

Worldradio

Year 14, Issue 1

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A view of the Louisiana Amateur Radio Exhibit

Amateur Radio at World's Fair

A working Amateur Radio station with space-age equipment, an international message-sending service and the Smithsonian Institute's Marconi exhibit, will demonstrate Amateur Radio's role in worldwide friendship.

The Louisiana Amateur Radio Exhibition's (LARE) booth at the Julia Street exit outlines Amateur Radio's heritage from the experimental days of radio wizard Guglielmo Marconi; disaster communications, such as during Gulf Coast hurricanes; the current era of Amateur Radio space communications, including astronaut Owen Garriott's Amateur Radio experiments from the space shuttle *Columbia* last year; to speculation on the hobby's future.

Operators demonstrate how amateurs communicate today, including the newer modes of color slow-scan television, radio-teleprinter and computer and space satellite methods, and the standby, Morse code.

Visitors from such World's Fair countries as the United States, Canada, Australia, Israel, Liberia and Peru may send free messages to their friends in their countries from the booth, via the hobby's international message system.

Among Marconi's relics on display through mid-August is a rotary spark gap transmitter used by early amateurs

and a magnetic detector used by radio stations in 1912.

Visiting Amateur Radio operators are allowed to use the station on presentation of their licenses. They must identify themselves with the station's call sign, K5WF, which belongs to Howard DeLauneyville of Jefferson, Louisiana.

Shortwave listeners hearing the station and other Amateur Radio operators contacting it will receive a unique verification card if they send details in an SASE to 221 Highway Dr., Metairie, LA 70121 USA.

The Historic New Orleans Collection is providing a full-time curator, Patricia Tusa (XYL of Nick Tusa, K5EF), to watch after the Marconi exhibit, which is being provided through the Smithsonian Institute Traveling Exhibition Service.

Marconi's daughter, Goia Marconi Bragga, has indicated she would like to visit the exhibit. Plans were made to have her come in June, according to John Uhl, KV5E, LARE president.

Amateur Radio equipment manufacturers are lending American-made products for use at the booth. Local volunteers have been constructing and designing the exhibit. Many volunteers will be needed to man the booth for the six-month show. □

Tornadoes teach hams to be prepared

As Emergency Coordinator of Robeson County (North Carolina), Bill French, WV4Z, found himself caught in the middle of destruction and human suffering unfit to be viewed by the weak. He observed amateurs who had operated so long in an emergency situation that they were too fatigued to continue, and too overwhelmed by the conditions to stop.

As Emergency Coordinator of Mecklenburg County, Clyde Weddle, KF4WY, pondered as to the best way to warn the community of imminent danger. A Sky Warn Net was initiated, with approximately 50 amateur operators responding to the danger call by giving eye-witness reports from a 30-mile radius as to what the storm front was doing as it passed

through the county. As violent as the weather was, little did he know at the time that Mecklenburg was receiving "outer fringes" of the real danger lurking to the south as it passed through.

It all began when Mary Ann, WA4AJS, gave us a call with the report that a "weather net" was on the Greenville Machine, and that a tornado watch was in effect. Everett Hames, WA4TTS, then reported that the "weather alert" had sounded at the local school, and that his barometer was at an all-time low.

Thus began an afternoon on Wednesday, 28 March 1984, that we will not soon forget: the relief and thankfulness that the miracle had occurred — we (please turn to page 27)

Dayton Hamvention '84

It's the biggie of them all! The last weekend of April saw over 21,000 amateurs — from every continent of the globe — gather in Dayton, Ohio.

This was the 33rd annual event, and those attending had their choice of attending over 30 informative forums. The subjects ranged from DX, contesting, antennas, antenna law, packet radio, giving exams, MARS and more.

Well over 300 companies in the business of serving amateurs had booths. More than 1,000 people had set up spaces in the flea market, and around 600 tests for Technician and General Class licenses were given.

Four amateurs, the kind who make an effort above and beyond the average, were honored at the banquet.

Dave Bell, W6AQ, was named "Amateur of the Year" for the many motion pictures he has produced regarding Amateur Radio. Ethel Smith, K4LMB, received the "Special Achievement Award" for being the founder of the Young Ladies Radio League and many other activities. Lyle Johnson, WA7GXB, received "Technical Achievement" for outstanding work in packet radio. Robert Zimmerman, W8ZM, was given the "Distinguished Service Award" for three decades of service to



Famed antenna expert Walt Maxwell, W2DU, delivered a seminar at the Dayton Hamfest.

Dayton Amateur Radio Association.

The Dayton magnet draws about one out of every 10 active amateurs. They come from as far as Alaska and Hawaii. There is good reason.

Worldradio will be there again next year. Come by our booth and say hello. □

(For more on Dayton, see pages 3-7, 18 and 51.)

Malaga drama

Carl Wallace, K6YEO
Leona Wallace, WA6OHB

It's hard to put into words how reassuring it is to hear a friendly voice when one is pounding through the waves in a small sailboat with nothing in sight in any direction but ocean and sky. Then, when the inky blackness of a cloudy night adds to the sense of isolation, the Amateur Radio contacts are even more treasured.

Carl and I had had a rather frustrating three months on the west coast of Mexico, as far as sailing was concerned. There was either no wind at all or too much right on the nose. Finally, the second day of the crossing from Mazatlan to La Paz on the Baja Peninsula, the wind was just right for a broad reach. Around noon, the wind got a little too

strong for the drifter, so Carl took that down and put up the yankee. We also were flying the staysail and main. I went below to brush my teeth as we had just finished having lunch in the cockpit. Carl had just taken down the mizzen.

A horrendous crash above me brought me flying topside. The twin backstays and the triatic had come down with great force, bringing one port shroud with them. Carl yelled at me to get on the radio and report the loss of our rig.

I called on Channel 16 on the marine radio and reported our plight and position. Ted and Marcia Fasy, N6GMW — a day ahead of us in much the same passage — responded. Through them, several other hams responded on the 40-meter frequency that was suggested. We checked in every hour, reporting our position and condition.

A current was setting us north of our rhumb line. The winds and sea were such that we could not steer for our destination, La Paz, but had to run with the wind to minimize the strain on what was left of our rigging. Carl had taken all the sail down as soon as it happened and used the main halyard secured to a winch on the mizzen mast as a jury-rigged backstay. He soon put the staysail back up to minimize the rolling, as he thought it would not be too much of a strain.

Instead of diminishing after dark, the wind picked up to 20-30 knots and the (please turn to page 27)

Ham indicted by jury

On 19 March, David Saks, WD4SHP, was indicted by a federal grand jury on charges of using "obscene, indecent and profane language" on Amateur Radio. The charge carries a maximum penalty of two years in prison and a \$10,000 fine.

— *The Commercial Appeal, Memphis, TN; submitted by Jim Moffatt, WD4SMW* □



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July 1984 Vol. 14, No. 1

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.

Looking for radios

The Australian War Memorial in Canberra is rebuilding a B-25. They need the following radio equipment: BC-45A, BC-458A, BC-442A, BC-454A, BC-453A, BC-455A, BC-966 (SCR-695), command set (SCR-274-N), BC-453B, Liaison set (SCR-287-N), Radio sets RC-103 and AN/ARN-5 installation, marker beacons RC-43 and RC-193, Radio compass SCR-269 and AN/ARN-7.

If you can help out, please contact Mark Clayton, Curator Military Technology, Australian War Memorial, P.O. Box 345, Canberra 2601, AUSTRALIA.

NAB hosts amateurs

Peter Onnigian, W6QEU

Over 650 Amateur Radio operators gathered in the Hilton Hotel, Las Vegas, on 30 April, to hear a taped video message from Barry Goldwater, K7UGA.

Senator Goldwater of Arizona, who is chairman of the Telecommunications Committee of the Senate, spoke about amateurs and their public service to the citizens of the United States "... and indeed to the world." Goldwater, it was learned, talks from his den in Washington at times, when Senate activity permits, and when he wants to relax.

