World Radio

Year 14, Issue 8 February 1985 • 85¢

Ham appeals FCC docket

In a United States Court of Appeals Order dated 14 November 1984, Acting Chief Judge Wright, for the District of Columbia circuit, has accepted Glenn Baxter, K1MAN's brief appealing the FCC AM power reduction (Docket 82-624) scheduled for 1990. Chief Judge Wright further ordered that K1MAN's motion to dispense with the appendix and record excerpts filed on 06 October 1984 is granted.

This dramatic action by the Court of Appeals overrides one FCC motion in opposition to K1MAN's motion to dispense with the complicated appendix and another motion by the FCC to strike K1MAN's brief itself on technical grounds that his brief " . . . does not conform to rule 28(A) (1) and (3), federal rules of appellate procedure . . ." The FCC appears to be resisting the appeal tooth and nail.

The next step is for the FCC to file their own brief in response to K1MAN's arguments. The FCC claims that K1MAN's brief was not due until 31 December 1984 and that their brief is not due until 30 January 1985. The FCC went on to say:

"The Commission is willing to consider dispensing with oral arguments as suggested by petitioner (K1MAN) following the submission of briefs, but is not in a position at this time to determine whether or not oral argument will be necessary . . ."

The Court of Appeals will decide this landmark amateur case on the basis of whether or not the FCC was erroneous or arbitrary in any way in ordering the 1990 AM power reduction.

K1MAN filed his petition on 21 September 1984, which the court entered to their docket (No. 84-1504) for the September 1984 term. The court docketing date was 09 October 1984.

K1MAN says he received a letter from FCC Counsel John Greenspan on 25 October 1984, advising him of his ". . . responsibility to file a complicated joint appendix or else a deferred appendix . . . as frequently done by (the Commission) . . ."

K1MAN responded by promptly filing a motion to dispense with the superfluous appendix, and by thus simplifying the appeal will save both himself and the Commission money. K1MAN explained:

"This appeal is really a very simple matter. Was the FCC reasonable or justified in outlawing all Collins KW-1 transmitters, Johnson desk kilowatts, and homebrew kilowatt AM transmitters in the year 1990? How would an antique car collector with a 1953 Rolls Royce Silver Cloud feel if the Motor Vehicles Department outlawed his treasured car in the year 1990?"

K1MAN's brief is 10 pages, double-spaced and includes 60 pages of exhibits. He had to supply the court with the bound original and 14 bound copies, plus one bound copy for the Commission. His expenses for all of this so far have been $371.25 to date, and only a few fellow amateurs have donated to the cause which benefits all amateurs who are frightened by unchecked FCC dockets that reached an absurd new low with Docket 82-624 and the AM power reduction.

K1MAN says that any donations in excess of the above will be sent to the Shriner's Burn Hospital for children in the same tradition as the Hoss Trader contribution each year. — *Glenn Baxter, K1MAN* □

Ray Briem, N6FFT (seated), host of Talk Radio all-night national show with guests (left to right) Chuck Lobb, KN6H; Bill Ellis, WB6USB; and Lenore Jensen, W6NAZ. (*Photo by Bob Jensen, W6VGQ*)

PR bonanza

The good word about Amateur Radio was aired nationwide Tuesday, 11 December when Ray Briem, N6FFT, had three amateurs as guests on his Talk-Radio night program heard on about 70 stations.

In the studio with Ray were Chuck Lobb, KN6H; Bill Ellis, WB6USB; and Lenore Jensen, W6NAZ, while Dave Sumner, K1ZZ, General Manager of ARRL, participated by telephone the entire time, midnight to 3:00 a.m.

Most facets of Amateur Radio were explained in a lively exchange between those in the KABC studios, Los Angeles, and many phone calls were accepted from listeners across the country, with the majority coming from other radio amateurs who contributed additional facts about our Service.

Dave Sumner was able to give authoritative information, not only on League matters but on FCC actions as well.

The welcome mat was put out repeatedly to the public to secure information about earning a license, and many such inquiries were helpfully answered.

Much appreciation is due Ray Briem for his giving Amateur Radio such a wide audience. □

Lack of support disappoints N6KJL

Herb Rosenberg, N6KJL

With the increasing tendency over the past few years by local government toward more restrictive antenna ordinances, coupled with a largely apathetic amateur community, I thought it would be beneficial to share with you my recent experience. My story is one where my own city's Amateur Radio emergency group took no effort to assist another amateur in battling a restrictive antenna ordinance.

I recently moved to the city of Irvine, California. The city has a 35-foot height restriction on external antennas, and there are no CC&R's that prohibit external antennas. I wanted to install a 55-foot crank-up tower and antenna. Since the tower would be lowered to a height of 24 feet when not in use, it would be more aesthetically appealing than a 35-foot free-standing tower. Since my antenna would exceed the 35-foot height limit, I was required to obtain a Conditional Use Permit — something the city had never granted a ham before me.

In addition to supplying the city with detailed engineering plans, site survey, plot plans, environmental assessment, letter of justification and a mailing list of all property owners within 300 feet of my QTH, the city charged me a $300 filing fee and $44/hour to review my plans and prepare a staff report to the Planning Commission.

While my application was being processed, I sent out a four-page letter to 270 licensed amateurs in Irvine, California, advising them of my problem, and asking for their attendance at my public hearing. My letter mentioned that I would be stressing the public service aspects of Amateur Radio in my presentation to the Planning Commission, because the Planning Commission had to determine that my proposal was in accord with the public health, safety and welfare for them to grant approval.

I provided every ham with an SASE and a reply note to send back stating whether or not they could attend, as well as stating their support for my proposal. I

(please turn to page 4)

'Mission of mercy' in South Pacific

Katashi Nose, KH6IJ

From Hanalei, Kauai, Alan Faye, AH6EC, writes of a "mercy mission" in which he has recently been involved.

Faye has kept a daily schedule with Capt. Ed Atkins, KH6KS/MM, of the yacht *Oriana* out of Ala Wai Yacht Harbor. The *Oriana* has been cruising since late October among Palmyra, Christmas and Fanning Islands, which are about 800 or 900 miles due south of Hawaii.

On 23 November, Capt. Atkins — a registered pharmacist, informed Faye that a young woman on Fanning had just died of fulminating infectious hepatitis. Faye then informed Martin Vitousek, KH6CIY, of Kona, since the deceased was his wife's sister.

Atkins and his first mate, Bernie Houston, had been exposed to the virus, since they had eaten dinner at the young woman's house shortly before she died. Also exposed were Vitousek's wife and about 70 inhabitants in the villages of Napari and Napia on Fanning Island.

Faye then contacted Dr. Frank Tabrah at Straub Clinic here in Honolulu. Following numerous phone calls and radio contacts over several days, it was arranged to have Air Tungaru fly the vaccine to the *Oriana* at Christmas Island. Capt. Atkins received his inoculation on the 28th, as did the others on Christmas Island. He then sailed back to Fanning to "save" the 70 inhabitants there.

Says Faye, "Incubation period for infectious hepatitis is about two weeks, so it was a race against time. I think (hope) we won. All because of Amateur Radio!" He is happy and proud that he was able to help as a radio amateur.

— *Honolulu Star-Bulletin; HI; submitted by Rufus McCracken, KH6QL* □

Worldradio

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

STAFF

Editor and Publisher	ARMOND NOBLE, N6WR
Managing Editor	CHRIS WILSON, KA6TAL
Associate Editor	NORM BROOKS, K6FO
Advertising Director	HELEN NOBLE
Advertising Sales	FRAN WELSCH
Graphics Director	DIANNE DUNNING
Circulation	MIN VASEY

February 1985 Vol. 14, No. 8

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

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

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

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

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

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

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

Subscription rates: $10.00 per year, $19.00 for two years, $27.00 for three years and $100.00 for life; $2.00 extra per year for surface mail delivery outside the U.S. Please remit international postal money order. IRCs will be accepted.

Second-class postage paid at Sacramento, CA.

Bulletin boards

Shelby Ennis, W8WN

Here are two bulletin boards that amateurs may be interested in:

The first is the Fenton BBS, a TBBS system in Fenton, Michigan, with over 10 MB of hard-disk storage area. One of its major sections is the Ham Radio Section, which has a large bank of Amateur Radio, electronic and general communications information.

The special feature of this section is news, with general newsletters and a number of specialized areas. Included is news from the ARRL, news about packet radio, DX, the Amateur Radio Emergency Service, space, swap and shop, etc. A Commodore Interest Group and other areas. It supports both 300 and 1200 baud and is available 24 hours per day, seven days a week, except for routine housekeeping chores. Amateur Radio operators and anyone else interested in communications or similar technical fields are welcome to check in. Call (313) 629-2854.

The second board is the Flint (Michigan) BBS, a Basic BBS run by and for radio amateurs. It is primarily Amateur, with message area, program area, news, etc. However, since it runs in Basic, use is limited to those approved by the Sysop, due to undesirable characters who delight in "crashing" the system.

The Flint BBS phone number is (313) 238-4984. You may also call the Sysop, N8DYB, at (313) 232-9008, for approval to check in. It is a smaller and simpler board than the Fenton BBS, but a very popular local board. □

Transponder operating schedule

Pursuant to the schedule effective 16 October 1984, the following is the transponder operating schedule for AO-10:

Mean anomaly	Mode
235-099	B
100-117	L (Except Sunday; B)
118-218	B
219-234	Off

— Amateur Satellite Report □

Space News

Space News, a bi-weekly newsletter, has now begun operating a computer information service to disseminate news of discoveries and developments as rapidly as possible. The constantly updated computer files are part of the CompuServe Information Service. While there is no charge specifically to access the *Space News* files, you must be a subscriber to CompuServe in order to use the system, and normal time charges will apply.

Information on CompuServe is available from 5000 Arlington Center Blvd., Columbus, OH 43220, or call 1-800-848-8990 (not a computer line).

Once you have accessed CompuServe, at the first '!' prompt, type 'PRO'; this will take you to the programming area and 'OK' will appear when the transfer is complete. Then, type in 'R ACCESS' to get to the public access files. To access *Space News* service, input 'R SPACENWS. TXT [70376,534].

The screen, at this point, will appear like this: !PRO OK R ACCESS PUBLIC FILE ACCESS SYSTEM USE? FOR HELP ACCESS: R SPACENWS. TXT [70376,534] and the information files will then follow, with the latest news always appearing first. To stop the output, enter 'CONTROL-C'. To re-enter the normal CompuServe area, or at the end of the file, enter 'EXIT', then 'R DISPLA'. Feel free to correspond with *SPACE NEWS* using the above Personal Identification Number and CompuServe electronic mail (EMAIL).

In March 1985, *SPACE News*, will devote a special expanded issue to computers and their uses in astronomy and space science, featuring both software and hardware applications. Any ideas, comments or suggestions on this are welcome. (Tks *SPACE News*)

— Amateur Satellite Report □

The VHFer's roost

Mark Cobbeldick, KB4CVN

On 23 June at 0942Z, John Silberman, KB4CRT, of Tampa (EL87) made the world's first fully portable OSCAR QSO. All equipment was body mounted, and consisted of the following: uplink-IC-402(70cm) driving a 20W Tokyo Highpower amp. Downlink- FT-290(2M) all-mode with an ARR 20dB preamp. The antenna was a J-beam with 6 elements on 2M and 12 elements on 70cm. The transceiver amp and receiver preamp were both run from two 6-volt lantern batteries in his back pocket.

The first station KB4CRT worked via OSCAR-10 was Peter Hopstaken, ON7HP, in Belgium. This was quickly followed by contacts with Niko Schreiber, DB8KJ, and Paul Bridle, G6CHD.

— Florida Skip □

.....

If you received this publication and are not a subscriber of WORLDRADIO, it was no accident. Please consider it an invitation to join. We can be very friendly.

Gloucester County ARC VEC exams

The Gloucester County Amateur Radio Club's volunteer examiner team will conduct VEC testing on Saturday, 26 January, 9:30 a.m. to 1:00 p.m., at Glassboro State College, Westby Hall (the building next to parking lot, with tribander beam) Rt. 322, Glassboro, New Jersey.

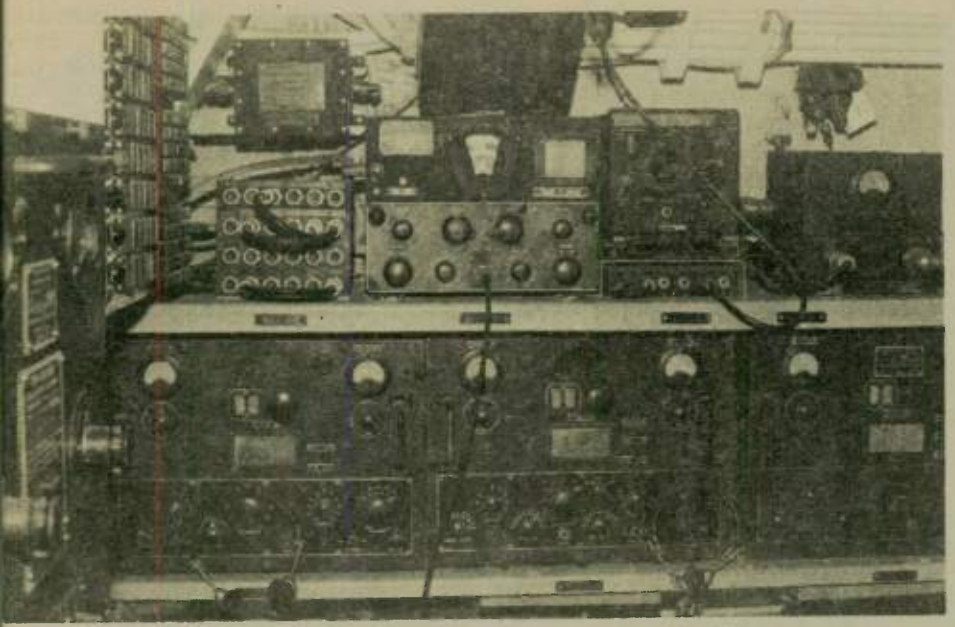
Exams will be given for all five license grades. Cost is $4. No preregistration is required. Maps are available upon request.

Talk-in on 147.18/78.

For more information, call John Fisher K2JF, at (609) 589-2318. □

Please send news and pictures to Worldradio

CONTENTS



This is the radio shack used aboard the *USS Bowfin*, a WWII submarine that succeeded in destroying 44 enemy vessels before the end of the war. The *Bowfin* has been made into a memorial, at Pearl Harbor, adjacent to the Arizona Memorial Visitor Center, and is open to tourists. For more information, contact Pacific Fleet Submarine Memorial Association, 11 Arizona Dr., Honolulu, HI 96818; (808) 423-1341. *(Photo by Wayne Wirtanen)*

These amateurs — all former members of the 62nd Signal Radio Intelligence Company, a World War II Signal Corps unit — were present at the annual reunion of the Company recently. From left to right: ex-WN2AWI; Overton Gentry, W0AI; Harold Hall, W8QHG; A.L. Tippett, W7LVB; W4NHZ; Ed Surmaitis, WA2MYZ; Robert Daney, W8RBR; Mildred Daney, K8QPT.

An overview

Amateur Radio emergency communications

Bob Dyruff, W6POU

Since World War II, there have been widespread developments in the field of radio communications. Hardly an institution devoted to public service has not adopted some form of radio system to perform its work — government, private agency, utilities.

Over this 40-year period, with few exceptions, individual agencies have acquired and currently operate radio systems tailored well to their own functions and service, but bearing little — if any — provision for effective integration with the many other agencies, since there is little need for such integration during "normal" emergencies on a day-by-day basis.

During the same four decades, it has been unusual for Amateur Radio to have been sought out and used consistently and in any planned way by more than one or two agencies in a given area — Red Cross by one group in one area, a sheriff by another group in another political subdivision, and a fire watch in yet another. Disasters are infrequent and unpredictable and are considered future emergencies in which the regular forces will be expected to work longer and harder than usual.

While some form of Amateur Radio emergency/disaster communication has been available in most localities for decades just for the asking, government and private agencies have ignored, failed to explore, or have been suspicious of the potential of Amateur Radio's multi-frequency/channel, "horizontal" cross-agency capabilities. They have opted, instead, for further extensions of their own proven, familiar, specified-frequency "vertical" communications systems dedicated specifically to their agency — systems which usually work well *until emergencies turn into disasters.*

Unfortunately, the Federal Communications Commission has not improved matters with its establishment of services such as the Disaster Communications Service on 1750 kHz (now being phased out), and the Radio Amateur Civil Emergency Services (RACES), which has failed to provide essential coordination and leadership beyond locally empowered units, and which fails to offer functions and services which cannot be offered by any group of amateur licensees working together under any organizational framework. It has also failed to provide commonly recognized disaster frequencies for national use and international cooperation, and has failed to address the real need for effective coordination of the various Military Affiliate Radio Service (MARS) systems with their civilian counterpart services.

Recently, as a result of budget cutbacks in government, Amateur Radio has received added attention. In some locations there is even competition developing for Amateur Radio services. Those who are competing for amateur services include: federal, state, county, city and private fire agencies; state, county, and city law enforcement agencies; highway patrols; national guards; Coast Guard; National Weather Service; city and county public works; welfare/health departments; hospitals; American Red Cross; and Salvation Army. These and other public services have begun to recognize and utilize Amateur Radio communications. But in no place are all these agencies and services registering their needs with Amateur Radio so as to develop a coordinated disaster communications plan.

In some areas, disaster training exercises are growing larger in scope, complexity and in the number of agencies and political subdivisions participating. Amateur Radio is fulfilling increasingly important roles in such operations.

One critical element still not resolved by governments is the assignment of leadership authority in disasters and preparedness operations. There appears to be no blueprint for coping with this carefully guarded set of prerogatives and mandates. In all likelihood, such authority will continue to be split between the agencies involved with the hope that good judgment and cooperation will prevail or until a disaster should reach such a magnitude that action would be required by the military.

Without centralized agency leadership authority, each agency may tend to fend for itself. Thus, there may be an inclination to stockpile the available supply of volunteer radio operators during normal periods "to make sure I've got mine trained the way *I* want them." Stockpiling could lead to a lack of service to many agencies and the public they serve.

Fortunately, radio units are now developing in ARES wherein the amateur leaders are increasingly accepted by user-agency heads for their skills and judgment in providing effective radio service under varying conditions. Just such competence and relationships will go a long way to soften the desire for "hoarding" this radio communications source.

In the recruiting and training of their volunteer operators, Amateur Radio leaders must be constantly urged to place first priority on *radio communications* as the *primary service* to be provided. While CPR and First Aid may be required immediately in an emergency, if there are others around to perform such important functions, the radioman's job is primarily

communications; secondarily fire-spotting, damage assessment administration, 4-wheel vehicle or truck driving, shelter management and other important functions. As the hours pass, following a disaster, such important skills can be pressed into service with less adverse effect on the primary task of communications the licensed amateur is best prepared to offer.

The ultimate goal will have been reached when trained Amateur Radio cadres are available and are backed up quickly and efficiently by mutual aid support from adjacent area cadres according to a pre-arranged plan, and when these qualified radio operators can be pressed into service quickly by *any* agency the moment it recognizes it is losing its full communications capability — or *when the emergency has turned to a disaster.*

The challenge to governments, the FCC and ARRL is to provide the national organization and leadership necessary to implement a comprehensive disaster response communications plan from the top down (without creating additional layers of administration), rather than to rely on the current 5 percent of the licensees for their grass-roots development of ad hoc systems and affiliations with each separate agency locally to the exclusion of other agencies and the municipalities, counties and sections next door.

When national objectives are set, national leadership is exhibited, and organizational hierarchies are developed to implement those objectives down to the individual contributor, amazing results will be achieved in the field of emergency response communications. □

Puzzle

Bob Johnson, AA4L

This is a true story — it really happened! At a hamfest some years ago, I met two amateurs who had consecutive calls and looked very much alike.

I asked the obvious question: "Are you fellows twins?" They said they weren't. In response to further questions, they stated that they were brothers, they had the same mother and father, the same last name, and were born within a few minutes of each other on the same day of the same year. But they continued to insist they were not twins, and a few minutes later they proved it to me.

How could this be, and how did they prove it?

(See answer on page *37*)

•••••

Brunei ham becomes ambassador

Pengiran Haji Idriss, VS5PM, Brunei's first ambassador to the United States, has spent several months in Washington, D.C., searching for suitable embassy space. The search has not been without snags. In fact, he had been so busy, he had been unable to engage in his favorite hobby — Amateur Radio.

"I think a lot of Americans would be surprised to know that VS5PM is now an ambassador in Washington," Idriss said with a chuckle. "For years I've been talking by radio with a lot of people in the United States."

The ambassador said that U.S. Amateur Radio operators probably know more about his small, remote country than any other group of Americans — a situation he hopes to change with the establishment of an embassy here.

It has been only a year since Brunei gained independence after 96 years as a British protectorate, but already the tiny sultanate of 200,000 people — which faces the South China Sea on the northwest coast of Borneo — is moving determinedly to establish a strong diplomatic presence in Washington.

Ambassador Idriss, a member of Brunei's royal family, is 49 years old. He did postgraduate work at Cambridge University in England before joining the Brunei civil service in 1964, then transferred to the diplomatic service in 1980 and has held posts as Brunei's high commissioner in Singapore and London. His current Washington tour is his first exposure to the United States — other than by Amateur Radio.

— Information from article by Barbara Gamarekian, New York Times, Wednesday, 07 November; submitted by Ruth Hesch □

Lack of support

(continued from page 1)

received 50 letters back, most of which indicated a willingness to support me and appear at my public hearing.

Interestingly enough, the city of Irvine has a group of over 50 Amateur Radio operators that voluntarily assist the Public Safety and Police Department (Irvine Disaster and Emergency Communications). This group of 50 amateurs voluntarily provides its time and equipment to assist the Public Safety Department in times of emergency and public events. This group attends regular monthly meetings at police headquarters and receives training in first aid, emergency preparedness, damage assessment, etc.

I am also a member in good standing of this group. In fact, two months ago, I was asked to make a presentation to this group on fast scan ATV, as well as its potential applications for the IDEC group. This presentation was very well received, and Hugh Davis, W6YBI, and I were asked to assist in setting up this mode for the group.

Out of the 50 response letters I got back from the amateurs in Irvine, only two came from IDEC members. A week before my public hearing with the Planning Commission, IDEC had its regular monthly meeting. I mentioned to the group my disappointment in not hearing from more IDEC members, especially since we as a group were involved in directly benefiting the city, and our public service accomplishments should not go unrecognized. Several board members and members at large indicated that they were in fact planning on attending, but simply forgot to send me their reply.

It is important to note that at no time did I ever ask the IDEC group to take an official position in support of my antenna, but only as individual amateurs involved with public service and sharing a common bond.

The night of my public hearing came on 01 November 1984. My partners in IDEC did not even have one person from the group show up. Unbelievable! However, almost 50 other John Q. Hams not involved with IDEC rallied to the cause. We put on an excellent presentation to the Planning Commission, that highlighted what Amateur Radio was, and its outstanding track record of public service on a local, state and federal level. The Planning Commission also reviewed a petition signed by 55 of my neighbors in opposition to me, as well as many letters from neighbors expressing their concern about my antenna.

When it was all said and done, the Planning Commission gave unanimous approval to my application — an unprecedented victory for the amateurs in Irvine. Many of my opposing neighbors made comment at the public hearing of the excellent presentation we had made. Several said they had no idea that Amateur Radio was involved in so many fine public service activities.

Where were the IDEC people? Irvine's own public service ham group, individually and collectively, miserably failed to help a member and fellow ham in time of need. What an excellent opportunity to demonstrate a value and a worth to the community.

Were they afraid the Planning Commission might realize that the IDEC group represented ugly antennas in Irvine, and cut off the city's limited financial support to the group?

What if the city were considering an ordinance to ban rubber duckies from Irvine. Would they have gotten off their butts and taken a stand, or just run scared?

What if IDEC's closed and unfriendly 2-meter repeater site was being threatened by a restrictive antenna ordinance? Would they have taken a stand then?

My hats go off to the 50 or so plain old average hams in Irvine and the surrounding areas who took the time to help me and sell Amateur Radio to the community. Many of those people just sat at the public hearing in silent support for me, representing the amateur community. Their presence had a positive impact.

What a sad commentary, however, the IDEC's group has for the future of Amateur Radio. The future will continue to hold restrictive antenna ordinances and spectrum threats, while the majority of Amateur Radio sits back and watches our hobby disappear.

Many thanks to Fried Heyn, WA6WZO, SW Division Director; Wayne Overbeck, N6NB, SW Division Vice Director; and Dale Clift and Wayne Yoshida from HQ for their assistance. □

"It's not that our good deeds are performed for thanks, but our survival may depend on letting the world know about them."

Lenore Jensen, W6NAZ

Model 425
TITAN
Linear Power
Amplifier

LEGAL LIMIT POWER AMPLIFIER
USES LATEST EIMAC CERAMIC TRIODES

- **Full Legal Output of 1.5 KW**
- **Typical Drive Power, 65 Watts**
- **High Speed QSK (Instant Break-In)**
- **Four LED Status Indicators Including Automatic Overdrive**
- **Full Metering**
- **Covers Amateur Bands 160 Thru 15 Meters**
- **Cool Operating 3CX800A7 Triodes (2)**
- **Export Model Includes 10 Meter Band**
- **Peak Power LED Bar Display**
- **Tape Wound Hypersil® Transformer In Separate Power Supply Unit**
- **Automatic Level Control (ALC)**
- **Compact Size Matches Modern Transceivers**

A lifetime investment in SUPER COMMUNICATION. The TITAN 425 Linear Amplifier delivers the full new legal power limit of 1500 watts PEP ssb output and 1500 watts of full break-in power for QSK cw or AMTOR. This cool running dependable design delivers the punch to be heard under any band condition. And it is brought to you by the leading American supplier of hf Amateur equipment with the same kind of reliability you've come to expect from TEN-TEC gear.

TITAN 425 consists of two sections — amplifier and power supply. The amplifier is styled to match modern transceivers and is extremely compact for its ratings. The amplifier section contains all operating controls and indicators. The power supply is housed in a utility type hide-away enclosure.

Commercial Version Available.

TEN-TEC, INC.
SEVIERVILLE, TENNESSEE 37862

Campers enjoy 'world of wireless'

Joel Colman, N8EDI

Teaching Amateur Radio at a summer camp is a lot of fun for both the campers and the staff. I have been teaching Amateur Radio at Camp Maas in Ortonville, Michigan for three years, and have found that our video/computer/cable TV-motivated children still find great wonderment in the world of wireless communication.

Camp Maas, which is sponsored by the Fresh Air Society, is a residential Jewish camp, serving children from the metropolitan Detroit area. The summer is divided up into two sessions of four weeks, with each session accommodating about 300 campers aged 10 to 14.

I have been working at this camp for the past nine summers as counselor, performing arts supervisor and communications specialist. My Novice class usually consists of six to eight campers 13 to 15 years of age.

This class also received instruction in computer programming (different instructor) and video techniques. I also met with bunks (a bunk is a group of children who live in a cabin together in camp), who would receive a brief orientation to Amateur Radio and, depending on the age, would have fun learning Morse code or talking on the radio. I usually met with two bunks every day, six days a week. My Novice class would meet about five times a week.

When I first presented the idea of an Amateur Radio program to the camp administration in the winter of 1982, I had had my Novice ticket only a few months. The director and the program director agreed that such a program would be something the campers would enjoy. They decided I could have $200 to purchase an antenna, but I would have to supply the transceiver. I then borrowed equipment (for the next two years) through the courtesy of Barry Kaufman, WD8JWM, and Mark Travaglini, WD8DPA.

A week before camp began, I passed the exams necessary to operate as a General Class operator, and — cutting rather close to the start of the summer — began the program.

The program was a success, though too much of my time was spent learning how to make SSB contacts (since as a Novice I had only made CW contacts). Hence, I did not get as many campers on the air as I had hoped.

In 1983, I came to camp with my Advanced license and a lot more experience on the air. The program went well, but the camp did not offer enough sessions for my Novice class to learn theory and code, so I concentrated on the campers making contacts.

1984 was a lot different. The station consisted of a Kenwood 520SE, Kantronics interface, Atari 400 computer, ICOM 2AT, Hy-Gain three-band vertical, Hy-Gain two-band dipole, and a Hy-Gain 2-meter Yagi. My Novice class was scheduled enough times to give them the necessary Novice Class instruction (though if a camper was ill and missed two or three sessions, it was difficult to catch up).

Even though the class content had the flavor of a school science class, I would hold class outdoors, which put us out in the fresh air and make a very nice learning environment. I also had the campers come to the shack after dinner, so each of them could talk on the air and receive personal attention.

What really got the campers motivated was setting up a simple short-wave listening station in their dining hall. I have an old Heathkit HR-10, which worked just fine for them. The class put up a long-wire antenna, I installed headphones for up to four listeners, and I required each camper to log in at least 20 calls. (Some logged in much more than 20.)

SWL listening is a terrific way for these kids to get excited about Amateur Radio. When by accident they picked up the BBC on 40 meters, they could not wait to tell me about it the next day. When was the last time you were excited about picking up the BBC?

By exploring for themselves, they discovered propagation, DX calls, mobile calls, nets, ragchewing, and the advantages and disadvantages of each band. By using this learning tool, the campers would ask me about these topic areas without the need for me to bring them up in the first place!

Every day I would provide something new for them in the station. Sometimes it would be a callmap, a Callbook, an SWL magazine, etc. — all with the intent of making the campers feel their station was growing all the time. I also would assign one camper to act as the control operator, so if a camper was a little shy, he or she would still have an opportunity to run the station.

I find that the campers really did not mind if their QSO was with Indiana, California or DX. The important matter was for the campers to have a sustaining conversation on the air.

Group shot of Joel Colman, N8EDI's summer camp radio class.

DX'ing is just not the place for ragchewing (especially with a vertical), though every once in a while we would hit on a 20-minute QSO with a DX. Forty meters was usually my best shot at the campers making a contact during the day, and 20 meters later on in the evening. I would have used 15 meters last summer, but it seemed pretty quiet.

A RTTY contact will always fascinate the campers. There is something special about having a computer talk to someone through the radio. Amateur Radio is definitely an "in" hobby for young people today.

The final result of this summer's effort was five more Novice Class operators, and a lot of people who are now aware of Amateur Radio. Not only do we need more amateurs; we need the general public to be knowledgeable of who we are and what we do on the radio.

Summer camp is certainly a fun place to learn about this hobby. Today's sophisticated children, when exposed to Amateur Radio, find that video games and cable TV pale in comparison to this exciting hobby. □

Fr. Moran impresses young ham

Betty Grace Faulkner, KA7TLV

(Just as Nightmare Alex was griping about the preponderance of grey heads and baggy pants among WWDXC members, this heartening letter arrived — hand-lettered on loose-leaf "filler" paper. There *is* hope for the future! Ed.)

"This is a report on my second visit to the WWDX Club. My name is Betty and I'm 10 years old. I recently became a Novice Class Amateur Radio operator. My call is KA7TLV. I went with my mother, father and good friend Kevin.

"The guest speaker was Father Moran. He was very funny. He said that Indians wore feathers on their heads to keep their wig warms. He told many interesting stories about his life, and the famous people he has met. He runs a boys' school and also started a girls' school with over 2,000 students. The boys play many games and contests and they stay on the same team all the way through the school.

"Father Moran showed the beautiful slides that he took of Nepal and its people. The two major religions are Buddhist and Hindu. Did you know that of the 12 tallest mountains in the world, 10 are in Nepal? Father Moran is the only ham in Nepal. He got special permission from the king to transmit. I had a great time, and I really enjoyed his talk."

— *Western Washington DX Club* □

Of Radio and horses Part I

Paul Rich, NE7C

"Would you fellows in Cody consider helping me out?"

This was the question asked of the Cedar Mountain Amateur Radio Club (CMARC) in December of 1983, by Jerry Pyle, KD7PV.

Jerry's neighbor, Terry Perkins, had come to him with a problem. Terry is secretary of the Purina Race of Champions — a 100-mile, one-day endurance race for the top endurance horses of the United States and Canada. Horses from Ontario to Florida, Oregon to California and everywhere in between. She was asking if we amateurs could provide the communications needed during this 24-hour race, as they had tried using CB's, commercial communications, etc. with poor results.

"Let us talk it over at our next meeting, and we will let you know," was our initial reply.

Our club is a close-knit group of 10 to 11 active amateurs, and it seems we will tackle most anything at least once. So the word went out: bring your maps, topo, forest service, three-dimensional, etc., and let's plot the trail.

"Base camp — Davis Ranch, three miles east of Shell, Wyoming on U.S. Hwy. 14, at 4,000-foot elevation. We'll need a crew of at least two operators there to begin with. Crossing the highway, you turn into the hills onto jeep roads and trails up Beaver Creek to Hudson Falls, mile post 25, elevation 5,500 feet. The sheer rimrock of the west face of the Big Horn Mountains look down on you from the north and east."

"Might have problems getting out of there," was the comment.

"What kind of traffic will we be handling?" was the next question.

"They want a complete report on each horse," was KD7PV's reply. "It will consist of horse and rider number, arrival time, pulse and respiration count, check-in time and after a mandatory 30-minute rest, the check-out time. Plus any emergency traffic, inquiries, etc."

"Well, that sounds like a lot of traffic with some 120 horses possibly coming," was the comment.

Back to the maps. "From Hudson Falls they travel some jeep roads but mostly horse trails, climbing to 9,200-foot elevation and traversing three major canyons. Riders will top out and come up on the Hunt Mountain road, a dirt road which they will follow into the Horse Creek Vet Check near the head of Finger Creek, 38 miles and 9,000-foot elevation." WOW!

"After leaving Horse Creek Vet Check, they will continue on the Hunt Mountain road for about eight miles before going back onto horse trails, maintaining approximately 9,000-foot elevation. They will cross U.S. Hwy. 14 at 47 miles near Granite Pass. Staying mostly on dirt roads, they will pass these mountain cabins at 50 miles, dropping to about 7,800-foot elevation before climbing on horse trails to 8,300 feet. Then a good jeep road into Ranger Creek Campgrounds, at 56 miles and 7,500-foot elevation.

"They will start at 4:30 a.m. and will have 24 hours to complete the race," Jerry said. "The first horse should be in before dark, though."

"Let's see. After Ranger Creek they head for Vet Check #4 at the head of Crooked Creek. Here, we could have problems," KD7PV continued. "There are a lot of huge boulders on the way to Lake Adelaide, and the riders can miss the trail. We might have to look for lost riders."

"Boy-oh-boy!"

"Lake Adelaide is 64 miles and 8,600-foot elevation. The trail will follow jeep roads to Shell Reservoir and climb out of Shell Canyon to Crooked Creek Hill, 69 miles and 9,600 feet."

"Poor horses."

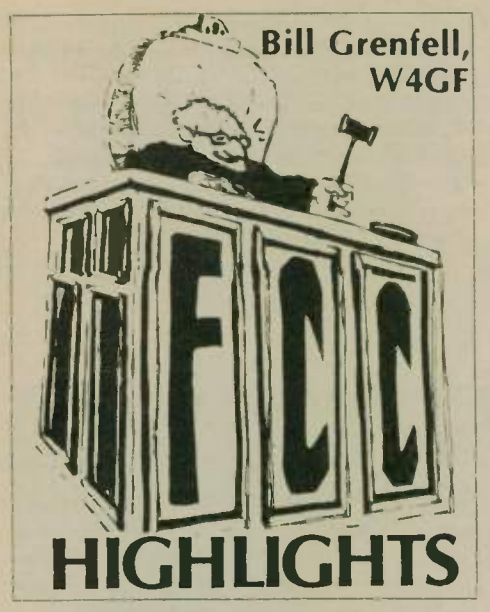
"What about the riders?"

"Who cares, they should have more sense. Well anyway, let's continue on. Battle Creek is Vet Check #5. Leaving Crooked Creek Vet Check and traveling on a jeep road, they will follow it, and at 72 miles will be at 10,200 feet. They will fall off the mountain for five miles on horse trails and hook up with this jeep trail into Battle Creek, 83 miles and 8,000 feet."

"We could very well have trouble communicating out of that hole," was Jerry's observation.

"Well, let's continue. They will leave Vet Check #5 and will continue down the jeep road toward Spring Creek Vet Check. At 92 miles they will be at the top of the dugway, which will have some slab rock on the

(please turn to page 16)



On 03 January 1985, new emission designators became effective in the Amateur Radio Service rules (Part 97), as well as for the other Radio Services regulated by the FCC (Gen. Docket No. 80-739). This is part of the implementation of the final Acts of the World Administrative Conference of 1979.

The Part 97 rules amended are: 97.7(e), 97.69(a), 97.61(a)(b), 97.65(a) (b) (c) (d) (e) and Appendix 3 (of Part 97). "The new system for emission designators will not require modification to equipment. It changes only the system used to identify emissions. The new emission designators . . . use three symbols. The first symbol indicates the type of modulation of the main carrier, the second symbol indicates the nature of signal(s) modulating the main carrier, and the third symbol indicates the type of information to be transmitted."

As before, the amended Appendix 3 contains a tabulation and description of the emissions applicable to the Amateur Radio Service. A listing of the old/new Appendix 3 designators follows: A0/N0N; A1/A1A; A2/A2A, A2B; A3/A3E, J3E, R3E, H3E; A4/A3C; A5/A3F; F1/F1B; (G1B); F2/F2B, (G2B); F3/F3E, (G3E); F4/F3C, (G3C); F5/F3F, (G3F); P/P0N.

"NOTE: Whenever frequency modulation 'F' is indicated, Phase modulation 'G' is also acceptable. There are . . . some questions on the Amateur Radio operator license examinations that will have to be changed. When the examination questions (Bulletin 1035 series) . . . are periodically updated, the questions with the new emission designators may be inserted."

•

The deletion of the 2310-2390 segment from the 2300-2450 MHz amateur band became effective 06 November 1984. Petitions for reconsideration of deletion of Amateur use of the segment on a secondary basis were denied by the FCC in an Order released on 02 July 1984.

Previously (12/08/83), the Commission had amended Section 2.106 (The Table of Frequency Allocations) to implement the primary provision by the World Administrative Radio Conference 1979 for flight test telemetry operations in that segment. In regard to its November 6th action, the FCC stated: "The intended effect of this action is to protect aeronautical telemetry and telecommand operation from possible interference by Amateur Radio operations."

Amateur Rule Section 97.61 now lists 2300-2310 and 2390-2450 MHz with the new three-symbol emission designators equivalent to the old two-symbol designators used for the old 2300-2450 band (see the above 'Highlights' paragraph regarding emission designator changes).

•

The FCC granted the ARRL request for extension of time in which to comment on the PRB-1 ". . . Matter of request for declaratory ruling to preempt state and local regulation of Amateur Radio transmitters and antennas" up to and including 24 December 1984.

In support of its request, the ARRL stated that there has been a "significant lag time in making amateurs aware of the Commission's solicitation of comment" in PRB-1. In support of the extension, FCC observed that: "The number of comments by amateurs and others interested in this proceeding has been unusually large far in advance of comment and reply comment deadlines. In excess of 300 comments have already been received. It appears that the public interest would best be served by extending the comment and reply comment periods in order to facilitate the broadest possible public participation in this proceeding."

•

The FCC's requirements for protection of aeronautical and marine radio services from harmful interference from signal leakage from cable television systems should provide considerable protection to the Amateur and other radio services using the VHF and UHF spectrum.

Aeronautical navigation and communications are in the 108-136 and 225-400 MHz bands with specific emergency frequencies at 121.5 and 243 MHz. Within the Maritime Mobile 156.25-157.45 MHz band, 156.8 MHz is the distress frequency. Besides providing cable leakage field strength limits, the FCC is requiring that "All cable television operators shall provide for regular signal leakage monitoring of their cable television systems for signal leakage, covering all portions of the systems at least once every three months . . . During regular monitoring, any leakage source which produces a field strength of 20uV/m or greater at a distance of 3 meters in the aeronautical radio frequency bands shall be noted, and such leakage shall be eliminated within a reasonable period of time." (Section 76.614) A very detailed check of the entire system is required once a year.

•

"The FCC has granted the joint AMSAT/ARRL request for a special temporary authorization (STA) permitting temporary operation of automatic digital teleport stations." (*The ARRL Letter*, 11/08/84) "Teleports in this case act as automatic relay stations between packet radio

Volunteer examiner statistics for October 1984 — FCC:

Call sign region	VEC	Sessions	Locations	Elements administered	Pass rate
I	ARRL-1	1	1	326	49%
II	ARRL-2	1	1	37	41
III	Mountain	1	1	24	42
	Laurel	1	1	44	80
IV	Central Ala.	17	14	426	46
	ARRL-4	3	3	167	44
	Mid-South	2	1	80	46
	Western Car.	2	2	31	34
V	ARRL-5	2	2	66	36
	Dallas	4	2	84	39
	W5YI-5	1	1	33	42
VI	SANDARC	4	3	45	67
	GLAARG	1	1	37	54
	ARRL-6	1	1	36	61
VII	Boeing	3	3	128	54
VIII	DARA	11	11	304	46
	ARRL-8	1	1	16	44
IX	DeVry	15	14	347	52
X	ARRL-10	3	3	218	45
	PHD	1	1	10	0
XI	Anchorage	1	1	20	45
XII	MARS	1	1	12	83
XIII	None	0	0	0	0
	22	77	69	2491	48%

•

Test session results summary, 06 November 1984 (from *ARRL Letter*, 11/08/84):
Cumulative summary of all ARRL/VEC sessions since the program began 01 September:

Total candidates served by ARRL/VEC: 925
Total ARRL/VEC sessions completed: 21
Average number of candidates/session: 44

	1A	1B	1C	2	3	4A	4B	Total
Elements passed	23	178	75	31	155	99	21	582
Elements given	35	382	124	34	311	236	85	1207
Pass rate	66%	47%	60%	91%	50%	42%	25%	48.2%

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 December 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	NI0N	KD0TM	N0FUN	KA0TTK
1	KX1P	KB1QD	N1DHG	KA1MIM
2	NG2Y	KD2JU	N2FFB	KA2WFJ
3	KU3V	KC3QE	N3EEC	KA3NJL
4	AA4GO	KI4WC	N4LBX	KB4MCO
5	NT5H	KE5UH	N5HMH	KA5VAS
6	WD6L	KG6MR	N6LGV	KB6HDM
7	NK7F	KE7BZ	N7GSP	KA7UCC
8	NK8M	KD8VL	N8GDX	KA8VNZ
9	NC9H	KD9LY	N9EWB	KA9SSN
N. Mariana Is.	AH0D	AH0AC	KH0AG	WH0AAG
Guam	AH2T	AH2BA	KH2BR	WH2AEQ
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6V	AH6FW	NH6CV	WH6BBT
Kure Is.			KH7AA	
American Samoa	AH8B	AH8AB	KH8AD	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAB
Alaska		AL7GI	NL7ER	WL7BFF
Virgin Is.	KP2L	KP2AT	NP2BE	WP2AEB
Puerto Rico	WP4D	KP4IF	NP4LL	WP4DWE

networks on the ground and amateur satellites in orbit."

Sections 97.126(a), (b) and 97.79(b) were waived: to permit a teleport station to automatically retransmit other amateur stations, to permit remote-controlled teleport stations to communicate with stations not on the network diagram, and to permit a teleport station to be operated under automatic control without a control operator at a control point.

•

The ARRL has petitioned FCC to amend its rules to provide for automatic control of digital communications above 30 MHz. Excerpts from the petition follow.

"The use of computer-based message systems is a new aspect of amateur communications which should be encouraged, consistent with establishment of standards for good amateur operating practice . . . the level of amateur experimentation with digital communications has progressed to the point that automatic control of digital communications is both feasible and necessary to facilitate further development of such experimentation.

"Of course, the authority to utilize automatic control of digital communication would not alter the primary responsibility of the station licensee for proper station operation." (*ARRL Letter*, 11/20/84)

As this was written, an RM-number had not yet been assigned to the petition by FCC.

•

Would you like to have your choice of the letters in your call sign? "ARRL's Plans and Programs Committee will study the feasibility of ARRL offering its assistance to the FCC in the area of maintaining amateur licensing records in general, but especially in the administration of special call sign requests of clubs and individuals." (*ARRL Letter*, 11/08/84)

•

The ARRL has petitioned the FCC to add the use of F2 to the emissions permitted in the 28 MHz band so that repeater stations may use an audio tone for identification, as is prevalent on the higher amateur frequency bands. As this was written, an RM-number had not yet been assigned to the petition.

•

The ARRL has petitioned the FCC to allow examinees who have failed an operator license test to repeat it in 27 days instead of 30 days, as is now required. Comments sent to the Commission and the ARRL should refer to RM-4835. FCC's mail address for such purposes is: 1919 M Street NW, Washington, D.C. 20554.

I understand the purpose is to allow retaking an examination given on a regular four-week cycle rather than a monthly cycle.

•

The FCC . . . "cleared the air as to what extent hams may participate in semi-commercial events," according to *Westlink Report* of 11/16/84.

This year, the New York Marathon became a "commercial venture" by beginning to award prize money to the winners. The Tri-State Repeater Council President wrote " . . . FCC to find out what Amateur Radio activities in . . . this and similar events were permissible."

