKO; George Gruenthaler, K9PBN; and Sharon Gunderson, KA9IIT. □

Greg Barron, N9DDU (right), shows a young visitor how an Amateur Radio transceiver works.

ARRL incumbents

(continued from page 1)

Adrienne Sherwood, WA6YEO, and Katherine Schaffstein, WA6FAH.

In what can only be termed an "unprecedented landslide", Dr. Overbeck — who was 1980 "Ham of the Year" — garnered 3,064 votes while his closest runner-up, Karl Pagel, N6BVU, was only able to attain 490 votes. The two ladies in the race fared similarly to Pagel.

It is interesting to note that while all four are popular figures in the Southwestern Division, none bothered to mount a major campaign. A similar vote of confidence was given to Rocky Mountain Division Vice Director Marshall Quiat, AG0X, who beat out contender Robert A. Scupp, WB5YYX, by a margin of 1,601 to 311.

Northwestern Division Director Mary Lewis, W7QGP, was returned to office for another two years, but she has a new Vice Director. M.L. Gibson, W7JIE, decided to challenge Director Lewis, coming in last in a three-way race. As a result, Rush Drake, W7RM, is the new Northwestern Division Vice Director, having gathered 1,839 votes to out-poll two other contenders.

Finally, in the Central Division, it was Huntington vs. Ebneter, with incumbent Director Howard Huntington, K9KM, beating out former Vice Director Kenneth Ebneter, K9EN, to retain the division's Vice Director's chair. The vote here was Huntington — 2,924 and Ebneter — 1,217.

While possibly not as exciting as the recent U.S. presidential race, these elections are important since they affect the overall make-up of the League's Board of Directors, and these are the men and women who set the basic political policy of the overall U.S. Amateur Service. □

Ohm-Brew

January's Ohm-Brew winner is Claudia Lang, KC3GO, of Pittsburgh, Pennsylvania. For the answer, turn to page 56.

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. □

WITH THE HANDI-HAMS

Maureen Pranghofer, KFØI

It was quite some years ago when I first heard the word DXpedition. I think the first time it crept into my vocabulary was when I was reading through one of the ham magazines. Since I am anything but a DX hound and have, at best, worked five or six countries and never QSL's, I didn't really understand what it was.

Then I had a chance to see a film some local amateurs had made about a DXpedition to Easter Island. I was fascinated by it and thought of how much fun it would be to be at the other end of a pile-up. My patience with pile-ups is very short-lived. I will half-heartedly try to call a station and then move on to a frequency when I can give a few CQ's and have a leisurely ragchew session. That is my favorite mode of hamming.

However, I had a chance to operate portable at one of the recent HANDI-HAM Radio Camps, and although it wasn't really a DXpedition, it was close enough for me. About 10 of us gathered at the Courage North activities building where we held classes and ate meals at beautiful Lake George in northern Minnesota. There were a variety of classes one could take during that particular hour, and since I had a break in my teaching schedule, I decided to sign up for the one called "backpacking".

The first step was to carry the necessary supplies. While this was not physically possible for everyone, those who could pitched in, and it was soon learned that the motorized wheelchairs which had lapboards made excellent transport vehicles. Once we were loaded up we trooped off down a dirt road into the "big woods". The paths were totally accessible and traveling was no problem. Those who were sighted gave directions, and guides — whether dog or human — had a blast.

It wasn't too long before our band of singing radio minstrels (it was found that singing while we walked was necessary because all hikers sing and it kept the blind people more together) came to a nice flat spot where there were a few trees off to the side and plenty of room to set up shop.

Then it was time to learn — to put an insulator into your hand and see how it felt; to hold the wire or rope while others walked off distances and measured for an antenna; to stand next to the tree and know that the person having the strongest arm would throw the rope tied to a heavy object over the branch, and to then feel the antenna as it was hoisted up.

It was all very exciting. But none of us could really imagine this meager station ever putting out a signal or being on the air. We had all come from an Amateur Radio world composed of AC wall sockets and shacks where one could sit down while operating and have a cup of coffee while making QSO's.

Finally, everything was set. The antenna was up, the rig and power supply were conveniently placed on the wheelchair lapboard of one of the campers (they make excellent tables), and we were in business. Amazingly enough, when the rig was turned on we heard signals, and they sounded just as good as those which came from the rigs back home.

When the antenna tuner was tested, we found we had almost a 1:1 SWR on 40. Heck, that was better than many of us had in our centrally heated, air-conditioned shacks. Then came the moment when we heard someone calling CQ and answered, only to get a 579 RST from a ham in Denver. Little did he know the excitement he caused.

That whole experience was wonderful. Since then, I have perused pages of magazines, reading about various DXpeditions. I have still never engaged in DX work or operated portable, but I still thrill remembering our day in the woods which will probably not be repeated in the near future.

The idea of going on a real DXpedition is more like a fantasy, something every ham thinks about once in awhile or dreams of — until now. Yesterday I was in Hungary, the day before that in someplace I had never heard of called Tonga. I was on the other end of a pile-up working stations right and left and having a marvelous time.

Of course, I really didn't travel these great distances; I was actually at HANDI-HAM Headquarters. But from the way things sounded on the bands, you would never have known it. The bands were clear, with not too much QRM, good propagation, and everyone was very considerate. Even 10 meters was open and beautiful. You might wonder what snazzy new antenna I was using or how I was managing to make the multitude of contacts I had on 10 meters. Well, I have a confession; I wasn't on the air. I was on the Doctor DX program which is hooked into the Commodore-64.

This fantastic program has made it possible to travel great distances in a matter of minutes, to learn more about DX'ing and world geography and to improve one's CW speed. And it is so real I have to consciously remind myself that I am just talking to a machine and I am not really on the air.

This is how it works. You sit down in front of the keyboard, turn on the monitor, the key and the computer. Then you select a time zone which you would like to operate (any GMT) and put that into the computer. Then select your location (any latitude and longitude will work). There is a convenient list of all of the 304 countries available and their corresponding coordinates. Since we have gotten the machine I have been in Minnesota, Texas, Norway, Hungary, Tonga, Botswana and I'm thinking about operating from Russia tomorrow.

The computer automatically duplicates propagation conditions from the location and time you have selected. Next you choose your frequency and power. All bands are available and are as real as the real thing. Sometimes 10 is dead (depending on the time of day), and 80 and 160 meters are quite noisy. Then you choose your power — 200, 20 or 2 watts. You are then "on the air" working the worldwide DX contest. Folks call CQ and you answer, giving the signal report and the zone and turn it back to them.

Sometimes they get the information immediately and send back theirs. Sometimes they ask a question. Sometimes they leave the frequency, and sometimes they wish you good luck. The band is crowded with stations having the real call sign prefixes of their locations. The program selects suffixes at random so you never know who you will work.

The other day I had a chance to get a 599 RST from W5YI. If you are tired of a frequency, you can simply change frequencies on a large or small scale by hitting a function hitch, and if you need a filter there is one readily available.

I think I have made my point that I'm in love with the "doctor". I am enjoying working DX, eager to try it on the real rig, and now have a means of going on accessible DXpeditions anywhere in the world with the touch of a button. Besides all this, my CW speed has increased dramatically, and it has all been almost as much fun as being portable in the Minnesota North Woods. □

You knew it all along!

Small vise-grip pliers make an excellent temporary heatsink for flat pack voltage regulators when trouble-shooting/repairing equipment out of an enclosure. — *Mickey McDaniel, W6FGE*

Change of address?

If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

Esther Given, W6BDE

The 28th Annual QCWA Party is scheduled as an opportunity for QCWA members to work each other and share fun and fellowship. The CW portion will be from 0001 UTC, Saturday, 09 February, through 2400 UTC, Sunday, 10 February. A month later the phone portion follows, from 0001 UTC, Saturday, 09 March, through 2400 UTC, Sunday, 10 March.

Official rules will appear in the winter issue of *QCWA News* and will be simple and easy to follow. Logs will be processed by members of Wisconsin Chapter #55 whose decisions will be final with respect to scores and enforcement of rules.

Two multipliers will be available to participants — one for each QCWA member worked, including all contacts on all bands and a second for each different chapter designated in the QSO information exchanged. The chapter multiplier may be used only once in each QSO party, no matter how many different bands are involved.

Further information concerning log preparation, deadlines and other pertinent data may be obtained from QCWA Activities Manager, Onie Woodward, W1ZEN, 14 Emmett St., Marlboro, MA 01752 or QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061.

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The QCWA Board of Directors, on recommendation of its Long-Range Planning Committee, took action at its meeting in September to establish a building fund. This ambitious undertaking will prepare the association for future requirements when permanent housing for QCWA headquarters becomes desirable. Several gifts have already been given in this regard. Contributions for the building fund are tax-deductible items with the IRS and most states.

Another action taken by the board in September was the election of Arthur Kay, W5APX, to that body to fill the vacancy created by the resignation of Ron Hessler, VE1ISH.

•

Each Sunday at 2000 UTC on 14347 kHz, the QCWA holds its weekly net. Herb Gleed, W6FC, net control, conducts a well-organized and popular get-together of QCWA members. Roll call is accomplished by alphabetical check-in by call letter. These breakdown categories are alternated weekly so the same people are not always first. Amateurs eligible for QCWA membership are welcome to check in, get acquainted and learn more about the organization and its members.

•

Quarter Century Wireless Women (QCWW), Chapter 120 of QCWA, is proud to announce the presentation of three QCWA Merit Awards to its members.

The 1982 award went to Blanche Randles, W4GXZ, in recognition of her work in organizing the chapter, serving as its first president, and help in promoting chapter activities. The 1983 award was presented to Beulah Barrick, W6NLM, who has dedicated two-and-a-half years with distinction as editor of the chapter's newsletter, *Silver Sparks*. Recipient of the 1984 award is Margaret Moore, WB6JVL, secretary-treasurer, whose efforts have strengthened the chapter and kept it healthy.

QCWW has made a second substantial contribution to the QCWA Memorial Scholarship Fund. Through efforts of its members present, a gift of $151 was turned over to the scholarship committee at the QCWA Convention Banquet. □

'Can you top this?'

I know we have all had requests for QSL cards. I know, too, that we have gotten them from remote corners of the world . . . and from some stations we have never even worked! I am sure we have waited two or three years for one to return from the "bureau".

Recently, Shel Davis, W3FVU, got one from the USQS-KM7Z bureau (which, by the way, is legitimate). It was from a K2-station that had been located in Hempstead, New York. The operator is now living in Butte, Montana.

So far, nothing too interesting or different. On taking a second and closer look at the QSL card/request, Shel noted that the date of the contact was 29 December 1970. Yes, that is no misprint: *1970!*

The first thought: here is a fellow looking for a phony card for an equally phony contact. *NOT SO!* Shel checked his old record book and sure enough, there was the contact recorded.

In this day and age, logbooks are not required anymore. Sad, too, since such a request as the above cannot be proven.

So there you are. A contact almost 14 years old, a request, a proof . . . and a return QSL. As I said: "Can you top this?"

— *Indiana County ARC, PA* □

Here's one to look for: YU3QRP.

That's the newly issued call for the Yugoslavia group, QRP Klub YU3QRP, an active bunch in Eastern Europe.

Rado Krizanec, YU3XL, says the organization got the special call issued after prolonged efforts and is using it as a base for new interests in low-power operations.

The group had 151 members as of October, and it had applications for membership from QRP'ers in Brazil and Sweden. A decision is expected soon on the admission of members from other nations, says Rado.

He is the editor of *CQ QRP*, the club's quarterly newsletter, which is filled with news about members, construction articles and contests.

"Membership in our club is free of charge, as is the bulletin, which is delivered to our members only if they are active in the QRP field," Rado says. "If they are not active, we stop delivering it to them, but they are still members of the club."

YU3QRP sponsored its fifth annual contest last September — the only one of its kind in the nation. The 1985 contest, he says, is being planned in cooperation with operators from other countries.

The club is developing certificates for having worked various members on a QRP-to-QRP basis, and details of the awards program should be available soon after the start of the new year.

Rado says a special editorial board has been established, with him as chief editor, for *CQ QRP*. In addition to a new format, the bulletin will focus on homebrewing equipment for future issues.

This is important to Yugoslav amateurs, Rado says, "considering the modest possibilities for purchase of materials in YU."

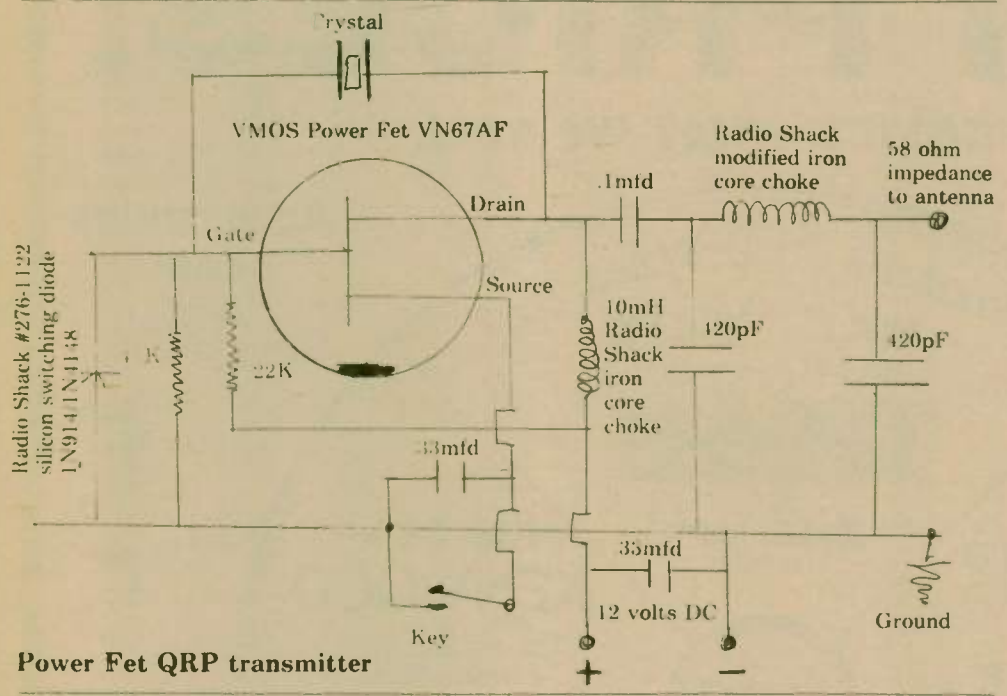
Rado also endorsed the concept of a Worldwide QRP Day as proposed by amateurs from Iceland during a meeting last April in Italy of IARU Region I.