This was the sixth year the Science and Technology Department of the National Association of Broadcasters (NAB) has hosted a ham gathering during the NAB Engineering Conference. Edmond Williams, staff engineer of NAB, said the annual Monday night ham unwinding included amateurs from more than 25 countries, and even more are expected next year.

A large number of door prizes were offered, including a 10 ft. TVRO complete with all the pieces, was won by Kevin Drost, WA8ZDT. It was donated by Vern Killion of Andrew Corporation. Bob Moody, W4WSZ, won a pair of Eimac 3CX800 tubes, complete with all sockets and chimneys.

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1984 Olympic Games

The Palo Alto Area Chapter of the American Red Cross has been asked by the Olympic Committee at Stanford to coordinate disaster communications during the period from 28 July to 08 August.

We will have 11 volunteer Amateur Radio operators on duty from 2:00 p.m. till 10:00 p.m. each day. Our primary goal is to provide emergency backup communications to the Olympic Committee.

Our Disaster Comm Van will be located inside the secure Venue Administrative area and will have communications for local police, fire, Olympic radio system, telephone and both 2-meter and HF. We will provide a 2-meter link between all sites in Southern California, interconnecting Santa Barbara, San Diego and the two Olympic Village stations in Los Angeles with Stanford.

A secondary goal is to provide a message center for the athletes and others wishing to send traffic anywhere permitted in the world.

A third goal — and the reason for this article — is that we are setting up a special event station both at the Palo Alto Red Cross and at the Stanford Stadium.

Our call at the Red Cross will be W84OG (Olympic Games), and our call at Stanford will be K84OG. The NCDX Foundation is being asked to print 5,000 special QSL cards for the two stations. QSL to: Olympic Games, P.O. Box 9007, Stanford, CA 94305. Include SASE; foreign QSL's please enclose 3 IRC's and SAE. — *Ted Harris, N6IIU, Disaster Services Director*

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Eyeball bivouac

The Allied Armored Force Amateur Radio Nationwide Emergency Team, more commonly known as the AFAR Net, will hold an eyeball bivouac (informal get-together) on 28 July 1984. The assembly time will be 1:00 p.m. at the Sheraton Inn in Canandaigua, New York.

The AFAR Net is an informal and non-profit group of radio amateurs who have served or who are presently serving with a military armored unit. Many of the net's members served with armored units during World War II. The net's motto is "We have served, we are serving, we shall serve."

All Amateur Radio operators who have been assigned or attached to an armored unit are invited to attend the get-together in Canandaigua.

Additional information on the eyeball bivouac or on net membership is available from the net's founder, Harry B. Thomsen, W2PJH, 348 Jefferson Ave., Apt. 15, Canandaigua, NY 14424. An SASE would be appreciated. — *Bill Willmot, K4TF*

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Corrections

The *International Repeater Directory* that was mentioned on page 2 of the May issue of Worldradio is actually called *The International VHF FM Guide*.

The book can be ordered for \$3.50 (U.S. air), not \$3.25, as mentioned in the May article. There is also a special "domestic" version for visitors to the British Isles. The cost for this \$5.50 (U.S.). Personal checks are acceptable.

The books can be ordered from Julian Baldwin, G3UHK, 41, Castle Drive, Maidenhead, Berks, ENGLAND SL6 6DB. Specify which edition you want — International or Domestic. (For more information on operating VHF FM in Europe, see page 31 of this issue.)

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Harry Dannals

Armond Noble, N6WR

The keynote speech at the Dayton Hamvention banquet was delivered by Harry Dannals, W2HD, former president of the ARRL.

Dannals said that Amateur Radio was a great natural resource, a group of volunteers who come forth during floods, earthquakes and typhoons. He mentioned amateurs who were called away from the Dayton Hamfest itself to go assist after the devastating tornado that hit nearby Xenia.

Referring to the FCC Basis and Purpose for Amateur Radio (Part 97.1), Dannals said we are outstanding in all aspects. He mentioned the advances due to the experimentation by amateurs. On the international goodwill facet, he said that to Amateur Radio operators, race, religion and politics are meaningless and make no difference.

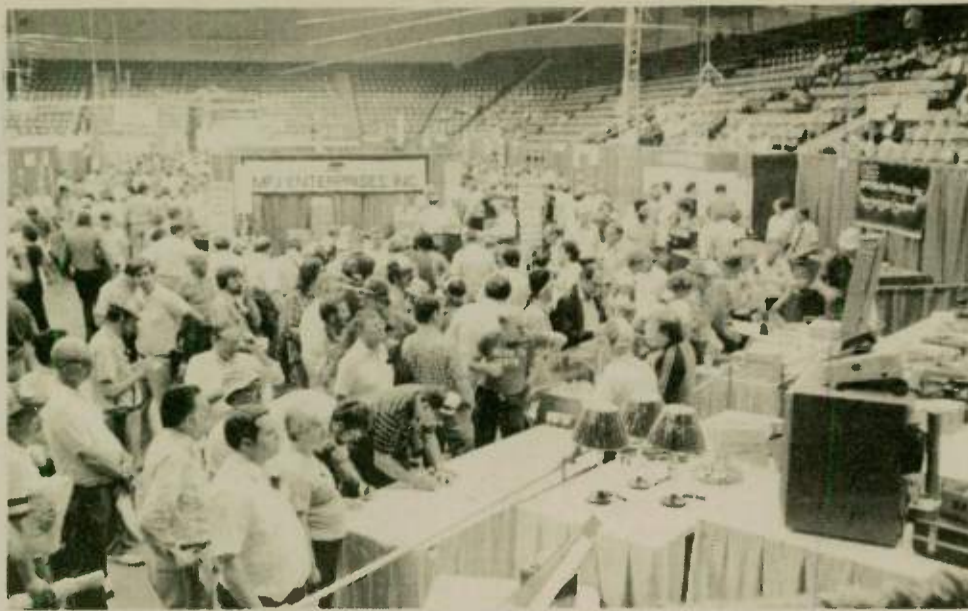
Dannals said the world would be a far better place if we stripped politicians of their power and instead sent the radio amateurs to negotiate with each other in the trouble spots of the world.

Dannals, who has served the League in volunteer and elected positions for 30 years, said he saw a bright future for Amateur Radio. He predicted that on a future space mission, an Amateur Radio satellite would be kicked out of the door and into orbit.

He said there is a greater need to expose Amateur Radio to the general public and, when something of public service value is done, we should get the story into the local media.

Dannals noted the Amateur Radio display at the Louisiana World's Fair, which opened on 12 May and will run for six months, telling our story to millions of people.

The dinner crowd of 1,250 heard a call to bring young people into the hobby and help them learn to communicate. Dannals, an engineer with Sperry, said the



With \$43,000 worth of prizes donated by companies catering to amateurs, a popular corner of the arena was where the winning numbers were posted.

training in technology the young people receive can be of great value to our country and the world.

He urged that we invite retired people to join us, as their golden years would be enhanced by Amateur Radio, a window

on the world.

Dannals called for amateurs to maintain their pride in Amateur Radio and wear their calls with distinction. He said, when someone asks you what that means, tell your story. □

ATTN: Novice teachers

A Southern California amateur has made up a Novice exam that he uses with his students, and is offering the exam to other amateurs who are interested in using it, too.

The exam is available free of charge to local amateurs, and is available at Henry Radio and Jun's Electronics. Those interested in having the exam mailed to them must send \$1 to Bill Ellis, WB6USB, 4119 Sepulveda Blvd., Culver City, CA 90230. □

FCC exams given

New Jersey area amateurs will be interested to learn that FCC examinations will be given at the Gloucester County ARC's annual hamfest and flea market, on Sunday, 26 August. Location will be the Gloucester County College in Sewell, New Jersey.