Private Radio Bureau Chief Robert Foosaner replied that while " . . . the Rules specifically prohibits business type communications using Amateur Radio, there were no regulations to stop them from working on an event of this sort as long as any pecuniary benefits to the race sponsor or its participants were 'incidental.' " He approved the " . . . 'Emergency Medical Network' and the 'Logistical Network', both of which were of direct benefit to the safety and welfare of the participants and the public. Nixed, however, was the 'Lead Runner Position Net', which was suggested to be moved to commercial FM channels."

•

U.S. amateur licensees in Puerto Rico have petitioned the FCC for telephony operating privileges below 7100 kHz. Comments on this petition should refer to RM-4872.

•

Senator Barry Goldwater has asked FCC Chairman Mark Fowler that the Commission "keep hands off" the 220 MHz amateur band. In his 17 November 1984 letter to the Chairman, the Senator wrote:

"More and more, I am getting word that the Federal Communications Commission might be considering a rulemaking aimed at reducing the 220 MHz allocation used by amateurs on a shared basis with the government. Now, this isn't going to set well, and I think the Commission would be wrong in doing this.

"There is an increasing demand for more service to the public which uses the radiowaves, and most importantly, some new technologies being developed through experimentation permit more signals to coexist within the present bands. I think we especially need to encourage these. But let's not knock down Amateur Radio once again in our efforts. The 220 MHz band is where we amateurs can do a lot of experimentation with these new technologies that will benefit all spectrum users. Removing these frequencies from amateur use is unnecessary and would be shortsighted.

"So, I ask you to keep hands off 220. It's needed for continued amateur experimentation, like the hams always have done.

"With best wishes,
Barry Goldwater"

•

The code-sending test is optional in Amateur Radio operator license examinations administered by volunteer examiners, I have been advised, by an FCC official directly concerned with such matters. He explained that it had been the FCC's experience that almost 100 percent of those who can pass a receiving test could pass the sending test at the same speed. He advised that the new examination instructions indicate the sending test is optional.

•

An amateur licensee who objects to the FCC's amateur station power output measurement rule has taken the matter to the Court of Appeals in the District of Columbia. (*W5YI Report*, 11/15/84)

•

On 02 November 1984, the FCC's review board upheld an administrative law judge's initial decision that the station license, N2EDW, of Vincent J. Beard is revoked, his Technician Class amateur operator license is suspended for term and his application for General Class operator license is denied.

Beard was caught during a license examination looking at a crib sheet which contained information which would enable its user to pass all 11 versions of the 13 wpm Morse code exam.

Radio romance

Faith Simms

The idea of love at first sight seems romantic to most of us. How about love at first QSO?

In April of 1968, Dr. Park "Doc" Salle, K7HYI (now a Silent Key), was conducting phone patches for the parents of military men in Viet-Nam. The Navy radio operator he worked with asked Doc between calls one day if he knew of any pretty girls who would like to talk to him. Doc said he knew two pretty girls — his daughters — and he'd ask them.

One of his daughters, Susan, was engaged and not interested in talking to the man, but Linda said she would talk to him.

Her first encounter with Ed Walker left Linda with the impression that her new acquaintance was fantastic. Thereafter, when Doc put through phone patches for the Navy, Linda got on the radio and talked to Ed. Then they began sending letters and pictures to one another.

As Linda's mother, Lea, said, "There was some kind of magic between them." Consider the "magic" of the invisible radio wave, carrying through the air the nuances and intensity of personality and emotion. From the sterile road-and-weather report QSO's to the romantic continent-to-continent courtship, the wide range of communication via Amateur Radio is demonstrated.

A 22-year-old man from Russell's Point, Ohio, Ed took a risk over the airways for all to hear and asked Linda to marry him. Who knows how many people from how many places waited on the edge of their ham shack chairs to hear what Ed's far-away sweetheart would say?

Linda accepted his proposal, adding that she felt they really should meet before they got married.

They had never seen each other's reactions to everyday life. Linda had never seen Ed greet a friend, pet a dog, unwrap a gift or relax after a busy day. Ed had never seen Linda deep in thought, read a newspaper, move about a room. These are among the things one usually has the opportunity to see while courtship takes place. For Ed and Linda, these discoveries were yet to come.

Ed arranged for Linda and her mother to fly to Hawaii and meet him during his R&R in November. Lea's friend, Wretha Matthews, accompanied them.

They arrived in Hawaii on Sunday evening, the 10th. The flight had been delayed about eight hours due to bad weather, and Ed had felt anxious for their safety. He posted himself at the bottom of the portable stairway when the plane landed.

(please turn to next page)

Editorial by Gordon West, WB6NOA

Examining the new examinations — will we really have better hams?

It's been almost a year since the FCC has issued the new questions for all classes of Amateur Radio examinations. Here at our Radio School classes in California, we have trained over 500 applicants to pass their Novice examinations, 600 applicants to pass the Technician Element III examination, and 400 applicants to pass their General Class code test. All of our students, through our local college system, took examinations under the new volunteer examination program.

The Novice course

Our Novice course lasts for nine weeks, and our class meets one evening a week for three hours. The first hour and a half, we cover one module per week in theory license preparation. We then take a break, and then we cover Morse code for an hour. It's no problem, in nine weeks, to bring all the students up to a minimum of 5 wpm code proficiency in our beginner Novice Amateur Radio classes.

Each module that we cover parallels the FCC syllabus and details the questions and answers that will be found on their 200-question Novice Class examination.

We find that almost all students who stick with the classroom sessions will pass their Novice test without any problem at all. We use an outside Volunteer Examiner to test our students — we never test our own students.

The Technician/General course

The Technician/General Class course lasts for an additional nine weeks. We go through one theory module per session, and increase our code speed from 5 to 13 wpm in nine sessions. We also carefully review each question, out of the 500, that may be asked on the examination. Students study these questions as well as ARRL-developed answers in our exclusive Radio School test guide.

We find that nine weeks is adequate to bring students from 5 wpm to 13 wpm in preparation to pass their General Class code test. All code is sent on an electronic keyer at a rate of 14 wpm, spaced down to 5 wpm for increasing the speed. As we go faster in the code, the amount of space between characters decreases. The dit-dah ratio remains the same.

All code instruction is handled by the Radio School Code Programs Manager, Loraine McCarthy, N6CIO, Extra Class licensee. Loraine has been responsible for a phenomenal growth in the passing rate for General Class licensees by truly educating them thoroughly on how to take a 13 wpm code test, and pass it.

Code tests — fair or unfair?

Before we talk about the theory information required to pass the Novice, Technician, Advanced and Extra Class licenses, let's take a look at the 13 wpm code test.

Some volunteer examination teams are giving a multiple-choice exam. This is what the FCC did in years past, and it will lead to a higher passing rate.

Some groups may elect to give a five-minute exam and ask for one minute of perfect copy. Although this is a little tougher than multiple choice, it is still a fair exam.

Some examination groups may elect to use a fill-in-the-blank format and require seven out of 10 correct answers. This is a much harder exam, and we'll let you be the judge as to whether or not you think it's fair.

Is the 13 wpm code test designed to see whether or not you can copy for five minutes solid, or is it a test to see whether or not you can achieve an understanding of what the other operator was talking about? If it's fill-in-the-blanks, you're going to need five minutes of almost solid perfect copy. If it's multiple choice, you simply write down the code in the same relaxed manner that you normally copy off the air. A letter here or there missed won't necessarily occlude your comprehension of the entire copy.

What do you think is a good type of code test to truly indicate the applicant's ability to copy International Morse Code at 13 wpm? I would be interested in your comments.

Gordon West, WB6NOA, instructor

Loraine McCarthy, N6CIO, code programs manager

Theory examinations — rote memory or true understanding?

For the Novice 200 questions, I believe that our students have more than rote memorized each question and answer. In nine weeks we can give them a firm foundation in basic electrical principles and rules and regulations behind the Amateur Radio Service. No problem, here, with Novice.

However, for Element III Technician/General Class 500 questions, there is absolutely no way any instructor or school can take someone with no previous electronic background and adequately train them to be technically oriented in each of the 500 questions.

I have studied all 500 questions carefully, and it would take almost 52 sessions, each session three hours long, to even get close to adequately training the lay person in electronic theory behind Element III questions and the FCC syllabus. This one year of study, three hours per week for 52 weeks, would also require a minimum of two hours per day of homework to meet my normal college curriculum for electronic theory.

Let's all ask ourselves a question that no one seem to be really addressing — is a very technical ham with plenty of previous background in electronic knowledge a better amateur than a new applicant that simply rote memorizes the 500 questions and also receives his Technician or General Class license?

If you were to teach a one-year course as thorough as the FCC syllabus would like us to be, I would estimate that a starting class of 100 potential Amateur Radio operators (that's our usual class size) would dwindle down to only five who would actually complete the course one year later for General Class.

When these remaining five amateurs get on the air, will they actually be better operators and more of a credit to the Amateur Radio Service? Will these five remaining amateurs who stuck it out be better hams because they indeed kept their interest up in pursuing their license? Will these five amateurs who braved well over 1,000 hours of study on Element III questions and answers and the theory behind them stand out on the airwaves when they grab the mike or hit the key?

LET'S FACE IT, THE NEW QUESTIONS WILL ONLY LEAD TO MORE ROTE MEMORIZATION FOR MOST HAMS IN OUR COUNTRY!

The ham technology is changing so fast, I think the old "I built it" days are gone. Today's Amateur Radio operator is buying his own equipment and following the instructions to hook it up — not building it. Let's not kid ourselves into thinking the new questions will make amateurs learn more about all of the electronic business inside the set — it's just not happening.

The new hams — even the technical ones — are merely rote memorizing the questions, achieving only a topical understanding of the answer, and then are going

(please turn to page 12)

Romance

(continued from page 9)

Linda had planned for this trip for about two months. Her clothes were just right, the setting was the romantic Hawaiian Islands, and she was about to meet the man she had already fallen for. Would she really recognize him from the pictures she'd received?

She stepped out the door of the plane. Down the steps she saw several Navy boys among the crowd. She recognized Ed at about the same time he recognized her, and she hurried down the steps to him.

After having dinner with Lea and Wretha, Linda and Ed spent a short time talking. They had wedding plans to discuss.

The next day was Linda's birthday. It was also Veterans' Day, so they couldn't get married. The very next day, Tuesday, the four went to the Naval Chapel in Honolulu, and Ed and Linda were married by the chaplain. Linda wore a street-

(please turn to page 47)

At Last.

A microthin, synthesized, programmable, sub-audible tone encoder that fits inside the ICOM IC-2AT.

Need we say more?

$29.95

VISA

COMMUNICATIONS SPECIALISTS

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

Editorial

(continued from page 10)

down and passing the test. They will then immediately file the formulas away somewhere in the back of their brain, and will probably never use 80 percent of that information again.

So what did the new test questions accomplish? Are they really weeding out the non-technical folks from the very technical ones? Absolutely not!

The new test questions are simply eliminating those amateurs who don't wish to spend a few hours in going through hardcore memorization processes to obtain their next upgrade.

Yes, we are turning into appliance operators. Is that so bad? The computer geniuses of the world are appliance operators — they probably couldn't begin to repair that 5-volt regulator that went out on their computer apparatus; but when it comes to operating the machine, they're the finest in the country. Just because they aren't technical, does this mean they should be disallowed from buying computer equipment and using it? Hell no!

Test questions off track

I, too, submitted questions and answers on the Technician/General Class level, Advanced and Extra. The Technician/General Class questions stressed operating, yet I don't see any that were chosen by the FCC.

Try this on for size -- the Technician/General Class written examination with test questions that deal with operating Amateur Radio equipment, operating rules and regulations, and radiotelephone and radio telegraph technique. Instead of asking questions about whether the resistance goes up or down in a carbon resistor when it gets hot, there should have been a question on simply how to read the resistor's color code! This indeed will help us the next time we're working on a simple project.

The present examinations for all classes of license don't begin to get into setting up ham stations — tying computer interfaces into your ham station and talking about band plans. It's no wonder a new operator upgrades and gets yelled at on the air because of not following the band plans.

I say the new questions are off-base in what they are looking for in Amateur Radio operators. I think more ham operators are interested in operating, on the air, rather than operating on the inside of their sets. Since this is obviously the case, and I am sure no one will deny it, I think it's time that the new questions reflect this on-the-air business.

In reviewing the Advanced and the Extra Class questions, it would also take a good solid year to thoroughly train an Amateur Radio operator in each one of the subject areas the FCC has outlined in their syllabus. There is absolutely no way in hell that any amateur is going to spend a year to upgrade their license. However, they will spend nine weeks in a class rote memorizing questions, and getting a topical knowledge of each question and answer.

This is what we do — we try to put the question into the proper perspective so they can understand how this might be used in everyday Amateur Radio operating. On super-technical questions, we simply rote memorize the formula, show how to make the calculations, and then go on to the next one — telling them where they might be able to use this formula if they should ever get involved in building a coil or balancing out an antenna network.

Will Amateur Radio really be worse off if students begin memorization of the questions? Why have we not seen proposals to allow upgrades that would also include certain amounts of "air time"? Just like a pilot having to have so many hours of flight time, I propose we might have "on-the-air time" as a prerequisite. This would help our students get their noses out of the books and onto the airwaves, where they belong.

Holding a First Class FCC license, and having taught electronics for many years in the local college system, I understand electronics well. I also read people's capabilities well.

The Amateur Radio world is rapidly changing, and it's no longer based on the very highly technical skills that hams in the past possessed. Today's Amateur Radio operator is more skilled in operating. Since this is the obvious way it's going, our tests should concentrate on this area rather than trying to go back to the old days.

If we are going to see the Amateur Radio Service grow, test-makers and the FCC had better realize that technical tests are not really a method to weed out good hams from bad hams once they get out on the air.

Our school will continue to thrive, but there is no way our classes will go beyond nine weeks, and there is absolutely no way any instructor can teach the amount of information necessary to know for passing each upgrade in less than one year. Although our students may have all this information rote memorized, I guarantee the extra operating material we cover in class will indeed make them a cut above the rest. □

Reporting spills

When a tank car overturns on the highway, you can be more effective, when reporting it, if you include the four-digit number on the rear and sides of the truck. The number, between 1001 and 9201, tips off police what the material is and how to handle it.

— DVRA newsletter □

Did you know . . .

Wes Murphy, N9AJM

Did you know that all frequencies from 216 to 450 MHz are controlled by the NTIA? There are other frequencies, but of no great interest to most amateurs. So, what is the NTIA? Well, it stands for the National Telecommunications Information Administration. To put it simply, it is the FCC of all those frequencies set aside exclusively on a shared basis with the FCC for government use. This includes such things as military, embassy, U.S. Forest Service, etc. In other words, all federal government usage.

The confusing thing about this is that, in the alphabet soup of government agencies, it has had other names in the past: OTP (Office of Telecommunications Policy) and OTM (Office of Telecommunications Management). Only the name has changed; its function is still the same.

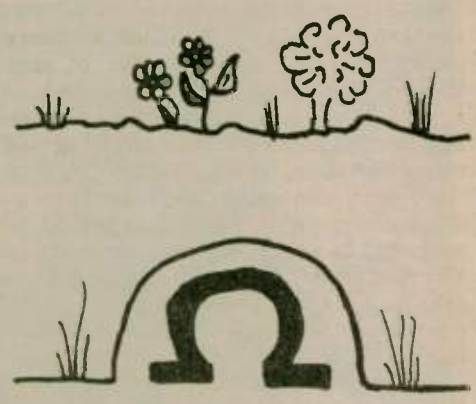
Now for the good news. The NTIA, on the whole, has had a good attitude toward Amateur Radio. So some of the rumors about the FCC taking 220 MHz away are far from correct, at least for the moment. Let's hope the powers that be leave the NTIA be and create no more changes.

— Santa Barbara ARC, CA □

Ohm-Brew

Hal Godfrey, N6AN, of San Carlos, California wins February's Ohm-Brew contest. The answer is on page 47.

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. □



BY1PK/BY4AA

A dream come true

Harold Robins, W2KN
(ex-W2JKN)

"Ham heaven, Chinese-style."

The thought was with me the day I walked down the stairway from the Air France plane we had boarded in Tokyo, and stood on Chinese soil at the Peking airport for the first time. It was July 1975. Along with the anticipation of all we were to see in the next few weeks, and the enormity of the fact that my wife and I were the first in our industry to be invited into the country, the intriguing possibility of getting on the air from this exotic land was ever on my mind.

As an importer of knitwear, I had been traveling through the Far East for many years, but when the invitation to visit China arrived, my wife and I felt like kids in a candy shop, and the ensuing weeks on our first trip proved to be anything but disappointing.

At every opportunity I would inquire about the possibilities of Amateur Radio surfacing in China — from our hosts in Chinatex (the China National Textiles Import and Export Corporation), from our commercial attaches at the liaison office (no embassy in those days!), and even from Vice President George Bush himself, who was in charge of the office in Peking at the time. The answer, of course, was always one of either complete bewilderment, at best, or at worst, complete pessimism about the possibility of such a thing ever occurring.

In each of the ensuing trips, from 1975 through 1978, I would repeat the inquiry, with the same inevitable result. As luck would have it, when the first forays into the hobby began, limited to inter-city communication, and then gradually growing into the full-fledged operation of BY1PK and the other stations that followed, my trips to China had been discontinued, and my dreams of operating from the People's Republic of China vanished simultaneously.

Then early in 1984, the "impossible dream" became possible once again. A return trip to China was scheduled for late May, and to add icing to the cake, not only would my son Donald (KA2MLM) be making the trip with me, but also our Chinese friend and business contact in the States, whom we had met in Nanjing in 1978. He was to accompany us as our guide and mentor every step of the way.

Obviously the first step in planning the Amateur Radio aspect of our trip would be contacting the authorities at the radio stations in Peking (now Beijing) and Shanghai, and securing permission to visit the stations — and if possible, to do some limited operating. I secured the names and mailing addresses of the chief operators of BY1PK and BY4AA from Harvey McCoy, W2IYX, editor of the *Long Island DX Bulletin*. I wrote to each of these gentlemen, mentioning my 10-year background of importing from China, my six visits there, and the fact that many of the visitors from Chinatex to the United States had been guests in my home, and had spoken from my station to amateurs worldwide, and had had their first introduction to the world of Amateur Radio in this way.

Bill Bennett, W7PHO, was also contacted, and he in turn lead me to Pat West, W7EA, who had lead a group to China (Henry Oman, K7HO), Bill Showers, KC7CF, and Bob Hudson, K7LAY) in September of 1981. It was Pat who supplied me with the necessary forms which proved essential for my visits.

When we left New York on Sunday, 20 May, we had received no reply from BY1PK, but did have an encouraging note from BY4AA, welcoming us to Shanghai and advising us to have our hosts there contact the station when we arrived.

Mr. Xu Ru, chief operator of BY4AA (left), and Harold (Buddy) Robins, W2KN.

We arrived in Beijing on Monday, 21 May, but it was not until Wednesday the 23rd that we had the time to make the effort to contact the station, and we were due to leave on Thursday the 24th for Nanjing!

We had no telephone number for the station, and with only a box number for the address, it looked like a modern miracle was in order if we were to make contact before leaving the city.

We were staying at the Great Wall Hotel, and it was due to the patience and persistence of one of the desk clerks that a telephone number was finally secured. (It took him one and a half hours to get it!) We were informed that it would be possible for us to visit at 4:00 p.m. that afternoon, and of course an address was given.

It took the driver of the taxi 45 minutes to find the building housing BY1PK, during which time Donald and I acquired stiff necks from looking up at building tops to see if we could spot the triband beam which we had been told adorned the particular building we were looking for.

We finally arrived, and with great anticipation ascended the stairs to the station floor. We were greeted by a welcoming committee who ushered us into a sitting room where we were seated, and in traditional Chinese fashion, entertained with polite conversation and tea, our Chinese companion doing the translating for us.

During this time, I was in a complete state of shock, hardly believing I was actually at BY1PK, and not at all certain I would be given permission to operate. The only encouraging sign seemed to be that it was evident my application had arrived a few days before our arrival.

At that moment, some other folk came into the room, and one of them turned out to be Anthony Sariti, WA3WAQ, attached to the embassy in Beijing, who was visiting the station. Then Mr. Tong, the chief operator at BY1PK, smiling ushered me into the next room and it suddenly appeared that I was to be allowed to operate!

After receiving some additional briefing from my host, I was seated at the long operating table, an automatic key was placed by my right hand, and there was the transceiver in front of me! I tuned around on 20 for several minutes, knowing it was too early on the East Coast to hear any of the boys who would be listening for me, and then proceeded to make several Japanese and one Russian very happy by giving them BY1PK.

It was indescribably exciting, and despite the fact that I completely forgot to take the movies I had so carefully planned, I felt I was truly in "ham heaven". Luckily Donald had a 35mm camera, and he had the presence of mind to take some excellent pictures of the station and the station complement.

We ended the session by inviting the chief op Mr. Tong, the second op Mr. Yan, and the school director Mr. Yang to have dinner with us, and the six of us took a taxi to the Peking Hotel, where with the help of our Chinese guide a sumptuous banquet was ordered for all of us. It was memorable!

The next day it suddenly occurred to me that while I had received a welcoming letter from Shanghai, I had not sent an application to that city, similar to the one I had sent to Beijing. I hurriedly filled one out and had the desk post it to Shanghai that morning.

We left Beijing for Nanjing on Friday, 25 May, one day late because of a cancelled CAAC flight on 24 May, and spent two delightful days at the Jinling Hotel — a newly constructed edifice which was so

beautiful and luxurious that the natives of the city cue up with regularity at its gates, there to pay a few cents to have a guide take them from top to bottom. They are rightfully impressed. The hotel is magnificent.

On Saturday we left for Suzhow by train, and a few hours later found ourselves in this ancient city, where we had not been before, and which is world famous for its beautiful gardens and its silk and embroidery skills. The food is noteworthy as well, and Donald and I continued to amaze our hosts with our ability to consume record-breaking quantities of Chinese food and still remain mobile.

We arrived in Shanghai on Wednesday, 30 May, and in the midst of conducting business with each of several departments, managed to have our hosts in this city attempt to contact BY4AA to arrange a visit.

It took the better part of a day to get through to the people at the station, and an appointment was made for Thursday afternoon, 31 May. Again the by now familiar chore of finding the building housing the station, this time only a half an hour, and again a repeat of the Beijing experience (spotting the beam on the roof) — this time a TH6DXX!

We went into an anteroom, much the same as in Beijing, and were greeted by Mr. Xu Ru, Madame Chen and the orientation process with tea began once again. As the minutes went by, however, and the discussion between our companions and Mr. Xu continued, I began to get the distinct impression that all was not going well. Sure enough, after some more conversation, it developed that as much as our courteous and friendly hosts would have liked to have given me the green light to operate, my application had only arrived that day from Beijing, and there had been little time to get it approved by the proper parties.

My face fell almost to the floor, and it must have been quite evident, for a considerable amount of discussion followed. I was now prepared to accept my fate, and wouldn't have given a nickel for my chances to operate. Suddenly, my Chinese companion turned to me, and with a broad grin said, "Let's go into the radio room and see who you can contact!"

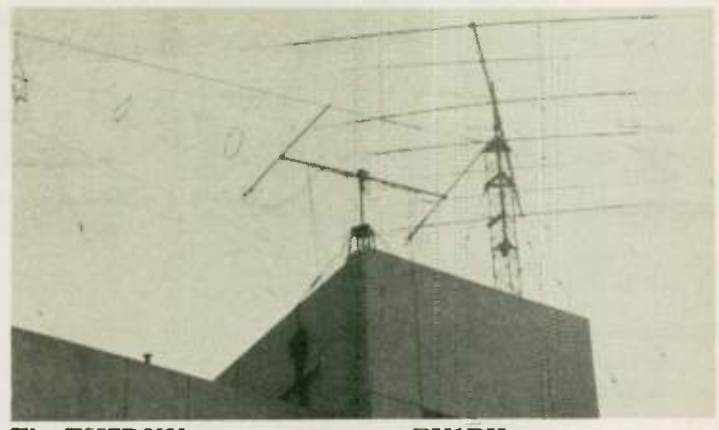
I was still full of disbelief, but when I saw the big smile on Mr. Xu's face, I knew that somehow I had been given a reprieve,

Madame Chen, second operator of station BY4AA, and Buddy Robins, W2KN.

Buddy Robins, W2KN, operating at station BY1PK

Bottom row **(left to right): Anthony Sariti, WA3WAQ (U.S. Embassy); Mr. Yang, school director; Mr. Tong, chief operator of BY1PK; and Mr. Yan, BY1PK's second operator.** ***Top row*** **(left to right): Buddy (W2KN) and Donald (KA2MLM) Robins.**

BY1PK shows off QSL cards received from all over the world.



The TH7DXX antenna set-up at BY1PK

and that I was going to go on the air from BY4AA.

This time I gave Donald the assignment of taking movies of the station, and then I was ushered to the console, seated before the TS-930 and a straight key (I think more to test my mettle as a CW operator than anything else). With the TH6 on the states, I actually managed a half a dozen stateside contacts, plus one in Hawaii, several Japanese and one Russian.

I got as far east as K5BDS, and in addition worked K6NA, W7TS, K7ZR and K6NO. The Hawaiian contact was with KH6KK. Not a sign of the East Coast, unfortunately, but all in all it was the same big thrill all over again.

We celebrated by taking Mr. Xu, Madame Chen and our local Shanghai contingent out for probably the best Chinese meal we had had thus far. It was a fitting climax to a most eventful afternoon.

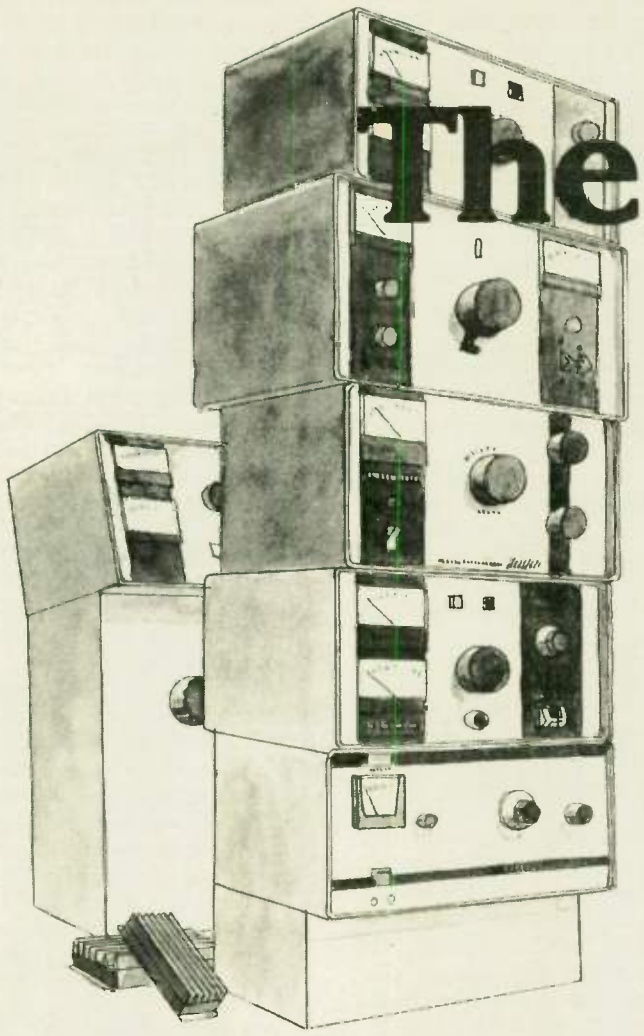
We left the next morning for Hong Kong, having said goodbye to our friends in Shanghai and our guide and mentor, without whom neither visit could possibly have taken place.

Since our arrival home, I have spoken to each station and passed on my 73 to all of our new friends, and received greetings in reply. The pictures which appear with this story are being sent on to each of our hosts. I find I still have to pinch myself to realize the visits actually did happen, and that a 10-year-old dream did become a reality.

Knowing the enthusiasm of the Chinese, I believe many additional stations will be coming on the air in the near future, but no matter how many appear, I know it will always be a thrill to make a Chinese contact. The mystique that has surrounded the country for centuries will always be present, I believe, and in my opinion, so will the spirit of friendship and warmth that has characterized the relationship between Chinese and Americans for so many years.

As always, Amateur Radio acts as the catalyst drawing us closer together. □

• Pass it on . . . WORLDRADIO •



The HENRY REPORT...

"Twenty years and 30,000 amplifiers later, Henry is building the world's broadest line of linear amplifiers and we're convinced we're the BEST!"

At Henry Radio, we wrote the book on quality and value. Choose any model. We believe you will find the finest performance, highest reliability and best value.

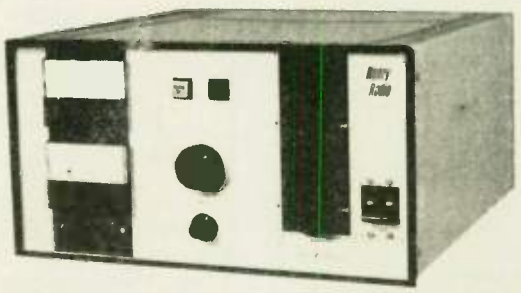
This has always been our aim...the most radio for the least money. Whether you're into amateur communications, industrial RF power, scientific research, or commercial communications we have amplifiers to help you. Two to five-hundred megahertz. Ten to ten-thousand watts.

We have an amplifier for you.

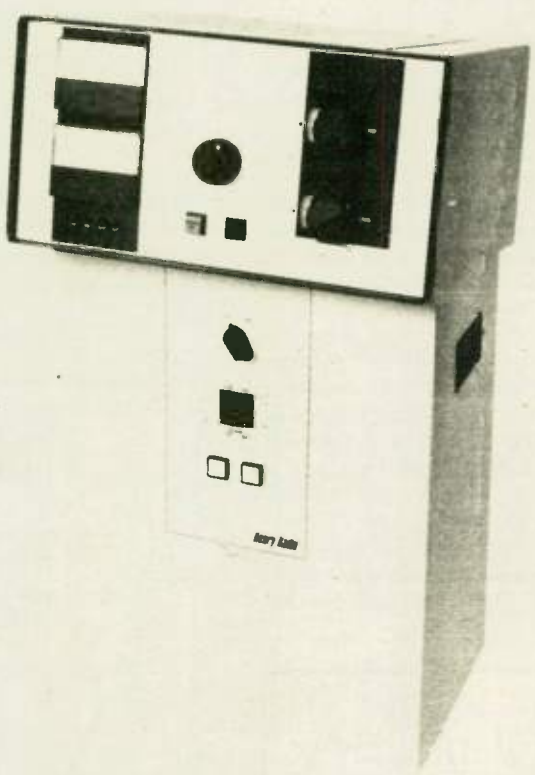
2K Classic...the culmination of more than fifteen years of developing the 2K series into the world famous line that sets the standards for top quality HF linears. A true "workhorse"; built to loaf along at full legal power, trouble free, for years of hard service. Operates on all amateur bands, 80 through 15 meters (export models include 10 meters).

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

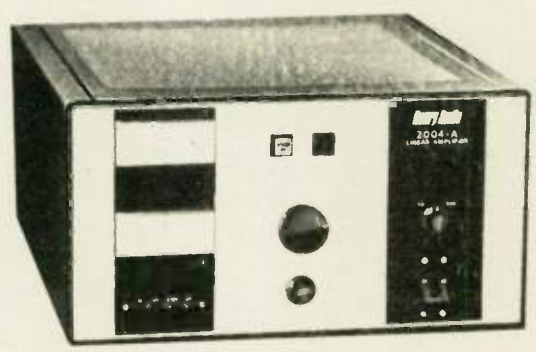
3K Classic...uses the superb Eimac 8877 tube. More than 13db gain. We believe the 3K to be the finest amateur linear available anywhere...the amplifier of every amateur's dreams.



2KD Classic...a desk model designed to operate at 2000 watts effortlessly, using two Eimac 3-500Z glass envelope triodes, a Pi-L plate circuit and a rotary silver plated tank coil. We challenge you to find a better desk model for even a thousand dollars more.



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



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

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

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

Henry amateur amplifiers are available from select dealers throughout the U.S. and are being exported to amateurs all over the world. In addition to our broad line of commercial FCC type accepted amplifiers we offer special RF power generators for industrial and scientific users. Call or write Ted Shannon or Mary Silva for full information.

We stock these plus many other fine names:
AEA • ARCO • AARL • ASTRON • B & K • B & W • BIRD • CDE • CONNECT-SYSTEMS • CUSHCRAFT • EIMAC • HAL • HUSTLER • HY-GAIN • ICOM • KENWOOD • LARSEN • NYE • ROBOT • TEMPO • VIBROPLEX • YAESU

HENRY RADIO 56 YEARS OF SERVICE

Henry Radio

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

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

Horses

(continued from page 7)

trail. That's a bear-cat for the horses and even four-wheel drives, as it is extremely slippery. We could have some horses go down.

"After the slab rock is passed, they will follow this dirt road into Spring Creek Vet Check, 94 miles and 4,500 feet. The trail from Vet Check #6 will be on good roads with the last three miles on the same trail as they started on in the morning."

Standing up, Jerry asks, "What do you think?"

"How about?" "What if?" "Say look here." "Man alive." Then it came — "Sure we can, can't we fellows?"

"You're on. Let's start laying the groundwork now. The last weekend of July 1984 will be here before you know it," smiles Jerry. Is he dreaming? Man, it's the middle of December in Wyoming. Hardly picnic weather. The problems both real and imagined were many. How does one communicate out of deep canyons with sheer walls? Two meters might work from several locations. Simplex from Vet Check #1.

"How about our repeater?" was a question. It is located five miles west of Cody at 8,000 feet, which is 80 miles to the west of the race. "It'll be impossible from #3 and #4, as they are in Shell Canyon." How about 75 meters? Well, maybe, but what about 4:30 a.m. and long skip after dark in the evening and summer QRN?

"I'll be putting up my repeater on Medicine Wheel as soon as we can get there after the snow melts," Allen Hull, KC7NP, chimes in.

"Say, that's great. Hey, but look here on the 3-D map. Hunt Mountain at 10,000-plus feet is directly in line with three or four of the pins we've placed at the checkpoints," was the observation.

"What do you fellows say let's work Field Day the last of June in the area and check the sites out?" was a suggestion. "Sure, that's it," was the reply.

As the next months passed quickly, we made up Vet Check Communication crews and assigned locations. About this time, we realized there weren't going to be enough of us. We were lacking enough operators for at least two checkpoints, even if Vet Check crews #1 and #2 traveled across the mountains and valleys to Vet #6 and the finish line. Considering it needful for at least two operators per checkpoint, an invitation was given to our fellow amateurs in the Sheridan-Buffalo, Wyoming area. Four or five indicated an interest and accepted the opportunity to check possibilities early on Field Day Saturday.

Each crew was to furnish 2M transceiver, HF transceiver, antennas, power supplies — be it battery or AC, coax, masts, shelter, etc. for their checkpoint.

Field Day arrived and early morning showed a caravan moving east out of Cody headed for various points on the west slope of the Big Horn Mountains, 75 to 80 miles away. It wasn't long after arriving at our assigned sites that some of our fears became the real thing.

Checkpoint #1 had to work via the Cody repeater, 150 miles round trip or on 75M. Checkpoint #2, my group, had problems also. Ours was to be eight miles north of Granite Pass on a dirt road. Within a half mile after leaving the highway, we ran into a snowdrift across the jeep trail. We managed to get around it OK, only to run into another about 50 yards long and 24 to 30 inches deep. These drifts were still left from last winter's snow, even though it was the last of June.

After several attempts to circumvent the drift, someone walked to the brow of the hill and guess what? Snow everywhere! Using binoculars, we could see snowfields a quarter to half a mile long across the trail ahead. What to do? Ralph Bartels, NC7O; Dave Rodgers, KA7ABY; and myself, NE7C, packed a TS-130S and TR-7800, HF dipole, 4-element 2M beam, 22-foot fiberglass mast, coax, antenna tuner, guy ropes, 105 amp hr deep-cycle batter, etc. up a steep slope for half a mile to the nearby ridge. We were still six miles from our assigned site, but this would have to do for now.

Now, Ralph and Dave are big fellows wearing size 12 built-in snowshoes. Me, I wear size 9½, so guess who got caught with 60 pounds of battery? That's right — me! Now ordinarily, this wouldn't make much difference, but not this time. These fellows with their built-in snowshoes could walk across the melting snow fields, while I sank to my knees at every step, with the extra 60 pounds of lead I was packing.

It didn't take long to set up the equipment after attaining the ridge top. We found easy simplex contact with base, also full quitting into the Cody repeater and good contact on 75M. What a place to operate from. One could see forever, spring flowers ankle deep, cool mountain air, but we had to leave and meet the others at checkpoint #3, Ranger Creek Campground, for Field Day operation.

The other crews also found similar problems — some big, some small; nevertheless, all were still game.

All involved gathered soon after we had arrived at the Field Day site, and we were able to get into operation about an hour late. Not bad, as we had already set up, torn down and repacked a mini-operation.

The boys of CMARC had a good Field Day operating as NE7D. We had fun, but our topic of conversation, thoughts and everything we did was directed to the Race of Champions the last weekend of July 1984 — just a month away.

In addition, I had been thinking for sometime about a portable repeater. I had on hand a COR board which we had used on our early repeater. It was written up in May 1978 QST by Bob Shriner of Circuit Board Specialists.

My thoughts were to use two Heath HW-202 crystal-controlled transceivers stacked one on top of another with the COR below. The various leads for audio, squelch, mike input and PT would be so the transceivers could be exchanged in a matter of seconds.

For the most part, this idea developed very well. The only hitch came when I found I didn't have enough positive-going voltage to key the COR. Various ideas were tried, including picking up a negative-going voltage and inverting it. Invariably, something suffered — squelch audio, etc. At this point, I called Lou Kuster, K7LK, of the Red Lodge, Montana group, knowing they had used the same transceiver as basis for their repeater. (It had separate receiver and transmitter boards and is very easy to separate them.)

Lou replied very quickly with a fine circuit using a 741 OP amp followed by several transistors. I fed this into the input of the COR board and it worked like a dream from the very start. Using two antennas, ⅝ groundplane type, separated 100 feet, the portable repeater worked surprisingly well; there was some desense, but it showed promise.

I next located the trap-filter duplexer (QST, March 1970) we had used on our original CMARC repeater. This was placed in the receiver antenna input line and a great improvement was noted — 300mW from Cody five miles over the hills was solid into it. This was with the antennas at 20 feet high and 100 feet apart.

Suddenly, the day before the race — 27 July — was here. Once again, vehicles were loaded the night before and a caravan headed east out of Cody. The group from the Sheridan-Buffalo area headed west.

Race headquarters was to be manned initially by Jerry KD7PV and Doug Troxel, WB7BVT. Checkpoint #1 by Lee Fouts, K7MBJ, and Ray Saunders, KA7PSJ. Checkpoint #2 crew was to be Ralph NC7O, Dave Rodgers, KA7ABY, and myself, NE7C. Vet Check #3 operators were Patrick McCue, NE7D, and Lynn Knapp, K7IKO. Vet Checks #4 and #5 were to be manned by our friends from over the Big Horns — Murry Clark, KB7JZ; Ted Strahan, W7JID; Wayne (KC7QE) and Judy (N7GED) Sutherland, at #4; and Max Carpenter, N7EQC; George Lunbeck, K7KSA; and Robert Glenn, N7BVX, at #5.

NC7O and KA7ABY from my #2 crew were to travel 40 miles across country and operate from #6. K7MBJ and KA7PSJ were to move to race headquarters after finishing at Vet Check #1. In addition, Allen KC7NP was to follow the race as much as possible via mobile in order to pick up any trouble as it occurred.

Lastly, Doug Sothan, K7SAR, was to be horse-mobile between #3 and #4 so as to give assistance to lost riders in the boulders of upper Shell Canyon.

One problem came up when my crew could not leave for the race site until after work Friday night, expecting to be in about dark. So I had the task of locating our checkpoint site, at which there were no markers or race crews yet present, selecting a nearby peak or ridge on which I could locate my portable repeater and erect the masts for the antennas.

I began bumping down the jeep trail looking for our site. "Hey! What's that? It sure looks like smoke." I dug out my binoculars and took a look. "KD7P this is NE7C mobile, do you copy on 52?"

"Not very good," came the reply.

"Wait till I top this knob. We've got trouble," I snapped back.

"What's the problem?" Jerry asked.

"There's a column of smoke rising due south of me at about five miles and across the Shell Canyon. Can you see it from headquarters?" I continued.

"No, we can't. Why don't you bring up the Greybull Simpatch and dial 911. You'll get the Sheriff's Department; then report it," Jerry suggested.

"OK, I'll go to that frequency and try it. Let's see, star, there it is. It's identifying, now 911."

"Hello, Big Horn Sheriff's Department. Can I help you?" comes a voice over the airwaves.

"Yes," I replied. "This is NE7C. I am a radio amateur, mobile in the Big Horns near the head of Finger Creek. I want to report a column of smoke about five miles to the south of my location and apparently across Shell Canyon. It sure is blossoming out."

"We'll get right on it, thank you," comes the reply.

"Now punch pounds," I think to myself. "Patch complete, this is NE7C."

Man alive, was that thing growing. In a matter of half an hour, the area where I was was filled with haze and the smell of smoke. The sound of heavy aircraft, the slurry bombers were already in the air.

"Sure glad they have a base at Greybull, just short minutes from the fire. I'm sure glad I don't have to fly one of those flying boxcars up that canyon," I said to myself.

"Let's get back to our task," as I continue talking to myself.

After several false starts, I found a ridge that tailed off in the direction of control center at race headquarters. Using 146.52 simplex, I was solid into control using 5 watts and mobile antenna. Checkpoints #4 and #5 also reported good copy. The crew at #3 was not there yet, so no check could be done. The crew at checkpoint #1 reported difficult copy, and the only way we could communicate was through the Cody repeater 80 miles away. The location I chose was about two miles from our site, so it should be easy for checkpoint #2.

Have you ever tried to raise two 30-foot steel masts with ⅝ 2M groundplane antennas, along with coax and wind, at 9,000 feet? I did, several times. Hi! With four guy ropes, one rope has to be exactly the right length!

Everything soon began to fall in place. I was sure glad for the advance planning. Nothing missing; every item I needed was there. How thankful I am that every fragile item had been packed in large ammo boxes or wooden tote boxes padded with 1-inch firm polyfoam. Boy, did the boxes take a beating, bouncing over the rough jeep road and a mile and a half of rock and ruts coming down the ridge.

I snuggled the little repeater module, along with the deep cycle battery and receiver filter, under a small clump of stunted spruce on an otherwise bare ridge. Bare except for the millions of indescribable mountain flowers.

Hesitantly I switched the repeater on. Kerchunk, it works. Thank you, Lord! "Let's see, 180-foot RG8 to the transmit antenna, 10 watts in at 13.8V, but I've only got 12VDC. 3dB loss in the long and old coax. I'll be lucky to get 4 watts out."

"KD7PV, KD7PV. This is NE7C through NE7C repeater. Anyone copy?"

"NE7C this is KD7PV," came the reply. "You're rock solid. A full S-meter ... Paul."

"You're good copy in Powell. This is W7SDA."

Wow, that's Chet Stanwaity, and he's 70 miles away! It was going to work! "Hey fellows," I replied, "I'm going to cover this thing up with my yellow saddle slicker and get off the ridge. I have to make camp yet before dark and it's already 6:00 p.m."

Bouncing back down the ridge toward the jeep road, it took me 20 minutes to cover the mile and a half. I pop over the last rise on the road and gazed out on a vast modern wagon train all circled up like the pioneers did a century ago.

"Must be 20 vehicles, campers and trailers there where a few hours ago I was by myself. There's Dave KA7ABY. I'll get him to help me erect my wall tent." I like to use the wall tent because I can set up the sheepherder stove and warm the place up if it gets chilly.

Jack Clucus, one of the race officials, was also there. Jack went over the procedure we would use as the horses came in. He also indicated he would like us to locate the communications at the checkout point. A bulletin board would be posted with all the information at that point, so it would be easy for us to gather what information we needed.

Dave and I thanked Jack and headed up the hillside above the checkpoint. "Up behind that clump of trees is a flat spot. A nice place to make camp," I told him.

Suddenly I realize it's 8:30 p.m. and dusk is approaching, and as yet, Kathy — one of my daughters — and a girlfriend of hers, Timmie, have not arrived.

Soon I saw them coming down the road. When they arrived, they told me they were delayed about an hour at the site of the fire. The slurry bombers were working and had slurry all over the highway. Slurry is a mixture of fire retardant and bentonite with water. Bentonite comes in two forms — a gray clay that, when dry, is like talcum powder, or when wet is like a wet bar of soap. In this case, it was wet and all over the highway and halfway up the mountainside.

Kathy indicated the fire was nearly under control, since the wind had died down.

Ralph's wife and youngsters emerged and soon we had the tent top up and camp made for them. "I couldn't get away from Powell until dark. I thought we would never get here. It's been a long day," Ralph said.