In a letter to David Farris, K5NT, secretary of the World QRP Federation (WQF), Rado suggested the week containing 17 June be set aside each year as a worldwide operating activity period for QRP'ers, similar to the annual G-QRP Club operating bash between 26 December and 01 January.

Rado also urged better WQF coordination of QRP contests between nations so they do not overlap and so they do not correspond with QRO contests.

Now that the Yugoslavians' organizational problems have been solved and an operating plan has been established, says Rado, "We will be able to start as a real QRP club with 01 January 1985."

The mailing address for QRP Klub YU3QRP is Box 146, 63000 Celje, YUGOSLAVIA. □



Power Fet QRP transmitter

QRP transmitter

Ken Hand, WB2EUF

Since building and writing the article about the one-transistor QRP transmitter, I have modified and improved on the design and performance to a large degree, simply by changing the 2N3553 transistor to a VMOS VN67AF Powr Fet, and the value of resistance of the gate feedback resistor to 22,000 ohms and adding a 1N914/1N4148 silicon switching diode in the gate-to-ground circuit, as can be seen from the circuit diagram of the latest modified Power Fet transmitter. Now there is no more trouble with the danger of destroying the 2N3553 transistor due to mismatch or overload — the Power Fet stands up fine against these problems and has a faster and easier keying. The crystal also starts faster, has more power and makes more contacts.

Be sure and make a 1" × 2" heatsink for the Power Fet, as it does heat up some. I made a heatsink from a tin sheet metal strip, from a discarded tin can. The tin can sheet metal conducts heat away much better than aluminum. Be careful in bending the prongs of the Power Fet. It will fit into the transistor socket OK. Be sure it is put in the socket correctly.

The gate of the Power Fet goes to base pin; drain goes to collector pin of socket; source of Power Fet goes to emitter pin in socket. The current drain is higher with the Power Fet — 1½ amps at 12 volts DC, but on CW it would only be ¾ amp duty cycle because of use of CW mode of operation. However, this modified transmitter works much better in a more reliable manner. □

Don't learn the hard way

Ed Proctor, KD4W

Calculated risks are a part of everyday life for all of us. We use them to save time and money, and for the sake of convenience. Usually they work for us, but sometimes they don't. At the (calculated) risk of making myself look stupid, I'd like to share two recent experiences in which calculated risks turned out to be expensive or downright foolish.

The first example occurred one Sunday morning last winter, during a DX contest, when my Kenwood TS-820 transceiver blew a fuse. After checking the rig and finding nothing wrong, I found that I had no fuses of the correct value (4A). In fact, the only available were some for the car, rated at 20A.

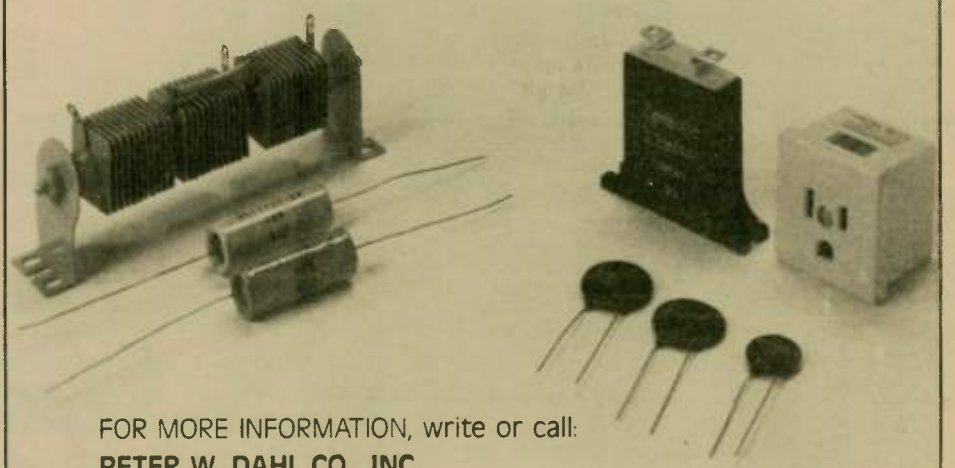
I installed the larger fuse, planning to replace it with the proper value at the first opportunity. Since everything was then working fine, I forgot about the fuse until one day a month or so later when one of the final tubes shorted during a transmission. With the 20A fuse, the damage to the rig was considerable: a $250 factory repair bill because of burned conductors and fried components. The correct fuse would have saved all but the cost of the defective tube.

Lesson #2 occurred one evening recently when I came across a motorist in distress. He had a dead battery and needed a "jump". He already had a set of jumper cables connected to his battery, so I carefully checked his connections, then attached the cables to my battery. Upon connecting the second cable (to the battery post), there was a healthy spark and a very loud explosion — right under my hand. The spark had ignited the hydrogen gas being emitted by my battery.

I then remembered that the cables are to be connected to the good battery first (with the negative cable on the chassis) and to the dead battery last. This reduces the chance of an explosion; and if one occurs, you would not be standing over it.

Fortunately, there were no permanent injuries, except to my pride. Please keep this experience in mind the next time you work with a dead battery.

— North Fulton AR League, AL □



TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Thanks, all

As your columnist concludes his eighth year producing this collection of trivia, he wishes to thank all who have contributed to it, even if only by reading it.

Thanks in a particular way to those who have written to comment or suggest, even to those who have taken issue with something that has appeared here. After all, even a criticism can be encouraging to a writer; shows at least that someone is reading it.

And thanks, too, to the publishers of net bulletins and traffic news letters who have sent copies of their publications, which have often been a great help in preparing these 96 columns, and I hope will do the same for many more to follow.

CW techniques

If I say that CW has always been the most popular mode for handling traffic, I'll be challenged by two groups at least. Newer amateurs will object that voice modes are more popular these days, and, depending on what standards are used for judging, the newer amateurs may be right. Old-old-timers will object that for the first decade and more of traffic handling by Amateur Radio, CW was the exception rather than the rule. The amateurs that formed the charter membership of the American Radio Relay League and developed the art of amateur traffic handling generally did not use CW. They used telegraphy, yes, but it was spark, not CW.

Manual telegraphy has always been — and most likely still is — the dominant mode in long-distance handling of formal traffic in the Amateur Radio Service, however, at least to the extent that most messages that reach the higher levels of the National Traffic System are handled by CW at some point.

CW's dominance is eroded a bit every year, though, and may end before too long if packet radio, AMTOR, and other automated systems live up to their promise of providing coast-to-coast service in minutes rather than hours. Even so, CW will still have much to offer Amateur Radio, and it will be a serious mistake to let it fall by the wayside.

There are three functions CW can provide in a packet radio world. It can serve as a backup means of communication. The best system can break down, and the more complex the system, the more ways it has to fail. CW communication can be there to help get things going again and to keep the lines open while repairs are made.

It's easy to interface a CW circuit with a packet radio circuit; often it can be done almost entirely with software. And if it is done, all one will need to access the whole system is a simple CW station, thereby greatly extending the potential for communication. It is to be hoped that those who develop packet switching networks will keep this in mind.

And third, the Morse code is a wonderful communication technique in its own right, and should not be allowed to become a dead language. It can be used in many other kinds of signaling besides radiotelegraphy. Ship officers are required to demonstrate their ability to use it to communicate by blinker before they are licensed. Lives have been saved by people who used mirrors to reflect sunlight to call for help, or who used auto horns for the same purpose. And stories are even told about a church organist who found a mate by discreet use of the Morse code when opportunities arose during the service.

The space

Why is the Morse code still so popular among the more active traffic handlers? Phone operators may not believe it, but it's usually faster and more accurate, even though one can talk several times as fast as one can send a message by Morse code. The reason is that translation from code to written text is on a one-to-one basis: di-dah is always A, for example, while you have to study the whole context and perhaps even spell the word phonetically to determine whether it's *right, rite, wright* or *write*. And all that takes time. Unless you can write shorthand, the sending station has to speak slowly enough for you to be able to write it down anyway.

Another reason is the fact that the CW bands are generally less congested than the phone bands. Add to that the fact that you need one-tenth or less power to give you an equivalent signal by CW than you need for voice, and you see why those who operate both modes seem to prefer CW.

But CW also has its problems, and one of them is similar to one experienced by voice operators: voice operators sometimes don't speak clearly, and CW operators sometimes don't send clearly. And perhaps one of the most frequently met problems is caused by poor spacing. The Morse code is made up of three elements, not two: the dit, the dah and the *space*. Sometimes spaces are left out, sometimes they are added where they shouldn't be, and the result is garbled copy.

If you were sent something like this: "John and Erson Smith, SMIOTH Ananama, Mauetsenn, Canada," and you copied "John Anderson Smith, 326 Panama, Quebec, Canada," I'd suspect you have psychic powers. Yet some of us slip confusing spaces into our characters, particularly numbers, that sometimes cause results almost as bad. At the opposite extreme, some of us run words together, andit'sveryhardtoreadwhenyou leave out spaces.

One problem I've encountered is the tendency of some operators to slow down when conditions are bad, but not increase the length of spaces in proportion. The result is the opposite of what the operator intends; for one accustomed to 20 wpm or so, slow speeds are actually harder to copy. You have to fight the urge to anticipate what is coming next as you wish things would speed up a bit, and the confusing spacing doesn't help, either.

It always seems that the other station will send easy copy during a break in the interference, and then when something unusual comes up, you have a tuner on your frequency or somebody runs an electric drill. "I wish he'd hurry up and send this message while I can hear him!"

Actually, when interference is from a station sending 10 or 12 wpm, one can often copy traffic more easily if the station sending it sends considerably faster than the interference. One's ear can pick it out because of the higher speed.

What speed?

Some operators seem to slow down any time they send formal traffic. If it's done because you don't trust yourself at a higher speed, well and good. But don't automatically assume you are helping the receiving operator.

A rule of thumb that has been around a long time is to send at the same speed the other operator sends to you, unless the other operator directs you otherwise. And when you first contact the other operator, send at the speed you wish to receive. Any hotshot with a fancy keyboard keyer who calls at 40 wpm is asking for a reply at the same speed.

With one exception noted below, there's no reason why two operators who can handle 30 wpm comfortably should not pass their traffic at that speed and save time. If they are not comfortable at that speed, however, they may save time by slowing down and not needing so many fills afterward.

The exception mentioned above is on the net frequency of a slow net. Slow nets are intended to provide an opportunity for Novices, Technicians and operators whose code abilities are rusty to be introduced into the traffic game, and whizz-bang speed demons are a prime source of discouragement for beginners. If you don't have patience, are short of time, or for any other reason can't slow down, you will help slow nets by not checking in.

On the other hand, slow nets are in need of experienced operators, and if you have the patience to adjust to the slower way things are done, your experience can be a valuable asset. Let them hear how things should be done, help prevent them from getting the wrong start. It won't be long before you'll hear them checking into the faster nets, and keeping up with the best of them. And how many CW nets have too many check-ins these days? □

ARRL election results

The ballots for ARRL Director and Vice Director were counted Tuesday, 20 November. The results are listed below. (Unopposed candidates were declared elected by the Executive Committee on 26 August.)

Central Division: *Director* — Edmond Metzger, W9PRN; Vice Director — Howard Huntington, K9KM.

Hudson Division: *Director* — Linda Ferdinand, N2YL; *Vice Director* — Stephen Mendelsohn, WA2DHF.

New England Division: *Director* — Thomas Frenaye, K1KI; *Vice Director* — Richard Beebe, K1PAD.

Northwestern Division: *Director* — Mary Lewis, W7QGP; *Vice Director* — Rush Drake, W7RM.

Roanoke Division: *Director* — Gay Milius Jr., W4UG; *Vice Director* — John Kanode, N4MM.

Rocky Mountain Division: *Director* — Lys Carey, K0PGM; *Vice Director* — Marshall Quiat, AG0X.

Southwestern Division: *Director* — Fried Heyn, WA6WZO; *Vice Director* — Wayne Overbeck, N6NB.

West Gulf Division: *Director* — Raymond Wangler, W5EDZ; *Vice Director* — Thomas Comstock, N5TC.

— *The ARRL Letter* □

Aerials

Lil Paddle

The trap was set, and people walked right into it!

First of all, young whippersnappers should not argue with those who date back to the era of Meissner.

It all started with my statement that an 80-metre antenna would work on 10 metres. We know it works because we've done it. Theoretical arguments against it are in the same league as those who say the bumblebee can't fly.

One letter stated that such an antenna would have a feedpoint resistance of 140 ohms. All I can say is, "SO WHAT?" There would be, yes, an SWR of 2:1. And that condition gets another great big "SO WHAT" and "WHO CARES?"

While it is true that many feel that an SWR of 2:1 will allow the republic to fall, let's look at reality.

Assuming a 100-foot run of RG-8/U foam is being used at 14 MHz, here's what really happens at 2:1. There is a loss of .15dB. Yes, that's right — .15 of a dB.

On some SWR bridges at 3:1, the panel is painted the color red. Condition Red results in a loss of .35dB. Yep, one-third of a dB.

Do you know just how meaningless a third of a dB is? Just how meaningless is it, Johnny?

Well, an "S" unit is 6 (six) dB, so a loss of .35dB translates into .06 of an "S" unit. Or put another way, 1/17 of an "S" unit. Instead of being "S-9", your report will only be "S-8.94".

DX'ers who are accustomed to receiving reports of "20 over" will be crushed when they hear they are only "19.65 over". Why, they'll probably give it all up and take up stamp collecting.

How 'bout an SWR of 5:1, you may ask. Does the Earth stop spinning on its axis? Actually, the loss now is .8 of a dB.

And what is 1 (one) dB? If you were listening on a pair of earphones to a single tone, and you were told to raise your hand when you detected the slightest increase in volume, you would do so at an increase of 1dB. Right, it is the barest perceptible change in level — and that is on a single, continuous tone.