Exams will be given for Novice through Extra at two times: 9:00-11:30 a.m. and 1:00-3:30 p.m. They will be conducted by the Metroplex Amateur Communication Association, and Extra Class members of GCARC.

For more information on the exams or other aspects of the hamfest, contact Hamfest Secretary, John Fisher, K2JF, GCARC, P.O. Box 370, Pitman, NJ 08071. □

Company will reimburse radio clubs

Eighteen Amateur Radio clubs nationwide will divide \$10,000 to cover losses due to the alleged fraudulent business practices of a Westmoreland County electronics manufacturer, as the result of action by Attorney General LeRoy S. Zimmerman. The company will also pay a \$1,000 civil penalty.

Zimmerman identified the company as HMR Communications, Inc., 10 Communications Way, West Newton, Westmoreland County, Pennsylvania.

An agreement document, signed by Henry M. Robbins, Jr., president of HMR, settles a 1981 suit against the company brought by Zimmerman's Bureau of Consumer Protection.

The suit charged HMR with misrepresenting the company's size, its personnel, the quality of its products and the terms of its warranties.

The agreement — a "Consent Petition" — became effective 26 April 1984, with its filing in Westmoreland County Common Pleas Court.

By signing the consent, HMR agrees to pay \$10,000 in refunds to the radio clubs, pay the civil penalty and refrain from misrepresenting the company's products, personnel and policies.

HMR additionally agrees to discontinue, for three years, the manufacture and sale of 11 Amateur Radio components which the bureau claims don't perform as advertised.

According to the bureau, the \$10,000 refund payment will be deposited into an escrow account and will be distributed by the bureau to the radio clubs proportionately. The following Amateur Radio clubs will receive refunds:

Lehigh Valley ARC, Allentown, PA; Radio Club of Argentina, Jersey City, NJ; Miami Valley FM Association, Dayton, OH; Western Electric, Columbus, OH; Southwest Radio Society, Dallas TX; Guadalupe Valley, Sequin, TX; Echo Society, Lake Jackson, TX; Heart of Texas ARC, Waco, TX; Flanagan Amateur Radio Repeater Group, Chenoa, IL; Gurnee Repeater Group, Gurnee, IL; Iowa Repeater Club, Denison, IA; Messilla Valley Radio Club, Denver, CO; Interstate Repeater Society, Chester, NH; Eagle River Repeater Club, Milwaukee, WI; Boy Scout Explorer Post 296, Albuquerque, NM; Hainer Systems, Swartz Creek, MI; Rosae City Repeater Club, Portland, OR; and Richmond Amateur Telecommunications Society, Beaver Dam, VA.

Under the terms of the consent, HMR doesn't admit to any past wrong-doing.

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ARRL General Manager Dave Sumner, K1ZZ, explained what the League is doing for amateurs.

ARRL Forum

Norm Brooks, K6FO

"Start getting your antennas up for 24 MHz. We should see activity on that new WARC band very quickly. We may be on it before the weather gets cold again." This was the "good news" prediction of George Wilson, W4OYI, Director of the Great Lakes Division of ARRL. He was the lead-off speaker of the ARRL Forum at the Dayton Hamvention 29 April 1984. About 100 Hamventioners were present.

Predictions

That prediction for 24 MHz was, of course, the good news. The bad news was, "Don't hold your breath about 18 MHz. We may not have that band until 1989." For "in between" news, George offered that the military communications now using the "window" in the 10 MHz band may hopefully find some place to move to, giving up the entire band "before too many months go by."

Watch 160 meters, George warned. The radiolocation people are making noises about needing the 1900-2000 kHz band after the expansion of the broadcast band chases them out of the 1600-1700 kHz region. There will be a lot of pressure to take it away from the amateurs.

Simplex patches

The use of simplex VHF and UHF frequencies for telephone patches has the FCC and the ARRL in a quandary. Are they really Amateur Radio, or do they simply use Amateur Radio to make a

long-range cordless phone? The League would like your comments on this, both pro and con.

CATV

George said he doesn't know what will happen to the two CATV channels that fall in the amateur bands. However, the League would like to know where the problems still exist. Even if you don't have a repeater on 145.250 MHz in your area, check it out and see if you can detect a carrier (from CATV).

Nets

The FCC has expressed concern that amateurs are requesting them to make rules about net operations. This, of course, is counter to the FCC's policy of deregulation. George is not sure what kind of rules the Commission has in mind.

900 MHz

Along with the good news on WARC comes the 900 MHz amateur band. George hopes there will be FCC action soon. It is exciting to think of the opportunity for band planning.

Packet radio

You have heard of packet radio. (See separate article in this issue of *Worldradio*.) George predicts that two to four years from now, packet radio will explode to the magnitude of SSB or FM repeaters. Everyone will get in on the act.

VEC

The ARRL expects to have its Volunteer Examination Coordinator (VEC) program in place by Labor Day, 1984. The cost is significant and should not be borne by membership dues. Consider giving exams under ARRL VEC auspices if you are planning a hamfest after Labor Day.

Volunteer Monitors

We amateurs have an excellent reputation for policing our own frequencies. The League will soon be signing an agreement with the FCC on a Volunteer Monitoring program. The present Official Observer program will be modified to do this. Where cases are so flagrant that enforcement is needed, enforcement agencies will be called in. The Volunteer Monitor will not carry out enforcement. It is expected the Amateur Volunteer Monitors will contribute greatly to FCC operations.

The League

If you visit the Hartford, Connecticut area, be sure to drop in at Newington to

operate W1AW. The station is there for you to use. Be sure to bring your license. When dues were raised a few years ago, the predicted drop in membership took place. Membership is on the increase again. The position of the League is one of strength — it couldn't be higher. No dues increase is expected in the near future.

President Price

Len Nathanson, W8RC, 1st Vice President of the League, explained that League president Larry Price, W4RA, could not be present at the Hamvention because of his busy schedule at Georgia Southern University, where he is a full professor. In addition to being an electrical engineer, he holds a doctorate in finance and law. He jokingly said, "He's the first ARRL president to speak without an accent."

Insurance program

The ARRL insurance program is alive and well. Members should remember they can insure their equipment for the cost of replacement. There is no depreciation.

Special Service Clubs

Special Service Clubs have a new SSC emblem. The SS Clubs are listed in the new repeater directory. It is from the SSC's that the new Volunteer Examiners will be selected. Your club should inquire if it wishes to become an SSC and render services to the membership.

Youth program

Our late ARRL President Vic Clark used to work Novices, then send each a QSL card along with an application for League membership. Len suggested we all do this. Work, say, two a week — that's 100 a year. We must somehow get



Ethel Smith, K4LMB, founder of the Young Ladies Radio League was honored for her many contributions.



Dave Bell, W6AQ, "Amateur of the Year," told how very much Amateur Radio meant to him.

to the young people and let them know about our wonderful hobby, and invite them to join the League. He reported the League had signed 160 new members at its Dayton booth so far.

Len closed his presentation with some food for thought: "The loser says, 'I can't.' The winner says 'I'll try.' Let's try."

160-meter band plan

In the question and answer portion of the forum, members asked about the (please turn to page 41)

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Witse G. Morgan, KL7CQ, president of the Anchorage Amateur Radio Club, which is the first VEC (Volunteer Examination Coordinator) to be approved by the FCC. The AARC, in turn, appointed Witse as their first VE (Volunteer Examiner), thus making him the first VE of the first VEC. (Photos by Helen Noble)

Volunteer Examiner Forum

Norm Brooks, K6FO

The Volunteer Examiner Forum at the Dayton Hamvention was moderated by Judy Frye, KG8P. Judy is the chairperson for the 8th call area VEC, the Dayton Amateur Radio Association, Inc. (DARA).

First, let's clearly state the meanings of the two acronyms we'll be using from now on.

VEC — Volunteer Examiner Coordinator. This is a club or other organization accredited by the FCC to coordinate the giving of Amateur Radio examinations in a specific FCC region.