"For me too," I replied. "I'm going to crawl into the sack. It's 12:30 a.m. and the race starts in four hours. Goodnight."

Whew! Ah, sleep, I think, but sleep doesn't come. The sleeping bag and I go around and around. Finally, around 1:30 a.m. Saturday, I doze off.

(NEXT MONTH: The horse race begins.) □

QRP Lost-Nut Finder

John Reddie, W7KJ

Projects around the shack, car and tower inevitably result in dropped nuts, washers, nails, set screws, etc. A diligent search through the bifocals is seldom fruitful. Scanning the area with the backside of a 15-inch woofer does the trick and is, in fact, essential in deep grass or a cow pasture. However, for most jobs, the way to go is with the QRP Lost-Nut Finder.

1) Procure 20 ea. Radio Shack round ceramic magnets (RS #64-1885).

2) Drill 22 each ¼" (.64cm) holes in the 1" (.0254 m) side of a 1" (.005 rod) by ¾" (.021 yard) wood stick on ⅝" (.16KKK Angstrom) centers.

3) Attach the 20 magnets to the stick with cable-lacing cord using the "KJ Wrap" — alternate the magnetic polarities.

4) Attach a second stick to the center of the first stick to act as a handle.

I find a scanning rate of about 1"/sec (153 furlongs/fortnight) about right for casual operation. Greater speeds would be necessary for contest work — probably in the neighborhood of .306 furlongs/fortnight (1.7 exp-8 lite-yr/centuries).

— *Western Washington DX Club* □

South Seas saga

David Atkins, W6VX

It was in the spring of 1925 that "short wave" really made an impression on the world of communications; the wavelength was about 39 meters. Maritime mobile was the start of it all.

Hams all over the world had been pointing the way below 200 meters for several years. There were two radio amateurs in on the act — Schnell 1MO aboard *USS Seattle,* signing NRRL; and Fred Roebuck, 6FD, on a large four-masted schooner, signing KFUH.

This story is about Fred, a lad from Phoenix, Arizona. He was one of the best ham or commercial operators on the air — arc, spark or CW. Fred could carry on a conversation person-to-person, and at the same time send or receive traffic about a half sentence behind. His fist was clean and rhythmical — a pleasure to hear. When he sent the word NAG, he meant NAG, not NAME.

This is also a story about a sailing ship. *Kaimiloa* was a beautiful schooner — a four-masted vessel with the lines of an Extreme Clipper, a fast sailing ship of the mid-1800's. It was built in about 1900, 650 tons, 182 ft. long by 38 ft. beam, and registered in Hawaii. Its owner and skipper was Kellum.

Kellum had just married in the Islands. He and his bride were about to set out in search of a place to build their future home; Kellum had a large load of lumber aboard to do it with. Fred was his wireless operator and confidant.

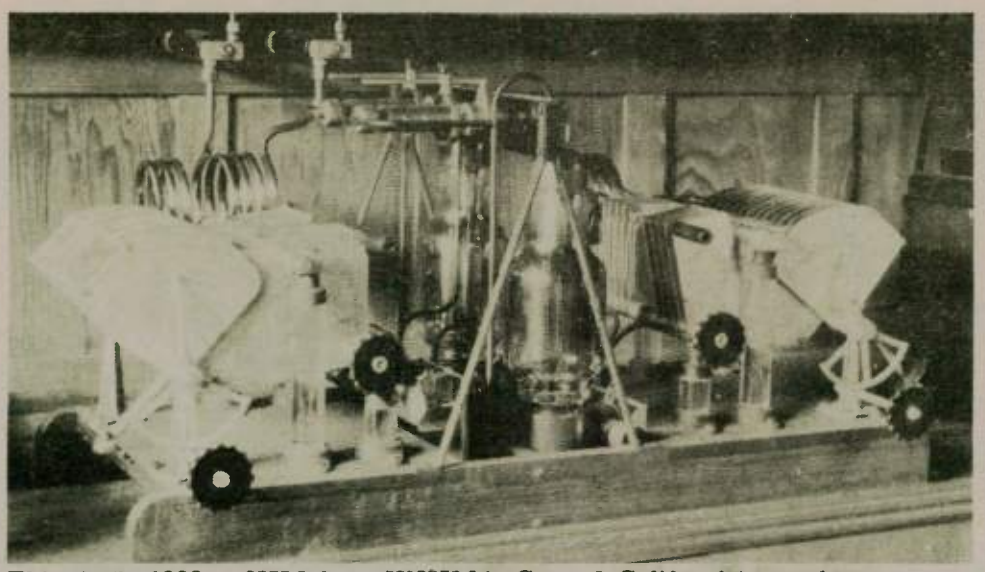
The shack contained a KW Navy spark rig with alternator and power to match. QRN was bad in those latitudes, so the signals in and out were sometimes not QSA. Fred talked to the skipper about the problem. He told Kellum that CW was the "in" thing these days, so Kellum had a message sent to Ralph Heintz, who was building short-wave sets for the Signal Corps, Wilkins, the Dollar S.S. Lines and others. 6RH at H&K, on Natoma Street in San Francisco, California, got the following cable, "BUILD NEW TRANSMITTER — USE YOUR OWN JUDGMENT — MEET YOU HONOLULU THREE WEEKS".

In just under the time limit, after an ocean trip, Ralph and Fred were rearranging the shack aboard. This commercial set-up was the first installed for short-wave operation aboard a vessel. It was a "tuned plate, tuned grid" self-excited, self-rectified, 500 watt "granite grinder," as Fred called it. In those days, the only practical oscillators were circuits like the Hartley and Colpits. Only radio amateurs would try the "TPTG"!

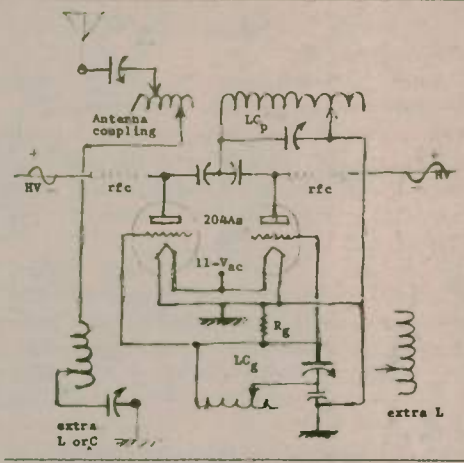
Ralph's transmitter was ruggedly built. The coils were of 5/16th copper tubing and secured to special ceramic bars at every other turn (see photo). Two 204A triodes were fed with 500 Hz at 2000 volts. Each tube took AC power on alternate pulses of the high voltage like a full-wave rectifier. The output, no filter of course, was 1000 Hz raw 100 percent modulation-type A2 emission — and very distinctive, too. Such signals could be copied on a non-oscillating type receiver — at times an advantage in those days.

Since this rig was carefully thrown together in such a short time, the theme was dependability and ready access for cleaning and quick adjustment. No frills, no enclosure — just brutal honesty. The clips for varying the inductance were a typical Ralph-ism. Note the clothespin on the grid-coil. The jaws, instead of wood, were cast bronze with added wing nut tighteners for locking tightly to the tubing turns.

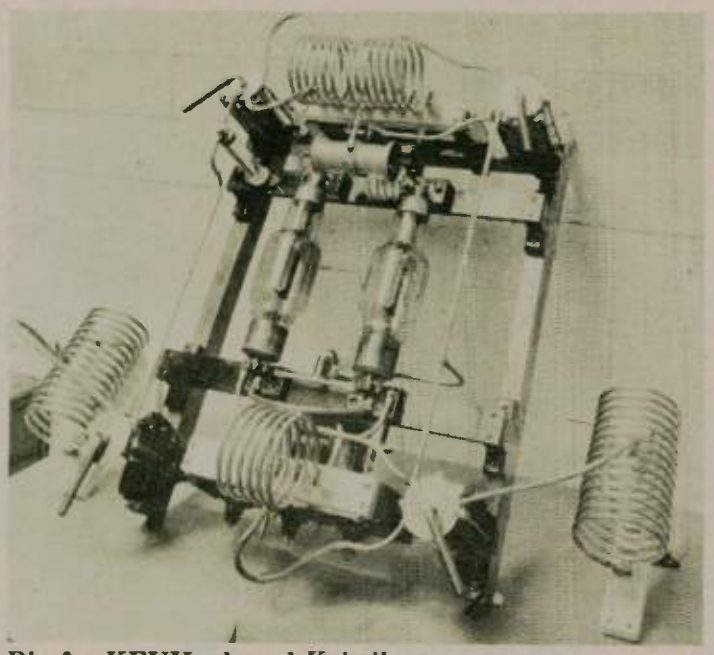
Since the available antenna was the usual shipboard Marconi flat-top multi-wire inverted L, plenty of capacitive and inductive reactance was provided for antenna tuning. The wires may be seen to go the full distance between the fore- and aftermasts, about 100 feet up and 100 feet long. This accounts for the extra outboard coils and the built-in heavy-duty wide-spaced Cardwell variables. The ground system, naturally, was the



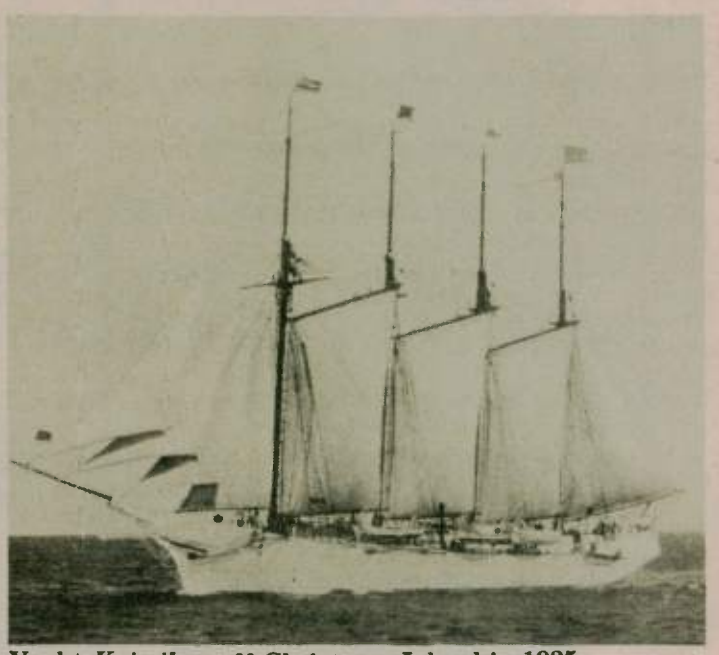
This rig (in 1928 at 6HM, later W6HM in Carmel, California) was the prototype of the KUP transmitter. It was later (1930) made into a final and crystal-controlled at 7005, 7010 or 7015 kHz. (You ground them yourself in those days!)



Schematic arrangement of KFUH "tuned-plate, tuned-grid" rig (1925)



Rig for KFUH, aboard *Kaimiloa*



Yacht *Kaimiloa,* off Christmas Island in 1925

endless ocean. Man has not been able to improve on it.

There is no record of the crew, but such vessels usually carried 10-15 men. So we have a picture of *Kaimiloa* with Captain Kellum, and I suppose Mrs. Kellum would be First Mate, and Fred the wireless officer, at sea, moving along at 10 or more knots, headed south.

The course was on the average downhill, as they say in these climes, because that's the way the wind blows. Under favorable conditions, New Zealand or at least Fiji would be about a week away. Some of us at the time, plotting KFUH's course, were a little amazed at the apparent whim of the helmsman. It zigzagged from place to place, crossing and recrossing previous headings. The reason for this wandering about, one will remember, was the search for a suitable homesite.

Skipper Kellum visited the islands of Christmas, Jarvis, Fanning, Malden, Starbuck, Penrhyn, Tahiti, Moorea, Bora Bora, Raiatea, Palmerston, Aitutaki, Raratonga, the Marquesas, New Caledonia, Fiji, Wallace, Fortuna, the Tuamotos, and others.

Fred Roebuck, 6FD, copying at the mill at KUP, San Francisco, in 1928. ***(from a small photo; sketch by W6VX)***

During this time, Fred was racking up the DX. The idle moments were few. Several stations awaited their turn for a QSO — stations like 6HM, 6AYC, 6AWT, 6OI and 6ZA, to name several on the West Coast. Cliff Dow, 6ZAC, was by now stationed in Pago Pago. 6HM was up north of Vancouver signing C9CK, and running a 202 5-watter on A and B batteries. I1ER was half-way around the world in Milano. The pile-ups were not bad in those days, so most of the hams got a shot at this unusual ship station with the big signal.

One "dark and stormy" night, *Kaimiloa* was headed toward the entrance of Fanning, an atoll. One entrance to the big lagoon is on the southwest. There, at London Harbour, is a cable station. On one side of the narrow entrance is Danger Point. At night it was dangerous for any craft. If the authorities knew of an arrival, they would turn on navigational lights to permit safe entrance.

The island was visible in the darkness by starlight. The sound of the surf on the coral was ominous, and the lights were off. There were no answers to calls on 600 meters or any other frequency. The big Atlas diesel was chugging away, just keeping headway in the heavy sea.

Fred and the Skipper talked it over. Fred called 6AWT in San Francisco, who called Ralph on the phone. Ralph sent a cable to Fanning, and on came the beacons. This took about 40 minutes! There may be safety in numbers, but try that hookup in these times with the hit-and-run DXers and plenty of the less serious types CQ'ing on top of QSOs. I'm sure you get the picture. Emergencies are not arranged. Emergencies are *NOW!*

In concluding this saga, the Kellums chose Moorea. There they built their home and raised their family. Fred had returned to San Francisco and opened a radio press station for Hearst Papers. The idea was to get news to ships at sea via short-waves, and by this time, there were plenty of them out there somewhere. The call was 6ARD until the Commission issued the letters to KUP. There, with the help of Ron Martin and Mort Brewer to handle the load of traffic, short-waves were steadily increasing their value.

The transmitter built at H&K (1928) was much like the one Fred used on *Kaimiloa*, only dressed up and sophisticated — stout Pyrex insulators and H&K transmitting variables, all mounted on a cast bronze open framework.

Fred left Ron 6AYC, and Mort 6JU in charge and took the job of Chief of Globe, Dollar S.S. Lines communications network, which included stations in Manila, Shanghai, Honolulu and San Francisco, plus the fleet of Dollar Liners, such as the palatial *Hoover* and *Coolidge*. This growth took place in the early 1930's.

Fred worked at KTK, at Mussel Rock overlooking the Pacific, just south of the city. Later IT&T got in the act, and Fred became Chief of KFS on the peninsula, till his retirement. He was a remarkable person, as much at home with his many friends as with his Vibroplex; millions of words of traffic had cleared his "hook".

In 1968, with two of our friends, we flew to Tahiti and chartered a yawl. We visited many of the isles "sous le vent" — to Bora Bora and back.

While in Cook Harbor at Moorea, we had tied up and gone ashore to stretch our legs. As we walked along the road, we came on a weathered wooden sign. It bore the name KELLUM! There, working on a flower bed, was a man. I asked him if he could tell us where to find the owner. He turned out to be Kellum, to whom we brought greetings from Fred and Ralph and Sophie Heintz. Our meeting was entirely accidental. Our mutual pleasure was immense. We were invited to visit, to see Mrs. Kellum and enjoy their hospitality.

The home was situated about 30 feet above the shore of the lagoon, surrounded by a sparkling green lawn, all set about with tall palms. We were greeted by a dachshund as we entered the house. We were careful to follow the example of our host, removing our sandy shoes.

All was in beautiful order. There were many tasteful arrangements of furnishing and decoration with spotless hardwood floors like the deck of a ship — just as you would expect of a skipper and his mate. We learned that the grown-up children had gone stateside to schools. The big schooner *Kaimiloa* had since foundered while in the harbor of Hong Kong, during a typhoon in 1931.

Short-wave had come into its own. □

Pre-Novices on the air

John Davidson, KA0NPN
(Silent Key)

I suppose that every Novice class spends some time around a table with one or more code practice oscillators, pretending that they are sending from their own stations. While this is probably good practice, the members of the Lincoln, Nebraska ARC suggest an improvement.

By the time most Novice class members have acquired their needed code speed and after they have passed their written tests, we try to pass the time while waiting for their licenses by pursuing operating practice.

The class is divided into two parts. One half goes to one ham's shack while the other group goes to another. We invite those who have not passed their code to come along as this seems to be a good motivator!

The licensed operators demonstrate the tune-up procedure on a *dead* band. After making the initial contact, we turn the key over to the students. While we practice correct procedures, we encourage each participant to find out as much as possible about the people at the other shack.

Though there is considerable key fright, and everyone gets plenty of practice sending eight dots at a time, communication does occur. Everyone gets the feel of an on-the-air contact. Club members usually conduct three or four sessions such as this before the new licenses arrive. Student progress is remarkable.

"This is really enjoyable!" "It's a whole lot of fun." "Those sessions make using your own station a lot less scary when the time finally comes!" Those are some of the comments we hear from our Novices.

Naturally, the host hams are the first ones called upon when the new Novice first goes on the air from his own shack. The broad grins and shiny eyes are ample reward!

— *ARRL Instructor's Newsletter* □

SPECIAL EVENTS

Valentine's Day

The Oregon Tualatin Valley Amateur Radio Club will operate station KA7NPN from 0000Z to 2400Z on 10 February, in celebration of Valentine's Day and Oregon's 126th anniversary of statehood.

Frequencies: 3.880, 7.280, 14.280, 21.380 and 28.580. For a certificate, send $1 or a large-sized SASE to KA7NPN, 3840 SW 102nd, Beaverton, OR 97005. □

They won the West with 2 meters

Lenore Jensen, W6NAZ

Five radio amateurs found themselves deep in show biz on 02 December as they provided communications on short notice to the Rawhide Rawlins Wild West Show, which was put on for the benefit of the Tri-Valley Special Olympics in the San Fernando Valley, in the stadium area of Pierce College.

With a large cast of trick riders and shooters and other stars of Wild West performances spread out over the large field, and with a huge crowd waiting, the producers realized the need for communications and contacted Bill Holliday, WB6EDE, who is active on behalf of the Special Olympics organization. Bill enlisted Judy (WD6FWZ) and Alvin (WD6FXG) Teeter, along with Elinor Siesel, N6GZP, and Kit Carson, WB6VPV, to help.

In addition to routine activities such as helping check in celebrities at the main gate and crowd control, they were greatly needed backstage when the sound system could not be heard for entrance cues.

"There we were, having a great time," recalls Bill, "cueing in headliners such as the trick shooter Beau Hickory, Chief Gray Otter and the California Rough Riders! It was exciting and fun, and at the same time we had the satisfaction of knowing all the proceeds went to our own Special Olympics."

The five amateurs were kept busy during the three-hour program and found many opportunities to help in the community project.

Other weeks they are active members of ARES and the San Fernando Valley Amateur Radio Club. □

CALL FOR QUOTES
1-800-231-3057
1-713-658-0268
Inside Texas
All Items Are Guaranteed Or
Sales Price Refunded.

MADISON
Electronics Supply

1508 McKinney — Houston, Texas 77010

EQUIPMENT

SANTEC ST142	+ +FREE GOODS+ +...299.95
KENWOOD TR2600	Give us a ring
TENTEC 2591	269.00
MIRAGE amps	less 12%
DENTRON GLT1000C tuner 1KW PEP	175.00
WM. NYE MB-V 3KW tuner & ant switch	489.00
WM NYE 46-6 phone patch for ICOM (8 wire)	82.00
BEARCAT DX-1000	449.95
SIGNAL ONE MILSPEC 1030	6595.00
ACCESSORIES AVAILABLE	CALL
KENWOOD TH21AT 2 mtr HT, shirt pocket size-IN STOCK	
KENWOOD TH41AT 70 cm HT, shirt pocket sizeIN STOCK	
THESE ARE REALLY NICE — MOST ACCESSORIESIN STOCK	
Soon a 220MHZ HT from **KENWOOD** WATCH FOR DETAILS	
KENWOOD TS711A 2m all mode 25 watt super rigCALL	
KENWOOD TS670 40, 15, 10 & 6 meters	CALL
BOTH THE TS711A & TS670 MATCH THE TS430 IN SIZE AND STYLING. A GREAT WAY TO ADD COVERAGE TO YOUR STATION	
KENWOOD SM220 station monitor	CALL
KENWOOD TR-7950...TM-201A...TM-401A	CALL
KENWOOD NEW!!!...TM211 and TM-411	CALL
KENWOOD TS-830S...TS-530SP	CALL
KENWOOD R2000...R1000...R600.R11	CALL
CES 510SA SMART PATCH...In stock	CALL

ACCESSORIES

FLUKE 77 auto-ranging digital multimeter	115.00
ALPHA DELTA MACC-8 surge protector	73.00
BENCHER	Less 10%
HI-MOUND paddles and keys	less 10%
VIBROPLEX	less 10%
SHURE 444D Desk Microphone	49.95
BIRD Wattmeter #43 & elements in stock	CALL
AMECO preamps	Less 10%
DAIWA...NEW METERS	CALL
CN-410IM 3.5-150MHZ 150 watt back lit meter	64.00
TRIPPLITE PR25 Regulated PS...25A/16	99.95
TRIPPLITE PR40...40A int...25A cont	149.95
GORDON WEST CODE TAPES...(GREAT)	7.95
COLLINS F455J05 500hz CW FILTER...NEW	95.00

HEIL SOUND PRODUCTS

HC-3 mic el. The Key Element	17.95
HC-4 The DX Dream Machine Element	20.50
HC-5 The ICOM Fix Element	20.50
HM-5 Desk Microphone	49.50
SS-2 Powered Speaker (Great Product)	49.50
BM-SO Boom micheadset	53.95
HCS Control box/interface	89.95

TUBES

GE 6146B	9.95
GE5728	62.00
Eimac 3-500Z	99.95
GE INDUSTRIAL TUBES	CALL

BELDEN

9913 low loss, solid center conductor, foil & braid shield - excellent product	50¢ft
8214 RG8 foam	43¢ft
8237 RG8	40¢ft
8267 RG213	52¢ft
8262 RG-58 a/u milspec	16¢ft
8000 14ga stranded copper ant. wire	13¢ft
8448 8 conductor rotor cable	31¢ft
9405 as above but HD—2-16ga, 6-18ga	52¢ft
8403 Mic cable 3 condctr & shield	80¢ft
100 feet 8214 w/ends installed	45.00

POLICIES—MASTERCARDS, VISA or C.O.D.
All prices FOB Houston, Texas, except as noted. Prices subject to change without notice, subject to prior sale. Used gear sale price refunded if not satisfied. Call anytime to check status of your order. Texas residents add sales tax.

AMPHENOL

831T coax tee	4.00
PL259 831SP silverplate	1.25
UG176 reducer RG8X/RG59	.30
4400 N Male-SO239	6.00
2900 BNC Male-SO239	4.00
8261 N Male	3.00
83-1ORCA to SO239	3.00
Other Amphenol products in STOCK — CALL	

ANTENNAS

ARX2B, V2S, 2MCV-5, ISOPOLE	$39.95
A3	219.95
A4	289.95
402CD	289.95
R3	279.95
OMNI-J2 2m ½ wave Mobile/Portable	39.95
OMNI-J 440 ½ wave Mobile/Portable	39.95
HUSTLER 6BTV	129.95
G7-144	119.95
CUSHCRAFT A147-11	49.95
A147-4	29.95
AOP-1 complete OSCAR ant	149.95
Butternut HF6V...80 thru 10 vertical	125.00
HF2V...80 and 40 vertical	125.00
70CMCV-7..70cm vertical collinear	39.00
Barker & Williamson	
All B & W Dipoles	less 10%
HyGain	
TH7DXX	339.95
HG52SS	999.00
40M BEAMS IN STOCK	CALL
Ham 4	219.95
Ham T2X	269.95
CDE T2X	239.95

NOTE: HyGain accessories shipped prepaid from the factory with tower orders.

KT34A	329.95
JV2X 2 meter Vertical	32.00
2M13LBA	79.95
2M14C	88.00
2M22C	119.95
2M16LBX	99.95
432-30LBX	96.00
435-18C..Incl. CS-2	116.95
432-16LB	68.00
HF WORLD CLASS SERIES Antennas	CALL DON
LARSEN Kulduck	17.00
LARSEN Cellular Antennas	stock
VALOR moblie antennas 75-10M, ea	20.00
AVANTI ASP151 3G thru the glass 2M	33.00
850 Cellular Ant	39.95
ANTECO 2M...5/8 MAG MOUNT, comol.	25.00
METZ SW-1 SWL ANT..50khz to 54mhz	59.95

MADISON STOCKS A WIDE SELECTION OF ANTENNAS _ PLEASE CALL FOR PRICES

ROHN FK2548...prepaid	899.00

SURPLUS

CDE 2 POLE DT RELAY 10amp. Enclosed..(New)	5.00
2.5A/1000PIV epoxy diode...29¢ea. or 19.00/100	
SANYO	
AA NICADS	2.00
AA NICADS with SOLDER TABS	2.50
MIC CONNECTORS 4 pin, 5 pin, 6 pin & 8 pin	4.00
CELLULAR...YOU BET! We stock the WESTERN UNION cellular phone made by E.F. JOHNSON. Price includes LARSEN antenna	1995.00
BE SURE TO CALL FOR OTHER ROHN PACKAGES AND INFORMATION ON ROHN PRODUCTS	
¼" E.H.S. GUY CABLE Rohn U.S. 1000 ft	250.00
3/16" E.H.S CABLE	210.00
¼" GUY CABLE 6100# 7x7 strand	15¢ft
3/16" GUY CABLE 3700# 7x7 strand	12¢ft
PREMAX GROUND RODS - HEAVY COPPER PLATING 3/8, 1/2, 5/8, 3/4 inch diameter, 4 to 8 ft. in length	CALL
GENUINE ROHN ACCESSORIES	CALL
Alliance HD-73	99.95
U110	59.95

RTTY SALE

AEA PACKAGE SPECIALS
The best VIC-20/C-64 system for the money.
MORSE, BAUDOT, ASCII and AMTOR OPERATION

AEA CP-1	retail	239.95
AEA TI-1	retail	119.95
AEA MBA-TOR software	retail	119.95
AEA AC-1 12VDC PS	retail	19.95
5 feet BELDEN mic cable	retail	5.00
MIC CONNECTOR 4 or 8 pin	retail	4.95
	TOTAL	$ 529.70

SALE PRICE $399.95 YOU SAVE $$$$$

This system has all the software features that the best system includes but in a self-contained unit that plugs into the back of the computer.

AEA MAP-64/2	retail	239.95
AEA TI-1	retail	119.95
AC-1 12VDC PS	retail	19.95
AC-1 12VDC PS	retail	19.95
MIC CONNECTOR 4 or 8 pin	retail	4.95
	TOTAL	$ 404.75

SALE PRICE $309.95 YOU SAVE $$$$$

KANTRONICS PACKAGE SPECIAL
The UTU works with any computer with RS-232 port. RTTY, ASCII, MORSE and AMTOR.

UTU	retail	199.95
TERMINAL software, PC or CPM	retail	19.95
AC-1 12VDC PS	retail	19.95
5 feet BELDEN mic cable	retail	5.00
MIC CONNECTOR 4 or 8 pin	retail	4.95
	TOTAL	$ 249.80

SALE PRICE $219.95 YOU SAVE $$$$$

HAL PACKAGE SPECIAL
SIMPLY THE BEST!

CT-2200 terminal	retail	945.00
ARQ-1000 AMTOR option	retail	749.00
KB-2100 keyboard	retail	175.00
RS-2100 scope/loop supply	retail	329.00
	TOTAL	$2,198.00

SALE PRICE $1,819.95 YOU SAVE $$$$$

ALL ITEMS AVAILABLE INDIVIDUALLY-CALL FOR PRICE

MADISON stocks the entire product lines of AEA, HAL, KANTRONICS and part of the MFJ equipment.

CALL FOR PRICES ON THESE AND OTHER COMPUTER COMMUNICATION PRODUCTS.

MICROLOG...We have a used ACT-1 and a DEMO ACT-1 available...the used unit SALE PRICE...600.00
DEMO ACT-1 ...SALE PRICE...650.00

HAL...We have some USED HAL EQUIPMENT available.
CT-2200 terminal with KB-2100 KBD ...699.95
KB-2100 ...125.95

ROBOT
We have a few of the ROBOT 800 RTTY UNITS left:

800 RTTY UNIT	395.00
800C update kit for the 800	155.00
800 with 800C update kit	500.00
1200C SSTV high resolution color system	1139.00

COMPUTER BOOKS...20% DISCOUNT ON STOCK ITEMS...CALL WITH TITLE & PUBLISHER

DON'S CORNER
We have a direct mail program in effect now. From time to time there will be some special prices and bargains offered. If you would like to be on the mailing list send a QSL or note with your call, name and mailing address. That way you can have a shot at some of the deals that won't be offered in any of our other advertising. 73 'til next month.

PUBLIC SERVICE

Hollywood Parade and hams

Lenore Jensen, W6NAZ

Eighty amateurs in a well-planned service participated in the annual Hollywood Christmas Parade, which was viewed by more than half a million people in person and countless numbers via TV, Sunday, 25 November.

Organized by Officer Frank Pettinato, WB6ELR, they performed many different functions, not only to assist the Los Angeles Police Department (LAPD) in its concern for safety and convenience of the public, but also for the enjoyment of those lining famed Sunset and Hollywood Boulevards. (Many had staked out sidewalk claims early that afternoon).

As usual, Hollywood Sound Systems' Les Harrison had arranged for powerful loudspeakers to be installed along the parade route so the announcers could keep the crowds alerted to the names of celebrities riding antique cars or floats, along with interesting information about them. In order for accurate line-up facts to be available, each announcer had a pair of amateurs to keep in touch with the Parade Command Post. And, as usual, there were a number of last-minute changes which were passed along on 2-meter FM.

In addition, these "sidewalk amateurs" were able to send return information about parade progress and in particular, the vital facts when any breakdown occurred.

"We had less than five minutes downtime this year, due to the efficiency of our amateurs and the use of ATV/mobile, which greatly assisted parade officials and LAPD," said Frank. "An incident of congestion near the parade start, where cross-over traffic had not been stopped, was a ham success. Because of communication problems, the word had not gotten back on police frequencies, but our amateurs came through promptly and officers were immediately dispatched to save the night."

Police officials were again deeply impressed with the ATV pictures which assisted them greatly, giving an overview of the parade route progress and traffic congestion.

For the first time, amateurs (in bright orange vests worn by all "parade officials") actually marched in the parade, accompanying floats and vehicles. Because many child stars were riding without parents, it was very consoling that an Amateur Radio operator was keeping a close watch.

The logisitics scramble was kept in check by the help of computer expert Dave Tucker, WB6FAK, who brought his personal equipment to the command post and gave those in charge updated information during the long hours Hollywood was inundated by parade watchers.

It was an unusually chilly evening in Hollywood and all hands were warmed by the delivery to each waiting spot of hot pizzas, arranged for by Les Harrison in appreciation of the amateur contribution to the success of the evening.

There had been a briefing meeting two weeks prior to the parade at which Frank had outlined in detail all responsibilities. At 2:00 p.m. on parade day, all gathered at Hollywood Sound for a last-minute briefing and issuance of the bright-colored vests before being delivered to starting points in an English red double-deck bus, courtesy of KACE. Everyone had a packet of xeroxed instructions to eliminate, as far as possible, problems during the two-hour parade which ended with Mr. Claus.

"It all went off as planned, and we were very pleased," said Frank in praise of the ham help.

In addition, at Hollywood Sound, other amateurs had established a commemorative station on "low bands" using the borrowed call W6HCP (Hollywood Christmas Parade) to work 180 stations.

A glittering array of movie and TV stars kept the watchers cheering and the Christmas season was off to a good start. □

Some of the amateurs who supplied communications for the Hollywood Christmas Parade, an annual event requiring much special communications service for public enjoyment and safety. (*Photo by Gene Ford, N6ERJ*)

Donald Ralston, KA3JGX, served as a link to the laboratory.

This emergency was planned

Amateur Radio's role in emergency situations is well known, but an emergency doesn't have to be sudden to require the assistance of local amateurs.

Barberton Citizens Hospital recently had to make a major change in its telephone service which required that the internal telephones be disconnected for several hours. To minimize the problems, the outage was planned for 10:00 p.m., 17 October, until 4:00 a.m., 18 October. The hospital contacted the Barberton Red Cross who in turn requested that the Silver Creek Amateur Radio Association (SARA) provide for emergency communication.

Helen Wanzie, KA8CYF, contacted club members and area amateurs to assist during the communications emergency. Akron area amateur operators representing SARA, the Cuyahoga Falls Amateur Radio Club, the Community Amateur Radio Service of Akron, and the Goodyear Amateur Radio Club (as well as Dennis Burgoyne, N8FNP, who was visiting from Columbus) handled the communications within the hospital for several hours. Everything from lab test results for emergency room patients, to requests for physicians, was handled via the 2-meter band. Several other local amateurs monitored the frequency in case additional assistance was needed.

The hospital felt that without the assistance provided by the Amateur Radio operators, the impact of the telephone outage certainly could have presented problems.

Another area hospital heard news stories concerning the effort and expressed an interest in being able to utilize the area amateur operators in case they ever faced a similar emergency.

At 3:30 a.m., telephone service restored, the amateurs terminated the emergency net. All were tired, but rightfully proud of a job well done.

Amateurs participating in the effort included: Helen Wanzie, KA8CYF; John Patton, WD8PUX; Bob Ducotey, KX8V; Tim McLeod, WB8HFZ; Donald Ralston,

KA3JGX; John Morisak, WD8ISQ; Ann (WA8VTS) and Lou (WA8SNF) Laurich; Ken Weidner, KB8GK; Curt Flick, KZ8Z; Debra Wanzie, WD8RPJ; Tom Farriss, WA8GXX; Charles Rogers, W8ZKX; John Kephart, W8KOQ; Jim Hipp, WD8RZI; Dennis Burgoyne, N8FNP; Bob Cronauer, N8AHJ; Gary Fields, WD8ITF; Steve Nowak, KA8SQD; and Jim Nicholson, KA8HRI. □

MAYDAY MAYDAY

FLASH!! MAYDAY MAYDAY MAYDAY, SOS. CALLING COAST GUARD. COME IN PLEASE!! (no answer)

Are you sure we're on channel 16 of the Coast Guard frequency? Yep, we sure are, try again. (No answer) Say, we got our 2-meter gear on board. Let's try that, OK? This is WA5UQR calling anyone on frequency? This is WA5UQR.

The above did happen recently, but maybe not just like the above paragraphs.

Thurman Capps and friends were in the Gulf of Mexico to do a little fishing. While going about the business of dunking lines and whatever you do out there, the shaft of Thurman's motor broke in two.

Well, being stranded out in one of the seven seas is no place to be — especially in this season.

Thurman gets the old microphone and turns to the CG channel and calls for help to no avail. He then calls for help on 2 meters via the Port Arthur 146.625/025 machine and — voilá — he gets an answer. WA5UQR this is WA5ZFQ, can I help you?

Good for Roger Jolly. Roger is retired now you know and gets to spend some time with his favorite hobby and happened to be at the right place at the right time.

Final result: Roger and Carl Sheffield (who was also on frequency) assisted Thurman in calling the Coast Guard by telephone and relaying the problems of the now stricken vessel which in turn, allowed the CG to get going and tow the fishing party in.

Now fellow readers and amateurs, I really don't know just exactly what happened word for word or paragraph for paragraph, but I do know it did happen. (It was passed on to me by an amateur involved.)

— *Beaumont ARC, TX* □

Keeping antenna mounts magnetic

Carl Zelich, AA4MI

Each morning and evening, the Kennedy Space Center "Salt Mine" net meets on our local 146.28/88 repeater. While enjoying a round-table, John McDonald, WB4ZXS, was enlightening the net of the joys of owning a sportscar. In mid-sentence, his signal abruptly ceased. Further attempts to reach him failed. Was he in an accident? Where?

A landline call to his office later revealed that his magnetic 2-meter mobile antenna had fallen off his trunk. Dragging it at 55 mph, only a few parts were retrievable and even less were recognizable.

I know this has happened to other amateurs. Tales of other antennas being dragged to their deaths came forth. The conclusion was: spend $50 and hope the magnet holds — this time. Analysis of the problem reveals that most Amateur Radio operators regularly remove the magnetic mount and toss it onto the floor behind the driver's seat. This detrimentally affects the magnet two ways.

First, the antenna base eventually gets dropped onto the floor. As time passes, the drop height gets higher and higher. Unintentionally, of course. This is not proper handling for a magnet. Magnets that are struck with a hammer will lose their magnetism. This repeated dropping contributes to disorienting the internal magnetic bipolar elements. Thus, the magnetic flux strength declines.

Secondly, when a magnet — even a so-called "permanent" magnet — is left laying around without a "keeper", the magnetic flux lines reach out to grasp other ferrous materials.

A "keeper" is generally a soft iron piece which provides a bridge between the poles for the flux lines to follow. This convenient path allows the magnetic lines to concentrate and confine themselves to the keeper.

The solution to both these problems is simple. In the electrical section of your hardware store are metal ceiling electrical boxes. They are available in square, octagonal and round shapes. These are often called "breakout" boxes because a main supply line is broken to serve a branch line.

Purchase a round steel electrical box cover. The cover normally has a diameter of 3½ inches and is fine for all antenna mounts.

Place this keeper onto your magnet before putting the antenna mount onto the floor. This keeper lessens the damage done if the antenna is accidentally dropped there. The keeper can also be kept on the floor or seat behind the driver when the antenna is on your vehicle.

Also, this keeper should be in place whenever you plan to store your antenna any length of time.

For about 41 cents for a keeper, you will avoid spending another $50 for a new antenna! And best of all, there's no work involved. □

ATTN: Amateurs and antique collectors

In the settlement of an estate, as a result of a Silent Key, I have on hand the following QST magazines: years 1946, 1947, 1948 [1949 (less April and March)]; years 1950 to 1959 (Incl.); years 1960 to 1969 (Incl.); years 1970 to 1975 (Incl.).

If anyone in your area is interested in any of these years of QST magazines, please contact me: Leo Haijsman, W4KA, 1044 SE 43rd St., Cape Coral, FL 33904.

Since these magazines are a part of an estate, we would like to secure, if possible, a fair market value, and we have priced them as follows: 1) Single magazines, $1 each; 2) Any year (12 magazines) bundle, $3. Estimated postage as follows: 1) Single magazine (9 oz.) third class, $1.05; 2) Postage on 12 magazines (8 #) parcel post, $4.

It would certainly be a shame to put these old magazines in the local paper drive.

LEO HAIJSMAN, W4KA
Cape Coral, Florida □

Contests — what is their value?

I have been in Amateur Radio only since 1971, but thought I would share my feelings about Amateur Radio, its uses and privileges, as concerns myself (and the more than 10,000 contacts I have made in that period of time, who mostly feel as I do).

I get on four nights a week, after midnight, to talk to old friends and meet new ones, and in that period of time, have had the opportunity to help in a number of distress situations, as well as "being there" if my help is needed.

I run about 300 watts output, but have several good antennas, so can usually hear most stations well enough to communicate when necessary.

I remember that when I first started, the thing stressed most by my instructors was the way we *could* and *should* make it our first priority to help others in situations where they could not help themselves (on the oceans, out in the wilderness, etc.), and understood *that* was the *real* reason the government allowed us a portion of the radio spectrum for our hobby.

In that respect, I joined a group on the West Coast dedicated to those amateurs who travel a lot, who — lots of times — cannot reach another form of communication to contact others.

There are usually enough base stations in this group to pass the necessary traffic for those people. It is on in the early evenings, Sundays through Fridays, 2400 UTC through 0200 UTC, at or about 7.268, for those who would like to help.

This group welcomes *all* amateurs, even for radio checks and other information, as we know most amateurs would rather be on a one-to-one situation. We feel that having many stations on one specific frequency leaves more space for those who want to use the limited space on 40 meters, General part of the band.

I think, as do many of my fellow amateurs, that we are presenting a good service and are promoting good will and a good public image for the real purpose Amateur Radio was intended.

Now, as to contests:

I have tried to be objective about the use of every band used for the sole purpose of winning awards, boosting a person's ego, whatever, and have come up with only three positive aspects for Amateur Radio:

1) It gives amateurs the chance to contact other countries where they might not otherwise go. It seems to me, *most* contest people do *not* utilize their tickets except in contests.

2) It does get more amateurs on the bands, using their equipment, than is usually the case.

3) The contests, by making competition heavier, also sell a lot more electronic gear and antennas, and that is good for the economy.

After talking to the ordinary run-of-the-mill amateurs, who are able to invest a relatively small portion of their income in their hobby, that was all the positives we were able to locate about contests, with the definite positive of Field Day, which actually improves an amateur's ability to communicate in a true emergency situation.

To sum up, contests — in general — promote more bad public relations and degrade the opinion of most of the world's other amateurs toward our amateurs, who, on the average, are more able to afford expensive electronic gear than the rest of the world's amateurs and are allowed to use more power by our government.

Also, most people in contests are covering up each other in their attempt to secure the awards, and I fear that if a distress call was trying to get through, with weak signals, lives could be lost at sea and other places.

If the contest sponsors could only allocate a small segment of each band for any life-and-death emergency, I feel it would considerably enhance our public image, and possibly even save a life or two!

I do not normally write to any publication, but feel so strongly on these issues, I just had to write to you. I enjoy your fine paper and get much enjoyment from it.

ROY McFALL, WA6GGB
Arcadia, California □

FCC — not a census bureau

The FCC, according to an item in a recent Westlink bulletin, is worried over a slowing in the growth of Amateur Radio. It seems that the FCC has some notion that if the number of amateurs does not constantly increase, something must be done (such as, perhaps, reviving the no-code idea).

I should think it far more sensible for the FCC to worry about the *quality* of Amateur Radio, not the *quantity*. Is Amateur Radio living up to the tenets expressed in Sec. 97.1 of the FCC rules and regulations? The *basis and purpose* of Amateur Radio do not seem to concern the FCC much.

Certain responsibilities of the FCC itself are set forth in Sec. 97.1: it is given the task of formulating rules for "enhancement of the value of the amateur service *to the public* as a voluntary noncommercial communication service . . ." (Emphasis mine — LRH).

This principle (service to the public) has been in place ever since the FCC was established, yet we find it countered severely in Sec. 97.114 (Third-Party Traffic), which was promulgated by the FCC about 15 years ago. Third-party traffic (as everyone knows) means traffic for the public. Two amateurs communicating with each other are the first two parties; the third party is the public.

Now let us take a good look at Sec. 97.114, which is largely negative in tone and throws a cloud over the natural impulse of amateurs to make themselves useful to the rest of the world.

Hams must not (says Sec. 97.114) serve the public by handling communications which in any way involve "material compensation, either tangible or intangible, direct or indirect, to a third party, a station licensee, a control operator, or any other person."

When this rule was promulgated, the ARRL Board of Directors voted unanimously to oppose it, and instructed the ARRL headquarters staff to proceed immediately toward that end. Unfortunately, nothing ever came of this; the ARRL let it fall through a crack.

The provision quoted above is found in Sec. 97.114(b). The FCC apparently felt that the wording left some doubt (and no wonder, for it is obtuse legalese), for next we find, in Sec. 97.114(c), an elaboration telling us that what the FCC is talking about is "Third-party traffic consisting of business communications on behalf of any party," and that "business communication shall mean any transmission or communication the purpose of which is to facilitate the regular business or commercial affairs of any party."

This bureaucratese is enough to set the average ham to scratching his head and chewing his nails until he has neither head nor hands left. The confusion this rule has created is heard frequently on the air: amateurs wondering if they must not mention prices, or whether it is all right to call up a store and ask a question as long as a phone patch is not used, etc.

Before Sec. 97.114 was promulgated, there was a very simple principle on third-party traffic which anybody could understand: hams are not to use their stations for material compensation *to themselves*. This criterion is as clear as blue sky in June. It should be the *only* principle the FCC needs to consider when it comes to third-party traffic. And if this still were the case, radio amateurs would be much more fully able to live up to Sec. 97.1 of

(please turn to page 36)

QUARTER CENTURY WIRELESS ASSOCIATION INC

Esther Given, W6BDE

The Quarter Century Wireless Association is proud of its accomplishments in creating a perpetual scholarship fund which approaches $50,000 and assures financial assistance to worthy young amateurs from the interest earned. Since the inception of the program in 1977, QCWA has awarded a total of $7,150. For 1985, the board has approved the sponsorship of six $600 and one $500 scholarships.

QCWA's scholarship program is administered by the Foundation for Amateur Radio, (FAR), 6903 Rhode Island Ave., College Park, MD 20740. Requests for application forms must be made with FAR prior to 01 June. Completed applications must be received by FAR by 01 July.

QCWA places no restrictions on course of study or residence area. Applicants must intend to seek at least an Associate degree. Preference is given those seeking a graduate degree. Applicants for a QCWA scholarship must be sponsored by a QCWA member or QCWA Chapter. Applicant must hold a General Class license or higher (or foreign equivalent).