In order to throw away that 1dB, you must have an SWR of 6:1. Such a condition (neglecting, for a moment, normal line loss) would be a 50-ohm transmitter, a 50-ohm feedline and a 300-ohm antenna.

As you can see, when they speak of an antenna's bandwidth being the range between the 2:1 SWR points, it's pretty ridiculous.

To make the point by extremes, we are now going to throw away 1/2 (one-half) of an "S" unit. This is the three (3) dB point, or half your power.

That requires an SWR of 20:1. The condition is: 50-ohm transmitter, 50-ohm line, 1,000 (one-thousand) ohm antenna. Your signal has dropped from "S-9" all the way down to "S-8-1/2".

Incidentally, under the same conditions, using instead open-wire line, the line losses are so slight they are not worth even thinking about.

To another subject: The **Worldradio** offices have received letters saying we are bitter and antagonistic towards the ARRL (for pointing out mistakes in their antenna articles). Nothing could be further from the truth. I'm a Life Member and have held leadership posts in the League. The greatest supporters of this column (saying we are right) are the two-letter calls.

We are not picking on the ARRL. We point out gross errors to protect newcomers (and some old-timers who have lost their way).

For example: Just out is a new book called *The Dandy Dipole*, published by Unadilla at a price of $3.95. It is written by two authors, one of whom has no call after his name.

On page 5, in speaking of antenna height, the reader is told, "The ideal is computed as 0.25 wavelength." Page 14 says, "If we can't get it up that high, 0.125 wavelength will do."

In reading over my original draft of this column, Kurt said, "Putting a 20-metre antenna up 17 feet will get your butt kicked so hard your nose will bleed."

(The trouble with crass people is they don't know they are and that other people are not.)

Just what happens to the poor Novice who reads that "0.125 will do"? He puts up his 15-metre dipole at 6 feet above ground! His only chance to make contacts is to buy one of those Doctor DX simulators!

Pity the poor Novice who reads that book and puts up his 10-metre dipole at 4 feet. He won't even work his neighbour's TV set.

Page 4 tells us, "The height does not seem critical from a radiation pattern point of view." That's about as wrong as it can get. We point that out only to aid those whose aspirations are beyond the Worked All States award.

Also on page 4 is a chart telling people that the "ideal" heights for antennas are (20) 16.50, (15) 11.00 and (10) 8.16 feet. And get this: the "practical" height is (20) 8.25 (15) 5.50 and (10) 4.08 ft.

Ladies and gentlemen, if you follow those instructions you won't even get WAC (not Worked All Continents, but Worked All Counties in your own state!).

The only virtue for a Novice putting a 15-metre antenna up 6 feet is that he certainly won't be spending much money on QSL cards, postage or IRC's.

Will we get some letters accusing us of "picking on" this book? Probably. Better you should write to the company distributing it and ask them why they are foisting off such trash on the unsuspecting neophytes. People following such absurd instructions will soon give up their licenses.

We've been criticised for not being "constructive" and "knocking" others. Well, the most constructive thing we can do is keep people out of the quicksand. Such a book (and others) deserves to be knocked!

Do not write to us or **Worldradio** and complain about this column. Better you should spend your time getting someone who knows something about antennas to come and lecture at your club, or buy a decent antenna book.

Anyone writing to disagree with the earlier part of this column about SWR and loss will do nothing but embarrass themselves. An old lady I may be, but sweet I'm not.

Thanks to the astute K5 who said, "As an avid reader of all three major ham mags (**QST**, **CQ**, **73**) and **Worldradio**, I've noticed that only one of the four don't tell antenna fibs. Doug DeMaw brainwashed 'em better than the moonies do!"

(Lil and Kurt, Mr. and Mrs. in real life, go by their code names so as to, like the Ninja, pass through with the cloak of invisibility. Amateurs who fight with them about antennas go to the battle unarmed.) □

Maxwell replies

In a letter from Harry Hyder, W7IV, published in Kurt Sterba's October antenna column, he doubts the statement in my **QST** article, ("Some Aspects of the Balun Problem," March 1983), that feedline radiation due to lack of a balun could seriously distort the radiation pattern of a 3-element Yagi. I would like to clarify the misunderstanding.

First, as stated in my article, the null in the rear of the radiation pattern (which determines the front-to-back ratio) will be filled in significantly with only a small amount of radiation from the feedline. Most Yagi users would consider this, alone, to be a serious distortion. But even worse, the forward pattern lobe can also be distorted and the gain degraded, because radiation from the feedline can reach a level approaching one-half of that radiated by the driven element of the Yagi. This occurs when the antenna current flowing on the outer surface of the coax approaches one-half the current in the driven element.

The principal factor determining the ratio of driven-element-to-external feedline current (and thus the feedline radiation) is the *electrical* length of the outer surface of the coax shield from its antenna feedpoint to its effective RF ground point, measured from the ground point. When the

electrical length is an odd multiple of a quarter-wavelength, the external current is negligible, and there is no pattern distortion. However, in the opposite extreme where the length chances to be an *even* multiple of a quarter-wave, the external antenna current on the feedline approaches half the current in the driven element.

The effect of adding the vertically-polarized radiation from the feedline to the horizontally-polarized radiation from the driven element is to tilt the polarization plane away from horizontal, which reduces the excitation of the parasitic elements, and in turn reduces the gain.

W7IV quoted from W5JJ's article in **Ham Radio**, May 1973, in which he reported measurements showing a 1.4:1 dipole unbalance due to feeding with coax without a balun. But he then followed up with the disturbingly contradictory statement that surface current on a feedline is small, from 1/1,000th to 1/10,000th of the dipole current, with no mention of the effect of feedline length.

Therefore, I must point out that if the current in one dipole arm is 1.4 times greater than that in the other because of unbalanced-to-balanced feed, then from Kirchoff's first law, a current equal to the difference between the two dipole-arm currents is flowing onto the outside surface of the coax at the coax-dipole junction. (See *Figure 1* of my **QST** article.) My own measurements confirm this, and anyone who has been burned by a hot microphone, but corrected the problem by simply installing a balun knows that the antenna current on the feedline was not small.

I hope my comments lay Mr. Hyder's doubts to rest, and perhaps those of any readers who may have entertained a similar misunderstanding.

Sincerely,
WALTER MAXWELL, W2DU
ARRL TA □

Program available

In reference to your article presenting Mr. Maxwell's paper, I wish to make a comment that he has done a great service to Amateur Radio in his series of articles on reflected power and VSWR. **Worldradio** is to be commended for publishing this material.

Several years ago, I wrote programs for my HP-97 and TRS-80C computers to carry out these computations. By way of interest, I checked out the programs using the example on page 39 of the August issue of **Worldradio**. The results were in complete agreement. I also checked the examples in the ARRL Antenna Book 14th Edition, page 3-12, and the ITT Handbook examples on page 24-12, with agreement in every case.

The program uses the VSWR at the input rather than the inconvenient value of VSWR at the load.

I am enclosing a copy of the program and the two examples. You may use them in any way you wish. I would be pleased to send a copy of the program to anyone on receipt of an SASE. It can be readily adapted to most any computer.

I.L. McNALLY, K6WX
26119 Fairlane Drive
Sun City, CA 92381 □

REMINDER.....

INCLUDE FIRST AND LAST NAMES WITH CALL SIGNS.

The triband Bobtail Curtain

Jerry Swank, W8HXR

The Bobtail Curtain was invented in 1948 by Woody Smith, W6BCX. It was originally designed as a 2-element pair of verticals, but it seemed so simple, and because it was used with the flat top instead of the ground mounting, no one would use it.

He finally decided to make it with three verticals merely to make it look more interesting. It worked, and the Bobtail Curtain was born. Actually, it is only one-third better than the 2-element job, and thus not worth the extra space if you are short of real estate.

It was also originally used as a current-fed antenna, but then was only usable on one band. Thus, the voltage feed was designed, as this would work on half and twice the frequency.

However, the current feed makes possible the design of a triband version, which would be complicated with voltage feed. I have not written this up anywhere before this, but have had several friends try it, even at 80 and 160 meters, and it works fine

One who tried it in Colorado said that on 15 meters, it was not as good as his 40-meter inverted Vee at 40 feet on the East Coast of the USA. This is to be expected, as the Bobtail is strictly a DX antenna, and the angle is too low for short-haul use.

My friend Ron Chappari, W6UAV, tried it on 80 meters in the CQ World Wide Contest against an inverted Vee at 60 feet. He said that at 1,000 miles, the inverted Vee was better, and at 1,500 miles they were equal, but into Japan the Bobtail was 3 S units (about 18dB) better than the inverted Vee. This is a spectacular improvement.

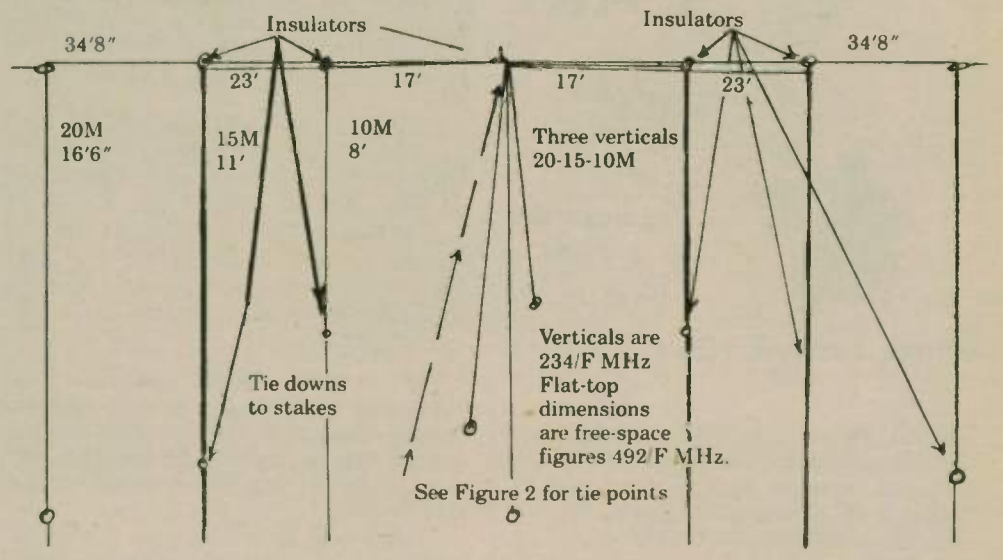


Figure 1

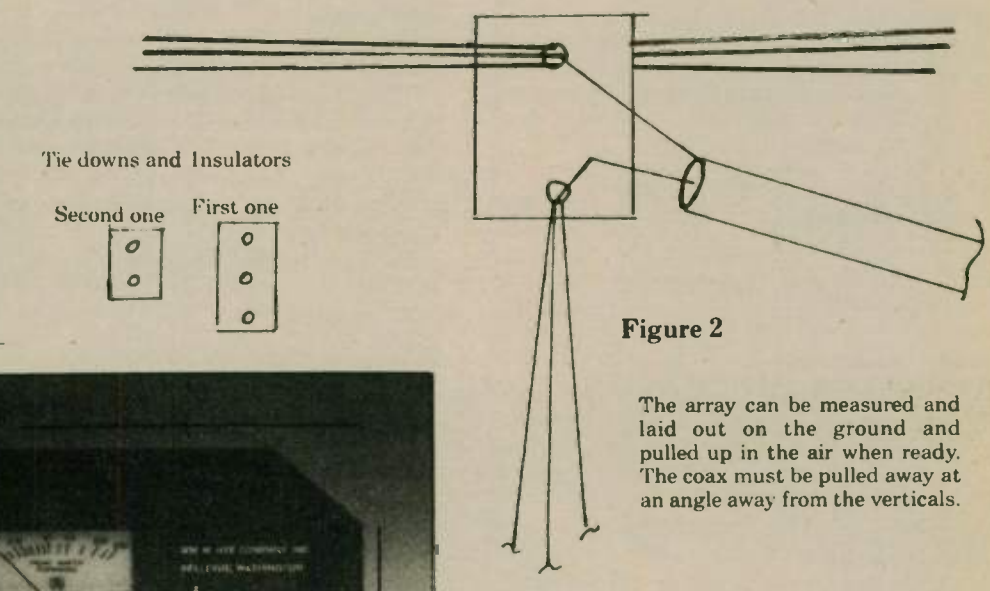


Figure 2

The array can be measured and laid out on the ground and pulled up in the air when ready. The coax must be pulled away at an angle away from the verticals.

In the drawings with this article, I have shown a 10-15-20-meter version. An amateur in Washington state called me on the phone and said he had put up a 5-element Bobtail on 15 meters and that the ZL and VK stations were consistently 40 over 9 at all times. Don't expect great results except over 2,500 miles.

The center element is made of three verticals, one for each of the three bands. The flat top must be made of three separate lines; it will not work by using the single flat top for all three bands. The center of the coax goes to the vertical, and the shield goes to the flat tops of all three bands.

Bill Orr wrote to me that he thought the coax should be turned over with the center conductor going to the flat top. This, he said, would be "more sanitary," whatever that means. However, I used it this way and could see no reason for trying it the other way. If you want to experiment, you are welcome.

I got at least a dozen long-distance calls from amateurs who tried the current feed and said it did not work.

After some questioning, I found they did not use an insulator at the center. This, of course, meant that the coax was shorted. So this time I am actually going to say it — use an insulator as shown in

(please turn to next page)

Vince Luciani, K2VJ

Kevin Moore, VK3ASM, became our first international member to CARI (Chess & Amateur Radio International). He has since done a marvelous job for us as evidenced by the fact that there are more VK members in CARI than from some U.S. call sign districts.

Kirk McMillan, ZL4PX, and Craig McMillan, VK3CRA, joined soon afterward; the two were unrelated to each other. (VK3CRA and VK3ASM lived a few blocks from each other but had never met.)

Craig handles new VK/ZL member applications and does a mighty fine job of writing, as evidenced by a two-page article on CARI recently published in Australia's **AMATEUR RADIO** magazine.

Kirk did rather well, also, with his two-page article on CARI in New Zealand's **BREAK-IN** magazine. Some months ago, we had what we called "The America's Cup in Radiochess" in which our Oceania members went up against U.S. CARI players. On the day of the match, Murphy took over, as usual; we couldn't hear VK-land from the States.