VE — Volunteer Examiner. This is a person, a radio amateur, accredited by a

VEC to administer examinations.

The DARA has been named by the FCC as VEC for the 8th call area. Judy enumerated the responsibilities of the VEC:

VEC responsibilities

The FCC provides long lists of questions to use. The VEC must format and print the questions and get them into the hands of the VE's. There are 500 questions, and DARA will set them up in random groups of 50.

The VEC keeps records of all examinations given in its territory. The VEC records the pass/fail rate of each exam session. The VEC receives Forms 610

from the VE's, processes them and sends them on to Gettysburg.

VE responsibilities

First, the VE must be accredited by the VEC. DARA will use three workshops to train the VE's in Ohio, Michigan and West Virginia. The VEC prefers the VE's to be Extra Class, as only they can give all examinations. Advanced Class operators can administer only the Technician Class license exams. There will be three VE's in each team.

Curt Holsopple, K9CH, manager of ARRL's VE program, announced that the League will be coming out with a training manual for VE's. He said the ARRL's accreditation process for VE's will be different than DARA's because they are further away from where the VE's will be functioning.

The VE will grade the exams on the spot, and issue a certificate of completion. Where appropriate, it will permit temporary operating privileges for 90 days. The VE has 10 days to get his/her paper work to the VEC, and the VEC has 10 days to get it to Gettysburg.

There will be computer checks to catch anyone who tries to apply more than once in 30 days. This was put in to stop applicants from coming in daily and using the exam as code practice.

At the Hamvention, DARA tested 350

applicants the first day and 45 the second day. All of the testing went smoothly with minimal delays.

Judy said the DARA plans to turn over the 8th call area VEC responsibilities to the ARRL, once the League gets going. She pointed out it would be confusing if both organizations continued to operate, with differences in question format, etc.

Alaska

The very first VEC in the country to be accredited by the FCC was the Anchorage Amateur Radio Club. Club President Witse Morgan, KL7CQ, was there to represent his club. The club has 464 members, all over Alaska. The club operates with an annual budget of \$41,000. Where do they get the money? The club has a gambling license!

The club has eight qualified VE's in Juneau and Fairbanks. All are Extra Class. Witse says he sees no advantage in qualifying Advanced Class VE's.

Budgets

The Alaska club's budget as a VEC is \$2,500 this year. Judy said DARA has budgeted \$10,000 per year to give approximately 7,000 exams. In contrast, the FCC spends \$7.26 per examination, but that includes salaries and rentals of examining rooms.

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Handicapped

The handicapped will be accommodated, but there will be no reduced requirements. There is nothing that keeps a team from going to an applicant who may be, say, in an iron lung. Wilse said his club would fly the team to such an applicant at the club's expense. The clubs are willing to bend over backwards to accommodate all applicants. Walk-ins are welcome, and the code will be given over for late-comers.

Want to apply?

Any Extra or Advanced Class amateur interested in becoming a VE can apply to the ARRL. The League plans to have its VEC machinery rolling by September 1984.

FCC rules

Part 97 of the FCC Rules has been amended to establish requirements for VEC's and VE's. The amendments run 13 pages long. If you would like a copy, the ARRL will furnish one for an SASE.



Wayne Green, W2NSD, telling how easy it is to make a fortune in America.

Wayne Green

Norm Brooks, K6FO

Do you want to become a millionaire? Then go to work for Wayne Green. This was the prediction Wayne made in his speech at the Dayton Hamvention, 27 April 1984.

The meeting room was packed. Hundreds came to hear how Wayne planned to use the \$60 million he says he received for his publishing empire. He explained that the \$60 million represents a complicated arrangement in which he gets the money to use during the remainder of his lifetime. When he goes, the money goes back to his buyer, CW Communications. Wayne jokingly says the company was named in honor of Morse code.

In the meantime, Wayne plans to build the amount to \$1 billion. Thirty percent of the profits will be set aside for members of his staff, and he fully anticipates they will become millionaires. He plans to invest the money in new publications and educational projects.

New publications

There is a crying need for publications in several fields, Wayne declares. One of these is a "teen" magazine aimed at young people all over the world. It will have a high-tech emphasis. It will be written in a way that will help the young person "grow up."

Wayne plans to use a new circulation approach that has never been done before. He says, "I will be disappointed if our circulation of this magazine doesn't reach 20 million." He expects the magazine to have sales of \$500 million a year.

Another magazine on his list is one on

telecommunications for executives. With the current divestiture of the Bell System, executives have many telecommunications options they never had before. The new magazine will give them the guidance they need.

There is a need for a magazine on the newest form of audio — digital audio. Anyone who had heard digital audio marvels at its dynamic range, totally unmatched by present-day analog audio. Millions of dollars will be spent in upgrading present stereo systems, and Wayne expects his magazine to be in the midst of this activity.

He has another idea for a magazine for

major cities of the world. This is also something that has never been done before, and he expects a circulation of up to 10 million. He expects sales to be \$400-500 million.

Educational projects

Wayne sees education as a marketable product that can be sold. His form of education will incorporate the latest technologies — an interactive videodisc format. It will be needed and used in every country in the world.

Countries like Chad, Mali and Central African Republic will, for the first time,

have a high-quality educational system available. More and more, the United States will be the developer and seller of technical information to Third World countries. We'll get a good price for it. In exchange, we'll buy the finished products from those countries because they'll have lower labor costs.

Central New England College in Westboro, Massachusetts will be starting with Wayne's program this fall. Students will be on the co-op plan, where they work in industry while attending college. Many high-tech companies are cooperating (please turn to page 12)

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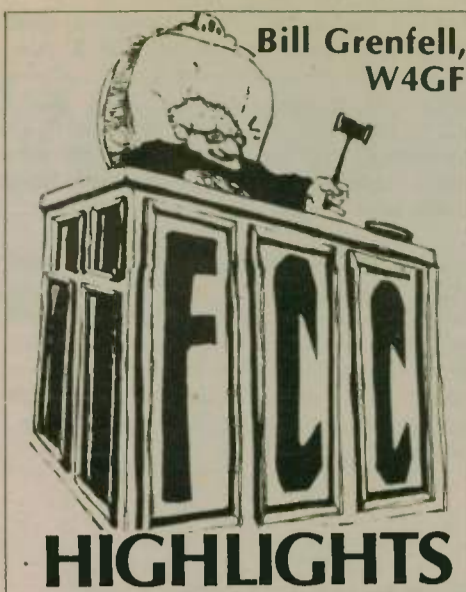
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The ARRL has published a second edition of *The FCC Rule Book*, which became available in April. However, the removal of the 1900-2000 kHz special geographical power limits by FCC, effective 22 March 1984, came too late to be included in the book. May '84 QST, page 64, describes how to bring the Part 97 Rules section of the book up to date through that revision.

In Section 97.61(a) table, change the first line to "1800-2000" and delete all of the second line. Delete Section 97.61(b) (1) and insert "(Reserved)". Delete Section 97.61 (b) (2) and insert "(Reserved)". In Section 97.185(b), remove limitation designator "(1)" in the table. In Section 97.185(c), delete the text of limitation (1) and insert "(Reserved)".

"Syracuse, New York ham gives up licenses and pays \$600 fine," FCC announced in a 23 April 1984 news bulletin. Edward L. Johnson, WA2JHU, was tracked down "electronically" by Captain David A. Stephenson of the Onondaga County, New York Sheriff's Department and caught violating FCC

Rule 97.84 (failure to identify) and Rule 97.113 (broadcasting prohibited).

The investigation was in response to complaints of severe interference from amateurs furnishing communications at the 1983 Empire State Games in Syracuse. Johnson turned in his licenses for a four-month period.

Amateur license statistics as of 28 February 1984 were: Extra Class, 34,722; Advanced, 95,787; General, 117,779; Technician, 77,574; Novice, 85,352; Total operators — 411,214.