FAR's Scholarship Administration program handles scholarship awards for a dozen or more Amateur Radio organizations. When an applicant files for consideration, he is eligible for any scholarship which FAR administers if he qualifies in meeting the requirements specified by the donors. Each applicant should be sure to include the endorsement of a QCWA member or chapter as his sponsor. The various requirements of donors, amounts of grants and other pertinent information will be furnished by FAR upon request for application. Information on the 1985 awards will appear in spring issues of most major Amateur Radio publications.

QCWA is honored to present short thumbnail sketches to introduce the winners of its 1984 scholarship awards, which went to a beginning freshman, a senior undergraduate student and a Ph.D. candidate:

IAN McNICHOLL, KA9KOW, entered University of California, Berkeley for the fall session 1984. He plans to major in biology and continue on to medical school after graduation. He was attracted to Amateur Radio while a student at Oconomowoc High School in Wisconsin, where he studied for and received his Novice license in 1981.

He upgraded to General Class in 1982, moving to La Habra, California with his family. He became an active member of the Mount Wilson Repeater Organization and participated in their "Operation Santa Claus" as a member of a team visiting pediatric wards in southern California, making it possible for the young patients to "talk" to Santa.

Ian is also a member of the North Orange County AREC and the UC-Berkeley ARC W6BB. He was sponsored by Roy Tucker, K6TK, QCWA #1904.

SCOTT SMITH, KA2EMO, of Malone, New York is enrolled in his senior year at New York State University in Potsdam where he is a history major. First licensed as a Novice in 1979, Scott made the goal of General Class in 1980. A victim of cerebral palsy, Scott has shown that drive and determination make goals attainable. His QCWA sponsor, Henry Killets, W2CFY, states that Scott is the pride of his home town.

BRUCE WADE, N9UR of Glendale, Wisconsin is a repeat winner, having been named a QCWA scholarship recipient in 1983. He attends the University of Wisconsin-Madison where he is in his third year of graduate school, majoring in applied mathematics. His Ph.D. thesis is "Partial Differential Equations and Numerical Analysis," which he hopes to submit by 1986.

Bruce was first licensed as WN9SXX in 1975, upgrading to Extra Class in 1976. He has been active in contesting and DX/CW. He enjoys hunting for rare DX and teaching Novice radio classes from which he has "graduated" 10 new amateurs. He serves as a teaching assistant for freshman and sophomore students in UWM mathematics classes, primarily the elementary calculus sequence. He hopes, upon graduation, to secure a spot on the University's mathematics faculty. Bruce's QCWA sponsor was Travis Baird, W9VQD.

•

QCWA members are reminded to participate in the 1985 QCWA QSO Party. The CW portion is 9-10 February; the Phone portion is 9-10 March 1985.

•

The QCWA Chapter Manual edited by Director, Wade Holland, W4AZT, has been mailed to the secretary of record of each active QCWA chapter. This long-awaited handbook furnished the chapter officers and members with ready reference and complete information on operating procedures. QCWA members are encouraged to acquaint themselves with the contents of this valuable reference. It promises to be a valuable tool for stimulating growth and smooth functioning of the QCWA chapter. □

AWARDS

Amateurs honored

Lenore Jensen, W6NAZ

Three Amateur Radio operators were highly honored at an awards ceremony on 04 December at the Jet Propulsion Laboratory.

ARRL 3rd Vice President, Jay Holladay, W6EJJ, received from NASA its Exceptional Service Medal. He was commended for outstanding achievements in the development of an information system for the IRAS mission.

Dan Bathker's award was for outstanding contributions to the development of high-performance microwave ground communications systems. He is K6BLG.

Dr. Peter Mason, N6BBP, was honored for his engineering work in low temperature — cryogenics.

Our hearty congratulations to these distinguished members of our fraternity! □

Scouts honor ham

At a recent dinner held at the Indiana Elks Club, awards were given those who have been devoting many years to working the Boy Scouts. It takes much coordinated effort and dedicated interest to keep any organization growing . . . especially the boy's groups.

Among those who were cited for their work was our own club member Betty Mack, WB3FXV. She was awarded Scouter Training Award, Arrowhead Award and Veteran's Award (for 15 years of service).

Congratulations from all of us to you, Betty, for your fine work "with the boys". As an associated item: Our repeater is located in Betty's QTH.

— *Indiana County ARC, PA* □

Dr. Gerald Tirozzi, Connecticut's Commissioner of Education (left), presents a 1984 VIP (Vocational Improvement Practice) Merit Award to Peter Kemp, KA1KD, Chairman of the Related Arts Department of Bethel (Connecticut) Public Schools. Kemp accepted the award on behalf of the Bethel Middle School's Exploratory Electronic Communications program.

STATION APPEARANCE

Bill Godden, W0JRJ, of Raytown, Missouri, wins this month's Station Appearance award. He's been an Advanced Class licensee since 1946, and has been very active in emergency traffic on 10 and 75-meter phone.

His shack can be seen in the picture. On the lower "deck" (left to right) are: an Atari 800 computer with 12-inch NEC green monitor and Atari cassette player; a Kenwood TS-820S (replaced now with TS-430S); Heath monitor HO-10; Heath SB200 amplifier; 20 amp Gessy power supply, with Kenwood TS-130S and AT-120 tuner on top of supply.

Upper deck (left to right): HAL 6700 telereader and Ham III rotator control box. The console in the middle contains (left to right): line voltmeter; Heath SWR meter; digital clock; and switching antenna relays. W0JRJ uses a Cushman A-3 tribander on tower, and a Hustler 5BTV vertical, roof-mounted with radials.

On the wall (upper left) are ARRL's Emergency Coordinator, Route Manager and Public Service certificates. □

Connecticut recognizes school program

Dr. Gerald Tirozzi, Connecticut's Commissioner of Education, has announced that the Bethel (Connecticut) Middle School's Exploratory Electronic Communications program has been selected to receive a 1984 VIP (Vocational Improvement Practice) Merit Award, being selected one of only 10 schools/colleges in the state to be so honored.

This program was cited by the Commissioner as ". . . an outstanding vocational practice, one worthy of emulation by other schools." The course, taught during the school day, offers students the opportunity to learn the fundamentals of electronics and communications in a practical manner and, in so doing, earn a Novice Class Amateur Radio license in the process.

The Exploratory Electronic Communications program was developed by Peter Kemp, KA1KD, Chairman of the Related Arts Department. Kemp was the 1983 recipient of the Herb Brier-W9AD Instructor of the Year Award, sponsored by the Lake County Indiana Amateur Radio Club and the ARRL. □

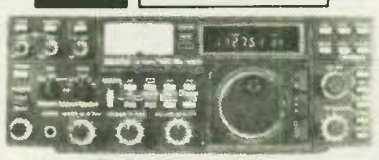
Michigan DX repeater

The DX repeater for southeast Michigan is operational on the 2-meter 145.13 MHz repeater frequency (144.53 MHz input). The repeater is intended for DX and contest spotting and information. The repeater is open to all DX'ers for their use (no PL required). Repeater call K8NA/R. All DX'ers passing through the southeast Michigan area are invited to check in and, if possible, set up local visits with DX'ers.

— *Ted Pauck, K8NA* □

C•COMM C•COMM C•COMM

ICOM



IC-751
PACKAGE DEAL

Order your IC-751 with: ICOM PS-35 internal power supply installed. ICOM FL-52A 500Hz CW filter installed and SM-8 desk mic.

All for $1489

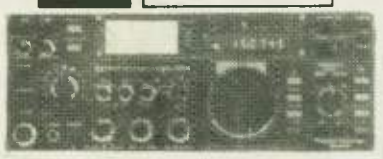
You Save $236!

ICOM

HANDHELD ACCESSORIES

LC-14 Vinyl Case for IC-02AT	$17.95
BC-35 Drop In-Charger	69.00
BP-2 425mA 7.2V NICAD Battery	39.50
BP-3 250mA 8.4V NICAD Battery	29.50
BP-4 Alkaline Battery Case	12.50
BP-5 425mA 10.8V Battery	49.50
BP-7 425mA 13.2V NICAD Battery	67.50
BP-8 800mA 8.4V NICAD Battery	62.50
HM-9 Speaker Mic	34.50
CP-1 Cigarette Lighter Cord	9.50
DC-1 DC OP Pack	17.50
Leather Case for IC-2AT	34.95
HS10 Headset for HTs	19.50
HS10A VOX Unit for IC-02A & Hdst.	19.50
HS10B PTT Switch Box for Headset	19.50

ICOM



IC-745
PACKAGE DEAL

Order your IC-745 with: Astron RS20A 20A power supply, ICOM SM-6 desk mic and ICOM FL-52A, 500Hz CW filter installed.

A Super Buy at $979

You Save $245!

KENWOOD

TS 430S

Now a general coverage receiver/ham band transceiver at an affordable price. Ideal for mobile, and portable use.

Sug. Retail $899.95

Call for Low, Low Price!

ICOM

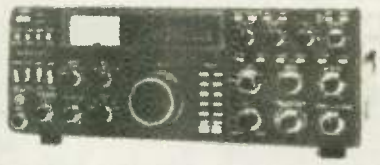
IC-730

80–10M in a very compact package. Ideal for mobile applications.

Sale Priced at $549.95

Subject to stock on hand

KENWOOD



TS 930S $1799

With the following popular options:

AT-930 Automatic Tuner Installed
MC60A Desk Microphone
YK886-1 CW Filter
SP-930 External Speaker

You Save $229!

ICOM

IC-R71A

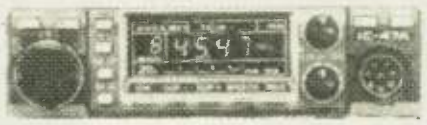
Perhaps the best receiver at any price!

Sug. Retail $799

Call for YOUR Low Price!

ICOM

NEW ICOM VHF/ UHF MOBILES



IC-27A (25W. 2M. FM) ..... Sug. Ret. $369
IC-27H (45W. 2M. FM) ..... Sug. Ret. $409
IC-37A (25W. 220MHz. FM) ..... Sug. Ret. $449
IC-47A (25W. 70cm. FM) ..... Sug. Ret. $469

Call for YOUR Low Price!

ICOM

IC-02AT IC-04AT

New full-featured 2M, and 440MHz handhelds! Scanning, 10 memories and programmable subaudible tones are just a few of the MANY features of these terrific new radios. AND THEY ARE COMPATIBLE WITH ALL ICOM HT ACCESSORIES!

IC-02AT Sug. Ret. $349
IC-04AT Sug. Ret. $379

Available at Reduced Price!

IC-2AT/3AT/4AT

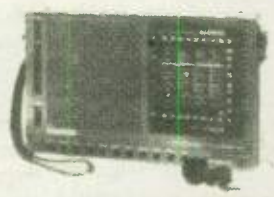
Still the most popular, low cost/ top performing handhelds around.

IC-2AT 2M .... Sug. Ret. $269.50
IC-3AT 220MHz Sug. Ret. $299.95
IC-4AT 450MHz Sug. Ret. $299.95

Call for YOUR Low Price!

KENWOOD

NEW



R-11 RECEIVER

Covers standard AM, FM broadcast plus nine additional international shortwave bands.

Call for YOUR Low Price!

Dale, Frank, Bob, and other knowledgeable professionals are willing to help you.

800-426-6528

TOLL FREE — Including Alaska and Hawaii.

Attention National WATS Callers: We have expanded the telephone hours Mon. thru Fri.: **6:30am - 5:30pm** PST (9:30am-8:30pm EST) for the convenience of our East coast and early morning buyers.

Washington Residents: Add applicable sales tax.
Call 800-562-6818 International Order: Telex 15-2391 C-COMM
All prices, specifications and availability subject to change without notice.

C-COMM

6115 15th Ave. N.W.
Seattle, WA 98107
(206) 784-7337

STORE HOURS:
Mon. thru Sat.
9:00am-5:30pm

VISA

master charge

C•COMM

HAM RADIO OUTLET

6 STORE BUYING POWER!!!

FOR THE VERY BEST DEAL *ON EVERY COUNT!*

- **BARGAIN PRICES** CHECK HERE FIRST. START OUT WITH THE BEST PRICE.
- **TOLL-FREE PHONE: 800-854-6046**
  INCLUDING ALASKA AND HAWAII CALIF. AND ARIZONA CUSTOMERS CALL OR VISIT STORE NEAREST YOU
- **FREE SHIPMENT** MOST ITEMS. U.P.S. SURFACE.

KENWOOD

TS-930S

PAY REGULAR PRICE OF $1599

RECEIVE FREE

YOUR CHOICE OF

TH-21AT 2 MTR HANDHELD REG $229.99 **and** **HMC-1** MIKE HEADSET REG. $39.95

OR

AT-930 ANT. TUNER REG $199.95 **and** **MC-60A** MIKE REG. $79.95

PLUS FREE U.P.S.

KENWOOD

TW-4000A

PAY REGULAR PRICE OF $599.95

RECEIVE FREE

YOUR CHOICE OF ANY 2 OF THE FOLLOWING

1) VS-1 VOICE SYNTHESIZER
$39.95 VALUE

2) TU4-C SUB-AUDIBLE
$39.95 VALUE

3) MA-4000 DUO-BAND MOBILE ANTENNA. $44.95 VALUE

TOWER/ANT./ROTOR

PACKAGE SALE

MA-40 TRISTAO 40' TUBULAR
$699 VALUE

A-3 CUSHCRAFT TRI-BANDER
$299 VALUE

HD-73 ALLIANCE ROTOR
$139 VALUE

75' BELDEN RG/8 COAX and 8 COND. CABLE $70 VALUE

A TOTAL VALUE OF $1207

YOUR PRICE $899

FREIGHT ON TOWER ONLY

YAESU

FT-209RH

PAY REG. PRICE OF $349.95

RECEIVE FREE

FTS-6 ENCODER/DECODER
$49.95 VALUE

ICOM

IC-751

PAY REG. PRICE OF $1399

RECEIVE FREE

IC-2AT HANDHELD
$269.50 VALUE

ICOM

IC-02AT

PAY REG. PRICE OF $349

RECEIVE FREE

IC-BP8 BATTERY
$63 VALUE

TRISTAO

MA-40, $549
MA-550, $899

TRI-EX

W-51, $899
LM-354, $1599

MIRAGE

B-3016 SALE $199.95
B-1016 SALE $249.95
B-108 SALE $159.95
B-23A SALE $89.95
D-1010 SALE $289.95

ALL THESE LINES IN STOCK

AEA • ALLIANCE • ALPHA • AMECO • AMPHENOL • ANIXTER MARK • ANTENNA SPECIALISTS • ARRL • ASTRON • BASH • BELDEN • BENCHER • BIRD • BUTTERNUT • B & W • CALLBOOK • CENTURIAN • COLLINS • COLUMBIA • CURTIS • CUSHCRAFT • DAIWA • DRAKE • DX EDGE • EIMAC • GILFER • HAL • HUSTLER • HY GAIN • ICOM • JSC • J W MILLER • KANTRONICS • KENWOOD • KLM • LARSEN • LUNAR • METZ • MFJ • MICRO-LOG • MINI-PRODUCTS • MIRAGE • NYE • PALOMAR • ROHN • SHURE • SIGNAL-ONE • STONER • TEMPO • TEN-TEC • TRISTAO • TRI-EX • VAN GORDON • VOCOM • VIBROPLEX • WEST • YAESU and more.

PERSONALIZED SERVICE

BOB FERRERO, W6RJ
President.

JIM RAFFERTY, N6RJ
VP, So. Calif. Div., Anaheim.

Managers:

GEORGE, WB6DSV *Burlingame.*
DON, N6IPE *Oakland.*
BOB, K7RDH *Phoenix.*
GLENN, K6NA *San Diego.*
AL, K6YRA *Van Nuys.*

and other active amateurs to serve you

SIX LOCATIONS

ANAHEIM, CA 92801
2620 W. La Palma,
(714) 761-3033, (213) 860-2040,
Between Disneyland and Knotts Berry Farm.

BURLINGAME, CA 94010
999 Howard Ave.
(415) 342-5757,
5 miles south on 101 from San Francisco Airport.

OAKLAND, CA 94609
2811 Telegraph Ave.,
(415) 451-5757,
Highway 24 Downtown.
Left 27th off-ramp.

PHOENIX, AZ 85015
1702 W. Camelback Road,
(602) 242-3515,
East of Highway 17.

SAN DIEGO, CA 92123
5375 Kearny Villa Road,
(619) 560-4900,
Highway 163 and Clairemont Mesa Boulevard.

VAN NUYS, CA 91401
6265 Sepulveda Blvd.
(818) 988-2212
San Diego Freeway at Victory Boulevard

STORE HOURS: 10AM to 5:30PM Mon. thru Sat.

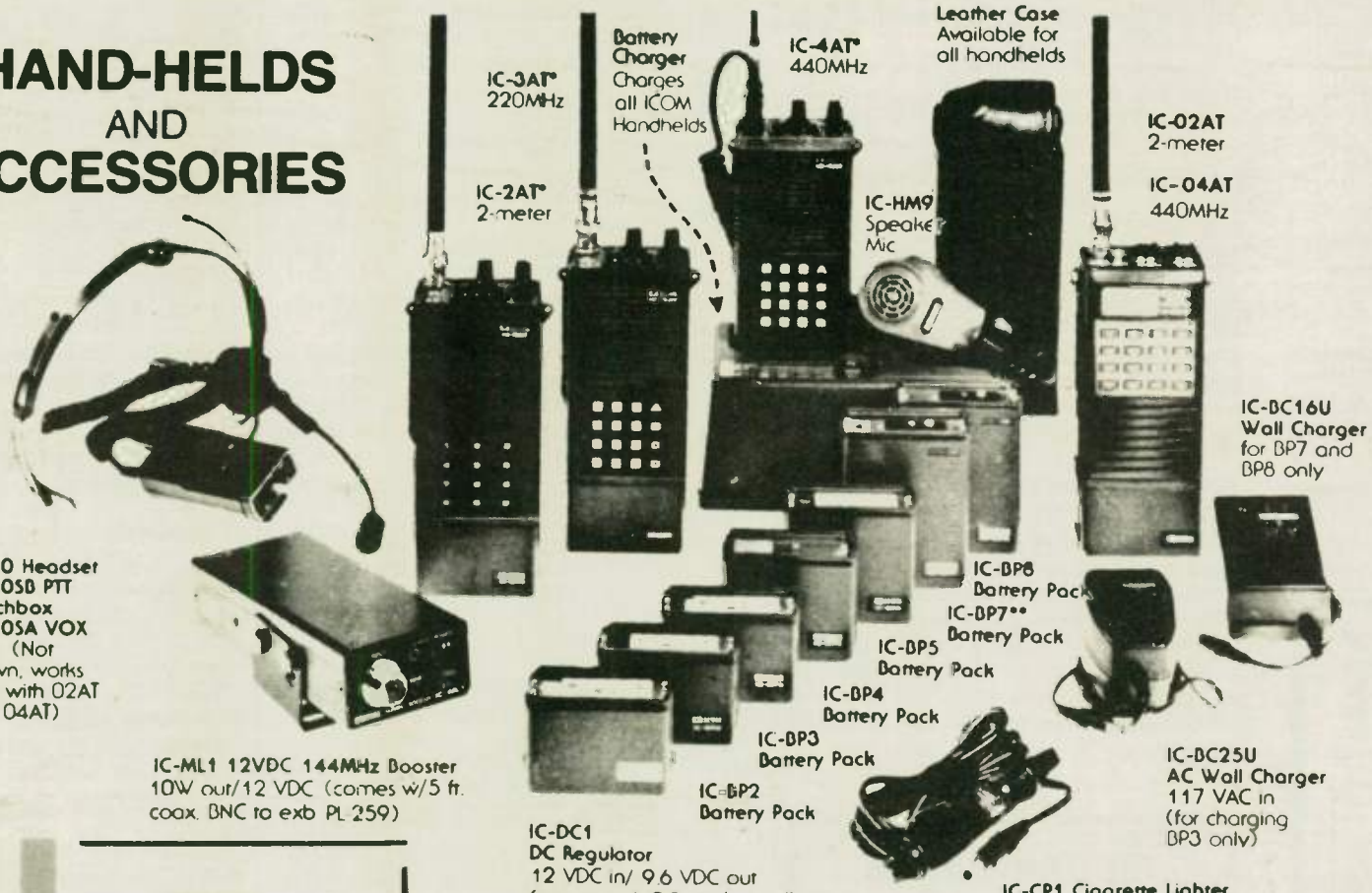
Prices, specifications, descriptions subject to change without notice. Calif. and Arizona residents please add sales tax.

HAM RADIO OUTLET

THE TOP SOURCE FOR ALL ICOM AMATEUR GEAR

- **COMPLETE STOCKS** NO WAITING!
- **ROCK-BOTTOM PRICES** SAVE BIG!
- **FREE SHIPMENT** MOST ITEMS: U.P.S. SURFACE

HAND-HELDS AND ACCESSORIES



SOME OF THE ACCESSORY ITEMS QUALIFY FOR FREE U.P.S. SURFACE DELIVERY

* Also available without Touchtone* pad.

ICOM

IC-27A

ICOM

R-71A

ICOM

IC-751

ICOM

IC-745

FOR LOWEST PRICES AND FAST DELIVERY

CALL TOLL FREE 800-854-6046

INCLUDING ALASKA AND HAWAII

CALIF. AND ARIZONA CUSTOMERS CALL OR VISIT STORE NEAREST YOU

STORE ADDRESSES AND LOCAL PHONE NUMBERS LISTED ON OPPOSITE PAGE

6 STORE BUYING POWER !!!

VISA

MasterCard

DX WORLD

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

Activities Calendar

26 - 27 January	73 World 15M & 20M Contest (SSB)
26 - 27 January	REF French Contest (CW)
26 - 27 January	CQ World Wide DX 160M Contest (CW)
22 - 24 February	CQ World Wide DX 160M Contest (SSB)
23 - 24 February	REF French Contest (SSB)
23 - 24 February	ARRL International DX Competition (CW)
30 - 31 March	CQ World Wide WPX Contest (SSB)

W-100-N

246. **W7HZL Alfred B. Cornwall**
247. **KC9CQ Virginia C. Wightman**

Iran (EP2)

There have been reports of two stations active from this one. A station in Kerman signing EP2MRD on 14.180 MHz at 1730 UTC and a station in Teheran signing EP2MMK on 14.214 MHz at 0800 UTC, were reported in *Les Nouvelles DX* via *QRZ DX*.

Amateur Radio Action, ('DX Notes', edited by Tony Gilbert, VK3CE), reports that an increase in activity from Iran, although nothing has been heard from EP3TY in some time, and possibly he has left the area. There is a station signing EP3TA with a QSL route of P.O. Box 34-214, Teheran, IRAN.

Bouvet Island (3Y)

The DX Bulletin reports that a South African scientific team will be making repairs to various Antarctic weather stations during the month of December. One amateur from South Africa, B.G. Rowan, ZS6BK, was trying to get passage on the ship for a short stay on Bouvet. The ship isn't scheduled to stop there, but passes close by, and he hopes they will drop him off on the way down to Antarctica and pick him up on the return trip if his request is granted. Nothing more has been heard regarding this.

There is still no word from Norway about the possibility of having an amateur stationed at the island for a longer period of time next year.

A note in *Amateur Radio Action* by R.J. McKibbin, VK5ARO, indicated that the possibility of a short operation from this spot is not promising. In the Antarctic, Norway has territorial jurisdiction over Bouvet Island, and in addition, that of Peter I Island and Queen Maud Land. Therefore, if a South African claims he is going to operate from Bouvet, he had better have his claim supported by permission from the Norwegian government.

Peter I Island (3Y0)

Also in *The DX Bulletin*, Jim Cain, K1TN, reports that several Japanese amateurs have been issued the call 3Y0AA by the Norwegian government with permission to land January to March, both this year and next. Although they are making an attempt for a 1985 DXpedition, such an operation is unlikely. It will be a new DXCC country as soon as the operation takes place.

Amateur Radio ('How's DX', by Ken McLachlan, VK3AH) printed a note by WB3KLQ, who was passing Peter I Island aboard the *Lindblad Explorer* last February. He comments:

"On a westerly course, we passed by the eastern shore about 8km off the coast and found no apparent beach, then traveling around the north tip to the western shore, about halfway down, we found Kapp Ingrid Christensen (a precipitous, barren promontory), where we decided to land.

"Landing by a Zodiak, which is an inflatable-type rubber boat with a 25HP outboard motor, made the approach quite easy, but the landing was somewhat tricky due to the surf. A pleasant little cove protected a beach covered with lava bits. In shore, lava-covered mottled ice where tents and equipment could be well placed. A rocky highland above the cove keeps the wind off this protected area of possibly an acre or so in extent. In 1982 or early 1983, a Zodiak with nine or so on board visited the island, as a metal plaque from the Russian research *Vostok* showed that the island had been visited."

India (VU2)

The new prime minister of India is a radio amateur, so states *The DX Bulletin*. Rajiv Gandhi holds the call VU2RG and will be prime minister at least until India holds their planned elections next year. This could be the perfect time, so claims *TDXB*, to push for permission for an Andamans DXpedition.

On the subject of India, we compiled a list of Indian stations reported active during the month of November. The frequencies are in MHz and times are the usual UTC:

VU2GSM	7.006	1230
VU2LO	7.008	1400
VU2IOC	14.011	1400
VU2BK	14.065	1300
VU2RX	14.177	1400
VU2CVP	14.195	1300
VU2JNI	14.206	1400
VU2GO	14.215	1300
VU2JNA	14.222	1400
VU2DDT	14.224	1315
VU2GI	14.226	1345

Sierra Leone (9L1)

Harvey McCoy, W2IYX's *The Long Island DX Bulletin* reports YL Sandra Davies, 9L1YL, busy near 14.227 MHz daily from 2000 UTC. For QSL cards, use her Callbook address — Box 992, Freetown, SIERRA LEONE.

Also reported from Sierra Leone is 9L1GA on 21.231 MHz at 1500 UTC and 9L1FC on 21.318 MHz at 1545 UTC, both reported busy the latter part of November.

Cape Verde (D44)

A note from Peter Munroe, WB1DQC, in *QRZ DX* comments on the activities from this one. He says, "Julio D44BC and Angelo D44BS are the only licensed amateurs from the Republic of Cape Verde and have been the only ones since independence in 1975." He also commented that there have been several pirated operations in recent years using bogus D4 and D44 call signs.

Julio is active on several bands, including 160 meters. He has been reported on 14.172 MHz around 2200 UTC, 7.027 MHz at 2300 UTC, 21.332 MHz at 1700 UTC, and 28.617 MHz at 2000 UTC. And D44BC also uses RTTY, as he has been worked on 14.088 MHz at 1200 UTC. No activity was reported for Angelo D44BS this month.

Both stations must be QSL'ed direct as neither use the services of a QSL manager, and there is no QSL bureau for this country.

Bhutan (A51)

Jim Cain, K1TN, in his *The DX Bulletin*, writes that Seiji Tokoi operated as JA1WXH/A5 on 18 October, and as A51SY on 20 October, with verbal permission only. The conditions were rather poor and he only worked about 10 stations, all in India and Indonesia.

Pradhan A51PN is due to receive a new FT757GX transceiver and should be able to use it in Phuntsholing, where he works. Friend A51TY is no longer an official with the Wireless Telecomm, as he has since moved into an administrative post with the Bhutan government. Several applications for DXpeditions to Bhutan have been rejected.

Zaire (9Q5)

The Long Island DX Bulletin reports that 9Q5JE is on a six-month assignment in Zaire, and has been checking into various 15- and 20-meter DX nets. Johannes schedules his QSL manager (DK0HT) on 21.345 MHz on Mondays at 1500 UTC.

Another station from this one is 9Q5MA with the activity on 21.335 MHz. There have been several reports for this one, all between 1600 and 1900 UTC.

Clipperton Island (FO0X)

The latest word so far on this one is that the DXpedition is due to leave San Diego on 27 March and return 18 April. The boat they have found this time is faster and more expensive than the last one they had planned for. The group plans a nine-day stay on the island. They also hope to be able to stop at Revilla Gigedo for a day to and from Clipperton.

Ceuta and Melilla (EA9)

Several stations from this one have been reported during the month of November. Active during the CQ World Wide DX Contest was EA9KF, operated by Jim Neiger, N6TJ, who also operated as N6TJ/EA9 when not in the contest. Cards for contacts made with Jim should go to Mark Beckwith, WA6OTU, whose new address is listed under 'QSL information.'

On 75 meters, two stations have appeared on 37.87 MHz: EA9MM from 0300 UTC, and EA9IE after 0600 UTC. On 40 meters, at least three stations have been reported: EA9CE on 7.001 MHz at 2200 UTC, EA9GH on 7.002 MHz at 2100 UTC, and ED9CM on 7.040 MHz at 0200 UTC.

A station signing EA9MV was reported on 14.040 MHz around 1200 UTC mid-month, and on 15 meters, EA9NN was busy on 21.275 MHz from 1530 UTC working the East Coast.

Gambia (C53)

All the activity for this one seems to be only on 15 and 20 meters. On 15 meters we have C53J on 21.020 MHz working the CW crowd around 1330 UTC, C53ES on 21.319 MHz at 1445 UTC, C53EK on 21.367 at 1700 UTC, and C53FG on 21.229 MHz at 1800 UTC. The sole report for 20 meters was C53FG on 14.240 MHz around 2200 UTC.

Mauritius (3B8)

We reported on this month last month, but there seems to be a little more activity for this one this time. Jacky Mandary, 3B8CF, again heads the list, with his activity concentrated on 40 and 75 meters. Jacky has been worked on 3.503 MHz at 0130 UTC, 3.778 MHz at 0030 UTC, and near 7.009 MHz at 0200 UTC and again at 1500 UTC. Jacky was at the ARRL convention in Boston a few months ago and took his exams for U.S. licensing all the way up and just missed passing the Amateur Extra. The questions he missed were related to the new VEC program.

Other activity from this one included 3B8FE on 14.186 MHz handing out SSB contacts around 0300 UTC, with the rest of the activity on CW with 3B8FK on 21.020 MHz at 1400 UTC, 3B8DB on 7.002 MHz at 0300 UTC, and 3B8CD on 3.503 MHz and 7.005 MHz from 0200 UTC.

San Felix (CE0X)

The DXpedition to San Felix was quite successful considering the operation was done by only two operators, both of them fairly new to the DX'ing game. More than 31,000 contacts were made by CE0AA, 6 through 160 meters, both SSB and CW. All QSL requests should be sent via Radio Club de Chile, P.O. Box 700, Santiago, CHILE.

Here is one DX'er you all have had contact with one way or another. Franz Langner, DJ9ZB, when not off on a DXpedition to some remote spot, is often busy handling QSL chores for several other DX'ers. Frank also finds time to operate, as he holds the European plaque for *Worldradio's* Worked 100 Nations Award, which was established in 1978. He was the first European and second DX'er worldwide to receive the award. This was only a few months from the start date of 01 January 1978. (*Photo courtesy of DJ9ZB*)

Mellish Reef (VK9MR)

The Down Under DX'ers Contest Club DXpedition to Mellish Reef made about 10,000 contacts during the five-day operation. The group had planned to stay a minimum of 10 days, but a falling tide level forced them to cut short the operation and leave. If they hadn't, they would have been stranded on the reef.

The DXpedition team consisted of Jan Wakulicz, VK2CIA; Bob McKibbin, VK5ARO; Tony Gilbert, VK3CE; and Les Cullen VK2WU. The yacht *Spitfire* provided the transportation with Keith Thiele, a non-amateur, as skipper. Keith, a former World War II bomber pilot, was enthusiastic with the DXpedition as he wanted to learn more about Amateur Radio. An interesting article about the Mellish Reef DXpedition by Tony Gilbert, VK3CE, is printed in *Amateur Radio Action* (Volume 7, Number 8), published in Australia.

South Shetland Islands (CE9)

Ricardo CE9AP has been reported on 14.260 MHz from 2345 UTC. He is operating from Greenwich Island, in the South Shetland group.

Also from this island group is the Soviet station, 4K1GAG, who has been worked on many bands. He has recently been reported on 14.176 MHz at 0700 UTC and earlier near 14.212 MHz around 0400 UTC. When I worked him a couple of months ago, he had a tremendous signal on 40 meters, and all I was using was a sloper in the wrong direction.

Macao — we were really there

Steve Gegewicz, K0CS, and company took off to Macao to operate in the October World Wide DX contest, concentrating on 75 meters and hoping to give a new one on that band for the deserving DX'er. Steve, who operated as XX9CS, is a member of the Kansas City DX Club, and prepared the following account of his DXpedition:

Clark Stewart, W8TN, Larry Mills, WB0UXI, and I cringed when we found out that the outlets at the Sintra hotel in Macao used a two-wire 210V outlet instead of the hoped-for 117V setup.

After the 287 machine screws were removed from the two IC-740 transceivers, internal power supplies by yours truly, our "chief surgeon" was called in to perform his magic.

The ICOM supply is not designed to be converted to 220V in a poorly lighted bathroom, in zone 24, but I knew things would turn out fine. With Hong Kong only an hour away, we could easily have upgraded to an IC-751, Kenwood 930 or Yaesu 757, if the mod created the "blue smoke" effect.

Macao is not your typical "Gus" type of DXpedition. When you are tired of the radio, you go to the Hyatt Hotel for brunch, lose some money at a local casino, or simply tour the beautiful scenery.

The antennas went up with no hitches, except for the usual "tweaks" of the 40M and 75M Vees.

W8TN's TH-3 was perched atop the 15th floor of the hotel, with the Vees nicely supported by the masts found on the roof.

The visit to the CTT office in downtown Macao to receive our licenses was routine, except for the mandatory station inspection that followed the next day.

After a detailed inspection by three CTT representatives, we were officially permitted Amateur Radio operation.

Prior to the contest, the usual formalities have to be achieved, such as working China on 75 meters, with Robin DU9RG running a nice list around 1300Z. I tape recorded a number of 6th and 7th district stations making 75-meter contacts with BY4AA on Robin's net, with very good signals — a real treat.

During this entire operating session on 75 meters, no Midwestern or East Coast stations were heard. When I heard a loud "VK" sign with Otto W5YU and heard nothing, I knew my hopes for a "good" contest weekend were in trouble.

W8TN, operating on the higher frequencies, experienced the same type of results to the United States with an occasional Midwest call breaking through, but only a few East Coast types being worked, such as N2AA.

Darkness occurs around 1000Z, and the contest ran flawlessly on 75M with some nice

Asian and Pacific DX being worked on the 75M band. → You can't be too upset with stuff like 9M2CO, 9V1TL, JT1AN, HS0A, VS6DO, VK9MR and XX9WW in the log.

Propagation to Europe, North and South America on the 75M band was non-existent, with very few stations being heard, let alone worked. The most frustrating moment was not being able to break a big "JA" pileup on FR0FLO, who would have surely wanted the multiplier as much as I.

Surprisingly, the ambient noise on the band during the contest was lower than what we experience in the Midwest, but the QRM found here is of a type I am unfamiliar with.

The two-day contest operation ended with a total of around 600 75M QSO's by XX9CS and a little over 1,000 all-band QSO's by XX9TN. During last year's contest, my single-band score at N0XA in Kansas was three times higher than my 75M score from Macao this year.

There is obviously a message here regarding this result. It isn't the amount of points, but the quality of the points that counts.

Dominica (J7)

Bill O'Kain, K4LTA, and XYL, Ruby N4FKO, will head to team from Oak Ridge, Tennessee, for their sixth Caribbean DXpedition to the island of Dominica for the period 15 February through 05 March. Bill plans to be active during the ARRL International DX Competition operating, hopefully, as J73LTA. He will team up with XYL Ruby for the other ARRL test on SSB in March.

Operations from Dominica will be primarily CW, 20 to 30 kHz above the band edge, plus 7.005, 3.505 and 1.827 MHz. For Novice band activity, look for Bill near 21.123 MHz at 2230 UTC daily, except during the contest weekends.

Ruby will also be available for SSB contacts on 14.257 MHz at 2200 UTC when she isn't basking on the beach, remarks Bill. The couple handed out over 10,000 contacts during last year's trip to Sint Maartin. All QSL cards for contacts made with this group go via K4LTA, 101 Baylor Dr., Oak Ridge, TN 37830.

Prefixes

Those "5L" prefixes you may have heard or worked at the end of 1984 were Liberian calls used to commemorate Amateur Radio Week, 25 November through 01 December.

During the month of December, the Merseyside Special Event Group operated from Beattle City in Liverpool to celebrate the opening of the Beattle City Museum. The special event calls were GB0BCL, GB1BCL, GB2BCL, GB4BCL, GB6BCL and GB8BCL. If you worked any of these calls, you may receive a special QSL card via QSL Manager G4VKV, c/o Beattle City, P.O. Box 12, Liverpool, ENGLAND. QSL requests must be direct only, and must include sufficient funds for return postage.

Those H10 prefixes are in honor of the Pope's visit and are being used until January.

160 meters

The staff of CQ Magazine will be "closely monitoring the abuse of using the DX window for on-frequency contacts" in their 160-meter contest the end of January. There is a gentleman's agreement on that band that no transceive contacts are made in the DX window, similar to HF contacts made with a rare DXpedition station. This prompted Bob Winn, W5KNE, to editorialize the following in the 26 November issue of his *QRZ DX:*

> Well, I don't disagree that the DX window has frequently been abused in the past, and I don't condone DX stations using the window for transceive pile-ups, but I don't know how you would ever enforce a penalty for such a practice in an equitable way.
>
> Would you penalize only the DX station or would you penalize all who worked him or would you penalize both? Of what would the penalty consist? Stripping a DX station of all contacts made while operating transceive in the window? Stripping a U.S. station of all contacts made while transmitting in the window? Maybe pure disqualification for committing these infractions.
>
> How will CQ determine who is guilty? Will they have a network of designated "window watchers", or will they rely on hearsay reports by random contest participants? These are the questions that come to my mind when I think about the enforcement of something like this.
>
> As Frank (Frank Anzalone, W1WY, CQ Contest Editor), knows, and anyone else who has followed my editorial comments from this monthly soapbox, I strongly favor the traditional values of Amateur Radio, including the 160-meter DX window. But, as happened last year in the 160-meter contest, when a DX station calls CQ in the window and takes callers on his frequency, you can kiss the window goodbye for as long as he is there. Especially if the offending DX station is a loud South American who is able to attract hundreds of stations.
>
> This is highly compounded by the uniqueness of the 160-meter tests where most multipliers are worked only once over the entire contest and to pass one by is to surely reduce one's score.
>
> I daresay any serious contester will think twice before passing a DX station by just because he is running a transceive pile-up (full of other serious contesters) in the window.

Bob goes on to say that he commends the magazine for taking a positive stand on the matter, but he is opposed to contest rules that require subjective interpretation to determine someone's guilt or innocence.

Therefore, whether or not you jump into the next 160-meter contest, observe the DX window. The same will apply to working any of the following other DX stations that have been reported recently. How about these:

CE8ABF	1830	0515
CT4BD	1834	0600
D44BC	1837	2200
EA3VY	1833	0600
EA6CJ	1835	0600
EA8YG	1844	0630
F6BWO	1831	0500
FG7AM	1830	0330
FY0GA	1829	0445
G3MXJ	1834	0600
GD4BEG	1826	0500
GJ4YHU	1825	0600
HB9G	1833	0500
HK0HEU	1835	0200
HP3FL	1834	0200
HZ1AB	1826	0300
I2BBJ	1836	0545
LX1PD	1825	0400
LZ2BE	1835	0145
OE5KE	1833	0600
OH3KM	1835	0500
OK1DIJ	1833	0600
PA3CZU	1833	0600
RA3DOX	1832	0300
SM6EHY	1836	0600
SP3IBS	1830	0500
SV0AA	1832	0300
TG9CP	1830	0645
TK5VK	1835	0600
VK6HD	1808	1100
XE3ARV	1824	0300
YU3EF	1832	0600
ZL3BO	1825	0715
ZP5JCY	1830	0515
ZS4PB	1837	0300
3X4EX	1827	0630
6Y5MC	1827	0530
7X5AB	1838	0400

As usual, the frequencies are in kHz, with the times UTC. There had been more 160-meter activity during the past period than what is shown here. We only wanted to list one station per country to give you an idea of what is on that band.

New IDXF president

Michael McGirr, K9AJ, recently became president of the International DX Foundation. Mike, who lives in Crete, Illinois, was first licensed in 1963 as WB2JYN in Irvington, New Jersey. Upon moving to Illinois, he changed his call to WB9SOR.

Mike's DX credits include 5BDXCC and 5BWAZ and is on the DXCC Honor Roll. He has also operated from the "other end", including that of 4S7AJG, 8Q7BQ and 9N1MM.

Other officers of the IDXF include Barbara Sweet, WA2KCL, vice president; Harry Flasher, W8KKF, treasurer; Jean Chittenden, WA2BGE, public relations; Charles J. Ellis, W0YBV, newsletter editor; and Don Schmidt, W0ANZ, associate newsletter editor. The DX Committee includes John Ackley, KP2A (IDXF Founder); Mike McGirr, K9AJ; Terry Baxter, N6CW; and Alan Fisher, K8CW.

We had not heard much from the IDXF until just recently. The organization is tax-deductible, and the suggested donations are as follows: Sustaining Member, $25; Associate Member, $10; Life Member, $500. Additional information is available from The International DX Foundation, RD #2, Box 341, Hyde Park, NY 12538. The IDXF, as that with the Northern California DX Foundation, often helps finance many of those DXpeditions you have worked.

PRB-1

The FCC had granted an extension time for filing comments on PRB-1 (the ARRL's "Request for Issuance of Declaratory Ruling") at the request of the ARRL. The extension was to 24 December.

The National League of Cities (NLC), filed comments against PRB-1, saying "... that the FCC doesn't have the authority to meddle in local zoning issues, that there is no need for the preemption since anyone with a complaint can always go to court, and that the FCC does not have the preemptive authority and lacks the competence to do it in such a manner that would avoid lengthy court battles."

In addition to the NLC opposition to PRB-1, amateurs are already harassed with local ordinances such as being required to pay large initial filing fees and annual fees to erect and maintain their towers. In fact, in some communities, people are required to initially or annually obtain written permission from all property owners within a specified distance from the amateur's property line.

Those of us who have been in Amateur Radio for several years have been aware of the increased amount of objection to our antenna towers, and we also know that our antennas and towers are getting bigger. The DX'ing community falls in this one as it is the DX'er who usually has the super antenna.

Unfortunately, we have brought this harassment upon ourselves. To the average homeowner in a normal-sized lot,

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".

MARCH 1985

UTC	AFRI	ASIA	OCEA	EURO	SOAM
0100	20.6	26.0	29.2	10.1	23.4
0200	15.2	24.0	29.6	9.7	19.6
0300	11.4	20.0	26.1	8.9	16.4
0400	13.6	17.9	22.5	8.1	14.6
0500	12.4	15.9	19.5	8.3	14.4
0600	11.6	15.1	17.4	9.9	14.9
0700	11.2	13.8	16.4	11.7	15.2
0800	10.8	13.1	16.1	11.7	12.5
0900	10.2	12.9	15.8	11.0	12.1
1000	9.6	13.1	15.6	10.6	14.9
1100	9.6	13.2	15.4	10.3	13.1
1200	10.5	12.6	14.4	10.5	12.5
1300	12.6	11.8	12.7	11.9	14.8
1400	15.3	12.2	12.5	14.4	19.0
1500	17.9	14.8	16.0	17.5	22.7
1600	19.8	15.4	16.8	19.8	24.8
1700	20.9	15.0	15.1	19.7	26.0
1800	21.8	14.3	13.8	18.3	27.4
1900	22.6	14.6	15.3	16.4	28.8
2000	23.3	16.8	19.5	14.3	29.9
2100	23.5	20.9	23.6	12.5	30.4
2200	23.5	24.9	25.8	11.2	30.3
2300	23.5	26.5	26.9	10.6	29.2
2400	22.8	26.8	28.0	10.3	26.8

there is nothing beautiful whatsoever about our tower and beam — especially when he looks out his window and sees nothing but an antenna farm. Oh yes, your antennas silhouetted in the sunset are a beautiful sight, but not to your neighbors!

That old cliche that we need these super antennas to maintain communications doesn't hold water. We like to throw that one at whoever objects, reminding them of our capabilities in case of a disaster where the amateurs are needed. These services, incidentally, would probably be via the 2-meter links anyway. Long-range communications would be out as most countries outside the Americas do not have third-party agreements.

It is my own feeling that if you need to put up a super antenna system, you should acquire some acreage out in the country where there are no restrictions or neighbors to be offended. In my own situation, I have a half-acre lot with a 50-foot Rohn 6 tower and TH6DXX tribander, which has been up over 15 years.

A few years after my tower was up, I raised it from an initial 40 feet to the present 50 feet. At that time, a brand new amateur just finishing high school was putting up his antenna — a 100-foot tower, in his *front* yard. On top of that, he installed a poorly constructed wide-spaced 4-element quad beam.

The neighbors were talking and grumbling, and some of the flack was directed at me as I was also working on my tower. As a result, I went down and filed a permit. (The feeling at that time with the county was that it wasn't that important.)

Needless to say, it was that thing in the young man's front yard that caused all the flack, not mine.