Tom Wagner, NH6R, had his local chess club standing by for such an eventuality. They took over, representing the United States. Here's how ZL4PX later reported in our newsletter, *CARI NEWS*, how it went:

"Tom, NH6R, set the mood early on with his keen sense of humor. Once the games started, the ad lib comments kept coming and it was both hilarious and entertaining.

"My game with Jason was the first to finish: I lost. With the first win theirs, the KH6 boys keyed the mic — 20dB over S9 — for about five minutes and all we heard was cheering, whistling and stomping of feet. It's one thing I'll never forget.

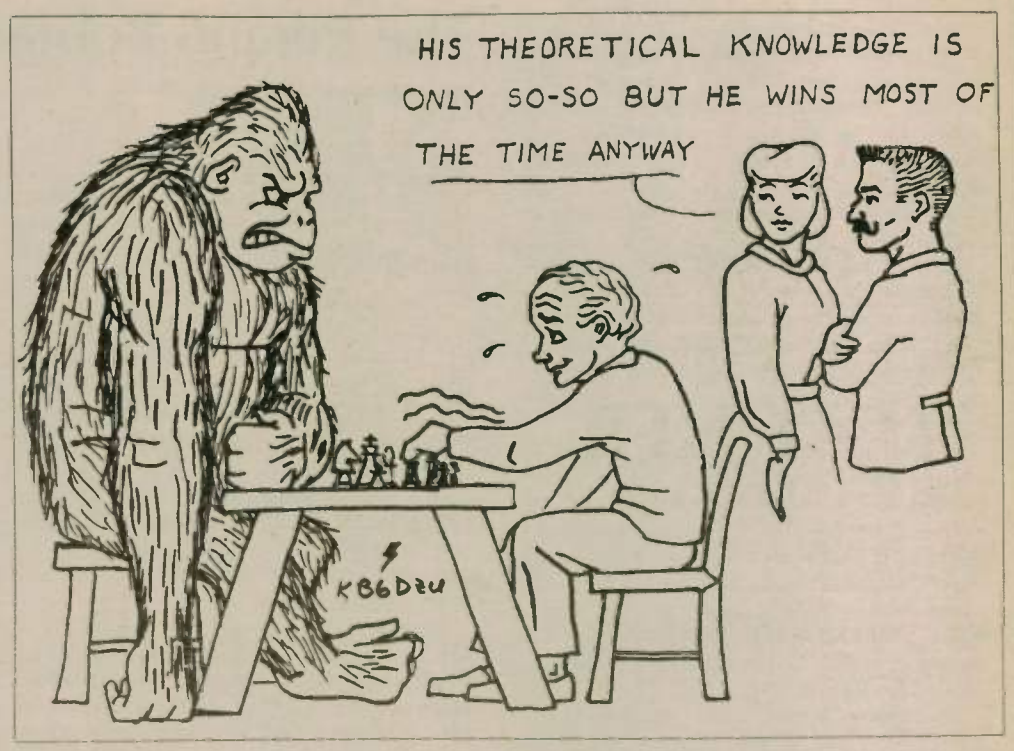
"Of course, the VK group immediately disowned me."

As it turned out, the match was a tie, with two games each. This necessitated a later rematch, which was reported on in *CARI NEWS* by contributing editor, Gary Freeman, WA0ZSU, as follows:

"Kirk ZL4PX volunteered to serve as NCS, this time, and ran the match superbly well.

"The first game decision came on board 5 as David ZL4RQ (not a CARI member) knocked off CARI president Vince Luciani, K2VJ (I never said I was a chess player!). Then WA0ZSU evened the score by handing Jim Kun, C21RK, a rare loss. (Yes, join CARI and work some rare — Republic of Nauru — DX.)

"Jay Horwath, K1RR, who was maritime mobile at the time (shipboard radio officer) then beat VK3ASM to give the United States a 2-1 lead.



"Tom Wagner, NH6R, soon tied it up again on board 3 by beating Tom Palmer, WX4V. (Two points of note, here: 1) The NH6R Tom was about to be transferred stateside from his Coast Guard assignment in Hawaii, and out of deep appreciation for the many enjoyable radiochess QSO's he had had with his friends in Oceania, we honored his request to turn "turncoat" this one time. 2) The WX4V Tom is a super ham/chess player who went from Novice to Extra Class in one year, motivated by his chess interests. An engineer? Huh-uh. Tom's an attorney.)

"With the score tied 2-2, everything now depended upon board 2, where John Bastin, WB8KKI, was slugging it out with Ian McLaren, VK3DSM. Their game went on and on . . . and on. In six hours of cross-band playing, and 74 moves, John finally won it."

John later claimed hearing the Star Spangled Banner playing in the distance — small wonder, the game had started at midnight, our local time, and ended with "the dawn's early light."

Pal, when it comes to radiochess . . . □

Bobtail

(continued from page 47)

Figure 2. This was when I wrote up a single current-fed Bobtail. I have never published the triband version.

Because the ends of the three antennas are different heights above the ground, the SWR is not the same on all three bands. On the 20-meter antenna the SWR is 1:1 when properly tuned, and on the 15-meter it is about 1.5:1. On the 10-meter, it is about 1.8:1.

The antenna is tuned by adjusting the length of the vertical sections. The length of the flat top sections only changes the phasing a small amount, and has almost no effect on the tuning.

Jim Gray, W1XU, suggested using rotator cable and making a 4-element array with 40 through 10. I have not tried this. This is about as cheap and simple as a triband array can be.

The reason the Bobtail works is that the high current is up in the air, away from the ground, and the flat top is a very low resistance compared to the ground resistance of an array of ground-mounted verticals. All 3- or 2-elements are in phase, and the pattern is a figure 8. There is no reason it cannot be used with a reflector or directional array for unidirectional gain. □

CW on the go

A girl — about 15 years old — was wandering down the line at the Dayton Hamvention with a tape player attached to her belt, the earphones on and listening as she went. Mentioned something about rock and roll and she turned one of the earphones around and out came CW at about 20 per. She was scheduled for the General test the next morning and was getting a brush-up on the code.

— *Illiana Repeater System, Catlin, IL* □

TEACHER

Alan Kline, KB1DJ
P.O. Box 54
West Lynn, MA 01905

VE program notes

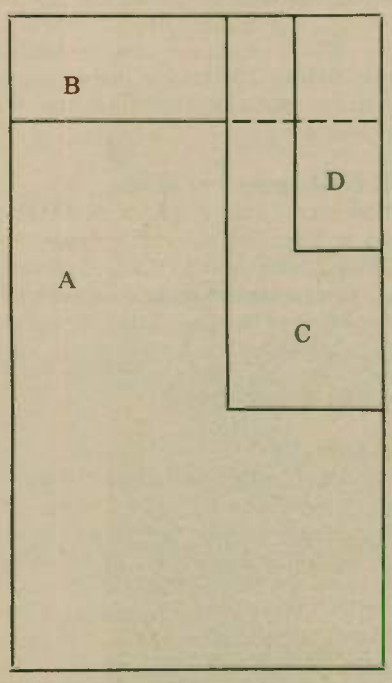
No matter what the new 610 form looks like, here are some suggestions for upgrading applicants in preparing their paperwork to apply for an appointment to take the exam. These suggestions are for the VE's and applicants, and apply to both small club-sponsored sessions and large hamfest sessions.

A proper 610 form has a copy of your current license attached to it. Before you make a clear copy of the license, make sure you have signed the original license. If you have recently upgraded or have a code credit certificate, please attach those also.

If you wish to upgrade two or more levels — say Novice to Advanced or Extra — don't submit two separate 610 forms; one will do. Just check off the highest class of license you might want to try for on that day. The VE team will schedule you according to the time you need to take all the exams.

If you are taking the test through the ARRL VE system, the charge is only $4, whether you are taking code only or everything to get that Extra. Make sure you sign the check or money order. If you are a family member and more than one of you is taking an exam, have different checks made out for each 610 form submitted. If you pay by money order or bank check, put your name and call sign on the check.

Check with the instructions from the VE team; how do they want the check made out? The VE's send their money in-



This is the way 610 Forms should look when sent to VE's.

to the ARRL for the tests, but they may not want to send in all the individual checks they collected. So not all checks will be made out to the ARRL/VEC.

Please include a business-size #10 SASE. Don't scribble your address on it; print or type clearly. Once the VE team schedules your exam time, I'm sure you'll want to know right away, and if the SASE is returned to the VE team, you may never know.

If the examiners are having a large session at a hamfest, you might tell them your preference to the day and times. But make your reason a good one. One YL complained to me about a Sunday 9:00 a.m. appointment time, not because she had to go to church, but because she knew she was going to party all night at the hamfest. If you have a legitimate reason for the preference of a certain time, maybe the VE team can accommodate you.

Somewhere on the border of the 610 form, put your work and home phone numbers. This is to facilitate the solving of problems. At the last minute, while sorting 610 forms, we called a few amateurs for their dates of birth.

And finally, let's make it easy on the VE's who are going to process your paperwork. I am proposing a form of standardization of 610 form submittals. Here's the way I like to see 610's sent to the VE's.

A) Correctly filled out 610 form; find one as new as possible.
B) Copy of license, cut to size, stapled at upper left corner.
C) Size #10 business envelope SASE.
D) Check for amount requested by VEC.

Now, don't bother to fold this package; put it into a large manila envelope and send to the VE team conducting the local exams. They will surely appreciate your neatness and thoroughness. □

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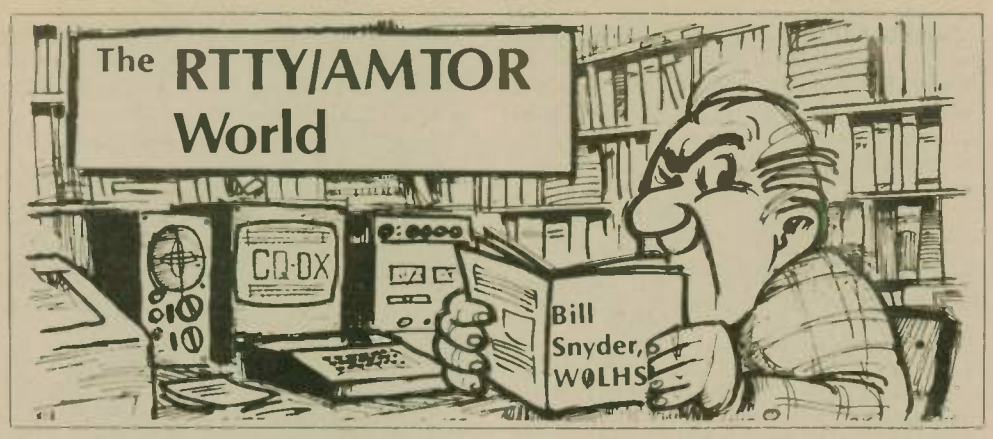


Auto-start operations on RTTY date back to the late 1940's and early '50s. Until 1953, RTTY transmissions were not allowed on the high frequency bands, so all operations were confined to the 2-meter band. Most activity was located on the East and West Coasts; very little of it took place in the hinterland.

In those days, the ham publications devoted to RTTY were full of construction articles featuring time clock arrangements that could turn on printers and tuning units once each hour. If you wished to send a message to any station on your net, all you had to do was transmit during the period all the printers were up and running. As long as there was a signal present, the printers would copy. If there was a dry spell, the tuning time-delay unit would shut the equipment down until the next hour. Many networks were set up to take advantage of this feature.

All 2-meter contacts were made using audio frequency shift keying (AFSK). This method was selected because the receivers did not have to be tuned exactly to the right frequency and any equipment drift would not create a problem. But AFSK was not allowed below 144 MHz so auto-start operations were not very popular. The coming of the computer changed all this.

Today, with solid-state gear, anyone with the inclination and the bucks can set up an auto-start or message storage operation (MSO). My AMTOR unit is capable of being set for auto-response simply by loading two of the memory blocks with messages. It works very well.

My first automated contact took place one morning after I had finished checking the 20-meter band for DX. I left the machine on, loaded for auto-response and went to breakfast. When I returned from eating, there was a message from my Tokyo friend, Minoru Tsuda, JA1DSI. It read in total: "OH BOY, BILL, YOU ARE THERE."

AMTOR lends itself nicely to auto-start operations because of its error-checking ability. The difference between auto-start and MSO operations is this: Auto-start will not handle third-party traffic; only those communications directed to the automated station are recorded. The MSO station, on the other hand, behaves as a depository for commuications between other stations as well as storing messages directed to the MSO operator personally.

Lately, we have a new breed of auto-response operators appearing on the bands. A few days ago I watched one AMTOR station call CQ at two-minute intervals. He was soliciting contacts with his auto-response computer. After a line of CQ and call signs, his computer would send instructions on how to access the various features of the auto-response computer. As long as I watched his print, he did not get one single answer, but he did cause a great deal of unnecessary QRM to the 14080 frequency.

All this brings me to this: Is high technology going to take away the basic idea of Amateur Radio — personal communications? I have for a long time been critical of MSO operations, and I have been characterized by MSO operators as childish, immature and a threat to Amateur Radio's technical progress. I'll admit to the first two, because I do enjoy my expensive toys, but I don't think I am any kind of threat to progress.

I peaked the dander of the MSO group when I started a campaign to get the ARRL Board of Directors to investigate automated operations and publish standards of good practice for this type of operation. Recently an Ad Hoc Committee, headed by Paul Rinaldo, W4RI, published guidelines for digital operations of this type. (See 'Operating News', page 71, October 1984 QST.)

I became upset with MSO operations when they started to proliferate like mosquitoes in a swamp. While some MSO units were orderly, systematic and were run with good judgement, some of them were trying to emulate newspapers, magazines and a post office all in one. For example: one 40-meter station had over 100 messages stored in memory. Many of them were want ads offering things for sale — things like ham gear and even an occasional automobile.

Another system featured the Westlink bulletin, the ARRL transmission schedule and a number of other items that rightfully belong in our ham magazines. We have enough QRM building in our RTTY sub-bands without having magazine information offered to any comer.