A reciprocal operating agreement with the Republic of South Africa is under negotiation by the United States' Department of State, according to the FCC's Treaty Branch Chief. However, some minor problems remain to be resolved before the agreement can be concluded.

Harold R. Claypoole, formerly N6BII, has been sentenced to a 90-day prison term. If he refrains from further "amateur" operation, he will not have to serve time. However, if he does operate his equipment, which has been returned to him after being confiscated, it can be seized without a search warrant and he can be jailed without further trial.

Claypoole has a long history of violations, including malicious interference to others, indecent and obscene transmissions, using a false call sign, unlicensed operation, and he has threatened to shoot an FCC inspector. After having his licenses suspended and revoked last year, his equipment was seized on 15 February 1984 and he was arrested and arraigned in a U.S. magistrate's court on 13 March, when he continued to operate.

George Grammer, W1DF, became a Silent Key on 19 April 1984. George joined the ARRL staff in 1929, became QST Technical Editor in 1939, and retired as the ARRL's Technical Director in 1970. During those years, "... George exerted a tremendous influence on the

progress of Amateur Radio. A measure of his stature is that to this day his name is carried in QST as ARRL Technical Consultant." (from the *ARRL Letter*, 04/26/84)

An Arlington, Texas firm using 144.08 MHz to coordinate commercial business activity was fined \$2,000 for operating an unlicensed radio station. This was the result of a recent investigation by the Dallas Office of the FCC, acting on information provided by Fort Worth amateurs. Investigation revealed that this operation had been going on for six months.

The Dallas FCC office is encouraging amateurs to help the Commission identify illegal use of their frequencies, via a recently released public bulletin. "Actually, in many cases, hams can do this more efficiently than the FCC. The FCC is understaffed, but ready to assist in problem resolution. Do your part — aid the FCC by identifying problems and determining their severity," it read.

"When amateurs identify a problem, the following steps are recommended: First, do what you can to resolve the problem yourselves. If you cannot resolve the problem, then notify the FCC, preferably in writing. Provide facts such as time, day, frequency and type of operation. Be sure to include your name and how you may be contacted for further information." (from the 04/12/84 *W5YI Report*)

It will still be helpful, if not necessary, in cases of willful, malicious interference, to have confirmation by an FCC monitor, advises the ARRL, even with volunteer monitoring coming on line as a result of provisions in Public Law 97-259.

"A person experiencing willful interference on an HF band should therefore call the FCC Watch Officer, (202) 632-6975, or one of the FCC monitoring stations while the interference is in progress. Amateur intercepts can then be used to buttress the case. Complaints without intercepts to back them up are not terribly useful to the FCC Enforcement Division." (from the *ARRL Letter*, 04/12/84)

Do not expect an announcement of FCC action on the further Notice of Inquiry proposing expansion of the 80, 15 and 10-meter phone bands before

August 1984, advises a concerned staff member.

As a result of an investigation by FCC's San Diego office of malicious interference to area amateur repeaters, three amateurs have been ordered to show cause why their amateur licenses should not be revoked. Calvin C. Plagemen, WD6DSV, James W. Smith, W6VCE, and Anthony DiBona, K6PWX, are charged with violating Section 97.125 of FCC's Rules (willful or malicious interference). Additionally, Smith and DiBona are charged with violating Sections 97.84(a) and 97.123 (failure to identify); 97.113 (broadcasting) and 97.115 (transmission of music).

"The investigation is continuing. Additional malicious interference cases involving San Diego area amateurs may be initiated in the near future."

A "Volunteer examiner team report" (FCC Form 610 attachment 2/84), properly filled in, must accompany each regular FCC Form 610 application for a new amateur operator license or for an upgrade of an existing amateur operator license, which is the result of an examination conducted under the volunteer examination program.

Congress has approved the president's selection of Dennis R. Patrick to fill the vacancy on the FCC caused by the resignation of Commissioner Anne Jones. He will fill out the balance of her five-year term which ends 30 June 1985.

Commissioner Patrick has been serving to fill the vacancy since 02 December 1983, until the Congress was back in session. Commissioner Patrick was recently a Special Assistant to the Administrator of the National Telecommunication and Information Administration (NTIA).

Randy L. Ballinger, WB6MMJ, has been issued an order to show cause why his amateur license should not be revoked, for causing malicious interference. When Ballinger requested a hearing on the matter, the FCC's "... Private Radio Bureau filed a motion for summary judgement before an Administrative Law Judge (ALJ).

"Ballinger's response now is that he did intentionally interfere with other amateur stations and knew it was wrong. He said he was sorry and begged the



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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 May 1984.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	NF0Q	KD0PA	N0FLU	KA0SUJ
1	KV1L	KB1NE	N1DBU	KA1LSF
2	NF2M	KD2GK	N2EWN	KA2UXL
3	KT3A	KC3NI	N3DWX	KA3MQQ
4	AA4CF	KI4KR	N4KCC	KB4KBF
5	NQ5K	KE5OI	N5GYF	KA5TTC
6	NZ6T	KG6GR	N6KJU	KB6FHP
7	NI7B	KD7VH	N7GEA	KA7TAK
8	NI8R	KD8RD	N8FRP	KA8UQP
9	NA9X	KD9IE	N9EMU	KA9RWM
N. Mariana Is.	AH0D	AH0AB	KH0AG	WH0AAG
Guam	AH2T	AH2AZ	KH2BN	WH2AEB
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii		WH6S	AH6FG	WH6AZT
Kure Is.			KH7AA	
American Samoa	AH8B	AH8AB	KH8AC	WH8AAO
Wake Wilkes Peale		AH9AB	KH9AB	WH9AAB
Alaska		AL7FV	KL7YM	WL7BDL
Virgin Is.	KP2J	KP2AT	KP2BE	WP2ADW
Puerto Rico	WP4C	KP4HR	NP4KF	WP4DKF

ALJ not to take his license." (W5YI Report, 04/15/84) A hearing has been scheduled for 10 July.

Is it legal to listen, even record, private cordless (telephone) conversations? queries Fred Maia, W5YI, in his 01 May 1984 W5YI Report. He reports that the Kansas Supreme Court ruled that police can use such recordings as evidence in trials, on the basis that the communications were equal to ordinary oral discussion and not wire-tapping.

The basic law is Section 605 of the Communications Act of 1934, as amended. Section 605 is a very comprehensive description of the prohibitions against divulging wire and radio communications. The only exceptions are stated in the last sentence of Section 605, which states: "This section shall not apply to the receiving, divulging, publishing or utilizing the contents of any radio communications, which is transmitted by any station for the use of the general public, which relates to ships, aircraft, vehicles or persons in distress, or which is transmitted by an Amateur Radio station or by a citizens band radio operator."

Titled "Prohibition against use of a radio device for eavesdropping," Section 2.701 (Part 2) of FCC's Rules states: a) No person shall use, either directly or indirectly, a device required to be licensed by Section 301 of the Communications Act of 1934, as amended, for the purpose of overhearing or recording the private conversations of others unless such use is authorized by all of the parties engaging in the conversation. b) Paragraph (a) of this section shall not apply to operations of any law enforcement officers conducted under lawful authority." (31 FR 3400, 04 March 1966)



Jim Meachen, ZL2BHF (Photo by Ken Kemp-Blair, NO6E)

ZL ham in California

Charles Pyne, N6FBP

A day or two off duty during a visit to Los Angeles for a week-long meeting with International Broadcasters involved in Summer Olympics coverage provided an opportunity for Jim Meachen, ZL2BHF, to meet with amateur friends in the greater Los Angeles area.

Jim, whose home location is near Wellington, New Zealand, is the Operation Coordinator for the New Zealand Television Team. An enthusiast for North American New Zealand County Hunting, Jim was responsible for the arranging of the visit of 17 ZL's to the NEZCHEQ Convention reported in Worldradio earlier this year.