That winter, when the young amateur was away at college, the winds came and tore the antenna to pieces. With all that metal swinging and banging around 100 feet up in the air, his frantic mother called me and wanted to know what to do. She was able to get some young friend of her son's, who was crazy enough to climb 100 feet up in the wind and rain and cut the remaining pieces with them crashing to the ground. A year or two later, the tower was also removed.

Awards Directory

Garry Hammond, VE3XN (ex-VE3GCO), announces his revised 1985 edition of *The Radio Amateur Awards Directory of the World* is now available.

The directory is an up-to-date gestefax publication prepared for radio amateurs and SWL's. It contains the rules, checklists, maps and application forms for more than 150 of the most popular, prestigious, attractive and sought-after certificates, pins, diplomas, awards and plaques available. All continents and more than 50 countries are represented in this directory.

The directory is of standard size, (8½ inches by 11 inches), with three-ring format for easy removal and addition of pages. The cost of the directory is $8 ($12 for airmail) in U.S. funds for the USA and its possessions, $8 in Canadian funds for Canada, and $10 in U.S. funds for the rest of the world. Orders should be sent to Garry Hammond, VE3XN, 5 McLaren Ave., Listowel, Ontario, CANADA N4W 3K1.

Garry is also editor of *Long Skip*, the monthly journal of The Canadian DX Association, which is administered by the Toronto DX Club. A sample copy is available for $1 or 2 IRC's, to cover postage, from CANADX, Box 717, Station Q, Toronto, Ontario, CANADA M4T 2N7. If interested in joining CANADX, The Canadian DX Association, the membership fee is $20, which includes a one-year subscription to *Long Skip* and unlimited use of their QSL bureau. Membership is open to all radio amateurs and SWL's.

Radiosporting

Up in the Toronto, Ontario area, a new Amateur Radio publication has been born. **Radiosporting**, edited by Yuri Blanarovich, VE3BMV, is a monthly magazine directed at the active radio amateur.

Yuri, in his 'Radiotorial', says, "From talking to many contesters and DX'ers, I have found that we need the type of publication that will cater to our specific needs, has a short lead time and quality material, showing us how to do better."

In his first, the table of contents reads:

Yuri has a fine list of contributing staff members, as you can see from the above list of calls, and there are more. Yours truly was also invited to participate, but I felt I should decline due to other commitments.

Subscription rates are $16 for one year and $30 for two years — U.S. funds, not Canadian. Rates for subscribers outside

of Canada and the United States are $3 per year in addition to that above.

Yuri has also created International Radiosport Association (IRSA), with a membership fee of $12 and a yearly renewal of $5. Further information on IRSA or Radiosporting is available from Yuri at P.O. Box 65, Don Mills, Ontario M3C 2R6, CANADA. Telephone (416) 438-6313 or his business phone (Blanarovich Engineering), (416) 439-6679.

The Low-Band DXer's Pledge of Allegiance

by Mike Crabtree, AB0X

If you want to be a low-band DX'er, place your left hand on your Alpha, raise your right hand and repeat after me:

I, (insert your call), pledge allegiance solely to the low bands, forsaking all other frequencies in my never-ending quest for DX, with full knowledge that I will forfeit all aspects of a normal life. Therefore, I will forsake any sort of family life, regular sleeping hours, a normal sex life, and all other recreational activities or commitments that might interfere with low-band DX'ing.

I also pledge to fill by backyard with as many wire, vertical and listening antennas as possible.

I accept the burden of never having enough radials in the ground, and I am fully aware that I will be perpetually burying wire in my yard as long as I am physically able.

I promise to disavow all guilt or wrongdoing when TVI complaints are received from irate neighbors.

I further pledge to endanger my job on a regular basis as a result of countless hours of lost sleep spent tuning the low bands in the middle of the night.

Lastly, I pledge to spend the rest of my amateur life listening to static and QRM, and calling stations I can't hear!

Congratulations! You are now a Low-Band DX'er!

Antique QSL Department

These two cards this month are not quite as old as the 1921 card last month. These are just recent ones — like 50 years old. Bub Truhlar, W9LNQ, sent these in, which came from the estate of W9UX/W9PST/NU9UU.

"Greetings from Lietuva," says the pretty YL on the Lithuanian QSL card from LY1J. The date for this contact was 04 November 1934 on 20 meters. The card is of buff card stock with red and green printing. Petr. Jastrzembskas, the operator, resided in Kaunus. The little nation of Lithuania, along with those of Latvia and Estonia, gained independence in 1918 following World War I. The freedom was short-lived as the three little nations were annexed into the Soviet Union in 1940.

Georges Solet operated FM4AA in Bizerte, Tunisie prior to World War II. This card was also for a 20-meter contact on 16 September 1934 at 2040 GMT. This station was running 20 watts to a zepp antenna.

QSL information

John Thompson, W1BIH, informs us that for his 1985 operations as W1BIH/PJ2 and P42J, his QSL manager will again be Marvin Nettleton, W1KDD. He has a new address and it is not in the Callbook: 122 Apter Drive, Torrington, CT 06790. He also has the logs for John's 1982, '83 and '84 operations.

Hal Howard, KD7EC, writes, "I am sending Guy's address as know a lot need Reunion Island and believe a new address — I know a lot have worked FR0FLO over the past two or three years and don't get a card either by sending green stamps or IRC's, so this a good one." Hal is referring to Guy FR7ZD, whose address is: Guy R. Hoarau, Rue M. de Narbonne, 97427 Etang Sale Les Bains, REUNION ISLAND.

Bill Snyder, KF8N, comments that he received his AZ5ZA cards after two tries. Here at N6JM, we made our third attempt to get those delinquent cards. If you can get through the Argentine postal system, you have it made, so here's hoping. Bill is also looking for a route for 9M2AX, who he worked in 1983. He sent his QSL card to JA6RIL, but is not sure if that was a correct route. We checked the famous W6GO/K6HHD list, and there is no listing for 9M2AX.

Art Phillips, WA7NXL, says he has been having trouble obtaining a QSL card from 9K2AV, despite two attempts with IRC's. He has also made a couple of attempts via the QSL bureau. Art says he will be glad to try anything to get his 9K2AV card.

Jon Casamajor, N0DJJ, has been having trouble receiving a card from WP4ATF/KP5. Jon says the Callbook address is unsuccessful. He also needs help with 9X5KE, 8R1RBF, 7X2LS and Z21FR. A quick check was made with the W6GO/K6HHD List, and nothing was found for the above calls. Anyone with ideas?

Mark Beckwith, WA6OTU, sends his latest list of the stations for which he is QSL manager. This includes 9K2DX, 8P6CW, 8P6J, KV4FZ (1983 World Wide CW Contest *only*), N6TJ/TI2, N6TJ/EA9 and EA9KF (1984 World Wide CW Contest *only*).

As Mark moved a little over a year ago and has finally purchased his first home, so expects to stick around for a while. Mark's new address is: 789 Brookside Lane, Sierra Madre, CA 91024.

QSL routes

A61AA	—G3LQP	ED9CM	—EA9IE
A92EB	—K0LST	EL1F	—WD9IDS
AP2SQ	—W3HNK	EL1G	—WD9IDS
AX0PB	—VK6NE	EL2AL	—KW9Z
C21FS	—K6EDV	EL2AT	—OE3NH
C30BBE	—OH6XY	EL2CD	—KE9A
C311U	—W8JAQ	EL2FJ	—JF2QHC
C31MD	—F6AJA	EL8E	—GM4LDU
C53CL	—EA8ZZ	FM7BH	—F2BS
C53J	—DL7AH	FM/W6SZN	—W6SZN
CE3DQR	—W3HNK	FO0RB	—W8LCZ
CN8EL	—W2PD	FY0GA	—NU6X
CO2HQ	—XE1XF	HH2MC	—KB4IT
EA9KF	—WA6OTU	HH2VP	—W1FJ

HI0A	—HI8LC	XE1VIC	—KV8U
	(See Note 1)	XE2MX	—K6VNX
HK0BKX	—WB4QFH	XE2SI	—K6VNX
HK0EHM	—WD9DZV		*(See Note 5)*
HP1AC	—KM7Z	XL1CV	—VO1CV
HP1XKR	—JA7AGO	XN5RA	—VE5RA
HV3SJ	—I0DJD	XX9CS	—K0CS
J3AVT	—W8UVZ	XX9DX	—VS6DX
J6L8R	—W1HHV	XX9TN	—W8TN
J37AH	—W2GHK	XZ5KNU	—9V1VY
J38BS	—WB2LCH	YS9RVE	—WA0JYJ
J73DF	—K4CRU	ZD8SB	—G4KIV
J73LC	—KF4IL	ZD9CC	—ZS2DK
K1KI/PJ4	—K1AR	ZF2HP	—AA8G
K0GU/6R1	—K0GU	ZP5JCY	—LU8DPM
KA2LJ	—KS7L	ZP5XDW	—N4DW
KA2MI	—KS7L	1A0KM	—I0MGM
KC6DX	—KS7L	3A2AF	—F5RV
KC7UU/5N8	—K6EDV	3B8CD	—3B8CF
KD7P/KH2	—KS7L	3D6AA	—KB5DQ
KP2AJ	—WB1GZW	3D6AL	—3D6AT
L8H	—LU4HH	3X4EX	—N4CID
N6TJ/EA9	—WA6OTU	4K1ANO	—RA3AR
NE8Z/PJ3	—NE8Z	4K1CEY	—UY5CEY
	(See Note 2)	4V2C	—W5VUX
OK5R	—OK1KRG	5H3QM	—VE7QM
P29KY	—JR1EMT	5N8FOC	—G3TXF
PA0JLS/PJ2	—PJ Bureau	5N8SHE	—G4HVE
PZ5ES	—N8DE	5R8AL	—WA4VDE
PY0FJ	—PY2AJK	5V7NG	—WB4LFM
S8HZR	—WA2HZR	5W1EZ	—JE1JKL
S42HZR	—WA2HZR	5X5GK	—3D6AT
SV0AC/SV9	—WA4GCP	5Z4DU	—N4IPT
SZ2COT	—SV2SV	6W1CK	—DL1HH
TG9VT	—W3HNK	6W1HF	—W0ZUZ
TI1C	—K6VNX	6W1HK	—W0ZUZ
	(See Note 3)	6W8HL	—WA4VDE
TL8CK	—F6EWM	6Y3M	—KT3M
TL8DC	—F6EWM		*(See Note 5)*
TL8TX	—K0VZR	6Y5MC	—WA4WTG
V3ZZ	—KE5KK	7P8DE	—N4NW
V9ADX	—ZS6GN	7X5AB	—W2KF
VK9MR	—VK2WU	8P6J	—WA6OTU
VK0CK	—VK5LP	9H3DH	—DF8ZH
VK0GC	—VK9NS	9H3DI	—DF8ZH
	(See Note 4)	9H3DJ	—DF8ZH
VK0PB	—VK6NE	9H3DK	—DF8ZH
VK0YL	—VK3AH	9I2O	—9J2BO
VP2MB	—N4AR	9Q5JE	—DK0HT
VP2MW	—G3RRS	9K2BE	—G4GIR
VP2VCW	—N6CW	9L1GA	—N1AGK
VS6CT	—JA4ENL	9Q5JE	—DK0HT
WA2HZR/V9	—WA2HZR	9Q5MA	—K1VSK
WA2HZR/ZS	—WA2HZR		*(See Note 6)*
XE1IF	—XE1XF	9Y4IH	—WB3AKI
XE1L	—WA3HUP		

A4XND	—P.O. Box 981, Muscat, OMAN
A24SC	—P.O. Box 416, Gaborone, BOTSWANA
AH6FG	—P.O. Box 8892, Honolulu, HI 96815
C53ES	—P.O. Box 553, Banjul, THE GAMBIA
CE9AP	—Richard Vasquez, Division Antarctica, Correo Naval, Puntas Arenas, CHILE
CT1DHG	—Akoshete, 2890 PORTUGAL
DX1A	—Relson, P.O. Box 426, Manila, REPUBLIC OF PHILIPPINES
EA9NN	—P.O. Box 419, Melilla, via SPAIN
EL2P	—P.O. Box 1929, Monrovia, LIBERIA
EL8M	—P.O. Box 707, Monrovia, LIBERIA
FH4AA	—J. Respau, P.O. Box 4, Mamoutzou, Mayotte 97600 FRANCE
H44IA	—P.O. Box 219, Honiara, SOLOMON ISLANDS
HC5NAI	—P.O. Box 815, Azopues, ECUADOR
HI3HRD	—P.O. Box 272, San Francisco, DOMINICAN REPUBLIC
HU1DX	—YSDX Club, P.O. Box 05-43, San Salvador, EL SALVADOR
HU1FI	—YSDX Club, P.O. Box 05-43, San Salvador, EL SALVADOR
J28EB	P.O. Box 2416, Djibouti City, DJIBOUTI *(See Note 7)*
PY2AJK	
PY0F	—Anton Kittler, P.O. Box 273, 01000 Sao Paulo, SP, BRAZIL
5N8AMA	—P.O. Box 7255, Kano, NIGERIA
5N8AMO	—P.O. Box 7355, Kano, NIGERIA

Notes

1. For HI0A, one DX bulletin gives the route HI8LC, and another via W2KE.
2. If your Callbook does not list NE8Z, try P.O. Box 62, Rochester, MI 48063. This is the former call for WB8ABN.
3. Cards for TI1C and XE2SI go via K6VNX for contacts made during the World Wide DX Contests *only*.
4. You may also send your VK0GC card via P29JS. VK9NS and P29JS are the same person — Jim Smith.
5. The latest Callbook lists KT3M; try N3DAY in the older book.
6. The Callbook address for K1VSK is reported to be incorrect. Try Don Berger, 108 Great Road, North Smithfield, RI 02895.
7. The battle of the DX bulletins again. One bulletin says P.O. Box 2416, and the other says P.O. Box 2417.

Contributors this month include W1BIH, K3ZJ, VE3XN, K4LTA, KA6A, WA6OTU, KD7EC, WA7NXL, KF8N, W9LNQ, DJ9ZB, AB0X, K0CS, N0DJJ, *Amateur Radio Action, Amateur Radio, Radiosporting, The Long Island DX Bulletin, The DX Bulletin, QRZ DX,* Southern California DX Club, Kansas City DX Club, and the International DX Foundation.

After several months of including 160-meter information, I decided to put up an antenna for that band, and a good weekend to try it out was the ARRL 160-Meter Contest. I thought I would be a sharp one, and after connecting the coax to a new coil of copper wire I took the whole thing to the top of my tower and secured it. This way I told myself I could avoid tangling the wire while I installed from the tower. All I had to do was untie the coil and let the whole thing drop and it would uncoil very nicely. Sprong! #@%&#!!! Needless to say, I missed the contest. Good DX'ing in 1985 to you! 73 de John, N6JM. □

Are we prepared?

Lester Warriner, AFF5P

This member of the Washington Air National Guard has just returned from attending the disaster preparedness officer/specialist course at Lowry AFB, Colorado. This being the first time back on active duty since 1953, there were changes galore to be noted.

The course of instruction covered all aspects of chemical, biological and radiological warfare and, to say the very least, was informative and a bit scary when the documented facts were known, most of which cannot be divulged here.

However, one of the major points was made about communications . . .

In the event of a nuclear incident, the EMP (electromagnetic pulse) — depending on the size of the device, the altitude of trigger and the terrain — will render almost all forms of communications inoperative. As an example: a 1 megaton device triggered at 100,000 feet above the state of Kansas will burn out front ends of communication equipment from Seattle to New York City. Instantaneously, all telephone, TV, radar, electrical power and communications equipment will be interrupted — unless there is some planning done in advance with protective circuits and hardened equipment.

If we in Air Force MARS do not take these protective measures, the North American Air Defense Systems will not have the necessary communications to maintain contact with the rest of the country. There is a great amount of available information to each of us through numerous channels concerning the effects and methods of protecting our equipment from this hazard.

Do not think that because I mentioned only one type of burst that this is the only nuclear incident which would render us useless. Any (!) incident will have the effects of EMP, but the lower the burst, the more localized it will become. If you think lightning will raise cain with your equipment, consider the EMP of a 1-megaton device, which will generate an instantaneous electrical energy of more than 100 times the current capability of lightning. Still think that spark gap will protect those transistors in the front end? NOPE! Won't start to protect them!

So, if we are really serious about being a service to the Air Force and to our communities, we had best get started on some intensive training sessions and spending some time and effort in protecting the primary source of communications — *US*! If we don't, we may as well all resign tomorrow.

— The Communicator, Dept. of the Air Force, MARS □

What it takes to join Florida Army MARS

Dick AAR4PP

If you've got a valid ham license, you've got the potential.

If your antenna works on 80 meters and your VFO can reach beyond the ham band to 4.025 MHz, you've got the minimum necessary equipment.

If you can reach 4.025, 7.311 and 6.9975 MHz, you've got enough to do a great job.

If you take pride in serving your country without getting paid for it, you've got the will.

If you can adhere to military communication procedures without feeling that your right to free speech has been compromised, you've got the orientation.

If you can take criticism with good will and a desire to improve your procedures, you've got the maturity.

If you can commit yourself to a few regular hours a week, you've got the time.

If delivering messages to the families of service personnel — serving the services — is your idea of rewarding work, you've got the motivation.

If hamming needs to be more to you than collecting wallpaper, screaming through pileups and ragchewing about the weather, you've got the drive.

If you monitor 4.025 MHz at 7:00 p.m. on four or five different evenings, and you say to yourself, "I'd like to join this gang," you've got the interest.

If, then, you contact Elmer T. Kusluch, AAA4FL, 612 Biscayne Ave., Citrus Springs, Dunnellon, FL 32630, (phone 904-489-5180) requesting application forms, you're on your way to participating in the most exciting and rewarding activity that Amateur Radio will ever offer you!

— Florida Skip □

AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

All amateurs should get behind a move to publicize ham space achievements

Four years after the launch of the Russian Sputnik, the first man-made object in space to orbit the Earth, American Radio amateurs launched a satellite which transmitted on an Amateur frequency band. The first OSCAR (*O*rbiting *S*atellite *C*arrying *A*mateur *R*adio) was launched on 12 December 1961. Since that time, an additional total of 20 amateur satellites have been lofted into space by Amateur Radio organizations around the world.

12 December 1986 will be the 25th anniversary of this milestone in Amateur Radio history. It should be commemorated by the Amateur Radio community worldwide. What better way to do this than for the U.S. Postal Service to issue a commemorative postage stamp? In fact, a whole series of "Amateurs in Space Communications" stamps should be issued. This series should include stamps in values corresponding to the OSCAR designator numbers of the satellites which have been launched by U.S. amateurs to date.

You can help bring this about. Just send a letter to the U.S. Postal Service, attention of the Citizens Committee on Commemorative Stamp Issues, Washington, D.C. 20260. In this letter you should suggest that you would like to see a series of commemorative stamps issued to celebrate the 25th anniversary of the first launching into space of an Amateur Radio Communications Satellite.

You might suggest that a 1-cent stamp be issued on which there was an image of the OSCAR-I which was launched on 12 December 1961. A 2-cent stamp could carry an image of OSCAR-II. A 3-cent stamp should carry an image of OSCAR-III. OSCAR-IV should be honored with a 4-cent stamp.

These were all built by American amateurs and prepared for launch by them. OSCAR-V was called AUSTRALIS-OSCAR because it was designed and built by the Australian amateurs at Latrobe University in Melbourne, Australia.

When Project OSCAR, the northern California group which was responsible for the launch of OSCARs-I through III and helped the TRW Amateur Radio Club with its OSCAR-IV, was unable to obtain a launch opportunity, the then newly formed AMSAT organization agreed to undertake the project. This culminated in the launch of AMSAT/AUSTRALIS-OSCAR-V. A 5-cent stamp would honor the American and Australian amateurs' joint space activity.

AMSAT/OSCAR-VI was a project of AMSAT's which started as an international cooperative effort with German amateurs at the University at Marburg. FRG became a wholly American adventure when the German component of the system was not ready at the time a launch opportunity occurred. A 6-cent stamp with an image of AMSAT/OSCAR-VI would commemorate this launch. Perhaps to vary the pace, since the shape of OSCAR-VI was the same as OSCAR-V, it would be nice to have the image of the spacecraft on the Delta Rocket on which it was launched, or of the launch itself.

AMSAT/OSCAR-VII was a truly international effort with components from Germany, Canada, Australia and the USA. When it was launched, the contrail of the Delta Rocket which boosted AMSAT/OSCAR-VII into space was formed into a perfect "7" by a crosswind aloft. A 7-cent stamp with this beautiful white rocket trail image of a "7" against a blue sky would certainly be a spectacular stamp, and one which philatelists all over the world would want to have in their collections.

OSCAR-VIII came into being when it became clear that its predecessors would soon be unusable. It was also an international effort with equipment designed and built by radio amateurs in the USA, Canada, Japan and Germany with participation by Hungarian and Australian amateurs. There is a plaque on my wall with a drawing of AMSAT/ARRL OSCAR-VIII which I'd like to suggest as the image for an 8-cent commemorative stamp.

AMSAT/OSCAR-X with its three-pointed star configuration would be an interesting subject for a 10-cent stamp.

The UOSAT/AMSAT/OSCARs-IX and XI were the first Amateur scientific research satellites. They were conceived and executed by AMSAT/UK affiliates at the University of Surrey. Both were launched as secondary payloads on U.S. Delta rockets. Nine-cent and 11-cent stamps with images of the UOSAT spacecraft or related subjects would certainly add to the international flavor of the series of stamps we are proposing. □

New AO-10 schedule anticipated

Increased battery load resulting from increasing Mode B transponder usage, especially on weekends, has led satellite controllers and engineers to recommend a modest rollback in operating time.

According to VE1SAT/VE6, who is in charge of AO-10 for this period, discussions with Karl Meinzer, DJ4ZC, suggest an adjustment may be in order to avoid approaching automatic cutoff regimes. Presently, AO-10's transponders are on for all but about 45 minutes per orbit. With the heavy weekend usage now evident, this "nap time" recharge period must be increased to provide a net positive energy equation for each orbit.

The recommendations to AMSAT Management were to increase the "Off" time slightly and, since Mode L is a very light user of power, to implement Mode L on Sundays in the same period as it appears throughout the week (i.e., MA 100 through 117). Sunday is a very heavy usage day.

The changes in the transponder schedule are anticipated on or about 01 December 1984. Users should watch the AO-10 beacon bulletins (145.810 and 435.040) for news of imminent change. Keeping well-tuned to your AMSAT nets will help as well.

Further refinements in the schedule are anticipated early this year when a minor series of eclipses will occur.

— *Amateur Satellite Report* □

Not a bureau

(continued from page 24)

the FCC rules and regulations.

If the FCC wants to enhance Amateur Radio, it might well encourage the use of phone patches for third-party traffic. This is communication in which the public *knows* immediately, right at the moment, that it is being served and being served well. But let us remember that it is not the FCC's duty to encourage any particular aspect of Amateur Radio. After all, the FCC is a regulatory body, not a census bureau.

LOUIS HUBER, W7UU
Seattle, Washington □

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, which is mailed in early July, is 10 June.

UO-11 spotter is now Silent Key

Finn Steenstrup, OX3FS, of Sondre Stromfjord died 21 October 1984, of injuries sustained in a fall from the supporting pedestal of a large dish antenna. He had been instrumental in the successful recovery of UO-11 earlier last year when the 2-meter beacon fell silent after only three orbits.

According to Dr. Robert Leonard, KD6DG, Finn fell from a height of about 30 feet to a concrete slab when, apparently, a harness failure occurred. He had been scaling the side of the conical pedestal as part of a routine maintenance activity when the mishap occurred. Dr. Leonard is Director of the Radio Physics Laboratory of SRI International, Menlo Park, California. SRI International runs the facility at Sondre Stromfjord as one of a series of experimental facilities around the world.

UO-11 was launched into a perfect orbit 01 March 1984 but fell silent on only its third orbit. (*ASR* #73, '74). It was thought a cold regulator or oscillator was causing a current-starved oscillator to generate sufficient noise to block reception of ground-originated commands. UO-11 remained silent while scientists and engineers at the University of Surrey rebuilt the command station in an effort to shower UO-11 with more RF to overcome the presumed white noise of the reluctant oscillator.

Making matters somewhat more complex was a lingering uncertainty regarding the spacecraft's precise location. Skin track radar seemed to confirm the NASA "two-line" Keplerian element sets, but, recalling an earlier mixup in the booster and the spacecraft (AO-8), additional location confirmation was desirable.

After several weeks of unsuccessful command efforts from Surrey and with concern for the spacecraft growing, Martin Sweeting, G3YJO, and his team at Surrey developed a scheme to help confirm the orbital predictions. He calculated that given the known local oscillator power and other factors of UO-11's 1.2 GHz command receiver, a sufficiently sensitive L-Band receiver could likely detect the feeble emissions of UO-11's L-Band command receiver.

Acting upon these calculations, AMSAT's Vern Riportella, WA2LQQ, contacted Dr. Leonard at SRI International in Menlo Park. Recalling the effort Dr. Leonard and his team had expended with commanding the UO-9 beacons off (*ASR* 42, 22 September 1982), WA2LQQ inquired whether the same 150-foot dish at Menlo Park might be turned to the task of locating UO-11. Immediately Dr. Leonard countered with a suggestion that an L-Band receiver was already in operation under the auspices of SRI in Greenland and that it probably was fitter than the 150-foot dish in California (cover of *ORBIT* #12, January/February 1983) for the task at hand.

Within days Dr. Leonard had contacted Finn Steenstrup in Greenland. Steenstrup, a ham for years, was up to the challenge and wasted no time. Based on a communication link established from Surrey to Menlo Park via Telemail and thence to Greenland by telephone, the frequencies and ephemeris information was passed on where and when to listen. Then on 11 May, the weak (+ 7dBm at the source) signal was heard on two successive orbits. This confirmed two essential facts: UO-11 lived and was where it was expected.

Elated by this good news, the team at Surrey — just completing their command station upgrade — successfully commanded the 2-meter beacon on 15 May, thus ending a potential nightmare for the hard-working Surrey team. Launching UO-11 itself had been a minor miracle given the extraordinarily tight schedule afforded. Now, with the successful recovery aided by SRI International and OX3FS, the UO-11 telemetry could begin to be exploited. (*ASR* #77)

It was while working on the same 100-foot radar dish at Sondre Stromfjord, Greenland that OX3FS fell to his death. He had been the Station Chief there and had been, according to reports, delighted to help his fellow hams in the UO-11 effort.

Finn Steenstrup was a professional engineer holding BSEE and MSEE degrees. He worked for SRI International as a Senior Research Engineer for the past five years. He worked for the Radio Physics Laboratory of which Dr. Leonard, KD6DG, is head.

Finn is survived by a wife and son at home and a daughter studying at the University of Michigan. He was 44 years old.

Amateur Radio is a special fraternity by any reasonable measure. Many around the world who now enjoy using UO-11 owe a small debt to the enthusiasm and professional talents of a fine man they never knew. AMSAT's Executive Vice President WA2LQQ expressed the grief of the Amateur Satellite community on behalf of AMSAT and the University of Surrey Satellite Laboratory to Dr. Leonard and by extension to the Steenstrup family.

AMSAT offered the Steenstrup family a modest memorial token on behalf of grateful satellite users around the world. Dr. Leonard accepted on behalf of the Steenstrup family at the Second Annual Space Symposium, Saturday, 10 November 1984, in Los Angeles, California.

— *Amateur Satellite Report* □

Change of address?

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

Space shuttle video on ATV

Tom O'Hara, W6ORG

Many amateurs are now used to hearing the shuttle audio repeated, but thanks to Bob Ripley, W6OSM, the live action color video and audio is being repeated out on two of the five southern California ATV repeaters.

Bob beams his 434.0 MHz ATV transmitter from his QTH in Inglewood toward the north, which hits the Mt. Wilson K6KMN ATV repeater (output 1241.25 MHz) and the Contractors Peak WA6ZVE ATV repeater (output 1277.25 MHz). Coverage is good to the San Fernando Valley and most of Los Angeles and Orange Counties, with reports from as far as San Diego.

The FCC and NASA have OK'ed amateurs repeating space shuttle communications on amateur bands to other amateurs. This is a special waiver of the rules prohibiting retransmission of another service over amateur frequencies, and since the retransmission is directed only to other amateurs, it is not considered broadcasting.

During the last flight, amateurs were treated to seeing the astronauts retrieve and launch the satellite in its entirety as it happened, rather than a few quick shots on the evening news. Most of the interesting mission activity took place in the morning, which was a problem for some who had to leave for work, but was fine on the weekend. Imagine the possibility of seeing Dr. Tony England, W0ORE, this spring as he works 2 meters during mission 51F.

W6OSM receives the space shuttle video and audio through his TVRO set on the Aurora satellite which is carrying the video for NASA on transponder 9V. The video has also been found on Satcom F5 transponder 13V. The composite video and audio outputs are simply plugged into his homebrew 70cm ATV transmitter built from modules, as described in chapter 14 of the 1984, and now in chapter 20 of the 1985, ARRL Handbook. The 10 watts of RF is fed to a vertically polarized KLM 440-27 broadband 70cm antenna.

Off-the-air ATV picture of space shuttle astronaut working in the cargo bay. (*W6ORG photo*)

To meet the 10-minute ID requirement, Bob has a Radio Shack color computer programmed to switch its monitor video to the transmitter for about five seconds. The computer screen has both his call letters, mission elapse time, and the 2-meter FM calling frequency, 146.43, on which one can call to get further information.

ATV repeaters in southern California are all crossband, 70cm in/ 23cm out. This allows any ATV'er to see his own video coming back with just 5 feet of vertical antenna separation and no extra filtering, as would be necessary with an inband repeater. The repeaters are open to all ATV-ers and key up by detecting horizontal sync.

There are three other ATV repeaters in operation: WB9KMO in Santa Barbara, WA6SVT Santiago Peak, and W6KVC in Lake Arrowhead. ATV activity in southern California is growing, with over 200 on both simplex and repeat showing their shacks, videotapes, computer listings and doing public service events like the Rose Parade, marathons, etc.

To receive the repeaters, most use homebrew or purchased downconverters from P.C. Electronics which convert the 1240-1300 MHz amateur band down to TV channel 8. Antennas are homebrew quagis, converted dishes or F9FT 23-element Yagis, all vertically polarized. □

Puzzle answer

They introduced me to their *other* brother! I had been talking to two of the Fenwick triplets, well-known VHF experimenters and authors. Obviously, they had played this game before!

— *Raleigh ARS, NC* □

"Running mobile coax"

Last month we talked all about coaxial cable and its important role in transferring radio energy from your set to the antenna, and weak signals from your antenna back to the set. This month, let's talk about running coaxial cable in your boat, your motorhome or your car.

Use the large RG-213 coax, regardless of how short your run. RG-213 coax is non-contaminating, and the outside jacket made of PVC won't break down with normal heat, vibration, sunlight, bilge water, or any other adversities you might subject it to. You'll also squeeze out an extra watt or two because of its low loss qualities.

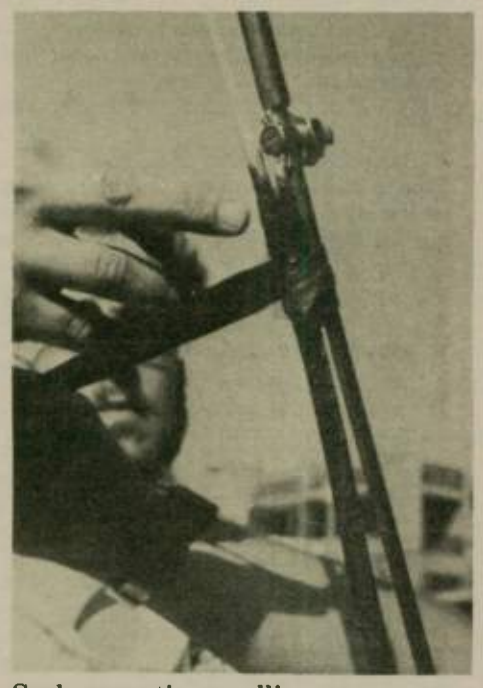
Don't be tempted to run bargain CB-type coax, even the large stuff. The braid is generally "thin" and your signal will literally leak out of it. Run only good quality RG-213 cable.

The only time you may wish to run smaller sized coax in your mobile installation would be when you need to sneak it out through a small hole to go to, let's say, a bumper mount. You could also use smaller sized coax as a jumper between your transceiver and a small antenna tuner. If you do run small coax, always make sure and run RG-8X or "Mini 8" coax. It's larger than RG-58, and generally holds up better in mobile and marine installations.

Starting with the antenna end of the circuit, your coax cable may terminate into a PL-259 connector. In other installations, you may separate the braid from the center conductor and make the appropriate connections to the antenna and the ground circuit. In either case, a weather resistant connection is absolutely necessary.

A PL-259 exposed to the open air will collect moisture and rain in no time. Water will build up inside the connector; after two douses, you will cut your transmitted signal in half and your receiver will sound like there's no antenna at all at the other end.

An exposed center and braid "Y" connection may accept water down the braid and eventually let water drip out at the transceiver end of your circuit! The capillary action will actually feed moisture, sea water and rain down your coax "hose", and may ultimately ruin your tuner or transceiver.



Seal connections well!

With the PL-259 as well as any open type of coaxial connection, a professional sealing job is required to keep moisture out. I recommend the commercially available "Coax Seal"® for this purpose. It goes on like "silly putty", never gets hard, and will keep moisture out of the connections. Make sure your entire feedpoint assembly is completely sealed.

NO! Don't use crimp on PL-259's. They usually go bad in the salt air.

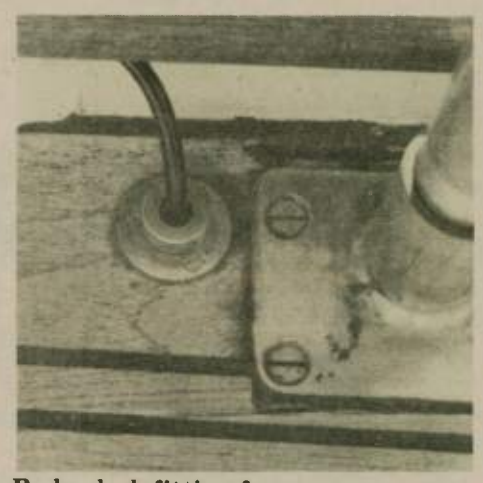
Excellent sealant!

When connecting coaxial cable to a backstay that has been insulated, the center conductor goes to the insulated side of the stay, and the braid goes to the grounded side of the stay on the opposite end of the bottom insulator.

You can use a stainless steel hose clamp to make a firm connection to the stay. I usually tin the end of the center conductor to make a good fitting that will resist flexing. Same thing with the copper braid — tin the spot that will get clamped to the bottom side of the backstay.

I also use the black PVC jacket I took off when making up the "Y" connection to cover the exposed copper braid of the coax. I then seal the entire works to keep out moisture. There are several commercially available coating solutions that will further keep your connection dry (Scotch-Kote).

When going through decks, metal or fiberglass, weathertight fittings are available that will squeeze out moisture and keep it from creeping down the sides of your coaxial cable. They are manufactured by Perko, and are commonly called Perko "coaxial cable weatherproof thru-fittings." They make big ones for the larger coax, and small ones for the smaller coax. Make sure and put them on the coax before you start trimming away at the ends.



Perko deck fitting for coax

Before leaving the antenna end of your coax, make sure the copper braid is substantially grounded. On a boat, this means grounding the chain plates that hold the backstay down to the deck. Simply grounding the braid of the coax to a little bit of metal in your lifelines won't make it.

In order to create a match somewhat close to 50 ohms, the groundplane connection must present itself directly below the radiating antenna. Leaving the braid of the coax cable totally unconnected is out of the question — you will get RF everywhere but where you want it into the antenna. On cars, be sure and ground the bumper to the vehicle frame! Safety bumpers are usually poor connections to the vehicle chassis.

Once you have made certain you have a good ground connection directly beneath the radiating antenna, your next concern is routing the coaxial cable back to the transceiver and tuner. This is best accomplished by *not* pre-soldering the PL-259 on the end of the connector. After all, you want to keep your coaxial cable run as short as possible. Any leftover cable should be dispensed with.

Avoid running the coaxial cable directly next to your engine. Keep it at least 5 feet away, and you'll have no problem with heat or gas-engine interference. You can run the coaxial cable alongside other wiring without any problem. As long as you are running the cable, go ahead and attach a couple of other coaxial cable sections to it and drag along some spares. You'll be happy you did this when you next consider Loran, Omni, Omega or SATNAV!

Support the coax with plastic wire ties that are affixed to bulkheads. Avoid areas where the coax may chafe and eventually tear. Keep it away from hot water lines, and avoid extremely sharp bends.

When you finally get to the back end of your high frequency transceiver, I usually wrap five tight turns of coax around my hand and use plastic ties to form a RF choke. This will help minimize any stray RF that might creep down the braid and back to the transceiver.

Finally, solder on your coaxial cable connector; and then with an ohmmeter, double-check all connections for continuity. If you are measuring (on R × 10,000), your cable into a backstay, you will probably notice a slight amount of conductivity between tip and shell on the coax connector. This is usually due to moisture on the insulators, and is nothing to worry about.

However, if you measure a small amount

of continuity when on the R × 1 scale, chances are you've got moisture in your ball mount, and you will need to disassemble the setup and clear out the high-conductivity sea water.

Once again, double-check your feedpoint and make sure it's completely weather-resistant. This is usually where your antenna connection goes bad.

Finally, document your coax cable run in your radio logbook for future reference. Note SWR readings, and then get ready to go on the air and enjoy your setup.

NEXT MONTH — the fabulous ICOM M-700, the combination Amateur Radio and type-accepted marine single-sideband. We will put it through its paces. □

Recommended maritime mobile equipment

Many of our students will be operating their Amateur Radio equipment aboard their boats. Past experience dictates that only certain pieces of equipment seem to fit in with maritime mobile operation. We would hope this memo will assist you in selecting only the equipment that best suits our students' maritime mobile needs.

Radio School, Inc. offers complete installation service of Amateur Radio equipment for maritime mobile installations. We also offer complete installation service for mobile home installations, residence installations for simple vertical or beam antennas, and regular vehicle installations.

For maritime mobile operation, the transceiver must be capable of split-channel (duplex) memory operation. The following rigs have memory channels that will accept duplex information: Kenwood 430S (memory channel 8), ICOM 751 (all memory channels) and ICOM M-700.

The popular Yaesu 757 does not store duplex information in its memories — only simplex operation. That is why this very popular transceiver is not recommended for maritime mobile operation. However, we do certainly recommend this rig for any other operation where maritime mobile duplex channels (i.e., marine channels for Coast Guard and telephone) are not required.

When you sell the 430S, make sure you include the mobile microphone along with the package. We also recommend the mobile mounting bracket for either the ICOM or Kenwood sets.

We have found the MFJ941D antenna tuner the best for maritime mobile operation. We will show the mariner how to set the tuner after the installation has been completed by our staff or by the mariner himself. The sample "tune-up" sheet is included for your review. Please note the many maritime "duplex" frequencies that necessitate a rig that memorizes duplex channels.

Although mariners are not allowed to transmit on marine frequencies with ham radios, it makes good sense to have these frequencies available in case of an emergency. FCC Part 97.107 allows radio operators to use any type of equipment on any frequency to elicit a response to emergency communications where safety of life or protection of property is at hand.

We recommend only non-contaminating RG-213 coaxial cable. Regardless of how short the run, only this type of coax is suitable for the harsh marine environment.

For grounding purposes, we have found that only 3-inch wide copper foil is adequate to create a good groundplane suitable to match a 50-ohm antenna. This groundplane must follow the guidelines on the enclosed grounding information sheet for your review. We offer ground foil at a 50 percent discount (30 cents per foot) if you wish to sell this to your customers. We encourage you to stock ground foil, but please be aware that we have it on hand for our installations.

If the customer wishes to use a backstay antenna, it must be fed with coaxial cable (not open wire or ladder line) and it must have ground foil run to the shield of the coax at the feedpoint. Please see our grounding sheet for more information on this subject. Never recommend open wire from the tuner to the backstay; this only radiates energy inside the vessel and into other electronics, causing possible damage to other sensitive onboard SATNAV or Loran equipment.

We make up a special waterproof "Y" connection for the backstay, and you should have your customer contact us for more information. Grounding the bottom end of the backstay below the insulator will present a 30 to 70 ohm match, and the MFJ tuner will tune this up quite nicely. This match can only be tuned if ground foil is attached to the chain plate that holds the backstay onto the deck area.

If mobile whips are used, again ground foil in quarter-wavelength radials must emanate from the base of the whips. We recommend only the non-corroding Anixter Mark whips that are white fiberglass. This same company also offers whips tuned specifically to marine channels at 2, 4, 8 and 12 MHz. These whips are easily stowed away when not in use, and are impervious to weather elements. Aluminum-type whips work well, but corrode badly and the mariner will invariably drop the loading coil overboard or the whip tip may vibrate off.

Multiband fiberglass (Spider) antennas are OK. If your mariner wants this type of operation, you may wish to sell him this type of antenna in place of individual tuned whips.

All mobile whips will need to be tuned, and our trained technicians (who possess First Class FCC radiotelephone licenses) will be more than happy to tune each whip antenna to a specific frequency of operation.

I personally check out each and every installation and spend several hours with the mariner, showing him how to use his new radio equipment. I go over the details of the installation, double-check marine licensing requirements, and train the mariner on how to use his set on ham frequencies as well as marine frequencies (in an emergency), if the need ever arises.

Here at Radio School we offer a complete installation package. We recommend students buy their equipment locally through southern California ham dealers, rather than cherry-picking by going mail order. We hope you appreciate our support of your local Amateur Radio dealership, but we ask that you work within our guidelines for recommended equipment and antenna/grounding materials.

We have over 450 boats over the last 10 years that are using our Amateur Radio recommendations, and they have some of the loudest signals on the Pacific and the Atlantic. Please work with us so we might sell to the mariner only those pieces of equipment that will truly meet his maritime mobile or land mobile installations.

Sincerely yours,
Gordon West, WB6NOA □

Open letter to a concerned reader

Staff Sgt. Steven J. Robeson,
KC8M/AFA1OQ
USMC
Naval Air Station
Willow Grove, Pennsylvania

Dear Steve:

Thanks for taking time to write me at **Worldradio** regarding your concern for the possible abuse of Amateur Radio equipment by Amateur Radio mariners that may unlock the transmitter section for marine radiotelephone calls. I share your concern with you, but would like to raise some interesting issues.

Our Radio School organization has licensed literally hundreds of mariners who already possessed Amateur Radio equipment and who may have already been operating on ham frequencies without any license at all. We take great pride in helping clean up the many maritime mobile nets that were infested with maritime mobile bootleggers — mariners who had enough money to buy the equipment, but couldn't find the right materials to pass their Amateur Radio license test.

I personally teach these classes through the local college system, and I might assure you that college instructors on a part-time basis probably receive lower pay than what you get each month in the military! hi-hi

I have worked closely with the FCC and John Johnston, W3BE, in a mutual effort to help stem illegal users of ham radios out on the high seas. I believe our efforts have paid off — at least that's what the net control operators are telling me.

The unlocking of 2-meter VHF handhelds to transceive on VHF marine channels has paid off in several cases here in southern California. Mariners in trouble with only a 2-meter set can easily reach the Coast Guard direct and find a much more qualified response to their emer-

(please turn to page 47)

Vince Luciani, K2VJ

As an Amateur Radio writer who is also an unspectacular lecturer on the hobby, I've talked to groups such as 5th grade kids and IEEE engineers. Their questions on Amateur Radio are largely the same — the alleged technical complexity to learning and/or joining, the hobby's time-consuming nature, equipment costs, etc., all of which I delight in answering by holding up my book *Amateur Radio, Super Hobby;* McGraw-Hill, 1984), turning to a pertinent chapter and reading from it.

In particular, there is the premiere question so often asked, directly or implied: "Who are these radio amateurs?" Well, there are still many in the popular media, mostly those "too busy" to be bothered with simple explanations, who hold the hobby to be a highly selective one populated by wild-eyed engineers who are all genius inventors and different from people. Perhaps one day this view may change for the good.

My first answer to the question of who we are is to say we're everyone, and I'd like to prove the point with statistics on the occupations of a Chess & Amateur Radio (CARI) membership sampling. I don't think that what we've come up with here is a valid model for the population of radio amateurs, but I would like to discuss the point with anyone so interested.

CARI has: retirees, 17%; technicians, 12%; engineers and students, each 7%; accountants, 6%; teachers, doctors, handicapped, computer programmers each 4%; supervisors, carpenters and machinists at 3% each; attorneys, insurance agents, artists, musicians, psychologists and biochemists at 2% each; and at 1% each are hair stylist, courier, surveyor, Coast Guard, mechanic, meteorologist, airline pilot, pharmacist, writer, shipboard radio officer, drafter, steamfitter, investigator, architect and clergy. (We've since added a few more CARI members in that latter category, thank you.)

Personally, I find this sampling of occupations to be a rather fascinating reflection of who we radio amateurs really are.

While we were into the stats on CARI members, we came up with the following tables which we think are also of interest: grouped member ages, years in Amateur Radio, years in chess.