So, before you put an automated RTTY/AMTOR operation onto the DX and non-VHF frequencies, I ask you: consider the QRM you might cause to the others who use the frequencies. Unless you have a super-intelligent computer that can ascertain if the frequency is busy, don't try to set up your own frequency for MSO operations. Join those who already have staked their claims. And whatever you do, please don't solicit automated contacts in our shrinking bands. It ain't fair to those who would like to ragchew or chase DX on a person-to-person basis.

Eavesdropping

" . . . THIS RTTY CONTEST NEEDS A RAIN DATE CAUSE PROPAGATION IS SO BAD!" . . . "HAVE TROUBLE THINKING AND TYPING AT THE SAME TIME." . . . "IF I AM PINNING YOUR NEEDLE, YOU BETTER RECALIBRATE YOUR METER." . . . "IF YOU SEE ANY BARE-BREASTED BIRDS ON THE BEACH, CALL THIS BIRDWATCHER." . . . "THANKS FOR NOT GOING INTO YOUR RIGS AND OTHER GEAR DOWN TO THE LAST 32ND OF AN INCH." . . . "MY RTTY GEAR HAS 75 COMMANDS AND I'VE ONLY MASTERED SIX OF THEM." . . . "NICE TO FINGERTALK WITH YOU TODAY." . . . "I HAVE CW QRM FROM A FRIEND OF MINE WHO I KNOW DOESN'T WORK CW." . . . "THANK YOU FOR THE NICE RAPORT." . . . "I WORK IN SUNKYVALE CALIFORNIA." . . . "WELCOME TO THE RTTY WORLD, I HAVE ONLY BEEN HERE TWO WEEKS." . . . "MAY THE BLUEBIRD OF HAPPINESS SIT ON YOUR ANTENNA MAST." . . . "THIS IS MY SECOND DAY ON RTTY AND MY 24TH CONTACT." . . . "MY SHACK IS ONLY SIX FEET SQUARE, BUT THE CEILING IS 40 FEET HIGH." . . . "KEEP THE CAT OUT OF THE SHACK AND THE MEAT LOAF." . . . "RY STANDS FOR RTTY YOKEL" . . . "WHAT CONTEST IS THIS? YOU ARE MY FIRST RTTY CONTACT." . . . "PERFECT COPY ALMOST EXCEPT FOR . . ." . . . "I LIKE VHF RTTY, THE SET-IT AND FORGET-IT KIND." . . . " I WORKED RTTY IN THE ARMY DURING THE 1560'S." . . . "WHEN I SWUNG THE BEAM IT OPENED MY GARAGE DOOR AND THE XYL STARTED TO YELL!"

Little bits and bytes

KT1N made his 100 DXCC RTTY contacts in just 11 months. Walter Skudlarek, DJ6QT, a famed DXpeditioner, put Julio Vera Cruz, D44BC, on RTTY during November. QSL via D44BC, Box 36, Mindelo, CAPE VERDE. — Hans EL2AT is heading for Antigua as his next duty station. Hans was active for awhile at A22WZ. — Dick Fields, 8R1RBF, is active now and then from Guyana. — Philippe Delcroix, TR8DX, operates regularly and can be QSL'ed via Bill Dunbar, WA4VDE, or Box 231, Libreville. — George KT3K lives in a trailer park where no antennas are allowed, so George tuned up the metal flashing on a nearby shed. — More and more RTTY stations are transmitting above 14100. The phone bands are moving down, so why shouldn't the RTTY move up a bit?

AMTOR operating note

Now and then, I notice AMTOR stations calling CQ by using mode A and loading in the selcall CQCQ. I asked one station why he did it, and he said he got more answers that way than by using the FEC mode. Call CQ by using the forward error correcting mode, and sign your call and your selcall often.

DX notes

Gin Naniwada, JA1ACB, is probably the most dedicated DX'er I know. At our last contact, he had over 240 confirmed RTTY contacts and is still counting. If you are a serious RTTY DX chaser, you probably owe a debt of gratitude to Gin for a number of the rare ones in your total. You see, Gin has sent Tono gear to DX operators in exotic locations so they could

(continued on next page)

OLD TIME RADIO

W5JJ
Carl C. Drumeller

Microwaves before 1900

Ask the average radio amateur or even the average electronics engineer when frequencies in the UHF and SHF range began to be explored by serious experimenters, and he'll probably say "Oh, somewhere in the '30s or possibly the '20s."

Would you believe frequencies as high as 500 MHz were being used in 1888? And that 4 GHz was "old stuff" by 1894?

The June 1984 issue of the *AESS Newsletter*, published by the Institute of Electrical and Electronics Engineers, Inc., has startling information, all verified, on early experiments and public demonstrations.

Most serious amateurs of radio are aware that Hertz, in 1888, conducted his investigations at frequencies between 350 MHz and 500 MHz. Many of us, though, were not aware that in England, Oliver Lodge — running parallel in time with Hertz — also was demonstrating even higher frequency experiments. Lodge, of course, had to invent most of the items he used in his experiments.

Although Hertz used resonant dipoles and parallel-wire transmission lines, Lodge used a different approach. He used a cavity oscillator feeding a circular waveguide to a radiating iris. These demonstrations were not carried on with milliwatt powers, either! He employed up to 70kW peak power! He could draw sparks from just about every metallic object in his laboratory!

At about the same time, J. Chunder Bose, in Calcutta, India, was doing even more awe-inspiring experiments! He didn't stop at UHF; he went well into the SHF range. To do this, he had to devise many new pieces of equipment. He developed the rectangular waveguide and the horn antenna, as well as a form of semi-conductor detector. Another development was capacitive loading for a spherical resonator, which lead to higher Q. The frequency? A mere 60 GHz!

So, you see, microwaves are not a new development, just one that got pushed aside when Marconi came along with commercial communication in the MF and LF spectrum! It was well into the '20s before serious attention was again directed to what was the first love of wireless pioneers. □

Early-day hams

Frank Berberich, W7JZC

Not long after World War I, a number of young fellows became interested in the new communications media known as "radio." The term radio amateur, or ham, had yet to be invented. It wasn't until 1927 that the word "amateur" was used in the Radio Act of 1927. This Act also created the Federal Radio Commission, a further attempt to bring order out of chaos.

Between 1900 and the mid-'20s, radio experimenters literally had everything their own way. The experimenter was king and paid little attention to military, federal or commercial complaints about his operations. However, some of these early-day enthusiasts left their mark in the fields of radio communication and entertainment.

One such experimenter was 35-year-old Powell Crosley, who lived in Cincinnati, Ohio, and operated a station under the call 8CR. In 1921, Crosley owned a small auto parts manufacturing business but was not very excited about its future. At the same time, he was very impressed with the possibilities of broadcast radio. It was, he felt, *the* up and coming business.

Crosley decided to move his ham transmitter from his home to his factory and apply for a commercial broadcast license. After a short period of bureaucratic exchanges, he received the call WLW ... and the rest is radio history.

In 1923, the rapidly expanding demand for home receivers caused Crosley to organize the Crosley Radio Corporation. Later he branched out from radios to household applicances and even, in 1946, was ahead of his times with a small compact car.

Another early call that carved a place in history was 9ZN. This call belonged to two ex-USN radio technicians — 27-year-old Karl E. Hassel and R.G. Matthews. Radio quickly became their whole interest and they formed the Chicago Radio Laboratory. Their company won the rights to use all of Major Edwin H. Armstrong's radio patents. Casting about for a suitable trade name, they came up with a play on their ham call. The name Z-Nith soon graced their products.

Hassel and Matthews had previously gained fame by building a longwave radio receiver for the **Chicago Tribune** in 1919. By using the receiver instead of the Atlantic Cable, the newspaper was able to scoop their competition by 12 to 24 hours in reporting the proceedings of the Versailles Peace Conference.

In 1923, Eugene F. McDonald, Jr. negotiated for the exclusive right to market CRL products. Still playing on the call 9ZN, he named his new company the Zenith Radio Corporation. As a sideline, he also formed the National Association of Broadcasters.

An early radio experimenter, who later became a household word, owed much to an international distress call. The distress signal CQD was adopted 01 January 1904, by the powerful Marconi International Communications. Because of the different codes in use, there was considerable confusion in the use of CQD.

In 1906, the International Radio Telegraph Convention, held in Berlin, Germany, adopted the letters SOS to replace CQD. The Marconi interests were against the change but finally agreed to eliminate CQD completely after 1912. Until then, both signals were still in use. However, confusion continued due to the difference in some codes.

In 1912, the International Radio and Telegraph Congress agreed to drop any alphabetical use and use three dots-three dashes-three dots for the international distress signal. This would eliminate the confusion with different codes.

Enter our radio amateur.

In 1912, a 21-year-old experimenter-turned-professional set up a demonstration radio station in a window of John Wanamaker's New York store as a publicity stunt. On 15 April, he intercepted a distress message that was so important that President Taft ordered all other radio stations to remain silent. The young operator remained at his post for 72 hours, coordinating rescue efforts, compiling passenger lists and evaluating the disaster.

The intercepted distress call was from the SS *Titanic* and the young operator was David Sarnoff.

In 1926, David Sarnoff — by now very active in broadcast radio — formed the National Broadcasting Company. □

RTTY/AMTOR

(continued from page 50)

put a new country on the air.

Recently Gin sent an outfit to JT1AO in Mongolia. Unfortunately, the CRT was broken in shipment, and Gin informs us it will be awhile before he can get a replacement into the country. The Japanese really are gung-ho RTTY DX'ers. They put China on the mode as well as many other out-of-the-way locations.

Let me hear from you. I like mail and my grandson collects stamps. Any Callbook will do. 73 and happy keyboarding. Bill, WØLHS. DIT DIT. □

●●●●●

How can you tell when it's exactly midnight?
When the darkness is directly overhead.

Murphy's Law in construction

Ed Marriner, W6XM

There once was a man who set down a law which stated that whatever can possibly go wrong will go wrong. He was an observant man, since this law can be applied to most anything in life. For a few laughs we have tried to apply it to Amateur Radio construction. If you have ever built any equipment it should bring a smile.

- If a stranded piece of hook-up wire is to go through the eye of a lug on the tube socket, it will always fray and one wire won't go through.
- If you solder the braid of a piece of RG-174u, the heat will melt the plastic around the center wire and short.
- If you think you have the right size series resistor for a regulator tube, it will always be the wrong size under load.
- A washer will always slip off the machine screw before you can get the nut twisted on.
- If you hold a 6-32 nut with the tweezers, it will always snap off just before you can get it in place.
- You can never find the slot for the screwdriver when you don't have your glasses.
- There is always a nut in the bottle that has the wrong thread and won't go on.
- No matter how carefully you measure the three holes for mounting a bdc condenser on the panel, it never fits the holes.
- No matter how accurately you measure and drill the holes for a crystal socket, it never fits.
- Resistor leads are always shorter than the length you want.
- The wife always calls for supper just as you are down to the last wire and are ready for the smoke test of whatever you are building.
- No matter how well you isolate a class AB, 6CL6 amplifier, it always oscillates.
- There is never enough RF drive for the stage you are trying to drive.
- Transistor amplifiers always go into self-oscillation when tuned off resonance.
- The IF can slug always falls off or breaks the fine coil wire.
- Printed circuits always have a tiny short.
- A piece of aluminum from drilling always falls down in between the variable condenser plates.
- A screw or washer falling on the floor can never be found.
- Two diode rectifiers always blow out in a bridge rectifier circuit.
- A Jackson ball drive always slips if you clean it and repack the grease.
- If you have an allen wrench you never have a bristol wrench to take off a military knob.
- When you want to measure voltage with your ohmmeter, the probe lead is always broken off inside.
- Solder always sticks on the outside pin of a BNC fitting no matter how careful you are, and it won't go down in the recess.
- If you build something from a circuit in a magazine article and think it is correct, the correction will be published next month.
- The values given for a crystal oscillator are always the wrong capacitor values for your crystal.
- If you use a silicone diode you should have used a germanium diode for a detector.
- If you bought a bargain miniature switch at the flea market, it always turns out to be a momentary spring type when you get it home.
- Solder always sticks on the pin of a BNC fitting no matter how careful you are and the wire won't go in the tiny holes.
- After you have waited on a clear frequency for a schedule, someone always starts to use the frequency at schedule time.
- A dipole antenna is always too long to fit across your property.
- Stainless steel wire antennas won't radiate.
- Now that you bought a tube transceiver, you can no longer get tubes for it. □

Super grounding system

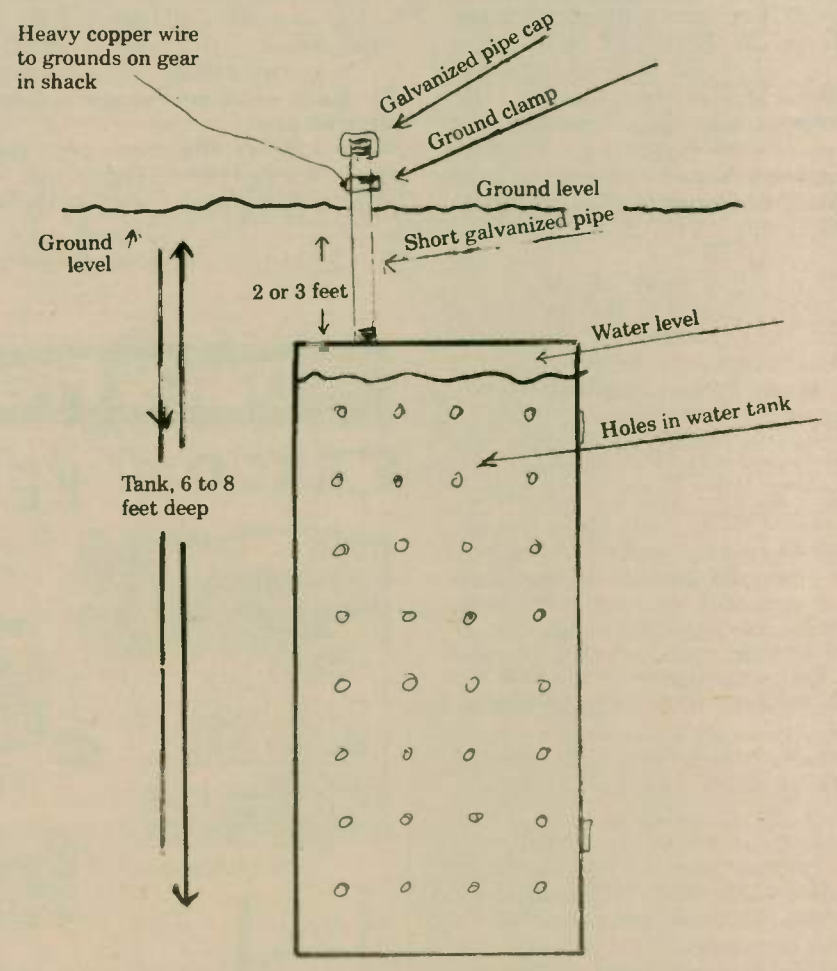
Kenneth Hand, WB2EUF

I think most SWL's and Amateur Radio operators can't deny the value and importance of a good grounding system. Here I have described what I have found to be a super homebrew grounding system, which is made from a discarded 30 or 50 gallon galvanized water storage tank. Many of these tanks can be found in local dumps or disposal areas.