He looks forward to returning to Los Angeles in late July and getting further involved with amateur activities after the Summer Olympics. — Submitted by Ken Kemp-Blair, NO6E

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Special Events...

Two Triers celebrate

In celebration of the 2000th anniversary of the founding of Trier, Germany, and the 60th anniversary of the New Trier High School ARC, a certificate will be awarded to any amateur contacting a station in both Trier, Germany and New Trier Township, Illinois. (This includes the villages of Wilmette, Winnetka, Kenilworth, Glencoe and Northfield, Illinois.)

Contacts must be made in 1984, any band or mode. To assist amateurs in earning the award, special event stations will be operated simultaneously from Trier (DL0TR, DL0BBS) and New Trier (W9EDC) on 30 June and 01 July.

Operations will be on 80-10 meters (SSB and some CW) and 15 kHz above the General band edges. DL0TR and DL0BBS will also operate RTTY and OSCAR-10.

Send QSL's for both QSO's to: New Trier High School ARC, W9EDC, New Trier High School, Winnetka, IL 60093. Enclose large SASE (or 54 cents U.S. postage or 4 IRC's for non-folded). □

Floral City Festival

The Monroe County Radio Communications Association will again operate WA8MTX during the Floral City Festival to be held in Monroe, Michigan, 13-14 July. We will try to operate in the General portion of all bands, including CW, and also RTTY for the first time. Operating times will be from 1300Z to 2100Z.

Send QSL card and business-size SASE for a certificate to Awards Manager Bob Keenan, KD8IW, 3083-6th St., Monroe, MI 48161. □

Annual yacht race

The Eastern Michigan ARC (K8EPV), will commemorate the annual Port Huron to Mackinac Island Yacht Race, 14-15 July. Operation from 1400Z to 0200Z both days. Frequencies: 3.910, 7.235 or 14.235 (Phone); 3.710, 7.110 or 21.110 (CW). A certificate is available.

Send your QSL with a legal-size SASE to K8EPV, 1415 Military St., Port Huron, MI 48060, or L.T. Switzer, N8CQA, 654 Georgia, Marysville, MI 48040. □

Steam engines

A special event station will be operating 13-15 July, from the Bourbon County Fair Grounds in Bourbon County, Kentucky, in commemoration of the annual steam engine convention. The station will be operating with the call of WD4GPO, in the General phone and CW portion, with some Novice activity planned.

All amateurs and SWL's working this station during this time will receive a commemorative QSL card from the Pioneer ARC of Winchester, Kentucky. Please send SASE to: Pete Clough, WD4GPO, 425 Bell St., Paris, KY 40361.

Detroit Arsenal

The Tank-Automotive Command ARC will operate W8JPW on 21 July, 1300Z-2000Z to commemorate the 43rd year of the Detroit Arsenal, home of the nation's first defense plant and the U.S. Army Tank-Automotive Command.

Frequencies: Phone — 7.274, 21.400 and 146.49 MHz; CW — 7.055, 1500Z-1700Z. Put our QSO number and frequency in upper left corner of outer envelope.

Send 9" x 12" SASE for unfolded certificate; otherwise SASE to: W8JPW, U.S. Army Communications Command, ATTN: CCNC-TAC-M, 28251 Van Dyke, Warren, MI 48090. □

Rare Utah counties

Bill Schuchman, W7YS, and Art Phillips, WA7NXL, will operate portable from two rare Utah counties — Wayne and Piute — during the 1984 CW County Hunters Contest, 0000Z, 28 July to 0200Z, 30 July, using the regular contest frequencies on 80-10 meters. Before the contest, they will operate on the Novice bands and 30 meters for those needing Utah for WAS.

QSL W7YS via 1400 N. Wakonda, Flagstaff, AZ 86001, and WA7NXL via P.O. Box 201, Flagstaff, AZ 86002. □

Bathtub Award

The Nanaimo Amateur Radio Association, the Nanaimo DX Association of Nanaimo, Vancouver Island, British Columbia, Canada — "the Bathtub Racing Capital of the World" — will be sponsoring a Bathtub Award this July, in conjunction with the World Championship Bathtub Races. The requirements for the award follow:

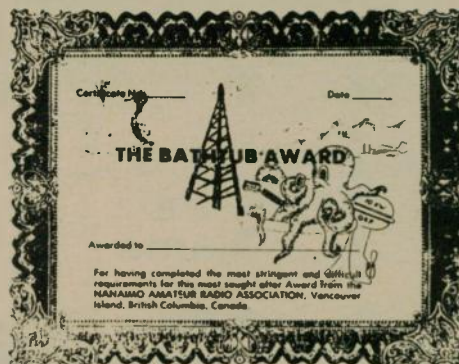
1) Work five different Nanaimo area stations or members of the Nanaimo Amateur Radio Association, and send certified log extract.

2) Contacts may be on any amateur band and in any mode.

3) Station contacts must be after 01 January 1983.

4) The cost of the award is \$3 or 10 IRC's.

5) Send award applications to: Award Manager, Ernie Harding, VE7FCK, P.O. Box 954, Nanaimo, B.C. CANADA, V9R 5N2.



The award itself is a distinctly designed certificate, with an artist's rendition of one of Nanaimo's famous Racing Bathtubs in action.

Nanaimo is a city of 60,000 people, located on the east coast of Vancouver Island, 30 miles across the Strait of Georgia from Vancouver, British Co-

lumbia. It is a fishing, lumbering and distribution center for the Island, as well as a popular retirement destination. It has a very temperate climate ranging from 30°F on the coldest winter day to 85° on the warmest summer day.

Nanaimo Harbour, with its many facilities, attracts numerous yachtsmen from all over the Pacific Coast, from California to Alaska, with Newcastle Island Marine Park in the center of the harbour as a focal point.

The Nanaimo Amateur Radio Association (NARA) and the Nanaimo DX Association are both very active in all aspects of Amateur Radio, and have a membership of over 60 hams. NARA is always active on Field Day under the club call VE7NA, and has been the top club in their class in Canada for the past few years.

Nanaimo is probably best known for the zany antics of the World Championship Bathtub Races, held each July between Nanaimo and Vancouver, British Columbia, when up to 200 of these motorized Bathtubs brave the dangers of the often stormy Strait of Georgia at speeds up to 30 mph.

The Bathtub Race originated in Nanaimo many years ago, and has now grown to international status, with entries coming from all over the world to compete. The race is now also seen around the world on TV. — Ernest Harding, VE7FCK □

Oyster Creek Nuclear Generating Station

The Jersey Shore Amateur Radio Society will operate KF2T at the Oyster Creek (New Jersey) Nuclear Generating Station between 1400Z Saturday, 04

August, and 1800Z Sunday, 05 August. Phone operations will be near 3930, 7270, 14270, 21270 and 28570 kHz. CW/Nov- (please turn to page 12)

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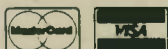


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Our new Universal Tone Encoder lends its versatility to all tastes. The menu includes all CTCSS, as well as Burst Tones, Touch Tones, and Test Tones. No counter or test equipment required to set frequency-just dial it in. While traveling, use it on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

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Wayne

(continued from page 7)

ating because they desperately need these types of students as employees. The student can pay from one-half to two-thirds of his education this way. Wayne plans to proceed with caution here. He wants the pilot model to work well before expanding.

One of Wayne's schools will teach the latest techniques in publishing. This is a field that has changed enormously in the past two to three years. We no longer paste up photo-typeset pages. Instead, the material is edited on a disc and laid out electronically by one person. It goes onto negatives, ready for printing, without ever having been first laid out on paper. He plans to use \$1 million to equip this school with the latest tech-

nology. Wayne smilingly points out that the best publishing students will come to work for him, and the others will go to his competitors.