AGES

Under 10	1%	(lowest age: 9)
11-20	7%	
21-30	15%	
31-40	30%	
41-50	19	
51-60	14	
61-70	10	
Over 70	4	(oldest age: 77)

Years in	Amateur Radio	Chess
Under 5	55%	31%
6-10	10	19
11-20	17	28
21-40	14	17
Over 40	4	5

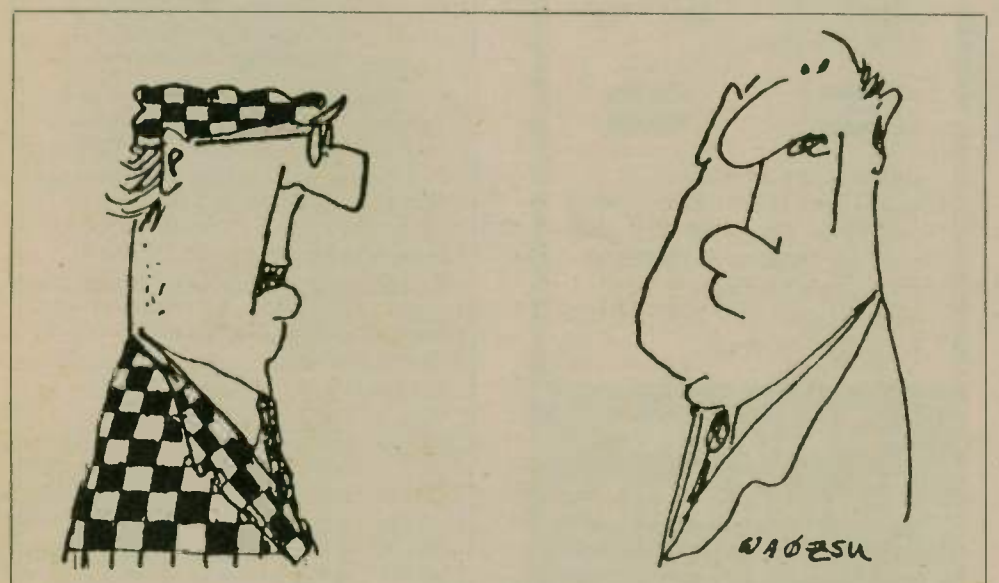
After three years of corresponding with several hundred radiochess players, and learning perhaps better than anyone of the common views they hold, I was nonetheless surprised to realize that more than half of CARI members are relative newcomers to Amateur Radio.

To CARI's credit, we have a program to help non-amateurs into the hobby, and perhaps it has been more effective than we had realized. Certainly, we herald each accomplishment of a new or upgraded amateur license in *CARI NEWS,* but we had not maintained any specific count on the total.

On the obverse side of this figurative coin are the old-timer radio amateurs who never, hardly ever, or long ago played chess but now wisely figure we are on to a good thing and they want part of the action. Also, it would be incorrect to assume a correlation between numbers of years in Amateur Radio and numbers of years in chess. Fred Kienzle, K4ZG, by way of example, has 51 years in Amateur Radio and only three in chess, whereas Frank Baldwin Jr., KA3DLY, had five years in Amateur Radio but 53 years in chess.

Winner of the most years in both Amateur Radio and chess is our fine friend, that editor known to more Amateur Radio editors than any other editor (whew!), "Andy" Anderson, KØNL, who has logged 54 years in Amateur Radio and 61 years in chess!

With all this, you may see why we seldom accept the objections and the "too much" excuses that some try to give for not working their way into our fabulous hobby. We are equally stubborn about not



Yes, I *am* a chess player. How did you guess?

VISIT YOUR LOCAL RADIO CLUB.

ALASKA

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

ARIZONA

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

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

CALIFORNIA

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

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

East Bay Amateur Radio Club
Salvation Army Center
Rheem Ave. & 36th Street
Richmond, CA 94804
2nd Friday/monthly — 8:00 p.m.

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.

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.

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.

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.

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

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) 742-0130/332-6667
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. B-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.

NOARS - Northern Ohio Amateur Radio Society
P.O. Box 354, Lorain, OH 44052 - 3rc 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
3177 Virginia Beach Blvd., Va. Beach, VA
1st Thursday/monthly — 7:30 p.m.
For information (804) 497-1235

WEST VIRGINIA

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

accepting same when it comes to joining in on the radiochess fun.

For information on CARI and radiochess, please send SASE to Vince Luciani, K2VJ, P.O. Box 682, Cologne, NJ 08213. □

TEACHER

Alan Kline, KB1DJ
P.O. Box 54
West Lynn, MA 01905

VE program, Part I

For the past few months I have written on my personal experiences with the new VE (volunteer examiner) program. Because it is the hottest educational activity we are all involved in, I tried to give you as much practical information as possible in a short time span. I had hoped this would help out others who were having exam sessions soon after ours.

What I am going to attempt next is a multi-part series on some very specific problems and operational data that we encountered during the session. There will be many comments and suggestions that will come directly from the various VE's who were involved. Let's start with some review.

The 1984 New England ARRL Convention was held the weekend of 29-30 September at the Sheraton Convention Center, Boxboro, Massachusetts. For the first time in six years, FCC exams were offered under the new VE program.

When asked by the convention's chairman — Gene Hastings, W1VRK — to be the exam chairman, I reluctantly agreed. I knew the new VE program was too new to run efficiently, but as chairman it would be my job to assemble a committee of VE's who could schedule the exams and do all the paperwork as best as the new system would allow. I had hoped that with good planning and management, I would get away with a minimal effort and be able to enjoy the convention myself.

I asked my club, the North Shore Repeater Association's VE team to be on my committee. Amanda Smith, N1BYI, and her husband Wilson KA1AE, along with John Maglio, KJ1J, all agreed to serve on the committee for the two-day event.

First I examined the following facts. I checked previous convention figures of FCC-given exams, checked other New England area test dates close to ours and double-checked the current FCC dates for giving their exams. Once the convention flyer went out into the mail, a week late, I realized we couldn't possibly have a large turnout.

QST ran the only media announcement of any great importance, so I projected we might get 50 to 100 applicants. I was wrong.

When I received the 200th 610 Form, I had to seriously evaluate my position. The VEC office at the League was telling me we were going to be a part of Amateur Radio history. Dayton had given 200 exams, but they were code only. Boxboro was destined to become the first of the large regional hamfests to give both the code and theory exams. By the time the weekend was over, we would've given 309 individual exams.

We spent much time scheduling, checking 610's arranging for VE's, talking to the examinees, conferring with the Boston FCC office and correcting exams. We realized that because it was a new system that much of what we did was experimental and many policies we developed would set the pattern for the ARRL to follow with the rest of the VE program.

Announcement of exams

The FCC required us to announce to the general public about the upcoming exams. This was not an easy task. Our largest regional newspaper, the **Boston Globe**, didn't print our news release about the exams. **QST** ran the details as soon as they could, but that was only in one issue. About 40 percent of the exam takers saw the announcement in **QST**.

The convention flyer had a section on the exams, and that generated the balance of the 60 percent of the applicants. The problem was that the flyer was mailed out too late for many to return their 610 forms to us in time for the exam dates.

QST carried the correct info on how to make out the required $4 check. The convention flyer had some incorrect info, so I received checks made out in many different ways. I had checks made out to myself, KB1DJ, the ARRL/VEC and North Shore Ham Services. I have some suggestions for this problem that I'll discuss later. By the way, not a single check bounced.

The final way the exams were announced was on the New England traffic net system and all the RTTY bulletin boards. The ARRL also called all the section managers to spread the word. All these methods worked because we had over 250 individual applicants.

610 forms

Amateurs sent me 610 forms so old I had never seen them; some dated back into the 1960's. My comments on how inadequate the old 610 form is are of no use now, however.

The FCC has just printed a newer version of the 610 form to be used exclusively with the new VE program. But watch out for missing date of births, no signature and no attached copies of current licenses.

As the 610 forms came in, I put a piece of note paper on each one at the top left hand corner. It contained the following info: missing facts from the 610, amount of payment, upgrade info and day requested.

Certain amateurs had good reasons for requesting which day they wanted to upgrade on. We had a church organist who worked on Sunday, a noted DX'er who was speaking on Saturday, a pro football player who had to fly out for the Monday night game of the week and a high school band director whose team played on Saturday afternoon. Wherever I could, I accommodated these people by giving them the day they requested.

The amount of money paid was noted because some dads or moms paid for each other and a few kids with the same check. When tallying up the final accounting these notes would be helpful. As I already mentioned, the checks were made out in various ways. I endorsed all of them and

(please turn to next page)

Wheelchair mobile

John Nelson, W2FW
Francis St. Onge, W2ZQA

To most of us, Amateur Radio is a hobby to be enjoyed in our leisure time. To Herb Taber, WB2RNH, it is almost his whole life.

Herb, who lives near Duanesburg, is a paraplegic, paralyzed from the neck down as a result of an automobile accident 15 years ago. He cannot grasp a tuning knob or hold a microphone. Herb had to learn to talk all over again after his mishap, and he gives most of the credit for his speech improvement to the many hours spent talking to devoted friends on the radio.

Several of Herb's ham friends have pitched in to get his gear operational, and to keep it going. He works 40 through 10 meters and 2 meters. Herb usually monitors Schoharie 146.61(-) repeater. His unique shack has special gadgets that help him operate most of his gear unassisted. Occasionally his good wife, Ruth, will install his earphones so she can enjoy TV while Herb is ragchewing or chasing 20-meter DX.

With warm weather coming, he is looking forward to mobiling in his motorized wheelchair to the front yard, and sometimes to the next-door neighbor's house. From his yard he can see the traffic on I-88, and expects to contact some of the amateurs rolling by on that Interstate while mobile/wheelchair. He now has a Drake 2-meter rig, powered from the chair storage battery, and equipped with special T/R switch and lapel mike.

Give Herb a call during the afternoon on 146.61 Schoharie repeater for an interesting QSO with an interesting fellow.
— Schenectady ARA, NY □

Amateur turns interest into hobby

William Pringle, WA7QDC, of Salem, Oregon, is single and a former bookkeeper. He is a high level quadriplegic with limited use of his hands, the result of a 1966 car accident.

Pringle was first introduced to Amateur Radio in a high school electronics class and maintained his interest while studying social sciences at Western Oregon State University. He didn't have time to actively pursue the hobby until after his accident. He began by listening to other amateurs on shortwave radio, then obtaining two-way equipment and earning his FCC licenses to the point where he now holds an Advanced Class license.

Bill learned about the Courage HANDI-HAM System in 1980 through an article in an Amateur Radio publication. He quickly involved himself with referring other area disabled people to the System.

When he's on the radio he enjoys checking in frequently with different networks on different frequencies. He says he's made many new friends through Amateur Radio. His most exciting moment came when he was able to make a Morse code contact with a radio amateur from Poland.

"We spent about 10 minutes discussing the weather and our signal strengths. It was very exciting, and it was also the farthest contact I've ever made."

When not "chewing the rag" with other hams, Bill enjoys chess, watching sports events, general reading and studying history.

He feels Amateur Radio is a very beneficial activity for disabled people. "From my experience, Amateur Radio has been a great hobby. It allows me to get out of the house, get on the air, make new friends, and it's good for the mind."
— HANDI-HAM World, Golden Valley, MN □

HANDI-HAM profile

Myron Hornbaker

Myron Hornbaker, W0GFU, a youngster of 60 and quadriplegic, frequently checks into the NORCARS net. This North Central Amateur Radio Service net operates on 7250 kHz at 0800, 1200 and 1500 CDT Monday through Friday to exchange weather and road information. Here Myron tells of his background:

"I graduated from high school in 1945 and then took a few electronic courses. During the time I was in high school, my cerebral palsy was bad and speech was difficult. The use of my arms and legs was limited.

"In the late '40s and '50s, I learned to drive (my legs were more dependable then). I drove truck to and from the fields during harvest for many, many years. My father ran the combine and I hauled the wheat.

"I guess you would say I was a bit of an extrovert. I do enjoy people, especially children.

"In 1950, I got my Amateur Radio license and the call W0GFU and have been very active ever since. One of my achievements which some may not consider particularly important is that I worked VE4VJ in Winnipeg, Manitoba, for about 30 years.

"In 1953 I had been on the air a couple of years when I heard VE4VJ (he has a serious speech impediment). Our schedule time has varied, but we have maintained contact ever since. There was a time when I was off the air for two years. He puts his log on tape, he cannot write either.

"In 1972, we moved down here to Meade, Kansas. I have met a lot of people and seen a lot of things — it has changed my feelings about death. I have seen many people in worse shape than me.

"I have met many wonderful people on the air. I am now running an ICOM 701 to an all-band vertical antenna. My rig is very effective. I use a mouthpiece of fiberglass to operate my rig.

"I am a life member of the QCWA, the 10-10 Net, HANDI-HAMs and the Handicapper Net. I enjoy participating with others — especially with the handicapped. I look forward to meeting both old and new friends on the air."
— HANDI-HAM World, Golden Valley, MN □

Share your knowledge with your fellow amateur and Worldradio reader

Buzzing LEDs

In order to make the "no tune-up" rigs even easier to use by the visually handicapped amateur, we have designed a minor modification that costs almost nothing and takes just minutes to do.

Most broad-banded amplifier-type rigs use an LED (light-emitting diode) to indicate when the microphone or drive level is high enough. Obviously, such a device is almost useless to the blind operator!

We came across a piezo-electric buzzer (similar to the "Sonalert") which, when placed in parallel with the LED, buzzes right along with the LED lighting.

If you hook it up with a single-throw single-pole switch, you can "turn it off" so it won't buzz every time you talk into the microphone or hit the key.

This is a simple solution to a common problem. Check your Radio Shack store for low-cost piezo-electric buzzers.

If you're not into buzzing lights, maybe you'd be interested in the tactile LEDs available from Tiflotel S.R.L., Claol ziocorte, Italy. This outfit makes an LED that pops out at you instead of lighting up! They have a whole series of LEDs for every purpose and voltage/current condition.

Write HANDI-HAM HQ for engineering data and address if you're interested. HQ address: Courage Center, 3915 Golden Valley Rd., Golden Valley, MN 55422.
— HANDI-HAM World □

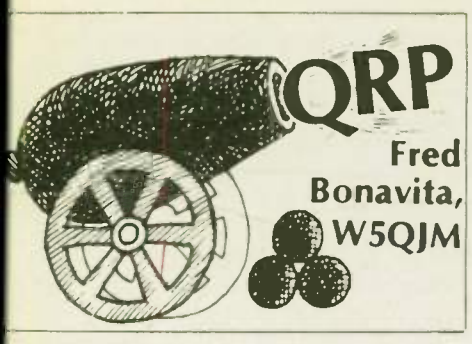
Teacher

(continued from page 41)

deposited them into my ham class checking account. This way, I sent only one certified bank to the ARRL to cover all my exams.

The upgrade info was noted in letters to act as a summary sheet of what the applicant would be taking for exams. This is needed to monitor the exam taker's progress when they take more than one exam.

In part II, we will talk about how to standardize your submittal of the 610 form to the VE. □



The International Amateur Radio Union (IARU) has boosted QRP on two fronts in recent months.

After more than a year of considering the idea, IARU has finally approved a low-power endorsement for its well-known Worked All Continents (WAC) award, and its Region I has taken the first steps toward designating 17 June as International QRP Day annually.

The WAC/QRP award became effective 01 January and applies *only* to low-power contacts with amateurs on the six continents *on or after that date.* Power levels during the contacts must not exceed 5 watts output or 10 watts input. The award is in the form of a special sticker endorsing the standard WAC certificate.

The effort to secure approval for the QRP endorsement began in July 1983 at the IARU Region II meeting in Cali, Colombia, when it was introduced by Carl Smith, W0BWJ. the region vice president. It won final approval last summer in Paris.

To qualify, an applicant must submit QSL cards from amateurs in each of the six continental areas as defined by IARU rules and as shown on the ARRL world map. No photocopies of QSLs are acceptable.

QSLs must show contacts made from one station call sign (this rule is waived in case of a change of call sign because of a license upgrade), from one location (an area or metropolis not exceeding 40km or 25 miles in diameter), and the mode and/or band used.

IARU offers this guideline in determining the area of a station located adjacent to a continental boundary. North America includes Greenland (OX) and Panama (HP). South America includes Trinidad and Tobago (9Y); Aruba, Curacao and Bonaire (PJ2-4); and Easter Island (CE0). Asia includes Ogasawara Islands (JD1), Maldives (8Q), Socotra Island (7O0), Abu Islands (J2/A), Cyprus (5B, ZC4) and Ankara (TA2).

Oceania includes Minami Tori-shima (JD1), the Philippines (DU), West Malaysia (9M6-8) and Indonesia (YB). Europe includes all the 4th and 6th call areas of RSFSR (UA4-6), Istanbul (TA1), all Italian Islands (I) and the Azores (CT2). Africa includes Ceuta and Melilla (EA9), Madeira (CT3), Gan Island (VS9M), French Austral Territory (FB8) and Heard Island (VK0).

Amateurs from the United States, Canada and those countries without IARU representation must use a special WAC award application form. Send a large, self-addressed, stamped envelope to IARU, P.O. Box AAA, Newington, CT 06111. U.S. and Canadian applicants also must have a current membership in ARRL or CRRL. All other applicants must apply through their respective country's member-society in IARU.

After verification, QSL cards will be returned, and the WAC/QRP certificate will be sent soon afterward. There is no application fee for WAC. However, a self-addressed stamped envelope must be included for return of all cards. If they are to be returned by registered or certified mail, sufficient remittance must be included to cover the costs. Check with local postal authorities to verify charges.

The proposal to designate 17 June as International QRP Day was made by Kristjan Benediktsson, TF3KB, president of the Icelandic Radio Association and his nation's sole delegate to IARU. The date coincides with the national holiday of Iceland.

Preliminary details of the proposal are sketchy, but Richard Baldwin, W1RU, IARU president, said the Region I executive committee was expected to act on the suggestion.

Kristjan's proposal, as adopted by the Region I meeting last spring in Cefalu, Italy, said 17 June would be proclaimed as a yearly HF QRP Day and that Region I would take steps to have the designation spread internationally "with the goal that all amateurs worldwide (would) use low power on that day every year."

There was no immediate indication of a definition of "low power" or any other aspects of the proposal, however. □

Can you believe it?

Don Grant, KR6J

A new problem has shown up on the ham bands. It's SMI.

During a QSO I was having with Glen Turner, NF7T, in Seattle, Washington, he received a call to the phone.

His neighbor, knowing (or at least thinking she was alone in her home, as her husband was working out of town), heard a man's voice come out of her *electronic sewing machine!*

Glen told me the lady said it was a little scary until she figured out whose voice it was. Seems Glen was coming in loud and clear, she said, but not to worry. With his beam pointing right over her house to talk to southern California, she had a treat to listen to a QSO while she did her sewing! How *nice* some neighbors can be!

— *ARC of El Cajon, CA* □

TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

International traffic

There are two lists that are sometimes confused: the list of countries which have agreements allowing amateurs from other countries to operate while visiting, and the list of countries having agreements allowing amateurs to exchange third-party traffic.

One reason for the confusion is that many countries are found on both lists. But there are some, such as England, that welcome visiting amateurs and encourage them to operate, but are adamant in refusing any permission for amateurs to handle third-party traffic, even limiting U.S. military stations to handling strictly military traffic — no personal messages, please. And there are others, like Mexico, that allow third-party traffic but foreign amateurs, no. Regardless of what we think of such attitudes, one must recognize that "they have the guns, so we must do as they say."

The list of countries with which the United States and Canada have third-party agreements appears on this page. There is one additional exception to the rule to the prohibition of third-party traffic in Article 41 of the International Radio Regulations, and it is found in Article 45 of the International Telecommunication Convention, Atlantic City, 1947:

"1) Radio stations shall be obligated to accept, with absolute priority, distress calls and messages regardless of their origin, to reply in the same manner to such messages, and immediately to take such action in regard thereto as may be required."

This article not only permits, it requires amateur stations to handle such traffic if they are the only ones or the ones best situated to help in a given emergency.

Except for emergency traffic, however, only amateur stations in countries which have an agreement modifying the prohibition of Article 41 of the International Radio Regulations may handle third-party traffic.

What kind of traffic may be handled? The exact wording of the various agreements differ somewhat in detail, but in substance we may handle anything in international third-party traffic that we are permitted to handle within our own country. Business traffic is prohibited in both cases.

That's the way it's interpreted by the National Traffic System, which is really an international traffic system, passing traffic back and forth between Canada and the United States without regard to any special consideration because it's international.

How about amateur-to-amateur-to-amateur traffic? Some European countries allow it, and a system of nets similar to and modeled on our National Traffic System has been set up. As long as the message is from one amateur to another, it is permitted to relay it. But how about on this side of the Atlantic?

The definition of third-party traffic given in Section 97.3(v) of the FCC rules seems to include such traffic, and so to forbid it: "Amateur Radio communication by or under the supervision of the control operator at an Amateur Radio station on behalf of anyone other than the control operator." And yet, Jerry Swank, W8HXR, told your columnist some years ago that he acted as a relay between an amateur stationed in Greece and the latter's mother, Carolyn Smith, WB6UVU.

This went on for three years, and Jerry asked the FCC's legal department if it was permitted and was assured that it was, because all three were licensed amateurs and control operators of their respective stations. That was not an official interpretation, however, and the more cautious among us may hesitate to follow it, remembering how in another context amateurs have found themselves in trouble for putting up towers, for example, without a permit, after having been assured by an employee of the building commission that no permit was needed. When dealing with the government, you go by what the law says, not by what people tell you.

Interpreting the definition literally, however, it is interesting to note that only messages originated by third parties, nonamateurs, would come under the prohibition. It looks like there is no explicit prohibition of messages sent by amateurs to third parties. Even here, however, there is need for caution. Other governments may not look at it that way, and one could get a foreign amateur in trouble by sending a message to be delivered to a third party.

Anyone who is interested in making contact with the European group could write to Sven Milander, SMØIX, Siljansvagen 60, S-121 70 Johanneshov, SWEDEN, and find out their current schedules. They would welcome interest from this side of the Atlantic.

Phone band expansion

You can see which amateurs have the clout these days. The ARRL always speaks of phone band expansion, and never mentions the fact that those of us who work CW are being squeezed out! We used to have the whole 40-meter band all to ourselves. Then just before World War II, the European broadcasters moved into the top 100 kHz. After the war we had phone there for amateurs, too, and the broadcasters took the top 200 kHz of the band.

The phones have moved down to 7150 in the United States, and DX phones have moved down into the bottom 100 kHz, too. At the bottom of the band, the FCC sliced off 25 kHz and reserved it for Extras only. Sure, the Extras enjoy the relatively interference-free area, but maybe they want to work stations that don't have an Extra Class operator sometimes, too. So now 40-meter CW folks are squeezed into maybe 50 kHz.

Truett Blackmon, W5ETM, had some strong words on this subject in the December 1984 QST correspondence page, remarking that the ARRL has never pushed for wider CW sub-bands. Some might question that statement, noting that the ARRL had much to do with obtaining the 10 MHz band, which is closed to phone, at ARRL's request. How long before the sidebanders move in is another question, though!

There's something we can do besides complain and write letters to the editor, however — something that will be effective. Too many of us use rigs designed for sideband with provisions for CW added as an afterthought (and often the designing engineer didn't give it much thought even as an afterthought), with bandwidth wide enough to pass a voice signal, and when the bands get crowded we can't copy any of the signals. Anything that will improve our selectivity will help alleviate the problem.

Audio filters are the simplest and cheapest, and can be made as sharp as one wishes. But they don't prevent overloading in the receiver by strong interference, nor do they prevent strong nearby signals from reducing the gain on the desired signal.

Most manufacturers offer optional narrow-band IF filters (usually rather expensive) that develop the full potential of the receiver for CW, usually offering bandwidths of down to 200 Hz or so. How sharp you can go depends on the stability of the transmitter and receiver, and this is another area that can stand some improvement. Many older rigs are plagued by drift and sometimes chirp.

The ultimate in CW, however, seems to be coherent CW, with frequencies maintained to a Hz or two, and precisely timed dits and dahs, making it possible for stations to work 10 Hz apart without mutual interference.

Imagine what a bunch of CW stations packed together 10 Hz apart would sound like. Anybody wanting to work sideband would avoid the spot for sure! And there's an unexpected bonus from narrowing the bandwidth of the receiver. A 10 Hz bandwidth picks up one two-hundredth the noise that the narrowest passband suitable for sideband does. As a result, you need only one two-hundredth the power to give you an equally good signal-to-noise ratio. Your 5-watt QRP rig will perform as well using coherent CW as a kilowatt will when an ordinary amateur receiver is used.

Traffic-handling cyclist

The *New Jersey Traffic Bulletin* tells in the last 1984 issue about Jeff Gornstein, KD2BE, of Springfield, New Jersey, who took along a hand-held when he participated with 13 other teenagers in a bicycle tour in eastern Massachusetts in August. He handled a sizeable volume of traffic for the other participants, but was somewhat disappointed when few of his handling instructions requesting a reply resulted in answers to his companions' messages.

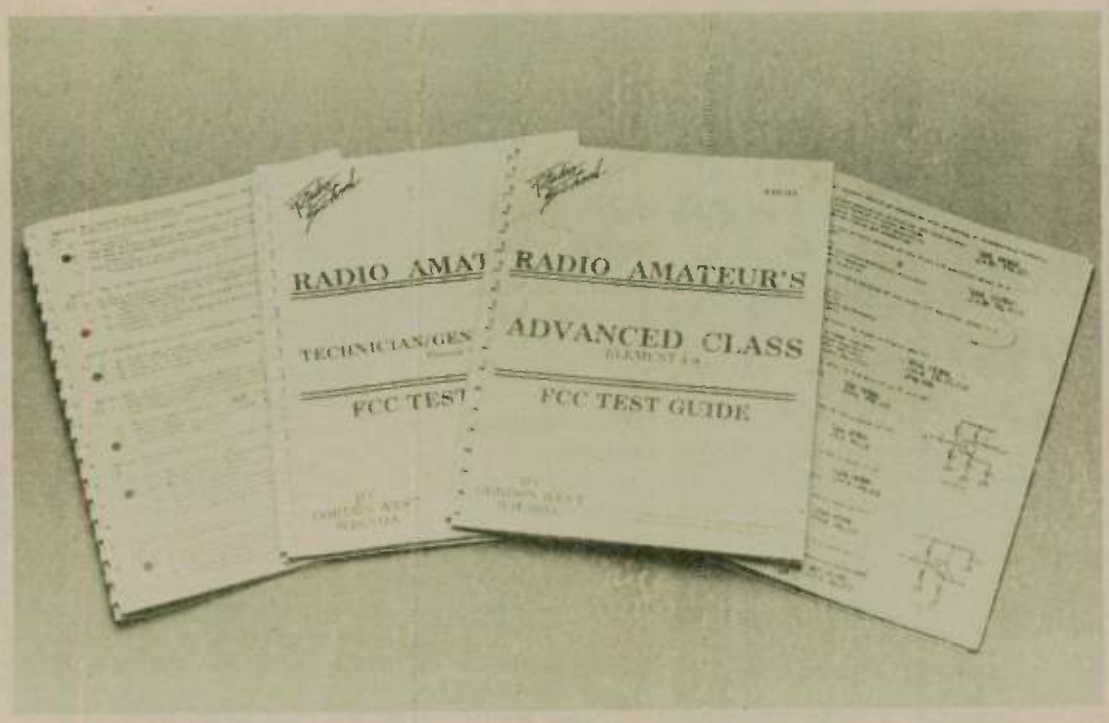
Third-party countries

U.S. amateurs are permitted to handle third-party traffic with amateurs in all countries listed. Canadian amateurs may exchange third-party traffic with countries indicated by (C).

Antigua and Barbuda, V2
Argentina, LU
Australia, VK (C)
Belize, V3
Bolivia, CP (C)
Brazil, PY (C)
Canada, VE (C)
Chile, CE (C)
Colombia, HK (C)
Costa Rica, TI (C)
Cuba, CO
Dominica, J7 (C)
Dominican Republic, HI (C)
Ecuador, HC
El Salvador, YS (C)
The Gambia, C5
Ghana, 9G
Grenada, J3
Guatemala, TG (C)
Guyana, 8R (C)
Haiti, HH (C)
Honduras, HR (C)
Israel, 4X (C)
ITU (Geneva), 4U1ITU
Jamaica, 6Y (C)
Jordan, JY
Liberia, EL
Mexico, XE (C)
Nicaragua, YN (C)
Panama, HP
Paraguay, CP (C)
Peru, OA (C)
Pitcairn Island, VR6
St. Kitts, Nevis, VP2K
St. Lucia, J6
St. Vincent, J8
Swaziland, 3D6
Trinidad and Tobago, 9Y (C)
Uruguay, CX (C)
USA W/K (C)
Venezuela, YV (C)

GORDON WEST'S RADIO SCHOOL UPGRADE BOOKS & TAPES

RADIO SCHOOL FCC/VE TEST GUIDES



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

The Radio School test guides list all 500 test questions plus the multiple-choice answers in an attractive 8-½ x 11 inch manual. The exact questions plus the exact distractors (wrong answers) and the exact correct answer are listed as they will be found on ARRL or W5YI volunteer examinations. The General and Advanced class test guides list 500 questions, the Extra class test guide has 400 questions, and the Novice class test guide covers 200 questions.

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

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

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

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

"I originally developed the test guides for our own classroom instruction," comments Gordon West, nationally acclaimed instructor and amateur radio columnist. "Since there was no other publication in the country that listed the actual multiple-choice answers, everyone began scrambling for this most unique set of books. Just as soon as the ARRL and Ameco come out with their own question and answer guides, we will then get back to our regular business of offering all this material in our exclusive stereo training tapes. We are in the cassette educational business, not the publishing business —but when there is no other book around that reflects the new questions and answers, you can bet that we'll come up with one to help our students out," adds Gordon West.

Study guides are available for $19.95 plus $3.00 postage. Be sure and specify which study guide you want. Exclusive stereo Radio School 4-set cassette theory tapes are available for $39.95, and each set of four theory tapes also includes amateur radio "sounds" that help illustrate certain questions on the examinations. Be sure and specify which theory course you are requesting.

For more information on study guides, code theory training tapes, and a colorful catalog on amateur radio instruction material for volunteers who give the exams, write to address below:

Gordon West's Radio School offers two ways to assist you in upgrading your amateur radio license, or starting your hobby in amateur radio. You can either learn by reading their exclusive Radio School FCC test guides, or learn by listening to their stereo code and theory cassettes.

"Our stereo 4-set theory tapes are an ideal way to study upgrade questions and answers while driving to work or while doing something else around the house. Instead of reading, our theory cassettes let you listen to the course material," comments Gordon West, WB6NOA, nationally acclaimed instructor and well-known columnist.

Theory tapes also include the sounds behind certain FCC questions. If the question talks about full break-in (QSK) operation, you will hear the difference in stereo between semi- and full break-in. The tapes will let you hear FSK and will let you appreciate the sounds of speech processing over high noise levels on the air.

Four stereo, long-play tape cassettes comprise each Technician/General, Advanced, or Extra class course. The four tapes are packaged in a gleaming white tape cassette holder that protects the tapes when not in use. The Technician, Advanced, and Extra class theory 4-set courses are $39.95 each, plus $3.00 for postage and handling.

Applicants who plan to study for the Novice test will play two theory course tapes. These tapes are also housed in a white cassette tape holder, and the complete Novice cassette theory course is only $19.95, plus $2.00 postage and handling.

All stereo tapes will also play equally well on monaural tape recorders as well as on any type of standard cassette playback unit. The stereo effect simply adds additional dimension to the theory courses.

"Most of our students play the tapes while driving to and from work. One of our students, a lady in New York, indicates she has gone from Novice to Extra simply by listening to our theory tapes while she works at home." comments Gordon West.

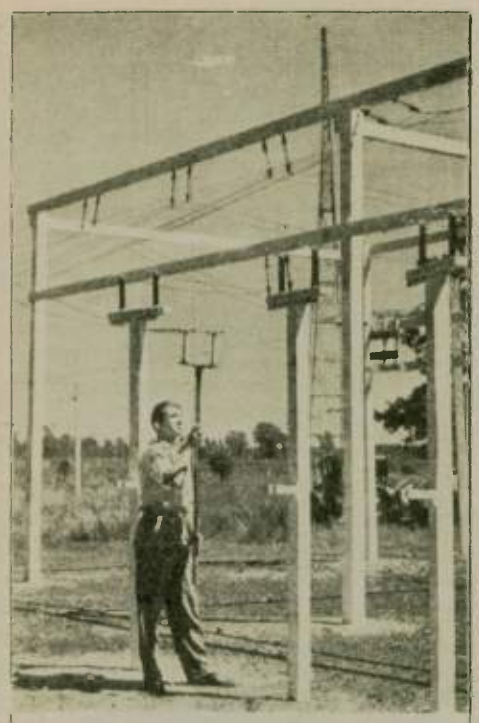
For more information on over 50 Radio School code and theory learning cassettes, write:

READING OR LISTENING — YOUR CHOICE

GORDON WEST RADIO SCHOOL

2414 College Dr. • Costa Mesa, CA 92626

(714) 549-5000
Monday thru Friday
10:00 - 4:00 p.m. (PST)



AERIALS

Kurt N. Sterba

Five contacts in five minutes, done while using very little, from 1952 to 1957Z on the Sunday of Sweepstakes. The rig measured 70 watts output on the Palomar light-bar wattmeter, and the antenna was my little favorite, the "Spider" from Multi-Band Antennas, used on 15 meters.

We're talking about a mobile mast 4 feet 2 inches long and an element which is 1 foot 3 inches long sticking out sideways at the top of the mast. The whole thing was placed on top of a card table in my backyard.

The 20-meter element is 22 inches long; the 40-meter element is 20 inches long and was responsible for five ARRL sections.

Multi-Band Antennas just came out with a 75-meter element. I used it with *no* radials for that band. All I had were two radials cut for 40 meters. The mast and element on 75 is an inch short of 6 feet long. That's about one-eighth of what it should be for one-quarter-wave performance. On 75 meters, I worked 500 miles in one direction and 600 miles in another direction.

What did I accomplish with near the bottom of the heap as far as power goes, and what must have been the smallest antenna in use during Sweepstakes?

All call areas, all ARRL Divisions, every section in four of the call areas. Geographically it was from Hawaii to New Hampshire, British Columbia to West Indies, South Texas to Saskatchewan and a TI. What didn't I work? VE8, KL7, Wyoming and a few others. Made just about 150 contacts. Since I won contests 25 years ago, don't feel I have to prove anything anymore. Now I leave the shack, and go relax with a good book and a good cigar.

Sure, there were times I got really beat out when calling a station. But there were times I'd make four contacts in six minutes, two in two, two in three, three in four, over and over again. Even got a report of "beautiful signal"; it was a great path, and the other station was super loud.

This was all done in *non*-"hot-dog" fashion, just moving up and down the band, answering CQ's. At my age I go into contests in a very non-stress manner. All I really wanted to do was check out the new 75-meter element for the Spider. Obviously it does what it is expected to do. And I like to show the geographical expanse that can be worked with a mobile antenna and relatively low power.

Speaking of accomplishing a lot with not much, we now turn to a recent communication from Maria Evans, KT5Y:

How about devoting some time in your column to my absolutely most positively favorite all-band antenna, the center-fed Zepp? As manager of the Missouri SSB Net, I am constantly crusading on the virtues of this antenna in the hopes that my weaker stations will be heard through the cacophony of 75 meters.

Of course, you know the most common excuse for "why I don't get on 75 meters" is, "I don't have room for a 75-meter antenna." Even a small Zepp has a longer effective antenna length than a garden-variety dipole, and is easily resonated with a tuner (notice I'm an enlightened person and say that it's *resonated*, not plate-fooled). Guess that makes my pi-net a final-fooler too, by that line of defective reasoning!

My favorite antenna book is my 1947 ARRL Handbook, which seems to be more technically correct than the antenna section of my 1983 ARRL Handbook. Of course, coax wasn't the vogue in '47, so the Handbook contains pages of really neat-o antennas with open-wire feeder systems. Back then, they even *admitted* that coupling networks actually *resonated* the antenna!

Anyway, I need you all to back me up. I'm tired of net members with crummy little trap dipoles calling me a liar. I'm sick of new hams laughing at my 37-year-old book. (It's 13 years older than me!) Just once I'd like someone on 75 to believe I'm not running a linear. All I did was follow the cardinal rules about Zepps: 1) don't make the feeder a quarter-wavelength of any band; 2) make it as long as you can; and 3) try to keep it as flat-topped as possible.

The trap dipole guys say, "No way — sounds too much like magic to me"; "Yeah, but you gotta use a tuner"; (So what? Is a "natural" 1.5:1 better than an "artificially induced" 1:1?); "Aw, I bet it's TVI city in your neighborhood"; (Get lost! Nice even, balanced, matched impedance and a *low-loss* feedline lessen your chances of spurious radiation.) And "yeah, but your antenna's not *really* resonant, and my trap dipole is!" (urp. barf.)

So *PLEASE!* Help me out and set 'em straight. I'm counting on you!

Thanks, Maria. Well, you certainly don't need me to straighten anyone out. You've done a great job yourself. Oh, the irony of it all . . . a 24-year-old YL has it all figured out and the OF's are arguing with her. I just love it! (Hey, that sounds like some kind of sexist stereotype remark to me. Watch it, Buster! — Lil)

Not really. You know, the JA's are going to come out with computers that don't need any programming at all. You just type into it what you want it to do, and it goes on from there. Then they will have computers you just talk to and tell it what you want it to do. They will win. Deservedly so. We have a lot of Americans who still haven't even figured out how the antenna works.

A note to those who wrote in about Lil's column about SWR last month, saying that when the SWR went up their transmitter either reduced power or cut off altogether and so her remarks were not practical. Gents, what you do is use a *tuner*! A *tuner*, just like we've been saying all along.

(The WR antenna gang, wishing to avoid the fate of Galileo, go by their Mark Twains in order to avoid — at flea markets, hamfests, conventions and on the air — those whose brains are QRP and QRS.) □

Not very private

Radio amateurs and cordless telephones have made the evening network news. CBS news showed a man listening to a telephone conversation on 1707.8 with a Kenwood 430S. The news item was well done and lasted a good two or three minutes.

This should demonstrate to the public that cordless phone conversations are not very private, and that almost anyone can listen in on their conversations.

— Beaumont ARC, TX □

Ham QSO on record-breaking flight

Hal Rogers, K8CMD

Saturday, 15 September, I tuned across a very intriguing QSO on 14.223 in which a fellow named Joe Kittinger, N4HDP, was giving his latitude and longitude coordinates and an altitude of some 10,000 feet! Well, like most of us, I enjoy a good aeronautical mobile QSO. But this guy, I soon realized, was in a 10-story balloon and said he could "just see the coast of Newfoundland."

He was on his way across the Atlantic Ocean. Destination: Europe . . . solo! His contact was with Bill Rausch, K4FXF, in Florida, and was one of a series of skeds.

American balloonist Joe W. Kittinger completed the first solo balloon crossing of the Atlantic on Tuesday, 18 September, calling it "magnificent". His craft was Rosie O'Grady's Balloon of Peace.

Amateur Radio was only a backup form of communication, but *we were there.* Unfortunately, we did not get any publicity. Regular aeronautical frequencies were his primary channels.

Kittinger's 3,535-mile trek from Caribou, Maine began on 14 September and ended in Savona, Italy in a rainstorm on the Italian Riviera. The crash landing resulted in a broken ankle for Kittinger, which he called "embarrassing". He added, however, that the injury was a small price to pay for the triumph. I agree.

(Six other people have tried the solo ocean crossing, but all failed and two died in the attempt. Kittinger was a record-holding balloonist even before this flight, a parachutist and a decorated military pilot in the Viet-Nam War.)

— Parma Radio Club; info in parentheses from The Plain Dealer, Cleveland, OH, 9/19/84 □

Romance

(continued from page 10)

length dress. She had hand-beaded the yoke herself. The bag carrying her wedding shoes and hat had been misplaced on the flight, and it was returned to her just in time for the ceremony. That evening was sort of a mini-reception with Lea and Wretha.

Imagine the father of the bride learning that his daughter was actually marrying this young man that he himself had introduced her to so innocently a mere half-year earlier. How quickly everything had come about.

His daughter hadn't backed out at the last moment to consider, even for a little longer, this momentous decision. Doc was on a plane to Hawaii the day after the wedding.

The newlyweds spent until that Saturday together, mostly in the company of Linda's parents and Wretha. Then Ed went back on duty and his bride went home to Nampa, Idaho.

In January 1969, Linda went back to Hawaii and spent another R&R with Ed. In April, Ed was discharged from the Navy. He came to Linda in Nampa. There they had their wedding reception and began their life together.

Ed went to work as a carpenter in Nampa. Their first child, Michelle, was born in 1971. In 1972, Ed went into the diplomatic corps of the State Department. Their second child, Kimberly, was born in New Delhi, India, in 1975.

From India the Walkers were moved to Athens, Greece. Michael Edward, the third child, was born in Venezuela in 1978. From there they moved to Washington, D.C., then on to Singapore, where they currently reside.

From a simple Amateur Radio contact, two young people have built a life together that spans the globe. Amateur Radio's most noble accomplishments may be in the area of emergency communications, but its most incredible accomplishments are of a more subtle nature.

— Idaho Society of Radio Amateurs, Boise, ID

The following was written in a letter received by Worldradio on 04 December 1984:

We celebrated our 16th wedding anniversary on 12 November this year — all made possible by the miracle of shortwave communications.

Ed does not currently hold a ham license. At the time we were communicating, Ed was a Navy communicator operating on the MARS network. I believe his call sign then was NØKOR and my father's NØEFN.

Ed is still a telecommunications officer for the Foreign Service branch of the Department of State. In many countries, it is not permitted to bring in shortwave equipment, so Ed is waiting until he retires to set up his own ham shack.

Sincerely,
Mr. & Mrs. Edward L. Walker
American Embassy, Singapore □

Open letter

(continued from page 39)

gency than through local 2-meter repeaters.

If I were sinking fast, Steve, and gave you a call on the 2-meter repeater, could you directly dial the local Coast Guard search and rescue office in less than five minutes? Most repeater operators simply don't have that information, and in an emergency, I believe a direct link to the Coast Guard is the best way to go — but only in an emergency.

On the worldwide bands, the U.S. Coast Guard offers communication channels on 2 MHz, 4 MHz, 6 MHz, 8 MHz and 12 MHz. All frequencies other than 2182 kHz and 2670 kHz are semi-duplex — separate talk and listen.

The Coast Guard works closely with the AT&T high seas marine operators who possess rhombic antenna systems that have 15 times the gain of any Amateur Radio 3-element beam. These stations rely on picking up weak signals for their telephone revenue. They are constantly scanning their frequencies for any weak call, and many times an emergency call can get through to them when band conditions on ham bands are just about dead.

If I had an emergency, I would first try an Amateur Radio maritime mobile net that was in progress. Most net controllers are quick to patch into a local Coast Guard rescue coordination center. However, during non-net times, reaching a well-meaning operator in Lander, Wyoming may lead to an extended delay in finally reaching the right number of a local Coast Guard search and rescue agency who can handle the call.

If I were sinking, you can bet my boots that my first call would go out on the high seas marine operator marine channels rather than calling Mayday on the 20- or 40-meter band. As an expert in the marine telecommunications market, I can assure you that the commercial and Coast Guard stations are much more skilled in handling distress calls than most Amateur Radio operators that are not regular maritime mobile net control operators.

In reviewing my logs on distress calls on ham frequencies, it normally takes the U.S. Coast Guard search and rescue coordination center 10 to 15 minutes to come up on frequency when attempting to dial in a ham maritime mobile station in distress. Invariably they come up with the wrong sideband, too, if that call is on the 40-, 80- or 160-meter ham bands. (All marine channels are upper sideband, and some of their equipment is incapable of working lower sideband which further confuses the matter.)

Unless you have been out there on the high seas on a small, wet and dark 34-foot sailboat, you have no idea as to how important one piece of radio equipment can be. Sure, it would be nice to have a complete rack of radio gear capable of working all different types of radio services, but for most sailors, that's simply impractical.

If a mariner has only one ham rig on board, and this is his only lifeline for help, I would hope he'd be able to activate his or her radio equipment at a moment's instance on any frequency to call for help when the water is coming up to their knee caps.

I can tell you from experience, in 1969 during the trans-Pacific yacht race from Los Angeles to Hawaii, Amateur Radio equipment on frequencies outside of the ham bands saved the life of a mariner who was hit in the head with a spinnaker pole.

In the mid-Pacific, with a crewman bleeding profusely from the head, the U.S. Coast Guard announced there was a Navy submarine in the area that could only be raised locally on a bizarre 8 MHz upper sideband frequency. A spin of the dial on our old modified Drake radio elicited an immediate response from that Navy vessel just a few miles away, and I am happy to say that the proper use of this type of equipment in an emergency saved someone's life.

Your comments are well taken, and I wholeheartedly agree — we all must be protective of our frequencies and those frequencies allocated to other services beyond the Amateur Radio Service.