First the tank is punched with holes every 2 inches apart. Then a short piece of galvanized pipe 2 feet or so is screwed into the threaded hole — the highest hole on the tank; then the water tank and pipe are buried 6 to 8 feet below ground level, with the intake water pipe extending 6 inches or more above ground level and a pipe cap (galvanized) screwed onto the open end of this pipe. Then the hole in which the tank is buried is filled in with soil up to ground level. Then a heavy copper wire or copper strap is attached to the water fill pipe with a ground clamp.

This wire or strap would run to the radio gear in the radio shack. Fasten ground connections on gear. Then take a garden hose and fill the tank through the water intake pipe. The water will fill the tank and leak out through all the holes punched in the tank. The water will leak out all around the tank, thereby making a perfect grounding system between the tank and the ground.

The good grounding effects of this super grounding system on radio reception and radio transmission will be very noticeable because of better radio reception and better radio transmission. Be sure and fill the tank once a month to have a super grounding system. □



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

CONTEST LOG

CaGen Software has just released its new universal CONTEST LOG program, designed for the Commodore 64 with disk drive and optional printer. The CaGen CONTEST LOG is a rapid action, machine language program that eliminates duplicate contest QSO's and prints permanent contest logs and "dupe sheets".

Because of its universal design, the program can be used for all contest situations, allowing duplicate checks by call sign alone or by call sign, band and mode. A single disk file will log and check up to 2,500 contacts, completely eliminating the need for paper logs or "dupe sheets".

A fully "loaded" log of contacts can be "dupe checked" using call sign, band and mode in 2.6 seconds. If the check is only for duplication of call sign, this same number of contacts is checked in less than one second.

The CaGen CONTEST LOG will not allow a duplicate contact to be entered. Instead, it visually notifies the operator and then automatically resets for input of another call sign. Rapid logging is assured, since the operator enters only call sign and "exchange" information. Date, time, band, mode and QSO serial number are automatically entered as each contact is logged. Each entry is permanently written on the disk, and power losses will not destroy the log.

A 24-hour clock is continuously displayed and retains its accuracy at all times, since it is not affected by disk read/write activity. The screen is designed to provide a constant display of contest status, showing the number of contacts logged, the time, and the current band and mode of operation. In addition, the QSO rate (contacts/hour) can be displayed at any time. This computation is updated with every log entry, and it even adjusts itself automatically for "break times" of 30 minutes or more!

Other features include the ability to recall and display any entry (by call or by serial number) and an "update" mode which enables the operator to change or add to any log entry whenever necessary.

The print routines will produce a complete contest log and "dupe sheets" as desired. Dupe sheets can be separated by band and mode, or they can be printed as a single listing of all contacts, regardless of band or mode.

The CaGen CONTEST LOG provides menu-driven selection of all program choices. While a separate "help" menu is available for display, the screen always shows all option codes during contest operation.

Each CaGen CONTEST LOG is personalized, with the purchaser's call sign displayed on the operating screen. The program is priced at $25 and is available from CaGen Software, 4821 Rosecroft St., Virginia Beach, VA 23464.

Advanced Class FCC Test Guide

Gordon West's Radio School announces the first-of-its-kind, 500 test question-and-answer guide for the new volunteer-administered Element 4A examination. All 500 test questions plus multiple choice answers are listed in this 8½" × 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.

This Advanced Class 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 also 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 that they may need some extra study time 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. An Extra Class test guide is also now available.

The Radio School Advanced 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 $9.95, all from Radio School Inc., 2414 College Dr., Costa Mesa, CA 92626.

Decode-A-Pad

Engineering Consulting introduces the "Decode-A-Pad." Touch-tone to RS-232-C interface for your home computer. Receive all 16 DTMF touch-tones as fast as they can be transmitted. The computer does all the work at 300 baud; each digit is displayed as it is transmitted.

Receive coded strings, decode any number of digits; program as many multi-digit codes as you want, all in basic. You program your computer to do the work. The DAP-1 will convert the touch-tones to serial 300 baud information which your computer receives. Sample programs to get you started are included in the price.

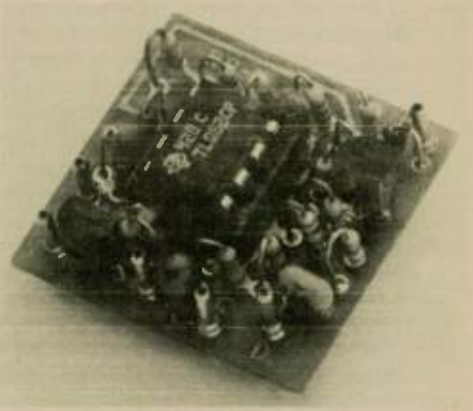
You can now use your hand-held radio to control your computer. Your computer will then be used to control your remote base, turn on and off relays, or do almost anything you can dream up.

The DAP-1 works like a 300 baud modem to convert your touch-tones to serial data. 300 baud is much faster than you can send a touch-tone digit over the air. This means no digits will be lost when decoding.

Many new HF transceivers on the market accept 300 baud RS-232-C to control the radio. Using a simple basic program to convert the code "strings" into commands will allow the hand-held radio to control the HF transceiver with the DAP-1 and your computer.

Let the DAP-1 make the interface easy for you today! Model DAP-1 sells for $89.95, including U.S. shipping. MasterCard/VISA accepted.

For more information, contact Engineering Consulting, 583 Candlewood St., Brea, CA 92621; (714) 671-2009.



Reverse Burst Accessory

Communications Specialists has introduced the RB-1 reverse burst accessory. The RB-1 eliminates the long squelch tail heard with some reed-type and other sub-tone decoders. When used in conjunction with decoders that offer squelch tail elimination, the RB-1 will delay the transmitter turn-off time and reverse the phase of the encoded tone. This immediately stops the decoder and eliminates the squelch tail.

The RB-1 is available from stock and sells for $14.95. Contact Communications Specialists for more information about the RB-1 and other tone products. Communications Specialists, Inc., 426 W. Taft Ave., Orange, CA 92665-4296; phones: (800) 854-0547, (714) 998-3021; 24-hour FAX: (714) 974-3420.

Automatic antenna

Heath Company, Benton Harbor, Michigan has expanded its Amateur Radio line to include the new SA-2500 Auto-Tune Antenna Tuner which features an efficient, continuously variable roller inductor that can be preset for 18 different frequencies.

The SA-2500 permits the user to preset high and low frequencies on each of the nine bands from 160 to 10 meters. In the Auto mode, this Tuner will set the roller inductor to the preselected value and automatically adjust the preset for a proper match. A remote capability allows selected frequencies to be automatically tuned to the proper SWR using only transmitter band switches, provided the transmitter is equipped for remote operation.

Manual tuning is made easy with three front-panel lever switches and dual wattmeters. The wattmeters read forward and reflected average power and SWR in two ranges. An auto-range circuit automatically switches the wattmeters to the appropriate range.

The SA-2500 effectively tunes and matches unbalanced feedlines and single-wire antennas at the full legal power limit of a station. The SA-2500-1 4:1 Balun Accessory can be added for use with balanced ladder line antennas. A front-panel coax switch allows the user to easily select from three different, permanently connected antennas and bypass.

Heath's Auto-Tune Antenna Tuner installs directly into the transmission line to measure power on all frequencies between 1.8 and 30 MHz — 200/2000 watts in the forward direction and 50/500 watts reflected. SWR readings on the reflected meter provide direct readings from 1:1 to 3:1.

Front-panel indicators show when the roller inductor, transmitter and antenna capacitors are being adjusted; the number of active roller inductor turns; high- and low-meter range; and

RF TRANSISTORS, MICROWAVE TRANSISTORS

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
2N1561	$25.00	2N4416	2.25	2N5920	$ 70.00	181-3	15.00
2N1562	25.00	2N4427	1.25	2N5921	80.00	210-2	10.00
2N1692	25.00	2N4428	1.85	2N5922	10.00	269-1	18.00
2N2857	1.55	2N4430	11.80	2N5923	25.00	281-1	15.00
2N2857JAN	4.10	2N4927	3.90	2N5941	23.00	282-1	30.00
2N2857JANTX	4.50	2N4957	3.45	2N5942	40.00	482	7.50
2N2876	13.50	2N4959	2.30	2N5944	10.35	564-1	25.00
2N2947	18.35	2N5016	18.40	2N5945	10.00	698-3	15.00
2N2948	13.00	2N5026	15.00	2N5946	12.00	703-1	15.00
2N2949	15.50	2N5070	18.40	2N5947	9.20	704	4.00
2N3118	5.00	2N5090	13.80	2N6080	6.00	709-2	11.00
2N3119	4.00	2N5108	3.45	2N6081	7.00	711	4.00
2N3134	1.15	2N5109	1.70	2N6082	9.00	733-2	15.00
2N3287	4.90	2N5160	3.45	2N6083	9.50	798-2	25.00
2N3288	4.40	2N5177	21.62	2N6084	12.00	3421	28.00
2N3309	4.85	2N5179	1.04	2N6094	11.00	3683P1	15.00
2N3375	17.10	2N5216	56.00	2N6095	12.00	3992	25.00
2N3478	2.13	2N5470	75.00	2N6096	16.10	4164P1	15.00
2N3553	1.55	2N5583	3.45	2N6097	20.70	4243P1	28.00
2N3553JAN	2.90	2N5589	9.77	2N6105	21.00	4340P3	18.00
2N3632	15.50	2N5590	10.92	2N6136	21.85	4387P1	27.50
2N3733	11.00	2N5591	13.80	2N6166	40.24	7104-1	28.00
2N3818	5.00	2N5596	99.00	2N6267	142.00	7249-2	10.50
2N3866	1.30	2N5636	12.00	2N6304	1.50	7283-1	37.50
2N3866JAN	2.20	2N5637	15.50	2N6368	30.00	7536-1	30.00
2N3866JANTX	3.80	2N5641	12.42	2N6439	55.31	7794-1	10.50
2N3866JANTXV	4.70	2N5642	14.03	2N6459	18.00	7795	15.00
2N3866AJANTXV	5.30	2N5643	25.50	2N6567	10.06	7795-1	15.00
2N3924	3.35	2N5645	13.80	2N6603	13.50	7796-1	24.00
2N3926	16.10	2N5646	20.70	2N6604	13.50	7797-1	36.00
2N3927	17.25	2N5651	11.05	2N6679	44.00	40081 RCA	5.00
2N3948	1.75	2N5691	18.00	2N6680	80.00	40279 RCA	10.00
2N3950	25.00	2N5764	27.00	021-1	15.00	40280 RCA	4.62
2N3959	3.85	2N5836	3.45	01-80703T4	65.00	40281 RCA	10.00
2N4012	11.00	2N5842	8.45	35C05	15.00	40282 RCA	20.00
2N4037	2.00	2N5847	19.90	102-1	28.00	40290 RCA	2.80
2N4041	14.00	2N5849	20.00	103-1	28.00	40292 RCA	13.05
2N4072	1.80	2N5913	3.25	103-2	28.00	40294 RCA	2.50
2N4080	4.53	2N5916	36.00	104P1	18.00	40341 RCA	21.00
2N4127	21.00			163P1	10.00		

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
40608 RCA	$ 2.48	A2X1698	POR	BFY90	$ 1.50	EFJ4017	24.00
40673 RCA	2.50	A3-12	14.45	BLW60C5	15.00	EFJ4021	24.00
40894 RCA	1.00	A50-12	24.00	BLX67	12.25	EFJ4026	35.00
60247 RCA	25.00	A209	10.00	BLX67C3	12.25	EN15745	20.00
61206 RCA	100.00	A283	6.00	BLX93C3	22.21	FJ9540	16.00
62800A RCA	60.00	A283B	6.00	BLY87A	7.50	FSX52WF	58.00
62803 RCA	100.00	A1610	19.00	BLY88C3	13.08	G65739	25.00
430414/3990RCA	50.00	AF102	2.50	BLY89C	13.00	G65386	25.00
3457159 RCA	20.00	AFY12	2.50	BLY90	45.00	GM0290A	2.50
3729685-2 RCA	75.00	AR7115	20.00	BLY92	13.30	HEP76	4.95
3729701-2 RCA	50.00	AT41435-5	6.35	BLY94C	45.00	HEPS3002	11.40
3753883 RCA	50.00	B2-8Z	10.70	BLY351	10.00	HEPS3003	30.00
615467-902	25.00	B3-12	10.85	BLY568C/CF	30.00	HEPS3005	10.00
615467-903	40.00	B12-12	15.70	C2M70-28R	92.70	HEPS3006	19.90
2SC568	2.50	BAL0204125	152.95	C25-28	57.00	HEPS3007	25.00
2SC703	36.00	BF25-35	56.25	C4005	2.50	HEPS3010	11.34
2SC756A	7.50	B40-12	19.25	CD1659	20.00	HF8003	10.00
2SC781	2.80	B70-12	55.00	CD1899	20.00	HFET2204	112.00
2SC1018	1.00	BF272A	2.50	CD1920	10.00	HP35821	38.00
2SC1042	24.00	BFQ85	2.50	CD2188	18.00	HP35826B	32.00
2SC1070	2.50	BFR21	2.50	CD2545	24.00	HP35826E	32.00
2SC1216	2.50	BFR90	1.00	CD2664A	16.00	HP35831E	30.00
2SC1239	2.50	BFR91	1.65	CD3167	92.70	HP35832E	50.00
2SC1251	24.00	BFR99	2.50	CD3353	95.00	HP35833E	50.00
2SC1306	2.90	BFT12	2.50	CD3435	26.30	HP35859E	75.00
2SC1307	5.50	BFW16A	2.50	CD3900	152.95	HP35866E	44.00
2SC1424	2.80	BFW17	2.50	CM25-12	20.00	HXTR2101	44.00
2SC1600	5.00	BFW92	1.50	CM40-12	27.90	HXTR3101	7.00
2SC1678	2.00	BFX44	2.50	CM40-28	56.90	HXTR5101	31.00
2SC1729	32.40	BFX48	2.50	CME50-12	30.00	HXTR6104	68.00
2SC1760	1.50	BFX65	2.50	CTC2001	42.00	HXTR6105	31.00
2SC1909	4.00	BFX84	2.50	CTC2005	55.00	HXTR6106	33.00
2SC1945	10.00	BFX85	2.50	CTC3005	70.00	J310	1.00
2SC1946	40.00	BFX86	2.50	CTC3460	20.00	J02000	10.00
2SC1947	10.00	BFX89	1.00	DV2820S	25.00	J02001	25.00
2SC1970	2.50	BFY11	2.50	DXL1003P70	22.00	J04045	24.00
2SC1974	4.00	BFY18	2.50	DXL2001P70	19.00	KD5522	25.00
2SC2166	5.50	BFY19	2.50	DXL2002P70	14.00	KJ5522	25.00
2SC2237	32.00	BFY39	2.50	DXL3501AP100F	47.00	M1106	13.75
2SC2695	47.00			EFJ4015	12.00		