Wayne plans to teach business, with all its related fields of sales, marketing, law, taxes, etc., especially advertising. He says, "If people in today's technical businesses knew more about advertising, they'd be wealthier people. Very few ads from these businesses are really well done." The students will come out of Wayne's business school as entrepreneurs. Or, if they don't want to go into business for themselves, they will be priceless employees for larger businesses.

Two excellent New Hampshire real estate properties have already been offered to house the schools. One is a former textile mill, a huge building made solidly of brick. The other is a 500-acre state college "campus", which is to be shut down.

Philosophy

Throughout his talk, Wayne expounds a philosophy that you don't have to be lucky to become a millionaire. Also, you don't have to invent something new.

Ten years from now, the world is going to need 10,000 times the amount of communications we have today. He described packet radio by satellite link, where any amateur could communicate with any other specific amateur in the world in a few minutes or hours. The technology is here. Nothing new has to be invented. We just have to do it.

He says, "If you do it, there is no power on Earth that can keep it from selling. Someone will do it and become incredibly wealthy. People will say, 'Gee whiz, wasn't he lucky!' The harder I work, the luckier I get."

Youth

Wayne lamented the fact that young people do not come into Amateur Radio

in the numbers they did in the 1940's and '50's. We must reach these teenagers, and the best place is in the schools. In the United States, there are but 500 high schools with Amateur Radio clubs. In Japan, there are 5,000 high schools with Amateur Radio clubs.

Wayne proposes that every high school in the United States have one period of time set aside for a high-tech hobby club — Amateur Radio, computers, astronomy or whatever. He explains that it is important to use a period of school time because there are busing and teacher overtime-pay problems when such clubs are held after school. He would expect that outside Amateur Radio clubs, astronomy clubs, etc., would volunteer to help the teachers with these clubs.

No-code

This report would not be complete without telling how Wayne took potshots at the recent "no-code" decision.

He credits Japan's no-code amateur amateur license as the vehicle to get young people into electronics, thus giving Japan worldwide leadership in consumer electronic products. Conversely, he feels the United States has cheated itself out of a million electronics technicians because of the amateur license code requirement. Eighty percent of the amateur population responded to the military's need for electronics technicians in World War II, but things are different now. Military communications are high-speed digital, eliminating the need for CW operators by the military.

As for CW saving the day, he asks how you would convert a transistor radio or a 2-meter hand-held transceiver to CW operation in an emergency.

Regardless, Wayne — with a grin — points to a tiny gold Morse code key he wears in his lapel.

Special Events

(continued from page 10)

ice-Tech 30 kHz from lower band edges.

VHF on 146.58. RTTY on 3640, 7080 and 14080.

A special photo QSL is available for an SASE to JSARS, 619-17th Ave., South Belmar, NJ 07719. □



Helping to celebrate W6RO's 5th anniversary of being aboard the *RMS Queen Mary*, and operating the *RMS Queen Mary* and *Spruce Goose* exhibits were (left to right): Ron Boan, AK6Y, President of the Associated Radio Amateurs of Long Beach, Inc.; Nate Brightman, K6OSC, Station Manager and Special Projects Chairman; Joseph F. Prevratil, President of Wrather Port Properties, Ltd.

W6RO celebrates its 5th

The Associated Radio Amateurs of Long Beach celebrated the 5th anniversary of their operation of W6RO aboard the *RMS Queen Mary* with a spectacular party. The success of the operation of W6RO is a perfect example of cooperation among amateurs to promote the wonderful hobby of Amateur Radio.

About 40 percent of the operators of W6RO belong to clubs other than ARALB; however, they recognize the opportunity to give visitors a look at Amateur Radio in action and to answer

questions about this great hobby.

More than 1 million people viewed the operation of W6RO last year. With a number of Olympic events being held in Long Beach (and the proximity to the Los Angeles Olympics), it is anticipated that about 2 to 2½ million people will tour the ship and see the station, which is on the ship's tour route. □

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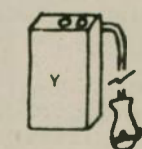


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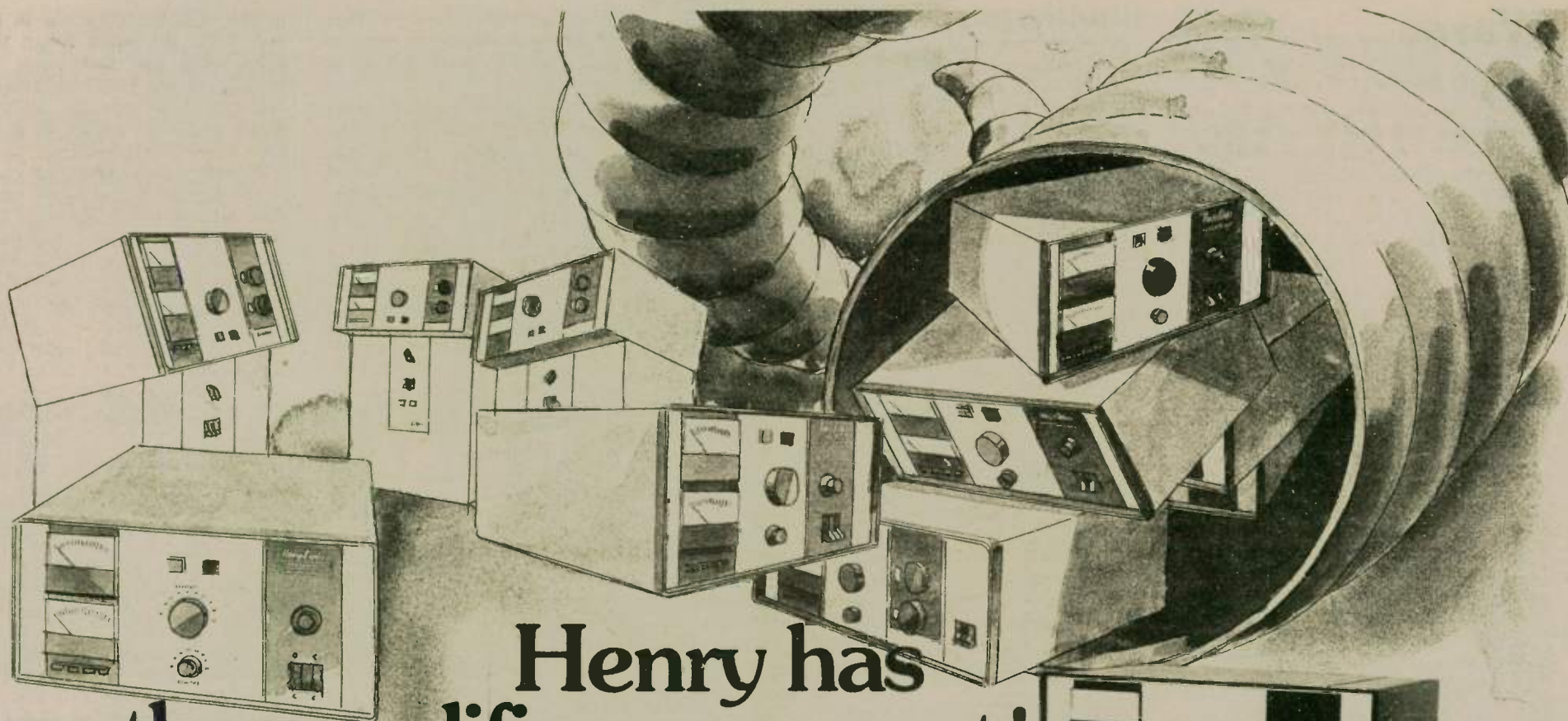