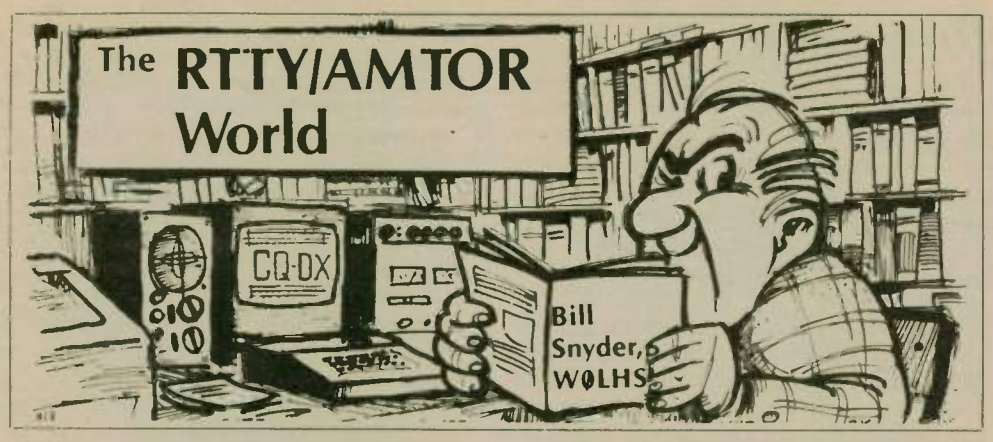
As a military man, Amateur Radio operators should be keenly aware of the very sensitive frequecies on each side of the 2-meter band, as well as the many frequencies used by the military on high frequency. Transmitting on unauthorized frequencies in this service could jeopardize the integrity of our national military communications systems.

Thanks, Steve, for your observations.

Sincerely yours,
Gordon West, WB6NOA
Worldradio Magazine □

Ohm-Brew Answer

UNDERGROUND RESISTANCE



In this bottoming-out period of the current sunspot cycle, living in the high latitudes of North Dakota has its dark side. Our radio amateur neighbors residing further to the south have it much better than we do. Recently, when A35RA appeared on the RTTY bands from Tonga island, two of my southern friends alerted me by landline phone. Jack Whitaker, W5HEZ, called early one evening with the news: "He's booming in here S-9 on 20 meters!"

Enthusiastically I turned on the rig because I needed Tonga for DXCC-RTTY. As I scanned the band, my excitement quickly disappeared. There was nothing but noise — no signals whatsoever. "Well, Jack," I moaned, "that's life far north of the horse latitudes! When you Louisiana guys hear 'em loud and clear, that doesn't mean we can. Old Sol is zapping us with aurora borealis as well as very low solar flux.

A check of the WWV broadcast at 18 minutes after the hour confirmed my suspicions. The solar flux was very low and the geo-magnetic index was higher than the flux! A major geo-magnetic storm was in progress.

Whenever I think of aurora, I think back to my youth and my father. He was a wire chief for the Northern Pacific Railway. He had about 400 miles of telegraph wires that he was responsible for maintaining in operating conditions. When aurora would appear, Dad would spend many long hours at the test board trying to keep things going. The telegraph circuits operated with earth returns and phantom circuits of all descriptions. "Earth currents," my father would call them, "are raising hell with every line we have — the relays are sputtering, the fuses are popping — it's a mess all around."

I was too young to understand what aurora really was, but both my mother and I learned that when the northern lights were in the sky, Dad was on the warpath and would probably be very late for supper. So I have always had a great respect for the phenomonon which appears in the high-latitude skies.

You don't always see aurora from the ground. I recall one night about 15 years ago when I was flying my Cessna from Bozeman, Montana to Fargo, North Dakota. The northern sky was a thing of great beauty, and the curtains of aurora were shifting rapidly in a ballet of color. We were leveled at 9,000 feet, it was a clear night, and the stars were bright as could be. As I passed over Miles City, Montana, I asked the flight service station, which is located on a plateau overlooking the city, if they could see the northern lights. They replied in the negative, as did the operators at the Dickinson, North Dakota station, which was next in my route of flight. I don't think I have ever seen a greater display of the phenomona, yet it was invisible to those on the ground.

A few days after Jack called, Carl Steavenson, K6WZ, relayed the same message through a neighbor, Jim Wayman, N0BCW. When I checked the band for the Tonga station, it was the same story — no DX, no signals. And so we missed another good one because the A35 station left the island the next day.

When I was the DX editor for the *RTTY Journal*, I developed regular skeds with DX'ers in all parts of the world. These contacts were the basis of my monthly column. The best rumors and/or factual information flowed regularly through the airwaves on these weekly chats. I also copied the Australian RTTY bulletin from VK2TTY every Sunday at 0130 UTC on 21095. Thus, it was relatively easy to keep up with the RTTY/AMTOR activities around the globe.

But that was two years ago, and the sun spots were still keeping the 15 and 10-meter bands open in our area. My astronomer friends tell me that past solar cycles have varied from nine to 11 years, with the mean about 11.2. They add that the cycle is seven years going down and four years on the rise, so cheer up, gang — the worst is yet to come.

Is the bird for RTTY?

I would be interested in hearing from operators who are working RTTY on OSCAR-10. I've had brief notes from people making contacts on this bird, but I do not have any really comprehensive information. Please send it along so we can share it with others who are interested in trying the satellite mode.

Callbooks for gifts

Last summer I won a Callbook at a hamfest, and having a full set of my own, I decided to give it to a ham on the other side of the iron curtain. Over the years I have struck up a friendship with Dima UT5RP in Odessa, Ukraine. So I asked Dima if he would like the Callbook as a gift. When he said yes, I shipped it to him by surface mail. A little more than two months later, Dima, in a QSO with me, reported the safe arrival of the book. He was so pleased that I offered to send my old ones as soon as the 1985 edition arrived. So, Dima, your next Callbooks are on the way.

If you mark the package "Used Books", it goes at a very low rate. It cost less than $4 to mail the last two to Russia. The word "USED" is the key to the rate. Amateur Radio has always been operated in the friendship mode — there are no borders we can't cross.

Operating tip of the month

Always begin each transmission with a carriage return/line feed and end each transmission with two C/R L/F. This practice will return the printer and/or cursor to the left side of the paper or screen. There are still some mechanical machines out there, and not all of them have automatic carriage returns and line feeds, so the printers run off the paper, etc. It's just a little courtesy, that's all.

National Teleconferencing Network

In December, the National Teleconferencing Network held an hour-and-a-half nationwide conference via all kinds of hook-ups. I listened to it via the W0RRW 2-meter repeater here in Fargo. The subject of the conference was packet radio. There were comments and questions from all over the country which made a very interesting program. The next conference is scheduled for 29 March, so mark your calendar and try to catch it. Packet radio is the next frontier of Amateur Radio, if the speakers are correct, and I think they are. If you hear strange-sounding RTTY signals on 14103 and 10147 and you can't decode them, they are probably packet radio signals.

AMTOR operating

14075 (carrier frequency) is used by most of the AMTOR operators as a calling frequency. Recently I have noticed a lot of QSO activity on this QRG. Use the calling frequency only for CQ and/or establishing contact. As soon as your link is up, please move off the calling frequency so others may use it.

I would appreciate mail comments on AMTOR operating practices as they exist today, and also suggestions to make it better for all of us. I'll act as the clearing house if you wish to contribute your ideas.

BARTG Spring RTTY Contest

Mark your calendars for the weekend of 23-24 March with big letters "BARTG". This is one of the best-run RTTY contests being held today, and every RTTY operator should join in the fun. One of the side effects of this contest is the WAC awards offered by the *RTTY Journal*.

The British Amateur Radio Teleprinter Group, the sponsors of the contest, also offer Quarter Century Awards for each 25 countries worked during the contest. I have always liked this contest best, probably because I made WAC in one hour and 20 minutes during the 1981 test. For details, see the contest pages in the March issue.

Eavesdropping

"MUSIC WILL BE PROVIDED BY THE CATGUT ACOUTICAL SOCIETY." ... "I DON'T ENVY YOU BEING A HIGH SCHOOL TEACHER — I CAN'T DUCK FAST ENOUGH FOR THE JOB." ... "AFTER TRYING THEIR SOFTWARE, THEY SHOULD RENAME IT: SOFT-SWEAR!" ... "MINNESOTA FATS IS THE ONLY PROFESSIONAL I EVER PLAYED — AND HE WON." ... "IF YOU HEAR A GUY CALLING 'CQ TEST" ON CW AT 40 WPM, HE IS EITHER ON AN EGO

(continued on next page)

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

Looking back

Ed Marriner, W6XM

I was licensed as W6BLZ in August 1931. It does not seem like a very long time ago to me, although it is over a half century. I was just 14 years old at the time I was licensed. How did it all start?

I suppose my interest in wireless came from my brother who had a spark set in the attic of our house from 1914 to 1917. As soon as I could crawl, I was up in the attic playing with fruit jars filled with liquid which generated his power from the wet cells. My brother never communicated very far — just around Lincoln, Nebraska. I can still see him climbing out on the roof putting up an antenna to the garage using rubber insulators. Although I was only a few years old, the memory is vivid.

By 1922, when I was 7 years old, I was busy making crystal sets winding wire on an oatmeal box, and obtaining the sliders and crystal from the dime store. In those days the dime store was the radio parts store, as everyone wanted a crystal set that was not very hard to build with the large blueprint they gave you.

In 1924 my family moved to Long Beach, California, where my interest continued. A neighbor lad and I first constructed a telegraph line between our homes. The sounder was made from a "T"-shaped piece of tin which was pulled down by a magnet made by winding wire on two nails driven in the board. From that we graduated to a spark transmitter made by soldering two nails on the side of a Ford Spark coil taken from a Model T Ford. I had now learned the code at at least 1 wpm!

In 1925-27 we moved to Laguna Beach, a small town of 200 population, (now 150,000) and no coast highway going through it. My interest in wireless hit an all-time high when I met 6SK who had some towers several hundred feet high and a log cabin shack. The spark set was buried in a dugout a distance away. 6SK later became W6BXQ, losing the call in later years.

With his help I built a tuned-plate tuned-grid transmitter using a 210 tube. He also showed me how to make a two-tube regenerative receiver using the ARRL pamphlet, *How to Become A Radio Amateur.* By listening to the receiver, I copied the V V V of commercial stations followed by their call signs. As soon as I felt I could copy 10 wpm, my older brother took me to Los Angeles. He left me in a room at the YMCA on a Sunday as I had to be at the FCC office at 9:00 Monday morning.

It was my first time away from home by myself. I was a little scared not only of being left alone by myself, but apprehensive of the examination on Monday morning.

That night I studied hard on the circuits and Monday morning found me in the radio inspector's office. In walked Inspector Chappel, a kindly man smoking his cigarette held in a long slim holder which was his trademark. The test went reasonably well, and I passed!

I will always be grateful to "Chappie", as he was known. The exam changed my whole life, and I became a radio operator. Years later when "Chappie" was transferred to Honolulu, the amateurs gave him a send-off in Riverside Park, giving him a gold watch. As he received it, he burst into tears, and we lost our kindly radio inspector, who will be remembered by many.

In 1931, there were only 20,000 amateurs in the USA. The other day I received my new Callbook listing 450,000, and I could hardly believe it. In the early days we knew a great many of the amateurs for several hundred miles around since most of our communication was on 40 meters and on CW. In the early morning hours we did QSO ZL and VK stations with a few J's. On 20 meters, we might listen all day to a few signals.

One in particular that seemed to come in most every day was W8CRA in Cannonsburg, Pennsylvania on CW or K6BAZ in Honolulu. Most operation was crystal control. You sent CQ on one frequency and scanned the band for a reply!

Those days were thrilling and exciting, and you built your own equipment. Parts were just as hard to find then as today. We had to scrounge or pay high prices from a store in Los Angeles called Radio Supply on Main Street. There were some surplus-type stores on Los Angeles Street that sold un-branded 210 tubes which usually worked. I never knew who made them.

For power supplies we went to auctions and bought old B eliminator supplies, taking out the transformers to series for high voltage and series and paralleling the condensers. The condensers were put in coffee cans and wax was poured around to hold them.

Aluminum was impossible to find and the best we could do was find an old Packard auto and remove the hood. By taking the paint off with lye water, it did come off; then we pounded the sheet flat with a mallet. It was necessary to have this aluminum for the panel and also a piece to sit on with a connecting wire so there was no body capacity when you touched the tuning knobs.

The tank coils were made from ¼-inch copper tubing or flat copper taken from auto starters and the cotton scraped off. Antennas were mostly of the old off-center-fed Hertz connected to the tank circuit with a clip through a .002mfd capacitor.

Looking back, it is amazing how well this junk put together did work! We made many life-long friends which we still see after 53 years.

In 1933 I went to sea. In every port a brother amateur was at the dock to show me around town and his home. In Dunedin, New Zealand, I attended my first hamfest of "Beano", as they call them. After we drained the keg of beer, they carved and signed the spigot with their calls and signed table napkins which I still have in my treasure chest.

In Hong Kong, I crossed the bay to Kowloon and visited VS6AG, which was a real thrill in those days because hardly anyone traveled to distant places. The war changed all of that and visiting foreign amateurs is nothing.

It seems to me that Amateur Radio was more fun in those days when we had to work hard for everything we had in the way of radio gear. It was romantic talking to far-away places with palm trees and white sandy beaches in the tropics. It is all gone now, but you can still get a thrill by tuning the shortwave bands for clandestine stations who still use slow CW. You hear them making their V V V QSA signals, and from the lists in the shortwave listeners magazines, there are lots of them who still communicate by CW.

Alas, I am afraid the filaments of my 210 burned out long ago, but I still remember the fun of the old days, wishing more could have enjoyed them. The senseless chatter of the SSB stations have driven me back to being an SWL, which I am finding more and more fun. Good luck to all! □

New Ohm Standard

The Dayton *RF Carrier* says there is a new Ohm Standard. Recently, the official One Ohm Standard which is kept at the International Bureau of Standards in Paris was measured and showed 0.99999999851 ohms. This came as quite a shock to the ham world! Better check your equipment . . . recalibrate!
— *Indiana County ARC, PA* □

RTTY/AMTOR

(continued from page 48)

TRIP OR HE'S A RUSSIAN." . . . "THE FOLKS ON RTTY SEEM MORE POLITE THAN ON SSB." . . . "I JUST JUNKED MY OLD MODEL 26. THIS COMPUTER WORKS GREAT!" . . . "AFTER WATCHING THAT FAMOUS TV PREACHER, I THINK THEY HELD HIM UNDER WATER TOO LONG WHEN THEY BAPTIZED HIM." . . . "HIEROGLYPHICS RESULT WHEN YOU TRY TO COPY ASCII WITH THE COMPUTER SET ON RTTY." . . . "I BOUGHT A USED TERMINAL UNIT, AND SURE ENOUGH, WHEN I GOT IT HOME, IT DIED." . . . "THE MUSIC WAS SO LOUD I THOUGHT I WAS ATTENDING THE SENIOR PROM AT THE SCHOOL FOR THE DEAF."

This is your column, and I solicit your input and/or your comments. If you are not into RTTY/AMTOR, I urge you to try it; or if you are a returning old-timer, like Norm Wilford, W1TLZ, who drifted away from RTTY, I strongly suggest you rejoin the ranks. It's the best! 73 and happy DX-ing. Bill Snyder, WØLHS, 1514 S. 12th, Fargo, ND 58103. DIT DIT □

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

Tar-Heel Novice Tapes

Tar-Heel Novice Tapes consist of five 60-minute cassette tapes especially prepared for easy-going learning of the International Morse Code at 5 wpm. They were designed and developed by an easy-going resident of the Tar-Heel State of North Carolina, which is how they got their name of *T*ar-Heel *N*ovice *T*apes: TNT. Dynamite, some call them.

How do TNT tapes differ from other code practice tapes? There is the friendly but determined expert talking to you throughout the tapes, announcing the code when it needs to be announced, making you work for it when you should. There is also the constant repetition of characters that saves you from the distraction of rewinding the tape for something you may have missed. And much more that all adds up to learning the International Morse Code with the very finest tools available.

Easy going? You bet. Five hours of tape practice as close to personalized code training as you might find in a classroom. Each tape entirely different from the others. Learn the complete alphabet and digits. (Punctuations can come later, when easier to learn. First, the alphabet.)

Learning the International Morse Code at home, on your own, can be a trial. You need good practice tapes. Lots of them.

In the past, TNT tapes had been made available only to individuals who were studying at home, or to Novice classes. But the demand for code practice tapes with plenty of material on them, especially those that work well with our SUBLIMINAL CODE LEARNING tape, has convinced us to custom-made sets of TNT tapes for individual purchase.

Try our TNT tapes for four weeks to see how you like them. They are guaranteed to please you or your purchase price will be refunded. All tapes are shipped first class mail or UPS.

To order, send check for $39.50 plus $2.50 shipping/handling, payable to Vince Luciani, K2VJ, to: Cologne Press, P.O. Box 682, Cologne, NJ 08213, ATTN: Vince Luciani. (NOTE: You save the $2.50 charge if you purchase our SUBLIMINAL CODE LEARNING tape with the TNT tapes.) □

SUBLIMINAL CODE LEARNING tape

SUBLIMINAL CODE LEARNING is a 60-minute cassette tape designed to help interested people learn the International Morse Code. It is also for those who need help in improving their code skills to higher speeds.

Subliminal learning tapes are rapidly increasing in popularity, the reason being their ability to condition the mind to memorize and learn new material.

You can play a subliminal tape at home, at work or in the car. SUBLIMINAL CODE LEARNING does *not* use hypnosis or meditation. It contains only the powerful suggestive code-learning phrases for the subconscious.

Subliminal learning can be dramatically effective in influencing your subconscious mind to work *for* you rather than against you. And the more you play the tape, the better you will be.

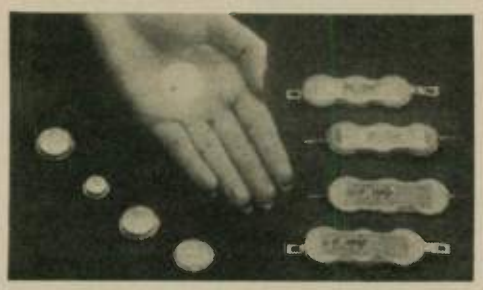
On one side of the tape, author Vince Luciani, K2VJ, announces the entire code alphabet complete with the dits and dahs for each letter. But you won't hear any of it. Instead, what you hear will be beautiful, relaxing, new-age music. The code, you see, is subliminal for only your subconscious mind to "hear" and learn.

The other side of the tape contains the vital affirmations which are meant to help you appreciate the code as fun, and the learning of it as a pleasure. This side is particularly delightful.

Please understand that SUBLIMINAL CODE LEARNING is a supplement to the regular code practice you must take as described in *Amateur Radio, Super Hobby!*.

We guarantee you will be pleased with this tape, or your purchase price will be promptly refunded.

To order, send check for $10.95, plus $1.50 shipping/handling, payable to Vince Luciani, K2VJ, to: Cologne Press, P.O. Box 682, Cologne, NJ 08213, ATTN: Vince Luciani. Ask for SUBLIMINAL CODE LEARNING. □



Button-type Ni-Cd cell batteries

GS Battery, provider of consumer and manufacturing batteries for over 100 years, features their button-type, Ni-Cd cell batteries. The "GF" Series (GF 50 and GF 100) are the thinnest in the world (2.8mm).

GS engineering design advances provide for rechargeability, long service life, excellent high-rate discharge, and a leak-proof capsule design for reliable use and equipment protection.

The "GF" Series Button Type, Ni-Cd cell batteries are perfect as back-up power sources for IC memory (computerized circuitry — telephones, computers, electronic equipment, etc.); back-up power sources for solar cell generating sources (radios, clocks, calculators, etc.); and direct power source for miniature toys, electronic games, miniaturized portable electronic equipment.

GS will also, by request, assemble any number of cells in series to meet consumer needs. GS's technology — which powers everything from watches to video recorders, computers, cars, buildings and spacecraft — is found in every GS battery.

Ask for GS Battery products at your local dealer. □

Commodore software

COMPUTERSTUFF announces the release of "RBBS/64" Amateur Radio "mailbox" software for Commodore computers.

RBBS/64 is a full-featured radio bulletin board program for use with the Commodore 64 and 1541 Disk drive. Thirty user commands are available to allow the calling station to create, review, save and read messages.

Advanced capabilities include: automatic logging of user call sign, time and date of access; automatic clock calendar updates for weeks of un-attended use; automatic system shutdown in the event of a component failure; file protect option for "read only" messages; serial printer support; baud/mode change; expert user mode; and full directory and storage for up to 100 messages. "Break-in" mode allows sysop to modify system parameters, set "Beacon mode" and directly communicate with other stations without stopping the program.

A special configuration program is included which will automatically format and prepare a file disk and encode it with the owner's call, QTH and system baud rate (60-132 wpm Baudot or 110-1200 baud ASCII), eliminating the need for manually reentering the information every time the system is loaded.

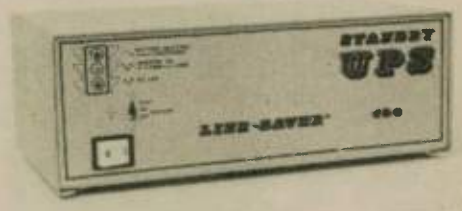
A third program included with the RBBS/64 system is a powerful file editor which allows the operator to examine, print, update, edit or delete messages; convert programs to RBBS/64 format; and view or print the user log. The complete RBBS/64 software system is available only on diskette for the Commodore 64. The complete RBBS/64 package including three programs on disk, instruction manual and gold contact "User Port" I/O connector is available directly from COMPUTERSTUFF for $60 (U.S.) postpaid.

Detailed information and order forms for RBBS/64 may be obtained by writing to COMPUTERSTUFF, 308½ Green St., Yankton, SD 57078; (605) 665-2833. □

LINE-SAVER

Kalglo Electronics Co., Inc. has announced a new model to its LINE-SAVER™ standby uninterruptible power systems. Designated the LINE-SAVER, Model LS-480, it represents a breakthrough in standby uninterruptible power systems for use with the more powerful configurated XT, AT and advanced types of business microcomputers.

It is engineered to provide trouble-free standby back-up power in 4ms or less and is available in models for 120/240 volts, 60/50 Hz, with 480 watts-VA capacity. The unit utilizes the latest "Pulse Width Modulation" (PWM) to regulate the RMS AC output voltage for greater efficiency to various load conditions. The PWM AC output also increases battery efficiency to increase back-up time; 11 minutes at full load, 30 minutes at one-half load, 45 minutes at one-third load.



In addition, the unit is furnished with a maintenance-free sealed rechargeable battery, replaceable fuses and two multiple staged voltage surge and noise-protected AC outlets. The unit features an exclusive audible and visual power failure warning system, test mode indicator switch and front-mounted illuminated master control switch.

The unit's compact design, 13¼" L × 7"W × 5"H, allows for portability and its external battery connectors allows an additional battery pack to be added to extend back-up time. The suggested retail price is $795.

For more details contact: Kalglo Electronics Co., Inc., Dept. LS, 6584 Ruch Rd., E. Allen Twp., Bethlehem, PA 18017. □

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

VISIT YOUR LOCAL RADIO STORE

ARIZONA

Ham Radio Outlet
1702 W. Camelback
Phoenix, AZ 85015
(602) 242-3515

CALIFORNIA

C & A Roberts Inc.
18511 Hawthorne Blvd.
Torrance, CA 90504
(213) 370-7451
834-5868 (24 Hr. Phone)

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801

Henry Radio
931 N. Euclid
Anaheim, CA 92801

Ham Radio Outlet
999 Howard Avenue
Burlingame, CA 94010

Jun's Electronics
3919 Sepulveda Blvd.
Culver City, CA 90230

Fontana Electronics
8628 Sierra Avenue
Fontana, CA 92335
(714) 822-7710 or (714) 822-7725

Jun's Electronics
7352 University Ave.
La Mesa, CA 92041

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 820-1234

Ham Radio Outlet
2811 Telegraph Ave.
Oakland, CA 94609

The Radio Place
2964 Freeport Blvd.
Sacramento, CA 95818
(916) 441-7388

Ham Radio Outlet
5375 Kearny Villa Road
San Diego, CA 92123

Quement Electronics
1090 S. Bascom Avenue
San Jose, CA 95128

Tele-Com/Alltronics
15460 Union Avenue
San Jose, CA 95124
(408) 377-4479 or 371-3053

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91401

HAWAII

Honolulu Electronics
819 Keeaumoku Street
Honolulu, HI 96814
(808) 949-5564

ILLINOIS

Aureus Electronics, Inc.
1415 N. Eagle
Naperville, IL 60540

MASSACHUSETTS

TEL-COM Communications
675 Great Road
Littleton, MA 01460
(617) 486-3400 or 486-3040

MICHIGAN

Purchase Radio Supply
327 E. Hoover Ave.
Ann Arbor, MI 48104
(313) 668-8696

MISSOURI

Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA

Jun's Electronics
460 E. Plumb Lane, #107
Reno, NV 89502

NEW HAMPSHIRE

Rivendell Associates
RFD5
Warner Hill Rd.
Derry, NH 03038
(603) 434-5371

NEW YORK

Radio World, Inc.
Oneida Cnty. Airport Terminal Bldg.
Oriskany, NY 13424
(315) 736-0184
(800) 448-9338/out-of-state

OHIO

Universal Amateur Radio, Inc.
1280 Aida Drive
Reynoldsburg (Columbus), OH 43068
(614) 866-4267

RF TRANSISTORS, MICROWAVE TRANSISTORS

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
2N1561	$25.00	2N4416	2.25	2N5920	$ 70.00	181-3	15.00	40608 RCA	$ 2.48	A2X1698	POR	BFY90	$ 1.50	EFJ4017	24.00
2N1562	25.00	2N4427	1.25	2N5921	80.00	210-2	10.00	40673 RCA	2.50	A3-12	14.45	BLW60C5	15.00	EFJ4021	24.00
2N1692	25.00	2N4428	1.85	2N5922	10.00	269-1	18.00	40894 RCA	1.00	A50-12	24.00	BLX67	12.25	EFJ4026	35.00
2N2857	1.55	2N4430	11.80	2N5923	25.00	281-1	15.00	60247 RCA	25.00	A209	10.00	BLX67C3	12.25	EN15745	20.00
2N2857JAN	4.10	2N4927	3.90	2N5941	23.00	282-1	30.00	61206 RCA	100.00	A283	6.00	BLX93C3	22.21	FJ9540	16.00
2N2857JANTX	4.50	2N4957	3.45	2N5942	40.00	482	7.50	62800A RCA	60.00	A283B	6.00	BLY87A	7.50	FSX52WF	58.00
2N2876	13.50	2N4959	2.30	2N5944	10.35	564-1	25.00	62803 RCA	100.00	A1610	19.00	BLY88C3	13.08	G65739	25.00
2N2947	18.35	2N5016	18.40	2N5945	10.00	698-3	15.00	430414/3990RCA	50.00	AF102	2.50	BLY89C	13.00	G65386	25.00
2N2948	13.00	2N5026	15.00	2N5946	12.00	703-1	15.00	3457159 RCA	20.00	AFY12	2.50	BLY90	45.00	GM0290A	2.50
2N2949	15.50	2N5070	18.40	2N5947	9.20	704	4.00	3729685-2 RCA	75.00	AR7115	20.00	BLY92	13.30	HEP76	4.95
2N3118	5.00	2N5090	13.80	2N6080	6.00	709-2	11.00	3729701-2 RCA	50.00	AT41435-5	6.35	BLY94C	45.00	HEPS3002	11.40
2N3119	4.00	2N5108	3.45	2N6081	7.00	711	4.00	3753883 RCA	50.00	B2-8Z	10.70	BLY351	10.00	HEPS3003	30.00
2N3134	1.15	2N5109	1.70	2N6082	9.00	733-2	15.00	615467-902	25.00	B3-12	10.85	BLY568C/CF	30.00	HEPS3005	10.00
2N3287	4.90	2N5160	3.45	2N6083	9.50	798-2	25.00	615467-903	40.00	B12-12	15.70	C2M70-28R	92.70	HEPS3006	19.90
2N3288	4.40	2N5177	21.62	2N6084	12.00	3421	28.00	2SC568	2.50	BAL0204125	152.95	C25-28	57.00	HEPS3007	25.00
2N3309	4.85	2N5179	1.04	2N6094	11.00	3683P1	15.00	2SC703	36.00	BF25-35	56.25	C4005	2.50	HEPS3010	11.34
2N3375	17.10	2N5216	56.00	2N6095	12.00	3992	25.00	2SC756A	7.50	B40-12	19.25	CD1659	20.00	HF8003	10.00
2N3478	2.13	2N5470	75.00	2N6096	16.10	4164P1	15.00	2SC781	2.80	B70-12	55.00	CD1899	20.00	HFET2204	112.00
2N3553	1.55	2N5583	3.45	2N6097	20.70	4243P1	28.00	2SC1018	1.00	BF272A	2.50	CD1920	10.00	HP35821	38.00
2N3553JAN	2.90	2N5589	9.77	2N6105	21.00	4340P3	18.00	2SC1042	24.00	BFQ85	2.50	CD2188	18.00	HP35826B	32.00
2N3632	15.50	2N5590	10.92	2N6136	21.85	4387P1	27.50	2SC1070	2.50	BFR21	2.50	CD2545	24.00	HP35826E	32.00
2N3733	11.00	2N5591	13.80	2N6166	40.24	7104-1	28.00	2SC1216	2.50	BFR90	1.00	CD2664A	16.00	HP35831E	30.00
2N3818	5.00	2N5596	99.00	2N6267	142.00	7249-2	10.50	2SC1239	2.50	BFR91	1.65	CD3167	92.70	HP35832E	50.00
2N3866	1.30	2N5636	12.00	2N6304	1.50	7283-1	37.50	2SC1251	24.00	BFR99	2.50	CD3353	95.00	HP35833E	50.00
2N3866JAN	2.20	2N5637	15.50	2N6368	30.00	7536-1	30.00	2SC1306	2.90	BFT12	2.50	CD3435	26.30	HP35859E	75.00
2N3866JANTX	3.80	2N5641	12.42	2N6439	55.31	7794-1	10.50	2SC1307	5.50	BFW16A	2.50	CD3900	152.95	HP35866E	44.00
2N3866JANTXV	4.70	2N5642	14.03	2N6459	18.00	7795	15.00	2SC1424	2.80	BFW17	2.50	CM25-12	20.00	HXTR2101	44.00
2N3866AJANTXV	5.30	2N5643	25.50	2N6567	10.06	7795-1	15.00	2SC1600	5.00	BFW92	1.50	CM40-12	27.90	HXTR3101	7.00
2N3924	3.35	2N5645	13.80	2N6603	13.50	7796-1	24.00	2SC1678	2.00	BFX44	2.50	CM40-28	56.90	HXTR5101	31.00
2N3926	16.10	2N5646	20.70	2N6604	13.50	7797-1	36.00	2SC1729	32.40	BFX48	2.50	CME50-12	30.00	HXTR6104	68.00
2N3927	17.25	2N5651	11.05	2N6679	44.00	40081 RCA	5.00	2SC1760	1.50	BFX65	2.50	CTC2001	42.00	HXTR6105	31.00
2N3948	1.75	2N5691	18.00	2N6680	80.00	40279 RCA	10.00	2SC1909	4.00	BFX84	2.50	CTC2005	55.00	HXTR6106	33.00
2N3950	25.00	2N5764	27.00	021-1	15.00	40280 RCA	4.62	2SC1945	10.00	BFX85	2.50	CTC3005	70.00	J310	1.00
2N3959	3.85	2N5836	3.45	01-80703T4	65.00	40281 RCA	10.00	2SC1946	40.00	BFX86	2.50	CTC3460	20.00	JO2000	10.00
2N4012	11.00	2N5842	8.45	35C05	15.00	40282 RCA	20.00	2SC1947	10.00	BFX89	1.00	DV2820S	25.00	JO2001	25.00
2N4037	2.00	2N5847	19.90	102-1	28.00	40290 RCA	2.80	2SC1970	2.50	BFY11	2.50	DXL1003P70	22.00	JO4045	24.00
2N4041	14.00	2N5849	20.00	103-1	28.00	40292 RCA	13.05	2SC1974	4.00	BFY18	2.50	DXL2001P70	19.00	KD5522	25.00
2N4072	1.80	2N5913	3.25	103-2	28.00	40294 RCA	2.50	2SC2166	5.50	BFY19	2.50	DXL2002P70	14.00	KJ5522	25.00
2N4080	4.53	2N5916	36.00	104P1	18.00	40341 RCA	21.00	2SC2237	32.00	BFY39	2.50	DXL3501AP100F	47.00	M1106	13.75
2N4127	21.00			163P1	10.00			2SC2695	47.00			EFJ4015	12.00		

* R F TRANSISTORS *

TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE	TYPE	PRICE
M1107	$16.75	MRF221	10.00	MRF525	3.45	MSC82001	33.00	PT4642	20.00	SD1007-4	15.00	SD1088-8	22.00	SD1220	8.00
M1131	5.15	MRF223	13.00	MRF559	1.76	MSC82014	33.00	PT5632	4.70	SD1007-5	15.00	SD1089-5	15.00	SD1220-1	9.50
M1132	7.25	MRF224	13.50	MRF587	11.00	MSC82020M	130.00	PT5749	25.00	SD1009	$15.00	SD1090	15.00	SD1220-9	8.00
M1134	13.40	MRF227	3.45	MRF605	20.00	MSC82030	33.00	PT6612	25.00	SD1009-2	15.00	SD1094	15.00	SD1222-8	16.00
M9116	29.10	MRF230	2.00	MRF618	25.00	MSC83001	40.00	PT6619	20.00	SD1012	10.00	SD1095	15.00	SD1222-11	7.50
M9579	6.00	MRF231	10.00	MRF626	12.00	MSC83003	82.00	PT6708	25.00	SD1012-3	10.00	SD1098-1	30.00	SD1224-10	18.00
M9580	7.95	MRF232	12.07	MRF628	8.65	MSC83005	70.00	PT6709	25.00	SD1012-5	10.00	SD1100	5.00	SD1225	18.00
M9587	7.00	MRF237	3.15	MRF629	3.45	MSC83026	POR	PT6720	25.00	SD1013	10.00	SD1109	18.00	SD1225-1	15.00
M9588	5.20	MRF238	13.80	MRF641	25.30	MSC83303	POR	PT8510	15.00	SD1013-3	10.00	SD1115-2	7.50	SD1229-7	10.95
M9622	5.95	MRF239	17.25	MRF644	27.60	MSC84900	60.00	PT8524	25.00	SD1013-7	10.00	SD1115-3	7.50	SD1229-16	10.95
M9623	7.95	MRF245	35.65	MRF646	29.90	MT4150	14.40	PT8609	25.00	SD1016	15.00	SD1115-7	2.10	SD1232	4.00
M9624	9.95	MRF247	31.00	MRF648	33.35	MT5126	25.00	PT8633	25.00	SD1016-5	15.00	SD1116	5.00	SD1240-8	15.00
M9625	15.95	MRF304	36.00	MRF816	15.00	MT5596(2N)	99.00	PT8639	25.00	SD1018-4	13.00	SD1118	22.00	SD1244-1	14.00
M9630	14.00	MRF306	50.00	MRF823	20.00	MT5768(2N)	95.00	PT8659	25.00	SD1018-6	13.00	SD1119	5.00	SD1244H12	25.00
M9740	27.90	MRF313	11.15	MRF846	44.85	MT8762	25.00	PT8679	25.00	SD1018-7	13.00	SD1124	50.00	SD1262	15.00
M9741	27.90	MRF314	29.21	MRF892	35.50	NEO2136	2.00	PT8708	20.00	SD1018-15	13.00	SD1132-1	15.00	SD1263	15.00
M9755	16.00	MRF315	28.86	MRF894	46.00	NEO2160ER	$100.00	PT8709	20.00	SD1020-5	10.00	SD1132-4	12.00	SD1263-1	15.00
M9780	5.50	MRF316	55.43	MRF901 3 Lead	1.00	NEO21350	5.30	PT8727	29.00	SD1028	15.00	SD1133	9.50	SD1272	10.95
M9827	11.00	MRF317	63.94	MRF901 4 Lead	2.00	NE13783	61.00	PT8731	25.00	SD1030	12.00	SD1133-1	10.00	SD1272-1	10.95
M9848	35.00	MRF412	18.00	MRF902/2N6603JAN	15.00	NE21889	43.00	PT8742	19.10	SD1030-2	12.00	SD1134-1	2.50	SD1272-2	10.95
M9850	13.50	MRF420	20.12	MRF902B	18.40	NE57835	5.70	PT8787	25.00	SD1040	5.00	SD1134-4	12.00	SD1272-4	10.95
M9851	20.00	MRF421	25.00	MRF904	2.30	NE64360ER-A	100.00	PT8828	25.00	SD1040-2	20.00	SD1134-17	12.00	SD1278	13.75
M9860	8.25	MRF422	38.00	MRF905	2.55	NE64480 (B)	94.00	PT9700	25.00	SD1040-4	10.00	SD1135	10.25	SD1278-1	13.75
M9887	2.80	MRF427	17.25	MRF911	2.50	NE73436	2.50	PT9702	25.00	SD1040-6	5.00	SD1135-3	12.00	SD1278-5	13.75
M9908	6.95	MRF428	63.00	MRF965	2.55	NE77362ER	100.00	PT9783	16.50	SD1043	12.00	SD1136	12.50	SD1279-1	18.00
M9965	12.00	MRF433	12.07	MRF966	3.55	NE98260ER	100.00	PT9784	32.70	SD1043-1	10.00	SD1136-2	12.50	SD1279-3	18.00
MM1500	25.00	MRF449/A	12.65	MRF1000MA	32.77	PRT8637	25.00	PT9790	56.00	SD1045	3.75	SD1143-1	10.00	SD1281-2	8.00
MM1550	10.00	MRF450/A	14.37	MRF1004M	31.05	PT3127A	5.00	PT31083	20.00	SD1049-1	2.00	SD1143-3	17.00	SD1283	10.00
MM1552	50.00	MRF452/A	17.00	MRF2001	41.74	PT3127B	5.00	PT31962	20.00	SD1053	4.00	SD1144	4.00	SD1283-2	10.60
MM1553	50.00	MRF453/A	18.40	MRF2005	54.97	PT3127C	20.00	PTX6680	20.00	SD1057	10.00	SD1145-5	15.00	SD1283-3	10.00
MM1607	8.45	MRF454/A	20.12	MRF5176	24.00	PT3127D	20.00	RE3754	25.00	SD1065	4.75	SD1146	15.00	SD1283-4	10.00
MM1614	10.00	MRF455/A	16.00	MRF8004	2.10	PT3127E	20.00	RE3789	25.00	SD1068	15.00	SD1147	15.00	SD1289-1	15.00
MM1810	15.00	MRF458	$20.70	MSC1720-12	225.00	PT3190	20.00	RF35	16.00	SD1074-2	18.00	SD1188	10.00	SD1290-4	15.00
MM1810	15.00	MRF464	25.30	MSC1821-3	125.00	PT3194	20.00	RF85	17.50	SD1074-4	28.00	SD1189	24.00	SD1290-7	15.00
MM1943	1.80	MRF466	18.97	MSC1821-10	225.00	PT3195	20.00	RF110	21.00	SD1074-5	28.00	SD1200	1.50	SD1300	1.25
MM2608	5.00	MRF472	1.50	MSC2001	30.00	PT3537	7.80	S50-12	23.80	SD1076	18.50	SD1201-2	15.00	SD1301-7	3.00
MM3375A	17.10	MRF475	3.10	MSC2010	93.00	PT4166E	20.00	S3006	15.00	SD1077	4.00	SD1202	$10.00	SD1304-8	$ 2.50
MM4429	10.00	MRF476	3.16	MSC2223-10	245.00	PT4176D	25.00	S3007	10.00	SD1077-4	4.00	SD1212-8	4.95	SD1305	3.00
MM8000	1.15	MRF477	20.00	MSC2302	POR	PT4186B	5.00	S3031	22.00	SD1077-6	4.00	SD1212-11	4.95	SD1307	3.00
MM8006	2.30	MRF479	8.05	MSC3000	35.00	PT4209	25.00	SCA3522	5.00	SD1078-6	24.00	SD1212-16	4.95	SD1308	3.00
MM8011	25.00	MRF492	23.00	MSC3001	38.00	PT4209C/5645	25.00	SCA3523	5.00	SD1080-7	7.50	SD1214-7	5.00	SD1311	1.00
MPSU31	1.01	MRF502	1.04	MSC73002	POR	PT4556	24.60	SD345	5.00	SD1080-8	6.00	SD1214-11	5.00	SD1317	8.00
MRA2023-1.5	42.50	MRF503	6.00	MSC73001	POR	PT4570	7.50	SD445	5.00	SD1080-9	3.00	SD1216	12.00	SD1319	2.50
MRF134	10.50	MRF504	7.00	MSC80064	35.00	PT4577	20.00	SD1004	15.00	SD1084	8.00	SD1219-4	15.00	SD1345-6	5.00
MRF136	16.00	MRF509	5.00	MSC80091	10.00	PT4590	5.00	SD1007	15.00	SD1087	15.00	SD1219-5	15.00	SD1347-1	1.00
MRF171	35.00	MRF511	10.69	MSC80099	3.00	PT4612	20.00	SD1007-2	15.00	SD1088	22.00	SD1219-8	15.00	SD1365-1	2.50
MRF208	11.50	MRF515	2.00	MSC80593	POR	PT4628	20.00								
MRF212	16.10	MRF517	2.00	MSC80758	POR	PT4640	20.00								

• OUR STOCK CHANGES DAILY SO CALL IF THE PART YOU NEED IS NOT LISTED

We Can Cross Reference Most RF Transistors, Diodes Hybrid Modules And Any Other Type Of Semiconductor.

"All parts may be new or surplus, and parts may be substituted with comparable parts if we are out of stock of an item."

TERMS: DOMESTIC: Prepaid, C.O.D. or Credit Card
FOREIGN: Prepaid only, U.S. Funds, Money Order, or Cashier's Check Only

C.O.D. Acceptable by telephone or mail. Payment from customer will be by Cash, Money Order, or Cashier's Check. We are sorry but we cannot accept personal checks for C.O.D.'s. C.O.D.'s are shipped by air only and thru United Parcel Service.

CONFIRMING ORDERS: We would prefer that confirming orders not be sent after a telephone order has been placed. If company policy necessitates a confirming order, please mark "CONFIRMING" boldly on the order. If problems or duplicate shipments occur due to an order which is not properly marked, the customer will be held responsible for any charges incurred, plus a 15% restock charge on the returned parts.

CREDIT CARDS: We are now accepting MASTERCARD, VISA, AND AMERICAN EXPRESS

DATA SHEETS: When we have data sheets in stock on devices we will supply them with the order.

DEFECTIVE MATERIALS: All claims for defective materials must be made within 30 DAYS after receipt of the parcel. All claims must include the defective material (for testing purposes), a copy of our invoice, and a return authorization number which must be obtained prior to shipping the merchandise back to us. This can be obtained by calling (602) 242-8916 or sending us a postcard. Due to Manufacture warranties we are unable to replace or issue credit on items which have been soldered to or have been altered in any way. All return items must be packed properly or it will void all warranties. We do not assume responsibility for shipping and handling charges incurred.

DELIVERY: Orders are usually shipped the same day they are placed or the next business day, unless we are out of stock on an item. The customer will be notified by post card if we are going to backorder the item. Our normal shipping method is UPS or U.S. Mail depending on size or the weight of the package. Test Equipment is shipped only by air and is freight collect, unless prior arrangements have been made and approved.

FOREIGN ORDERS: All foreign orders must be prepaid with a Cashier's Check, or Money Order made out in U.S. FUNDS ONLY. We are sorry but C.O.D. is not available to foreign countries and letters of credit are unacceptable as a form of payment. Further information is available on request.

HOURS: Monday thru Friday 8:30 a.m. to 5:00 p.m. Saturdays 8:30 a.m. to 4:30 p.m.

INSURANCE: Please include 25¢ for each additional $100.00 over $100, UPS ONLY. All insured packages are shipped thru UPS only. If you wish to have it shipped through the post office there is a $5.00 fee which is additional to the shipping, handling and insurance.

OPEN ACCOUNTS: We regret that we do not issue open accounts.

ORDER FORMS: New order forms are included with each order for your convenience. Additional order forms are available on request.

PARTS: We reserve the right to substitute or replace any item with a part of equal or comparable specification.

POSTAGE: Minimum shipping and handling in the U.S., Canada, and Mexico is $3.00 for ground shipments, all other countries is $5.50. Air rates are available at the time of your order. All foreign orders please include 25% of the ordered amount for shipping and handling. C.O.D.'s are shipped AIR ONLY.

PREPAID ORDERS: Orders must be accompanied by a check.

PRICES: Prices are subject to change without notice.

PURCHASE ORDERS: We accept purchase orders only when they are accompanied by a check.