* R F TRANSISTORS *

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
M1107	$16.75	MRF221	10.00	MRF525	3.45	MSC82001	33.00
M1131	5.15	MRF223	13.00	MRF559	1.76	MSC82014	33.00
M1132	7.25	MRF224	13.50	MRF587	11.00	MSC82020M	130.00
M1134	13.40	MRF227	3.45	MRF605	20.00	MSC82030	33.00
M9116	29.10	MRF230	2.00	MRF618	25.00	MSC83001	40.00
M9579	6.00	MRF231	10.00	MRF626	12.00	MSC83003	82.00
M9580	7.95	MRF232	12.07	MRF628	8.65	MSC83005	70.00
M9587	7.00	MRF237	3.15	MRF629	3.45	MSC83026	POR
M9588	5.20	MRF238	13.80	MRF641	25.30	MSC83303	POR
M9622	5.95	MRF239	17.25	MRF644	27.60	MSC84900	60.00
M9623	7.95	MRF245	35.65	MRF646	29.90	MT4150	14.40
M9624	9.95	MRF247	31.00	MRF648	33.35	MT5126	25.00
M9625	15.95	MRF304	36.00	MRF816	15.00	MT5596(2N)	99.00
M9630	14.00	MRF306	50.00	MRF823	20.00	MT5768(2N)	95.00
M9740	27.90	MRF313	11.15	MRF846	44.85	MT8762	25.00
M9741	27.90	MRF314	29.21	MRF892	35.50	NE02136	2.00
M9755	16.00	MRF315	28.86	MRF894	46.00	NE02160ER	$100.00
M9780	5.50	MRF316	55.43	MRF901 3 Lead	1.00	NE021350	5.30
M9827	11.00	MRF317	63.94	MRF901 4 Lead	2.00	NE13783	61.00
M9848	35.00	MRF412	18.00	MRF902/2N6603JAN	15.00	NE21889	43.00
M9850	13.50	MRF420	20.12	MRF902B	18.40	NE57835	5.70
M9851	20.00	MRF421	25.00	MRF904	2.30	NE64360ER-A	100.00
M9860	8.25	MRF422	38.00	MRF905	2.55	NE64480 (B)	94.00
M9887	2.80	MRF427	17.25	MRF911	2.50	NE73436	2.50
M9908	6.95	MRF428	63.00	MRF965	2.55	NE77362ER	100.00
M9965	12.00	MRF433	12.07	MRF966	3.55	NE98260ER	100.00
MM1500	25.00	MRF449/A	12.65	MRF1000MA	32.77	PRT8637	25.00
MM1550	10.00	MRF450/A	14.37	MRF1004M	31.05	PT3127A	5.00
MM1552	50.00	MRF452/A	17.00	MRF2001	41.74	PT3127B	5.00
MM1553	50.00	MRF453/A	18.40	MRF2005	54.97	PT3127C	20.00
MM1607	8.45	MRF454/A	20.12	MRF5176	24.00	PT3127D	20.00
MM1614	10.00	MRF455/A	16.00	MRF8004	2.10	PT3127E	20.00
MM1810	15.00	MRF458	$20.70	MSC1720-12	225.00	PT3190	20.00
MM1810	15.00	MRF464	25.30	MSC1821-3	125.00	PT3194	20.00
MM1943	1.80	MRF466	18.97	MSC1821-10	225.00	PT3195	20.00
MM2608	5.00	MRF472	1.50	MSC2001	30.00	PT3537	7.80
MM3375A	17.10	MRF475	3.10	MSC2010	93.00	PT4166E	20.00
MM4429	10.00	MRF476	3.16	MSC2223-10	245.00	PT4176D	25.00
MM8000	1.15	MRF477	20.00	MSC2302	POR	PT4186B	5.00
MM8006	2.30	MRF479	8.05	MSC3000	35.00	PT4209	25.00
MM8011	25.00	MRF492	23.00	MSC3001	38.00	PT4209C/5645	25.00
MPSU31	1.01	MRF502	1.04	MSC72002	POR	PT4556	24.60
MRA2023-1.5	42.50	MRF503	6.00	MSC73001	POR	PT4570	7.50
MRF134	10.50	MRF504	7.00	MSC80064	35.00	PT4577	20.00
MRF136	16.00	MRF509	5.00	MSC80091	10.00	PT4590	5.00
MRF171	35.00	MRF511	10.69	MSC80099	3.00	PT4612	20.00
MRF208	11.50	MRF515	2.00	MSC80593	POR	PT4628	20.00
MRF212	16.10	MRF517	2.00	MSC80758	POR	PT4640	20.00

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
PT4642	20.00	SD1007-4	15.00	SD1088-8	22.00	SD1220	8.00
PT5632	4.70	SD1007-5	15.00	SD1089-5	15.00	SD1220-1	9.50
PT5749	25.00	SD1009	$15.00	SD1090	15.00	SD1220-9	8.00
PT6612	25.00	SD1009-2	15.00	SD1094	15.00	SD1222-8	16.00
PT6619	20.00	SD1012	10.00	SD1095	15.00	SD1222-11	7.50
PT6708	25.00	SD1012-3	10.00	SD1098-1	30.00	SD1224-10	18.00
PT6709	25.00	SD1012-5	10.00	SD1100	5.00	SD1225	18.00
PT6720	25.00	SD1013	10.00	SD1109	18.00	SD1225-1	15.00
PT8510	15.00	SD1013-3	10.00	SD1115-2	7.50	SD1229-7	10.95
PT8524	25.00	SD1013-7	10.00	SD1115-3	7.50	SD1229-16	10.95
PT8609	25.00	SD1016	15.00	SD1115-7	2.10	SD1232	4.00
PT8633	25.00	SD1016-5	15.00	SD1116	5.00	SD1240-8	15.00
PT8639	25.00	SD1018-4	13.00	SD1118	22.00	SD1244-1	14.00
PT8659	25.00	SD1018-6	13.00	SD1119	5.00	SD1244H12	25.00
PT8679	25.00	SD1018-7	13.00	SD1124	50.00	SD1262	15.00
PT8708	20.00	SD1018-15	13.00	SD1132-1	15.00	SD1263	15.00
PT8709	20.00	SD1020-5	10.00	SD1132-4	12.00	SD1263-1	15.00
PT8727	29.00	SD1028	15.00	SD1133	9.50	SD1272	10.95
PT8731	25.00	SD1030	12.00	SD1133-1	10.00	SD1272-1	10.95
PT8742	19.10	SD1030-2	12.00	SD1134-1	2.50	SD1272-2	10.95
PT8787	25.00	SD1040	5.00	SD1134-4	12.00	SD1272-4	10.95
PT8828	25.00	SD1040-2	20.00	SD1134-17	12.00	SD1278	13.75
PT9700	25.00	SD1040-4	10.00	SD1135	10.25	SD1278-1	13.75
PT9702	25.00	SD1040-6	5.00	SD1135-3	12.00	SD1278-5	13.75
PT9783	16.50	SD1043	12.00	SD1136	12.50	SD1279-1	18.00
PT9784	32.70	SD1043-1	10.00	SD1136-2	12.50	SD1279-3	18.00
PT9790	56.00	SD1045	3.75	SD1143-1	10.00	SD1281-2	8.00
PT31083	20.00	SD1049-1	2.00	SD1143-3	17.00	SD1283	10.00
PT31962	20.00	SD1053	4.00	SD1144	4.00	SD1283-2	10.60
PTX6680	20.00	SD1057	10.00	SD1145-5	15.00	SD1283-3	10.00
RE3754	25.00	SD1065	4.75	SD1146	15.00	SD1283-4	10.00
RE3789	25.00	SD1068	15.00	SD1147	15.00	SD1289-1	15.00
RF35	16.00	SD1074-2	18.00	SD1188	10.00	SD1290-4	15.00
RF85	17.50	SD1074-4	28.00	SD1189	24.00	SD1290-7	15.00
RF110	21.00	SD1074-5	28.00	SD1200	1.50	SD1300	1.25
S50-12	23.80	SD1076	18.50	SD1201-2	15.00	SD1301-7	3.00
S3006	15.00	SD1077	4.00	SD1202	$10.00	SD1304-8	$ 2.50
S3007	10.00	SD1077-4	4.00	SD1212-8	4.95	SD1305	3.00
S3031	22.00	SD1077-6	4.00	SD1212-11	4.95	SD1307	3.00
SCA3522	5.00	SD1078-6	24.00	SD1212-16	4.95	SD1308	3.00
SCA3523	5.00	SD1080-7	7.50	SD1214-7	5.00	SD1311	1.00
SD345	5.00	SD1080-8	6.00	SD1214-11	5.00	SD1317	8.00
SD445	5.00	SD1080-9	3.00	SD1216	12.00	SD1319	2.50
SD1004	15.00	SD1084	8.00	SD1219-4	15.00	SD1345-6	5.00
SD1007	15.00	SD1087	15.00	SD1219-5	15.00	SD1347-1	1.00
SD1007-2	15.00	SD1088	22.00	SD1219-8	15.00	SD1365-1	2.50

• 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
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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.

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when the tuned SWR exceeds the selected ratio.

The SA-2500 Auto-Tune Antenna Tuner is just one of over 400 products offered in the latest Heathkit Catalog. To receive this colorful catalog free of charge, write Heath Company, Dept. 150-395, Benton Harbor, MI 49022. In Canada, write Heath Company, 1020 Islington Ave., Dept. 3100, Toronto, Ontario, M8Z 5Z3, CANADA. Catalogs are also available at over 70 Heathkit Electronic Centers in the United States and Canada. See telephone directory white pages for the nearest store.

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Product availability, specifications and prices are subject to change without notice. □

8-pole crystal filters

International Radio, Inc. proudly announces their own line of 8-pole crystal filters, especially designed for improved selectivity in Kenwood and ICOM products.

The crystal filters are custom-made to International Radio's specifications and offer the best selectivity and shape factor with the lowest insertion loss and ripple. We have in stock the following crystal filters for Kenwood and ICOM products. Shipping and handling in USA, Canada and Mexico — $3; elsewhere — $10.

For TS-930S SSB: 2.1 kHz SSB super selectivity kit. Transmit and receive through these filters. (Old original filters are removed.) *Matched set; $149.99 plus shipping.* Consists of one 455 kHz 2.1 kHz and one 8.83 MHz 2.1 kHz crystal filter with instructions. (See Kenwood Newsletter No. 31, page 4, February 1983.)

For TS-930S CW: 400 Hz CW super selectivity kit. Consists of one 455 kHz 400 Hz 8-pole crystal filter and one 8.8 MHz 400 Hz 8-pole crystal filter. *Matched set; $149.99 plus shipping.* Instructions included.

For TS-830S SSB: 2.1 kHz SSB super selectivity kit. Transmit and receive through these filters. (Old original filters are removed.) *Matched set $149.99 plus shipping.* Consists of one 455 kHz 2.1 kHz and one 8.83 MHz 2.1 kHz crystal filter with instructions. (See Kenwood Newsletters No. 22, page 13; March 1982 and No. 23, page 20, April 1983.)

For TS-830S CW: 400 Hz CW super selectivity kit. Consists of one 8.8 MHz 400 Hz 8-pole crystal filter and one 455 kHz 2.1 kHz 8-pole crystal filter. *Matched set; $149.99 plus shipping.* Includes instructions.

For TS-430 SSB: "The original TS-430S Cascade Kit". (We engineered it.) Consists of one 8.83 MHz 2.1 kHz crystal filter and impedance matching printed circuit board. *Now just $79.* Adds eight extra poles of crystal filtering to your 430S receiver. (See Kenwood Newsletter No. 34, page 25, May 1983.)

For TS-430S CW: 400 Hz CW 8-pole crystal filter; *$49.99* with instructions.

For TS-820S SSB: The original TS-820S SSB Kenwood Newsletter super selectivity cascade kit. Consists of one 8.83 MHz 2.1 kHz crystal filter and matching printed circuit board. Now just *$79.* Adds eight extra poles of crystal filtering to your receiver. (See Kenwood Newsletter No. 4, pages 2 and 3, May 1980.)

For TS-820S CW: 400 Hz CW 8-pole crystal filter drop-in; *$49.99* with instructions.

All of the above modifications can be done here at International Radio Inc.

Installation prices are as follows:

TS-930 SSB 2.1 kHz Super Selectivity Kit — 1.5 hours labor at $35 per hour = $52.50; *TS-830 SSB 2.1 kHz Super Selectivity Kit* — 1.5 hours labor at $35 per hour = $52.50; *TS-430S Cascade Kit* — 1.0 hour labor = $35; *TS-820S Cascade Kit* — 1.0 hour labor = $35; *930 Switching Kit* — 2.0 hours labor at $35 per hour = $70; *830 Switching Kit* — 2.0 hours labor at $35 per hour = $70.

ICOM filters

IC-R70/R71: SSB 455 kHz 8-pole crystal filter. This filter replaces the FL-44A SSB filter in last IF. *$99* with instructions.

IC-730: 2.1 kHz SSB 455 kHz 8-pole crystal filter. This filter replaces the FL-44A SSB filter in last IF. *$99* with instructions.

IC-740: 2.1 kHz SSB 455 kHz 8-pole crystal filter. This filter replaces the FL-44A SSB filter in last IF. *$99* with instructions.

IC-745: 2.1 kHz SSB 455 kHz 8-pole crystal filter. This filter replaces the FL-44A SSB filter in last IF. *$99* with instructions plus IF Board Modification.

All of the above modifications can be done here at International Radio Inc. Installation prices are as follows: **IC-730** — Add 2.1 kHz SSB filter, 1.0 hour labor = $35; **IC-740** — Add 2.1 kHz SSB filter, 1.0 hour labor = $35; **IC-745** — Add 2.1 kHz SSB filter, 1.5 hours labor at $35 per hour = $52.

Specify radio and bandwidth when ordering. Shipping charges $3; Air $5; COD add $1.75. Overseas $10. Florida residents add 5 percent sales tax. International Radio Inc., 1532 SE Village Green Dr., Ste. L, Port St. Lucie, FL 33452; (305) 335-5545. □

Louisiana

The SOUTHEASTERN LOUISIANA UNIVERSITY ARC (SLUARC) and the SOUTHEAST LOUISIANA UNIVERSITY ARC (SELARC) are jointly sponsoring a hamfest on Saturday, 19 January, from 9:00 a.m. to 3:00 p.m., at the old men's gym on the Southeastern Louisiana University campus.

Admission is free. Food and prizes.

For more information, contact Ralph Shaw, K5CAV, Box 402, SLU, Hammond, LA 70402. □

New York

Come to the Yonkers Electronics Auction! It will be held at Lemko Hall, 556 Yonkers Avenue, Yonkers, New York, on Sunday, 27 January, 9:00 a.m. to 3:00 p.m. The event will be sponsored by the YONKERS ARC.

Inspection 9:00 to 10:00 a.m. Auction starts at 10:00 a.m. sharp. Admission is $3 each, buyer and seller; children under 8 free. Club commission on successful sales only; 10 percent on first $100, 5 percent on remainder. Hourly prizes, 50-50 drawings. Unlimited free coffee all day. Plenty of seats and parking.

Talk-in on 146.265T/146.865R, 52 direct.

For more information, including directions, contact YARC, 53 Hayward St., Yonkers, NY 10704; (914) 969-1053. □

Ohio

Cincinnati ARRL '85 — also known as the 5th Annual Ohio State Convention and Flea Market — is coming to Ohio, 22-24 February. The convention will be held at Great Oaks Vocational Campus, Sharonville (Cincinnati), Ohio, just off I-75 and I-275. Organizer is HAMILTON COUNTY AMATEUR RADIO PUBLIC SERVICE CORPS.

Forums, vendors, indoor flea market, FCC exams, meetings, food, women's activities, banquet and Wouff Hong. Hospitality room Friday and Saturday. Admission ($5) includes all convention awards. Add $5 per regular space, $10 per reserved space for flea market. Special hotel rates.

For more information, phone (513) 563-7373 (vendor), (513) 851-1056 (flea market), (513) 921-3844 or (513) 471-4775 (general). □

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The DAYTON AMATEUR RADIO ASSOCIATION announces the 1985 Dayton Hamvention, to be held 26-28 April, at the Hara Arena and Exhibition Center, Dayton, Ohio.

The flea market will begin at noon Friday and will last all day Saturday and Sunday. Among the attractions: forums (ARRL, FCC, technical, electrical safety, YL and personal computer); FCC examinations; new products and exhibits; special group meetings; International VHF/UHF Conference; alternative activities; CW Proficiency and Special Achievement awards; and Amateur of the Year Award.

Seating will be limited for the grand banquet and entertainment on Saturday evening, so please make reservations early. Noted humorist Jean Sheperd, K2ORS, will return as banquet speaker.

If you have registered within the last three years, you will receive a brochure in January. If not, write Box 44, Dayton, OH 45401.

Registration processing for this giant three-day flea market begins 01 January 1985. Admission is $8 in advance, $10 at the door (valid for all three days). Banquet is $14 in advance, $16 at the door. Flea market space is $17 in advance (valid for all three days). Checks for advance registration can be sent to Dayton Hamvention, Box 2205, Dayton, OH 45401.

Nominations are requested for Radio Amateur of the Year, Special Achievement and Technical Excellence Awards. Nomination forms are available from Award Chairman, Box 44, Dayton, OH 45401, and must be returned by 01 April 1985.

For special motel rates and reservations, write to Hamvention Housing, Box 1288, Dayton, OH 45402. No reservations will be accepted by telephone. All other inquiries, write Box 44, Dayton, OH 45401, or phone (513) 433-7720.

Flea market spaces will be sold in advance only. No spaces sold at gate. Entrance for set-up available starting Thursday, 25 April. Special flea market telephone (513) 223-0923.

FCC exams

All elements will be administered. Advance registration only. Deadline to register: 27 March 1985. Send $4 check or money order, made payable to ARRL/VEC; completed 610 form with copy of license. Indicate preferred sitting time: Saturday, 9:00 a.m., Saturday, 1:00 p.m., or Sunday, 9:00 a.m. Mail registration to FCC Exams, 203 Bellewood St., Dayton, OH 45406. □

Rats Nest & Crooked Stick QSO Contest

This is an antenna experimenter's contest and QSO party sponsored by the Issaquah ARC, Issaquah, Washington. Operating time is from 1800Z to 2300Z, 13 January 1985. *CW* — 21.060 available for anyone contacting three or more IARC members. **Exchange**: Name, QTH, antenna type, IARC membership (Y or N).

Send log by 01 February 1985. Send SASE for more info or results to: IARC, c/o Steve Pack, WB7VAS, 4609-158th Ave. SE, Bellevue, WA 98006.

West Virginia QSO Party

The West Virginia (WV) QSO Party, sponsored by the West Virginia State Amateur Radio Council, will last from 1700Z, 26 January until 1700Z, 27 January. Single-operator only.

Exchange: Signal report, serial number and QTH (county for WV stations; state or country for others).

Suggested frequencies: *Phone* —10 kHz up from lower General band edges; *CW* — 35 kHz up from low end; *Novice* — 35 kHz from lower band edge. Count 1 pt. per QSO. WV stations multiply by total WV counties, states and countries worked. Others multiply by total WV counties worked. Multiply score by 1.5 if running 200W or less.

Mail logs by 11 February (include large SASE for results) to Bill Hunter, K8BS, P.O. Box 1694, Charleston, WV 25326.

Vermont QSO Party

The Central Vermont ARC (W1BD) is sponsoring a Vermont QSO Party on 02-03 February. Operating time is 0001Z, 02 February to 2400Z, 03 February.

Frequencies: *Phone* — 3910, 7230, 14260, 14320, 21360, 28570, 50110, 144.2; *CW* — 3540, 3720, 7040, 7120, 14040, 21040, 21140, 28040; *RTTY* — 3620 and 90 kHz from lower edge of other bands.

Exchange: VT stations send RS(T) and county (CW two-letter county designators: AN, BN, CA, CN, EX, FN, GI, LA, OG, OL, RU, WA, WM, WR). Other stations send RS(T) and state, province or ARRL country.

Scoring: *VT Stations* — 1 pt. per phone contact; 5 pts. per CW or RTTY contact. Multiply by the number of VT counties + states + Canadian provinces + ARRL countries (non-W/VE). *Other stations* — 1 pt. per phone contact; 5 pts. per CW or RTTY contact. Multiply by number of VT counties. 20 bonus points for working W1BD.

Rules: A station may be worked three times per band, once each on Phone, CW or RTTY. CW and RTTY contacts must be on CW and RTTY sub-bands. Duplicate and repeater contacts invalid.

Awards: *Non-VT* — Certificate to highest-scoring station in each state, province, country (non-W/VE). *Vermont* — Certificate to each station submitting a log. Plaque (annual) to highest-scoring VT station. W/VT Award to stations working 13 of Vermont's 14 counties.

Send SASE now for official score and log sheets. SASE for results. Send logs/facsimiles, name, address, county (Vermont), no later than 01 March 1985, to: D. Nevin, KK1U, W. Hill, Northfield, VT 05663.

Zero District QSO Party

The Zero District QSO Party is sponsored by the Davenport Radio Amateur Club, 02-03 February. Operating hours are: 1900Z, 02 February to 0100Z, 03 February, and 1500Z, 03 February to 2400Z, 03 February.

Stations outside of the zero district will work zero district stations only; zero district stations may work anyone. The same station may be worked once on each band (80, 40, 20, 15 and 10 meters only) and each mode (CW and phone). *Exception:* mobile stations may be worked each time they change counties.

All stations exchange RS(T) and ARRL section. Zero district stations must also send country.

Each phone QSO is worth 1 pt. and a CW QSO is worth 2 pts. Stations outside of the zero district obtain score by adding phone QSO points and CW QSO points, then multiplying by the number of zero district counties. Zero's score by adding phone QSO points and CW QSO points. This is multiplied by the total of ARRL sections, zero district counties and DXCC countries.

Suggested frequencies: 3560, 7060, 14060, 21060, 28060; and 3900, 7270, 14300, 213701, 28570. *Novice* — 3725, 7125, 21125, 28125.

A plaque will be awarded to the high scorer in the zero district and to the high scorer from outside the U.S. Zero Land. Certificates will be awarded for the high score in each ARRL section, DXCC country, Novice/Technician Class and mobile category. Results and a participation certificate will be issued all entrants who include an SASE.

Mail logs by 09 March to W0BXR, P.O. Box 10304, Davenport, IA 52803.

1985 New Hampshire QSO Party

The 1985 New Hampshire (NH) QSO Party, sponsored by the NH Amateur Radio Association (NHARA), from 1900Z, 02 February, to 0700Z, 03 February, and 1400Z, 03 February to 0200Z, 04 February. Work stations once per band and mode. NH to NH QSO's allowed. Exchange signal report and QTH (county for NH stations; state, VE province or DXCC country for others). NH stations count 1 pt. per QSO and multiply by sum of states (except NH), NH counties and DXCC countries (except United States, Canada, Alaska and Hawaii) worked. Others count 5 pts. per QSO and multiply by total number of NH counties worked (10 maximum).

In addition, all stations count 20 bonus points each for working the following NHARA member club stations: WB1CAG, W1OC, WB1FFZ, K1RD, W1WQM (for a maximum of 100 bonus points.)

Suggested frequencies: *Phone* — 1875, 3975, 7235, 14280, 21380, 28575, 50115, 144205; *CW* — 1810, 3555, 7055, 14055, 21055, 28055; *Novice* — 3730, 7130, 21130, 28130; *RTTY* — 3625, 7085, 14085, 21085, 28085.

Certificates to highest scorer (with minimum of 5 QSO's) in each NH county and state/province/DXCC country; plaque to highest scorer in NH (courtesy of Concord Brasspounders).

Worked All NH Award, sponsored by W1JB, to participants who work all 10 NH counties. Logs *MUST* be postmarked by 15 March. Include large SASE for results. Mail logs to: Great Bay Radio Association, P.O. Box 911, Dover, NH 03820.

Annual RTTY World Championship Contest

The 4th Annual RTTY World Championship Contest, held from 000Z to 2400Z, 23 February, will be sponsored by the *RTTY Journal* and **73 Magazine**.

Miscellaneous rules: The same station may be worked *once on each band.* Crossmode contacts do not count. Single operator stations may work 16 hours maximum, while the multi-operator stations may operate the entire 24-hour period. Off times are *no less* than 30 minutes each and *must* be noted in your log(s).

Operator classes: Single Operator, Single Transmitter; Multi-operator, Single Transmitter.

Entry categories: Single-Band; All-Band, 10-80 meters.

Exchange: Stations within the 48 continental U.S. states and Canada must transmit RST, and state, province/territory. All others must transmit RST and consecutive contact number.

QSO points: 5 QSO points for contacts with W/VE stations located within the continental United States and Canada. 10 QSO points for all other contacts.

Multiplier points: 1 multiplier point is awarded for each of the 48 continental U.S. states, (a District of Columbia contact may be substituted for a state of Maryland multiplier), Canadian provinces/territories and DX countries worked on each band (excluding United States and Canada).

Final points: Total QSO points × total multipliers = claimed score.

Contest entries: Entries must include a SEPARATE log for EACH BAND, a dupe sheet, a summary sheet, a multiplier check list, and a list of equipment used. Contestants are asked to send a SASE to the contest address for official forms.

Entry deadline: All entries *must be postmarked* no later than 16 April 1985.

Disqualifications: Omission of the required entry forms, operating in excess of legal power, manipulating 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 entry category and operator class in each of the U.S. call districts, Canadian provinces/territories as well as in each DX country represented. Other awards may be issued at the discretion of the awards committee. A minimum of 25 QSO's must be worked to be eligible for awards.

Contest address: Enclose an SASE to: RTTY World Championship Contest, c/o The RTTY Journal, P.O. Box RY, Cardiff, CA 92007.

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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.

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ADVERTISERS' INDEX

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NEW Competition Grade Transceiver!

ICOM is proud to announce the most advanced amateur transceiver in communications history. Based on ICOM's proven high technology and wide dynamic range HF receiver designs, the IC-751 is a competition grade ham receiver, a 100KHz to 30 MHz continuous tuning general coverage receiver, and a full featured all mode solid state ham band transmitter, that covers all the new WARC bands. And with the optional internal AC power supply, it becomes one compact, portable/field day package.

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CWN: FL52A, FL53A, FL32, FL63
AM: FL33

ICOM
The World System

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