RESTOCK CHARGES: If parts are returned to MHZ ELECTRONICS, INC. due to customer error, the customer will be held responsible for all fees incurred and will be charged a 15% RESTOCK CHARGE with the remainder in CREDIT ONLY. The following must accompany any return; A copy of our invoice, return authorization number which must be obtained prior to shipping the merchandise back. Returns must be done within 10 DAYS of receipt of parcel. Return authorization numbers can be obtained by calling (602) 242-8916 or notifying us by post card. Return authorizations will not be given out on our 800 number.

SALES TAX: ARIZONA residents must add 6% sales tax, unless a signed ARIZONA resale tax card is currently on file with us. All orders placed by persons outside of ARIZONA, but delivered to persons in ARIZONA are subject to the 6% sales tax.

SHORTAGE OR DAMAGE: All claims for shortages or damages must be made within 5 DAYS of receipt of parcel. Claims must include a copy of our invoice, along with a return authorization number which can be obtained by contacting us at (602) 242-8916 or sending a post card. Authorizations cannot be on our 800 number. All items must be properly packed. If items are not properly packed make sure to contact the carrier so that they can come out and inspect the package before it is returned to us. Customers which do not notify us within this time period will be held responsible for the entire order as we will consider the order complete.

OUR 800 NUMBER IS STRICTLY FOR ORDERS ONLY (800) 528-0180. INFORMATION CALLS ARE TAKEN ON (602) 242-8916 or (602) 242-3037.

MHz electronics

2111 W. CAMELBACK ROAD
PHOENIX, ARIZONA 85015
For Information call: (602) 242-3037

Toll Free Number
800-528-0180
(For orders only)

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

West Coast 160 Bulletin SSB Contest

The West Coast 160 Bulletin SSB Contest will be held 09-10 February (SSB), from 0000 GMT, Saturday the 9th to 2359 GMT, Sunday the 10th. Single operator only.

Exchange: RST, QTH

Class: Subscribers and non-subscribers

Sub-Class: 3, 2 and 1kW, 250 watts, QRP. Power is measured with peak meter.

Scoring: 10 pts. per QSO

Multipliers: states, VE province, country

Penalties: Deduct 3 QSOs per dupe.

Awards: *Subscribers* — Plaque to overall winner and to class winner. Certificates to each state, VE and country winner. *Non-subscribers* — Plaque to overall winner; certificate to class winners, as well as state, VE's and country winners.

Logs: Include date, time RST/RST, QTH. Enclose a statement declaring your power rating. Those who falsify their power rating will be banned from the contest for three years.

To find your PEP rating, see following: Power out × 2, 1500 watts × 2 = 3000 watts PEP class. *Scoring:* 300 QSOs × 10 = 3000, 35 states, 5 VE's, 10 countries = 50, 3000 × 50 = 150,000 pts. FINAL SCORE.

Send logs to: R. Koziomkowski, 5 Watson Dr., Portsmouth, RI 02871. Logs must be postmarked before 31 March 1985. □

YL-OM Contest

The operating hours for the YL-OM Contest are: *Phone* — 1800 UTC, Saturday, 09 February to 1800 UTC, Sunday, 10 February; *CW* — 1800 UTC, Saturday, 23 February to 1800 UTC, Sunday, 24 February.

Eligibility: All licensed men and women operators throughout the world are invited to participate.

Procedure: OMs call "CQ YL" and YLs call "CQ OM".

Operation: All bands may be used. No crossband operation. Net contacts and repeater contacts do not count. A station may be counted only *once* in each contest for credit.

Exchange: Station worked, QSO number, RS or RST, ARRL Section or country. Entries in log must also show time, band, date and transmitter power. (Please know your ARRL Section. A section list is available for an SASE to YLRL vice president.)

Scoring: A) Phone and CW will be scored as separate contests. Submit separate logs for each contest. B) 1 pt. is earned for each station worked, YL to OM or OM to YL. C) Multiply the number of QSOs by the total number of different ARRL sections and countries worked. D) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of (C) by 1.25 (low-power multiplier).

Logs: All logs must show ARRL section or country to qualify for awards. Do not send carbon copies of logs. Please print or type. Logs must be signed by the operator and *no logs will be returned.* Remember to file separate logs for each contest. Logs must show claimed score and be postmarked by 15 March 1985, and received no later than *05 April 1985* or they will be disqualified. Please send logs to: Marty Silver, NY4H, 3118 Eton Rd., Raleigh, NC 27608, USA.

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

Awards: *1st place phone* — YL cup, OM cup; *1st place CW* — YL cup, OM cup. 2nd and 3rd place YL and OM winners in each contest will receive certificates. The winner of the phone contest cup is also eligible to win the CW cup. Certificates will be awarded to the high YL and OM phone and YL and OM CW winners of each U.S. and VE call district and country.

Suggested frequencies:

CW:
80 meters — 3.540- 3.570
40 meters — 7.040- 7.070
20 meters — 14.040-14.070
15 meters — 21.180-21.210
10 meters — 28.180-28.210

SSB:
80 meters — 3.940- 3.970
40 meters — 7.240- 7.270
20 meters — 14.280-14.310
15 meters — 21.380-21.410
10 meters — 28.580-28.610

• Help a friend become a ham! •

Florida

Southwest Florida's oldest and largest Amateur Radio club has scheduled its exciting annual hamfest for Saturday, 23 February. The Fort Myers City of Palms ARC will play host to visiting amateurs and exhibitors this year inside the 5,000 square foot air-conditioned Moose Hall at 1900 Park Meadow Drive.

The 225 members of the 28-year-old club will be offering ARRL volunteer license exams (by previous registration only; no walk-in), and there will be drawings for a main prize and numerous hourly prizes. Also, considerable emphasis will be placed upon computer exhibits.

Indoor flea market tables are $10 and may be shared by two exhibitors. Admission is $3 per person at the door (no mail orders). There is ample free parking.

Talk-in on 146.28-146.88.

For more information, contact George X. Sand, W4EOB, 1412 Winkler Ave., Fort Myers, FL 33901. □

Iowa

The DAVENPORT RADIO AMATEUR CLUB will hold its 14th annual hamfest at the Davenport Masonic Temple, Brady Street (Hwy. 61) and 7th Street, on Sunday, 24 February, from 8:00 a.m. to 4:00 p.m.

Admission: $2 advance, $3 at the door. Tables are available and must be reserved for $7 with $2 extra for AC hook-up. Table set-up begins at 7:00 a.m. All indoors. Food and drink.

Talk-in on 146.28/88, WØBXR.

For table reservations and advance tickets, contact Dave Johannsen, WBØFBP, 2131 Myrtle St., Davenport, IA 52804.

Exams will also be held for Amateur Radio licenses. Send Form 610 with copy of license and $4 check (made payable to ARRL/VEC) to Al Broendel, N9OK, 2712-38th St., Rock Island, IL 61201, to arrive by 25 January. □

Michigan

The 2nd Annual Amateur Radio Auction sponsored by the HOLLAND ARC, will be held Saturday, 09 March, at the Hudsonville High School auditorium, 5051-32nd Ave., Hudsonville, Michigan, .6 mile north of I-196, exit #62.

There will be no admission fee. Equipment can be checked in from 8:00 a.m. to 12:00 noon. The auction will run from 9:00 a.m. to 1:00 p.m. A 10 percent donation will be received for each item sold. Refreshments will be available.

Talk-in on 146.06 and 52.

For more information, contact Dan Ruiter, KC8KN, 7106 Michael Dr., Hudsonville, MI 49426. □

Minnesota

The ROBBINSDALE ARC will be sponsoring the 4th Annual Midwinter Madness Hobby Electronics Show on Saturday, 23 February, at Totino-Grace High School, 1350 Gardena Avenue, NE, Fridley, Minnesota (suburb of Minneapolis).

Flea market opens at 8:00 a.m.; retail exhibits open at 9:00 a.m.; show closes with grand prize drawings at 2:00 p.m. Admission is $4 at the door. Manufacturers, dealers, flea market of radio, computer, satellite TV, etc. Prize drawings all day.

Talk-in on 147.60/00 KØLTC repeater and 146.52 simplex.

For more information, contact Robbinsdale ARC, P.O. Box 22613, Robbinsdale, MN 55422; or call Bob at (612) 533-7354.

FCC tests for all grades of license will be given. Write to: Elmo Nygard, 4151 Adair Ave. N, Robbinsdale, MN 55422. □

Ohio

The 24th Annual MANSFIELD MID-WINTER HAMFEST/AUCTION will be held Sunday, 10 February, at the Richland County Fairgrounds, Mansfield, Ohio.

Prizes, auction and flea market in large modern heated buildings. Doors open to the public at 8:00 a.m. Tickets $3 in advance and $4 at the door. Tables $5 in advance; $6 at the door. Half-tables available.

Talk-in on 146.34/94.

For additional information or advanced tickets/tables, send SASE to Dean Wrasse, KB8MG, 1094 Beal Rd., Mansfield, OH 44905, or phone (419) 589-2415.

An ARRL/VEC license exam will be held at the Mansfield Campus of the Ohio State University/North Central Technical College at 1:00 p.m. the day of the hamfest. Send an SASE, Form 610 and check for $4 payable to "ARRL/VEC", to Lloyd Nelson, N8BAZ, 630 Oak St. Lot 82, Mansfield, OH 44907. Exam site is less than two miles from hamfest. □

•

Announcing CINCINNATI ARRL '85, the 5th Annual Ohio State Convention and Flea Market. The event will be held 22-24 February at the Great Oaks Vocational Campus, Sharonville (Cincinnati), Ohio.

Two days of forums (14), vendors, flea market, meetings, food, women's activities, banquet.

Admission $5. Flea market, add $5/non-reserved space, $10 reserved space. For reservations, call (513) 851-1056.

For general information and schedule, contact CINCINNATI ARRL '85, P.O. Box 11300, Cincinnati, OH 45211; (513) 921-3844 or 471-4775. Vendors call (513) 563-7373. □

•

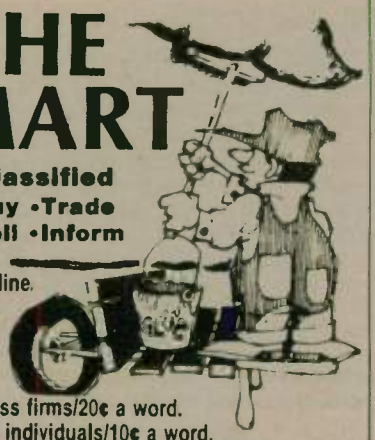
The TEAYS ARC 7th Annual Hamfest will be held on Sunday, 03 March, at K.C. Lodge, two miles north of Circleville, Ohio on Co. Road #511 (old 23).

Sellers set up at 6:00 a.m.; open to public at 8:00 a.m. Advance tickets are $2; $3 at door. Tables (8-foot) are $4 in advance; $5 at the door on a first-come basis. Hourly drawing prizes; main door prize at 2:30 p.m. Refreshments.

Talk-in on Circleville repeater 147.18 MHz.

For table reservations, send SASE to Joe Subich, AD8I, 7825 State Rte. 188, Circleville, OH 43113. For more information, contact Chairman Len Campbell, WB8PPH, 8951 State Rte. 188, Circleville, OH 43113. □

THE MART



Classified
•Buy •Trade
•Sell •Inform

Mart deadline.

Business firms/20¢ a word.
Private individuals/10¢ a word.

THE MART *Worldradio*
2120 28th St., Sacramento, CA 95818

WORLDRADIO ON CASSETTES — Worldradio for blind amateurs on cassettes. To receive this free service send $3.00 check, payable to George Hickin (for one time only contribution for tapes) with your name, address and call to George Hickin, W4GH, Box 7497, Macon, GA 31209.

DISTINCTIVE QSLS — Largest selection, lowest prices, top quality photo and completely customized cards. Make your QSLs truly unique at the same cost as a standard card, and get a better return rate! Free samples, catalogue. Stamps appreciated. Stu, K2RPZ, Box 412, Rocky Point, NY 11778. (516) 744-6260.

RTTY JOURNAL — Now in our 32nd year. New Beginners Handbook — $8.00 PPD USA, foreign add postage. Year's subscription to the RTTY JOURNAL, $7.00, foreign $13.50. Send to: RTTY JOURNAL, POB RY, Cardiff, CA 92007.

WYOMING AND UTAH RANCH LAND. Wild horses, antelope, deer. Near paved road. 10 acres — $60 down, $60/month. FREE information, maps, photographs. (Offer void in Calif.) Will trade equity for ham gear, home computer, test equipment, etc. Owner — Dr. Michael Gauthier, K6ICS, 9550 W. Gallatin Road, Downey, CA 90240.

The SOCIETY OF WIRELESS PIONEERS, Inc., invites all professional operators, active or retired, military or commercial, to join the world's largest organization of its kind. Many active nets. Write Box 530, Santa Rosa, CA 95402 for details or send $1 to pay postage on sample SPARKS JOURNAL.

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write Fran Norrick, WB9WPS, Route 6, Box 239, Kankakee, IL 60901.

KENWOOD TS-520S factory alignment new finals $400. TS-520SE $375. Both absolutely mint. Manuals. Both $725. W2HWS (516) 653-4714.

QSLS. QUALITY AND FAST SERVICE FOR 24 YEARS. Include call for free decal. Samples 50¢. Ray, K7HLR, Box 331, Clearfield, UT 84015.

COPY SATELLITE PHOTOS, WEATHER MAPS, press photos on our full size 18" wide facsimile recorders. We provide the equipment and information to get you started. FAX Guide, $1.00. ATLANTIC SURPLUS SALES, 3730 Nautilus Ave; Brooklyn NY 11224. (212) 372-0349 — Ask for ED, WA2FBY.

CHASSIS AND CABINETS kits. SASE, K3IWK.

SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

MOBILE IGNITION SHIELDING, provides more range with no noise. Free literature. ESTES ENGINEERING, 930 Marine Drive, Port Angeles, WA 98362.

ELECTRONICS PARTS CATALOG. IC's, transistors. Send first class stamp to ALDELCO, 2789 Milburn Ave., Baldwin, NY 11510.

INTRODUCING: Beautiful natural **full color photo QSL cards,** made from your color negative or slide. From $285.00 for 3,000 cards minimum. Free samples, stamps appreciated. K2RPZ, Box 412, Dept. NCW, Rocky Point, NY 11778, (516) 744-6260.

2 KW ROLLER INDUCTOR — 28 mh, only $47.50 — KILO-TEC, P.O. Box 1001, Oakview, CA 93022, (805)646-9645.

CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC, each Saturday, Sunday, Monday and Thursday on 7060 kHz, starting 2000Z. Each Tuesday and Friday on 14060 kHz, starting 2000Z. Speeds range from 20 to 60 wpm.

QSLs & RUBBER STAMPS — TOP QUALITY! State outline, straight key, space shuttle QSLs and more! Sample pack — 50¢. EBBERT GRAPHICS, Dept. 1, Box 70, Westerville, OH 43081.

E.F. JOHNSON KILOWATT, SSB, CW & AM. Full gallon with external speech amp. Built into a steel office desk. 810's mods. 4-400's finals, 872's rectifier. Excellent un-modified condition. $850.00. BART PAINE K7CC, 4631 E. 8th St., Tucson, AZ 85711.

HATS WITH NAME AND CALL, $4.95 plus $1.50 shipping. Same day service, SASE for information. KB3XS, 322 Wilmot Street, Duquesne, PA 15110.

TELETYPEWRITER gears, ribbons, manuals, parts, supplies and toroids. SASE list. Buy unused parts. TYPETRONICS, Box 8873, Ft. Lauderdale, FL 33310 N4TT.

AUTO-CALL KEEPS UP WITH THE LATEST Ham info from Washington, DC area. Subscription $6.00 a year, sample copies $1.00. Address: AUTO-CALL, c/o W2GHK, 2417 Newton St., Vienna, Virginia 22180.

QSL THE BEST. Full color $20 for 200. As low as $7. Free samples. RUSPRINT, Box 7575. Kansas City, MO 64116. (Credit card order line-1(800)531-7373.

SOLID BRASS BELT BUCKLES. Name or call. One line — name or call — $8.50. Two lines, name and call — $9.50. Add $1.00 postage. S. Slonim, 320 Rose St., Massapequa Park, NY 11762.

CW IS EASY — Pass the Extra code exam with SYSTEM EXTRA, a one-hour cassette tape with one side of random code and a second side with six FCC QSO's (20 WPM). Included are FCC type examinations to test your skill. $6.50 post paid. SYSTEM GENERAL, (13 wpm), consists of two cassettes, ten FCC QSO/exams and more text. $12.25 post paid. LANCE JOHNSON ENGINEERING, P.O. Box 7363, Kansas City, MO 64116.

HAMS FOR CHRIST — Reach other hams with a Gospel Tract sure to please. Clyde Stanfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.

LEARN THE CODE — A course for family members and friends who don't know the difference between a dot or a dash. Monday through Friday, 0630-0700 California local time, 3865 KHz ± A2/A3/LSB, January through December. K6RAU. Starts first Monday of each month.

INTERNATIONAL DX ASSOCIATION — Hams helping hams. Write for details. IDXA, 1902 Jamestown, Ct., Arlington, TX 76013.

COMPUTER OWNERS! Now featuring large selection of software and accessories for VIC-20, Commodore 64, Atari, Timex/Sinclair, TRS80C Home, games, Amateur Radio, top quality, hundreds sold internationally. SASE for catalog and discount coupon. AMATEUR ACCESSORIES, 6 Harvest Ct., Rd 7, Dept. WR, Flemington, NJ 08822, (201) 782-1551, after 6:30 pm. Eastern

TI99/4-4A BASIC, Extended Basic, Assembly Language Programs. CW receive/transmit, CW practice, DX log/call locator, Amateur call locator, SSTV keyboard, 1010 record, WAS, programs for Hamkids. Write Sam Moore, AC5D, Box 368, Stigler, OK 74462.

CDE ROTOR OWNERS — You need a "D-Lay-5"! This easy-to-install circuit protects the rotor from damage caused by accidental braking. Works with the Ham II, Ham III, Ham IV, and Tailtwister models. Provides a five-second safety factor in your rotor brake. Incredible value at $19.95 — Postage paid world wide. LANCE JOHNSON ENGINEERING, PO Box 7363, Kansas City, MO 64116.

HAM COMPUTER SOFTWARE, top quality! From $6.95; send SASE for catalog. ELECTRONIC PUT-ONS, 7805 N.E. 147th Ave., Vancouver WA 98662.

QSL's BY K6MFE — "Customized" $24.50 per 1000. 7124 "C" Mohawk Trail, Yucca Valley, CA 92284.

NOTICE — for Commodore 64 Disk 1 Logbook. All log info including QSL records-easy edit, update, delete, Quick Search, etc. Disk-2 Master File Disk allows creation of any type of files for Amateur Radio, business, personal on blank disks including more logbooks. $39.95 ppd. Master file disk to create your own files for any reason on blank disks store 1000 records per disk. Quick search, etc. $32.95 ppd. Box of 10 blank disks 100% certified and error-free $22.00 ppd. Quick delivery. No COD's. NARWID ELECTRONICS, 61 Bellot R Ringwood, NJ 07456. Note: Try our Bulletin Board (201) 962-4956.

QSL SAMPLES — 25¢. SAMCARDS, 48 Monte Carlo Dr., Pittsburgh, PA 15239.

NOVICE CRYSTALS 7.1-7.15 MHz 3/$5 and 7/$10. 30-meters (5.050-5.075 MHz) 3/$10. (double). FT-243 types ONLY. Our selection of frequency. E. TAYLOR, W7BYF, 2921 Loyola Dr., Davis, CA 95616.

MILITARY RADIOS: R-390A, premier communications receiver, .5-30 MHz, 4 mechanical filters, meters sealed (Government removed) operation unaffected: complete/checked $175, complete/unchecked $115, spare parts unit (80% complete, missing PTO/power supply) $65. R-390A Manual reprint $5. CPRC-26 Manpack Radio, compact, transceives 46-54 MHz FM, 6 channels, with battery box, antenna, crystal, handset: $22.50 apiece, $42.50/pair. PRC-510 Backpack Radio (Canadian version of American PRC-10—, transceives 38-55 MHz FM continuous tuning, with battery box, headset, antenna: $39.50 apiece, $77.50/pair. ARC-27 Guard Receiver, single channel 220-250 MHz AM: $12.50. R-108 Vehicular/Field Receiver, 20-28 MHz FM: $27.50. 45 day replacement guarantee. Ad $9.50 shipping-handling (except R-390A, shipped actual charges collect). BAYTRONICS, Dept. W, Box 591, Sandusky, OH 44870.

C-64 AND VIC-20 HAM SOFTWARE: Over a dozen programs for each computer. S.A.S.E. for catalog. Specify computer. Walt, KA9GLB, 4880 N. 49th St., Dept.-W, Milwaukee, WI 53218.

TEKTRONIX DUAL TRACE plug-in Model CA mint condition $50. Power supply kit, 12V. 3A., transformer, diodes, heat sink, IC regulator, pass transistor, LED, all parts needed less cabinet with instructions, $8. DAVE ROSCOE, W1DWZ, 49 Cedar, East Bridgewater, MA 02333.

CLEANOUT SALE! General Radio 1217-A Pulse Generator $25, 1203-B Power supply $15, 1214-B Unit Oscillator $18, General Electric high voltage capacitors 2 MFD 10 KV $20/pr. Large supply of ferrite pot cores by Ferroxcube, all at $25 per hundred sets with specs, SASE for info on available sizes. Dave (617) 378-3619.

YAESU FT107M, WARC DMS, FP107P phone patch, service manual, very low hours, mint, original boxes — $695. PHIL KF6A. (916) 988-6127.

BARGAIN TROPICAL VACATION tailored to your taste. Peace, quiet, breezes, beautiful views, congenial couple, private use of my gear. Write NP4R, JOHN SCHULER, Rural Mailbox 2593A, Vega Baja, PR 00763 for details. You won't be sorry. Specify needs, desires and number.

IF YOU HAVE BEEN THINKING of pulling in "the big signal" on 20 meters and 40 meters then here is a golden opportunity. Everything listed below will go to the first person who can provide me with a negotiable CASHIERS CHECK in the amount of ONE THOUSAND SEVEN HUNDRED FIFTY DOLLARS ($1,750.00). 1. Tower, 71 ft. self-supporting HD steel tower, model CZ-471-FS wgt. 1,060 lbs. 2. Erection fixture, TRZ-80, for above tower, 90 lbs. (includes winch and cable). 3. Antenna, Hy-gain model 204BA, 20-meter 4-element monoband beam. (10 db gain). 4. Antenna, Hy-Gain model 402BA, 40-meter 2-element monoband beam. (5 db gain). 5. Rotator, Ham III, with quick disconnect power cable. Approximately 125 ft. 6. Dow-Key 260B six (6) position remote coaxial switch. (Operates from 120 VAC). 7. Cable, coaxial, RG-214/U, 50 ohm, silver-coated copper double shielding, 125 ft. 8. Transceiver, 2-meter FM, Heath model HW-2036A with Micoder II for autopatch. 9. Bushing, brass for above listed tower. Complete with grease fitting. 10. Adapter, 6061-T6 aluminum alloy, for perfect centering of mast in rotator. The above listed items are in very good condition and are ready for use. If you want to seize this golden opportunity, just call or write: WA6WWC ARMAND FILER, 2406 Addison Circle, Thousand Oaks, CA 91360 or call: (805) 495-3391.

ROSS $$$$ NEW FEBRUARY SPECIALS: Kenwood TR-2600 $289.90, TH-21AT 198.90, TS-930S w/at, call; Yaesu FT-208 $219.00, FT-757GX $748.90, FRG-7700 $378.90; ICOM R-71A $628.90, IC-02AT 288.90; Encomm HT-1200 $199.90; MFJ 941D antenna tuner $79.95; Astron RS-20A 88.95. Hy-gain and Cushcraft specials, AEA Micropatch for C-64 or Vic-20 $125.00. If this month's specials are not what you are looking for, phone or send call letters and phone # for a personal price quote. Over 6,000 ham-related items in stock. Closed Mondays at 2:00. Prices cash, FOB Preston. ROSS DISTRIBUTING COMPANY, 78 South State, Preston, ID 83263. (208) 852-0830.

WANTED: Discarded or used AKAI tape-deck recorder × 1800 SD for mechanical part replacement. WM. H. CLINCHARD, Rt 3 Box 3256 Blairsville, GA 30512.

IF YOU CAN READ THIS, thank your English teacher and send a QSL to the crew at Junior High School 22, who are learning ENGLISH THRU AMATEUR RADIO. They may send you their QSL OF THE WEEK AWARD. WB2JKJ via callbook for details.

MICROPHONES — Kenwood MC-50 or Electro Voice #641, with desk stand. — $45.00 each. (Both mint — UPS paid). JOSEPH LEWALSKI, 3512 Moraga Blvd., Apt. 4102, Lafayette, CA 94549.

ALL ABOUT CRYSTAL SETS. New book by Charles Green shows you how to build crystal set radios. $7.95 ppd USA. ALL ABOUT BOOKS, Dept W, P.O. Box 4155, Fremont, CA 94539.

SELL KENWOOD TS820S. CW filter, new finals, factory aligned, mint condx. - $500.00, Ship UPS. Sell Heathkit HW 101 with power supply. Added speaker inside, fan, added bells and whistles, mint condx - $275.00. (714) 985-3388, 1570 Albright, Upland, CA 91786.

NEW! SUBLIMINAL CODE LEARNING cassette tape for those who need help with the code. Let the subconscious mind work while the conscious mind relaxes with pleasant music — in which the code is hidden — and positive encouragements to overcome mental blocks. Subliminal learning is a proven technique. K2VJ, Box 682, Cologne, N.J. 08213.

SELL/TRADE, Drake 2B RCVR $35.00, Trio TX599 XMTR $50.00, Kenwood TS900 XCVR $195.00. Need 2-MTR hand-held, all mode, digital voltmeter, linear, FM test equip. or whatever. W6EGG (209) 638-1326.

QRQ — INCREASE CODE SPEED, enjoyment. Chat like old timers. Get *"How to Read Morse Code in Your Head"*. $3.00 ppd. New system. Ideal for beginners. COM-VIZ PUBLICATIONS, Box 215A, Sherman, IL 62684.

HOSS-TRADER ED says "Shop around for the best price then telephone the HOSS last for the best deal!" New display Kenwood 430-S transceiver $639.00. New Display ICOM IC-2AT $195.00. Display Azden PCS-4000 $259.00. New display ICOM-730 transceiver regularly $829.00, cash $529.00. New Display KDK-2033 $249.00. New Display ICOM-751 transceiver regularly $1379.00, cash $1119.00. New display ICOM-745 transceiver regularly $999.00, cash $689.00. New ICOM 02-AT regularly $349.00, cash $277.00. New display Kenwood 530-SP transceiver $589.00. 3kW Nye Viking MB-V antenna tuner regularly $535.00, cash $415.00. 2500 Watt AMP supply linear with tubes, Hypersil transformer regularly $1127.00, cash $899.00. VISA/ MasterCard accepted!!! MOORY ELECTRONICS CO., P.O. Box 506, DeWitt, AR 72042, Tele: (501) 946-2820.

ANTECK hydraulic vertical, model MT-1RT hydraulic vertical, $225; Collins mechanical filter, F455Y21 3R2, $50; Vocom 2M amplifier, model 2CO25-CHG, $65. All new, will ship. Need Kenwood TW-4000A. W6JBB/7 (702) 356-1424.

PORTABLE 2-METER QUADS AND J-VERTICALS. 144 MHz and 220MHz portable cubical quads. Featured in September 1980 *QST*. Quad folds into container for transportation. Container also holds antenna upright when in use. Fully assembled $69.95 plus $3.00 shipping. California add sales tax. Specify 2-meter or 220MHz. 2-Meter J-Vertical made of twin lead and coax. Can be coiled for pocket carrying. $24.95, $2.00 shipping, California add tax. RADIO ENGINEERS, 3941 Mt. Brundage Ave. San Diego, CA 92111.

TEN-TEC OMNI-D SERIES-B HF transceiver w/ NB, Ten-Tec 252 matching p/s, Astatic desk mike, Drake MN-2000 2kW antenna tuner, Kenwood SM-220 monitor scope, Yaesu "memorizer" 2-meter synthesized FM transceiver, Swan WM-3000 2kW PEP Wattmeter, Ameco PT-2 HF transceiver pre-amp, Palomar noise bridge, Heath SB-634 station monitor, ERC SL-55 audio filter. Must sell — make reasonable offer. (916) 283-4035 evenings. HENRY FLORES.

HAM COMPUTER PROGRAM FOR ATARI. Menu driven. Determines SWR, wavelength, resonant frequency, 'L' or 'C' from Fr., power gain, effective radiated power, Yagi design, pi tank circuit design, and amateur log (call, name, QTH; with name/state crossreference). Cassette $12.00 postpaid USA. JOHN A. STANGELAND, WAØFDV, Rt. 3, Willow Creek, Fargo, ND 58103.

CINCINNATI ARRL '85. Fifth Annual Ohio State Convention & Flea Market, February 22-24, Great Oaks Vocational Campus, Sharonville (Cincinnati), Ohio. Hospitality suite Friday & Saturday evenings. Two days of 14 forums, vendors, flea market, meetings, food, women's activities, banquet, Wouff Hong begins Saturday. All indoors. Speakers include: Bob Winn, W5KNE, editor "QRZ DX," Jeff Ward, K8KA, ARRL HQ packet radio expert, Division Director George Wilson, III, W4OYI, Don Pyrell, W8AD, Alpha Delta Communications. Admission: $5. Flea market: add $5/non-reserved space, $10/reserved space. For reservations: 513-851-1056. For general information and schedule: CINCINNATI ARRL '85, P.O.B. 11300, Cincinnati, OH 45211 (telephone (513) 921-3844 or (513) 471-4775). Vendors call (513) 563-7373.

SPECIALS — 5¼" SS/DD discs, 100% certified (can be used both sides) 10-$19.50, 50-$85.00, 100-$155.00. Surge suppressors, over voltage protected, $39.95 and $59.00. Printer paper, pin feed, 9½ × 11 15 pound white Bond, 1500 sheets per box $27.95. Free shipping on all items. No CODs. Quick delivery. We have been serving your needs since 1973. NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

APPLE OWNERS — Five-band DXCC, WAS, WAZ scorecard programs. Simplify your record keeping! CRT/Printer reports. Requires Apple II+/e/c, disk, 80 columns. Includes disk with 3 programs, doc, and postage. KB8VV, 1226 Winghaven, Maumee, OH 43537.

DIGITAL AUTOMATIC DISPLAYS for Collins KWM-2, 75S-3 (all in series), Drake R-4(C), TR-⅞ and Swan 300C through 700CX. No installation. Plugs into existing jacks and tube sockets (using extenders). Automatic on off. All have six ½" red LED digits in a 5" wide by 1 ½" high and 9" deep metal cabinet. For FT-101's our model GD-6Y plugs into the EXT VFO jack by installing two new pieces of coax — no holes to drill! Our GD-6K for the TS-520's is a functional replacement for the Kenwood DG-5 in a smaller cabinet with larger brighter digits and draws half the power. No installation on the TS-520S! Write for prices and information. GRAND SYSTEMS, Dep't B. PO Box 3377, Blaine WA 98230. (604) 530-4551.

KNIGHT 50 Watt CW transmitter with matching V.F.O. (10 to 80) $75.00 (UPS paid). JOSEPH LEWALSKI, 3512 Moraga Blvd., Apt. 4102, Lafayette, CA 94549.

"A Real DX Hound." John L. Wentz, W8HFK, of West Liberty, Ohio, shares this picture with us. W8HFK used this as his QSL card until he got some made.

DON'T FORGET . . .

Include first and last names with call signs.

SELL NEW COILS AND VARIABLE CAPACITORS. B & W type 3035 coils, 198uH, $9.50 each. Miller type 2152 variable capacitors, 40-1,000pF, rated at 1,500 volts, $32 each. Groth type TC-3S turn counters with spin dials, for ¼ inch shafts, $13 each. All items brand new, in original boxes, shipped prepaid by UPS. Send check to Peter Onnigian, W6QEU, 1236 40th Ave., Sacramento, CA 95822. (916) 392-8964.

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send $2 (USA) or $3 (DX) to cover certificate cost. W6LS, 2814 Empire Ave., Burbank, CA 91504.

ANTENNA MART REMOTE SWITCHES. The best remote antenna switch on the market. SW5-$129.95, SW6-$139.95, SW7-149.95, SW8-$159.95, SW9-$169.95 + UPS. Write or call for order or more information. W0MLY, Box 7, Rippey, IA 50235. (515) 436-7718.

NEW DRAKE TR7/DR7 — $1195. R7/DR7 — $1195. Dentron GLA1000 — $315, GLA1000B — $350. TA36 — $250. Hy-Gain 105BA — $115, 155BA — $149. TH3 mk 3 — $185. ORGANS AND ELECTRONICS, Box 117, Lockport, IL 60441 (815) 838-1580.

JAMES MILLEN COMPONENTS — Many types available. Inquire SASE. Ralph, KA1FAA, 16 Hansom Road, Andover, MA 01810.

AMATEUR RADIO REPAIR — experienced, licensed, reasonable. ROBERT HALL ELECTRONICS, W6BSH, P.O. Box 8363, San Francisco, CA 94128. (408) 729-8200.

"DEUTSCH FUER AMATEURFUNK" — German for Amateur Radio. 90-min. audio cassette and text. $8.95 ppd. DANRICK/SOUNDEVENTS, 213 Dayton Ave., Clifton, NJ 07011.

HAVE TO TRADE electronic digit cash register Unitrex 2000 for Atlas 210 mobile 10/80 meters. Also (2) calculators, (1) 12-digit electronic business print display, other elect. adding machine, also Bright frequency counter, A-500, Heathkit phone patch #HD-15. Sell or trade for 2-meter KDK or synthesizer 25W. STRETCH, WB2MSD, NY, after 6:00 pm. (914) 373-8243.

REPLACE RUSTED ANTENNA BOLTS with stainless steel. Small quantities, free catalog. ELWICK, Dept. 535, 230 Woods Lane, Somerdale, NJ 08083.

ROSS $$$ USED FEBRUARY SPECIALS: Kenwood TS-430 $585.00, TS-820 w/CW filter $469.00, TS-130 $459.00, ICOM 701 $419.00, Yaesu FT-620B $285.00, FT-301D 379.00, FT-101 $359.00, Dentron MLA-2500 $495.00, ROBOT 400 299.00, Send for complete used list-more than 300 items. If this month's specials are not what you are looking for, phone or send call letters and phone # for a personal price quote. Over 6,000 ham related items in stock. Closed Mondays at 2:00. Prices cash, FOB Preston. ROSS DISTRIBUTING COMPANY, 78 South State Preston ID 83263 (208) 852-0830.

MAGNETIC CALL SIGNS, 2" × 8". Great gift idea! Easy transfer from one car to another! Your call letters or repeater frequency available in the following colors (on white background): Black, blue, green or red. $6.00 each sign ppd. SIGN-ON, 1923 Edward Lane, Merrick, NY 11566.

FOR SALE: TS-520SE, DG5 digital display, CW filter, BS-5 pan-adaptor. MC 50 mike. $425. Will ship UPS — N6EGY, 4604 Via Gennita, Santa Barbara, CA 93111. (805) 964-5154.

R390 BALLAST TUBE REPLACEMENT solid-state, $18.75. R390 SSB adapter. Excellent SSB RTTY. No receiver modification needed. Solid-state, $25.00 G.B. COMMUNICATIONS, 963 Birch Bay Lynden Rd., Lynden, WA 98264.

APPLE COMPUTER OWNERS: The computerized AMATEUR RADIO LOG is here. Enter contacts, view log, change entry, delete entry, sort entries, search for entries, print QSL and print log. Send personal check or money order for $39.95 + $2.00 shipping and handling to: KENNETH MILLMAN, K1ZKM, 12227 Buckskin Trail, Poway, CA 92064-6005. California residents add 6% sales tax. Orders outside U.S. and Canada add $10.00 for shipping and handling. Send SASE for further details

PICTURE QSLs from your slides and photos. Full color — $84.75 single thousand. B/W 250 — $25.00 Subject to discount. Samples. Get a better return with PICTURE CARDS, Box 5471, Amarillo, TX 79117. (806) 383-8347.

REPAIR, alignment, calibration. Collins written estimates, $25; non-Collins, $50. K1MAN, (207) 495-2215.

HAVE AM CAPABILITY? Join SPAM (Society for Promotion AM). Membership is free. Write: SPAM c/o F. Dunlap, 14113 Stoneshire, Houston, TX 77060. -73 de WA5TWF (SASE please).

$$$ SUPER SAVINGS radio computer electronic parts; accessories, supplies. SASE for catalog. BCD Electro, P.O. Box 830119 Richardson, TX 75083.

WANTED — old radio transcription discs. Any size, speed, subject. Send full details & price. W7FIZ, Box 724, Redmond, WA 98052-0724.

WANTED: OLD TELEGRAPH KEYS for my collection. Also want WWII keys, miniature keys, sounders, and call boxes. LARRY NUTTING, 5957 Yerba Buena, Santa Rosa, CA 95405.

SOFTWARE — Sanyo 550, Commodore 64, Vic-20, Atari 400/800 TI99/4A, Amateur Radio and utility software. Free catalog. RAK ELECTRONICS, Box 1585, Orange Park, FL 32067-1585.

GROUND RADIALS WORK — Solve your vertical antenna radial problems with the fantastic ground plane one (GP-1). A 10" diameter, 24-point cast aluminum buss that fits any 2" diameter or smaller mast. Radial problems solved for only $24.95. Send an SASE for photos and brochure. Lance Johnson Engineering, P.O. Box 7363, Kansas City, MO, 64116.

KB3XS QSL's — twelve card colors, ten inks. Stamps bring samples. KB3XS, 322 Wilmot Street, Duquesne, PA 15110.

WRIGHTAPES: (Since 1976) Unconditionally guaranteed Morse Code Practice on 60 min. cassette tapes. Beginners 2-tape set 5 wpm $7.90. Also 3, 4, 5, 6-8, 10, 9-11, 12-14, 14, 16-20, 22, 24-28 wpm. Specify Plain Language or Code Groups. Also plain lang. only 30-35, 35-40, 45-60. FCC type tests: 5-6, 11-12, 11-17, 13-14, 20-24 wpm. Call signs: 12-15, 20-24. Nos.: 5-22, 13-18, 18-24. Check, M/C, VISA, $3.95 ea. PPD 1st Class USA, Mex., Can., (Elsewhere add $2 per tape). Instant service. Ph: (517) 484-9794. WRIGHTAPES, 235 E. Jackson T-2, Lansing, MI 48906.

WOW! NEW MFJ 1224 CW/RTTY/ASCII terminal units and software. Full featured. Popular software packages for VIC, C64, Atari, TRS 80I-IV, IBM, Timex, Apple, TRS-80C, TI99/4A in stock! VISA/MC, check, C.O.D. AMATEUR ACCESSORIES. 6 Harvest Ct, RD 7, Flemington NJ 08822, (201) 782-1551 after 7:00 p.m. Eastern.

WANTED: CENTRAL ELECTRONICS 200, VFO tuning mechanism: three pulley-type wheels, three screw-type shafts, and knob. Either new parts forgotten about, or, used from disabled unit. VE2OU, 2785 Valcourt St., Ste Foy, Quebec, Canada G1W 1W2.

WANTED: OLD RADIOS, parts, tubes pre-1939 for my collection. KC5PC, 2825 6th Avenue, Ft. Worth, TX 76110.

NOTICE: I WISH TO PURCHASE Public Domain Software on disk for Commodore 64. Try my diversified BBS it has Ham Radio, Computers, Video etc. 300 Baud online 0900-2330EST. (201) 962-4956 Full details for an SASE, ED NARWID, WA2OAF, 61 Bellot Rd., Ringwood, NJ 07456.

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92025.

KENWOOD 430S OWNERS ONLY! Stop Scan . . . when the squelch breaks, the scan stops! Adjustable resume scan delay. No modifications! Kit $25, assembled $35. JABCO, R1, Box 386, Alexandria, IN 46001.

Be first to know precisely when and where to work all the choice DX. Bi-weekly LI DX BULLETIN has: Hot DX news — time and frequency of each goodie — QSL info — propagation forecast — and more . . . Send business size SASE for free sample or $12.50 for 1-year domestic subscription to:

LONG ISLAND DX BULLETIN
PO Box 173, Huntington, NY 11743

RADIOCHESS? Write CARI, Box 682 Cologne, NJ 08213.

A/R MONEY CLIP with commemorative medallion $5.95, letter opener with medallion embedded in clear lucite $9.95, belt buckle, brass key design 2¼" × 3½", $7.95, Buy all three for $19.95. Make very nice gifts, RUSPRINT, Box 7575, Kansas City, MO 64116.

SUPER SAVINGS: ICOM ICR-71A — $659.50; Kenwood R-2000 — $495.50, R-1000 — $409.50, R-11 — $114.50; Sony 2002 — $219.50; Regency HX-1000, 30ch — $239.50, MX-5000 — $385.50; Bearcat DX-1000 — $475.50, BC-180, BC-201, BC-250 — $255.50, BC-300 — $359.50. Radio tap — $189.50, rotors, Panasonics, MFJ, antennas, coax, CB's, CW/RTTY decoders, much, much, more!! Free UPS shipping & insurance to 48 states. 25-page picture catalog — $1.00 (refundable). GALAXY ELECTRONICS. Box 1202, 67 Eber Ave, Akron, OH 44309. (216) 376-2402 9-5pm EST.

ELECTRONIC PARTS BY MAIL since 1954. Free flyer. BIGELOW ELECTRONICS, P.O. Box 125, Bluffton, OH 45817.

FOR SALE BEAUTIFUL HAM SHACK in small, southeastern Arizona town. Elevation 3600 feet; moderate climate. Quiet, restful surroundings. Good services. Three bedrooms, indoor pool, south patio. Price includes complete ham station along with 60-ft crank-down tower and antennae all in operation. Perfect for the retiree who wants peace and quiet. Officially appraised at $140,000.00 must sell — quick deal $90,000. Telephone (602) 359-2461 or (602) 359-2751. Hal, WA-7ZYD, Box K Duncan, AZ 85534.

HEATHKIT HW-8, $105 mint: Includes power supply & manual, UPS free. Call evenings (215) 583-1148, or write J. WILKINS III, 1510 Hermesprota Dr., Sharon Hill, PA 19079.

EMPLOYMENT

Classified ads for jobs wanted or positions offered will be run free of charge in Worldradio's MART.

THE RADIO MARTI PROGRAM of the Voice of America has a number of immediate opportunities for skilled broadcast technicians in its Washington, D.C. studios. These positions require technical experience in professional radio or television audio operations which demonstrates a good knowledge of the principles applied in technical operations. This experience must have been progressively responsible in studio control, tape recording, field operation, and broadcast equipment maintenance. The ability to understand spoken Spanish is desirable. Education may be substituted for some of the required experience. Applicants must be willing to work shifts and/or weekend duty. The Radio Marti Program of the Voice of America, part of the United States Information Agency, offers an excellent salary and benefits package, including life and health insurance. The Radio Marti Program will broadcast in Spanish to Cuba. Applicants selected will be required to clear the agency's security process. Send resume or government employment application Standard Form 171 (SF-171) to: USIA/RADIO MARTI PROGRAM, 400 6th St., S.W., Washington, D.C. 20547, Attention: B/CP. (Applications may be obtained from U.S. Post Offices, Office of Personnel Management Regional Offices, or by writing us). The Radio Marti Program is an Equal Opportunity Employer.

EIMAC 4-1000A

Sub/Extra heavy duty 2KW+

only $89.95

Limited Quantity

Tested and guaranteed to run legal limit • Used tubes • Note: Draw about 5 Amps more than 4-1000A. Most all transmitters will handle easily.

MIKE FORMAN
3740 Randolph • Oakland, CA 94602
415-530-8840

Terms: Cash, M.O. Add $5 shipping & handling

★ I pay cash or trade for all types of transmitting or special purpose tubes.

WANTED: POSITION IN EMS, EMERGENCY MANAGEMENT, Communications, Public Safety, or related department or organization, preferably management level but will consider other positions as well. Prefer within state of Indiana. Over 10 years in Emergency Services and Amateur Radio, six years as Indiana-certified EMT. Complete resume available upon request. JEFF E. HOWELL, 800 Bartlett St., #47, Huntington, IN 46750. Phone (812) 265-6200 daily 8:30 to 4:30 EST.

●●●●●

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

ADVERTISER'S INDEX

Subscription form

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

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

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

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

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

(SOURCE) ☐☐☐☐ (59-60) 2

Name _____

Call _____

Address _____

City _____

State _____ **Zip** _____

☐ NEW	☐ Renewal	☐ Gift
12 issues	(83¢ per issue)	$10.00
24 issues	(79¢ per issue · save $1)	$19.00
36 issues	(75¢ per issue · save $3)	$27.00
Lifetime	(Be a WR super booster)	$100.00

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

☐ Check enclosed ☐ MasterCard ☐ VISA

Card # _____ **Exp. date** _____

Signature _____

Please clip and mail to . . .

Worldradio™

2120 28th Street • Sacramento, CA 95818

Thank you!

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

Tell us something:

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

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

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

_____

_____