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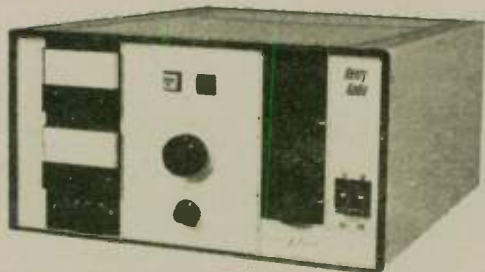
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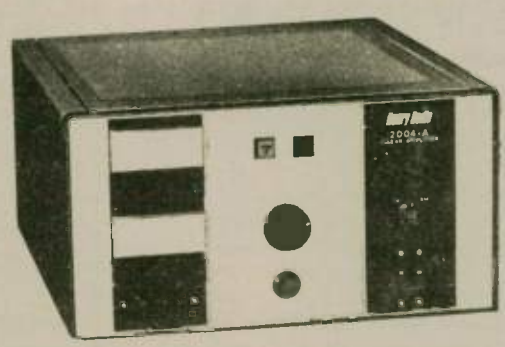
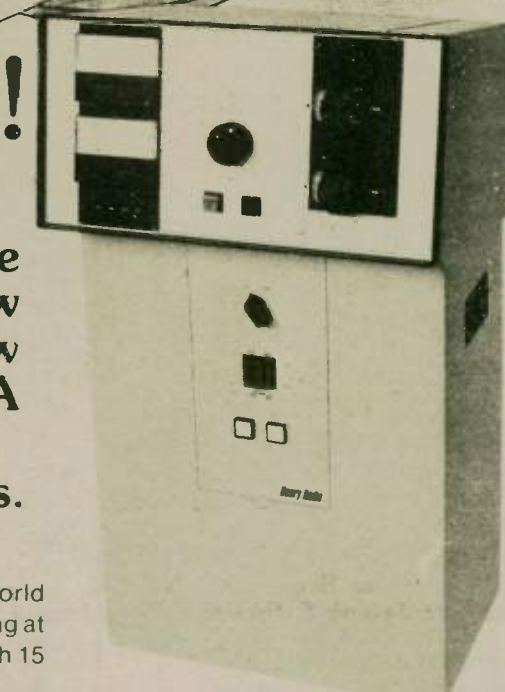
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2004-A is identical to the 2002A except that it is set up for the 430 to 450 MHz band. This amplifier will use a $\frac{1}{4}$ wave strip line and offer all of the same specifications as the 2002A. This will replace our limited production 2004.

1002-A A 2 meter amplifier with the same design as the 2002A, except using one 8874 tube for $\frac{1}{2}$ 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 half-power version of the 2004A. Will cover the 430 to 450 MHz band using a $\frac{1}{2}$ wave strip line design.



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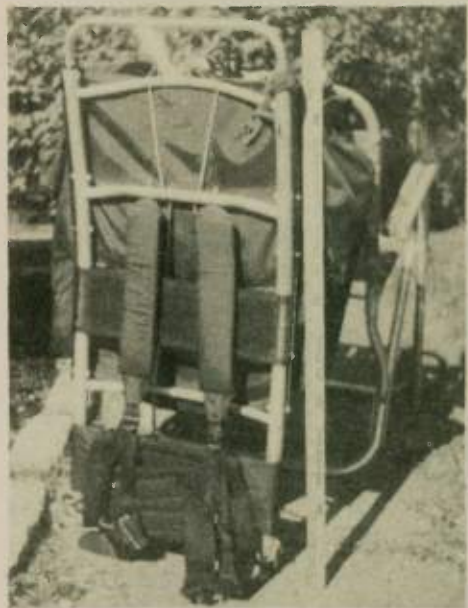
TOLL FREE ORDER NUMBER: (800) 421-6631 For all states except California. Calif. residents please call collect on our regular numbers.



WANTED: CAP hams

I have two young men, ages 21 and 25, who are going to hike the Continental Divide this summer, and we plan to drop water and provisions from the air using CAP squadron aircraft, where feasible.

I would like to contact any amateurs who are: 1) in Civil Air Patrol, and also 2) located in a state which contains or is adjacent to the Continental Divide.



A yardstick shows the dimensions of this backpack's tubular aluminum frame. An RF feed will be attached to both vertical tubes at about half-way up. A low-Z twisted pair will come through a small hole in the back of the cloth pack and fan out to match the impedance at both mid-points of the vertical tubes. Polarization will be vertical like most mobile antennas. Antenna pattern? Who can guess? Hikers will be at high altitudes most of the time, so VHF "visibility" to amateurs and other DF'ers should be pretty good, if they have a good beam.

We are presently designing a low-power 2-meter beeper, using lithium batteries, to send an identifier and one of eight simple messages. For example:

- 1) V de KG2C/M AM OK AR
- 2) V de KG2C/M LOW ON WATER AR
- 3) V de KG2C/M LOW ON FOOD AR
- 4) V de KG2C/M BEHIND SCHEDULE AR
- 5) V de KG2C/M ACCIDENT/NEED HELP.

The hiker selects whatever message is appropriate to their combined condition, by selector switch.

The beeper will be CW on 144.070 MHz, or very near the lower edge of the 2-meter band. It will be milliwatts, broadcast once per minute, and will drive the tubular aluminum frame of one backpack as an antenna.

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10 MHz question

At times, in various magazines, concern and surprise have been expressed about the lack of use of the 10 MHz band. What is even more surprising (to me, at least) is that they haven't caught on to the fact that there is absolutely no incentive to use 10 MHz!

With the present policy of no contests and no credit for any awards, why should anyone want to operate on 10 MHz? Unless the current policies are changed, I think there might be a good chance we could lose this band because of lack of use. It isn't unusual to spend time

tuning across 30 and hear absolutely no ham activity.

It's hard to believe the majority of us want to keep 30 clear of any contest or award credit. Presently, I get the impression we're being told that, in effect, we can operate all we want to but nothing we do will be credited for anything except time marked in our logbooks. I think that if enough of us put pressure on the FCC, we can — with a little work — get 30 opened up for contesting and QSO's credited for awards.

Also, I've had envelopes on file with the W6 QSL Bureau for about two years

now and have received no QSL's. During this period, I've worked around 50 countries, and the only cards I've gotten have been when a DX station QSL'ed directly. I've written the "buro" several times (and included SASE's), with no reply. Anybody else having this problem?

It's gotten to the point where I ask DX to QSL direct when they get my card, but the price of IRC's makes this a rather expensive proposition. Any help I could obtain in getting my cards from the bureau will be appreciated.

GARY PAYNE, KE6CZ
Fresno, California

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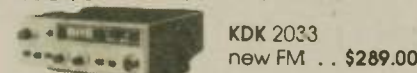
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DON'S CORNER

Kudo's to Yaesu. Tang, our spy in Japan,
heard of the demise of the IC-2 series of
portables. "Old Faithful" to HT users, Well,
Yaesu is introducing a similar design for
less money. Bells and whistles are nice, but
the plain-jane thumbwheels are still most
demanded by experienced users. Way to
go Yaesu.

73,
Don

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VK friends in Belgium

I think it was at the end of 1978 or the beginning of 1979 that I wrote a letter to the Wireless Institute of Australia. I asked if it was possible to publish my request in *Amateur Radio*, and that I would like to find an amateur who would start a correspondence with me.

My question was published and Kirby Cunningham, VK7KC (of Tasmania), was one of the amateurs who wrote to me. We continued writing, and at the end of 1982, Kirby wrote that he planned a journey to Europe, with his wife and two little children, during the months of April and May.

We invited them to spend a few days with us. On Thursday, 31 March (1983), at 7:00 p.m., our visitors arrived in their red mobile home (with English registration plate).

It gave a strange feeling to meet people, our antipodes, who we only knew by letters. They spent four days with us. They lived with us and worked with us. We showed them a part of our family and country. We visited some amateurs (Herman Alloncius, ON6HA; Silvain Huys, ON4OE; Luc Smet, ON5UK), and were present at the club meeting on Friday evening.

We participated in the weekly (Sunday morning) talk-on-the-air of the club. We visited a war museum in Ypres, where we found the names of Australian soldiers



Kirby Cunningham, VK7KC (left), visits the shack of Luk Smet, ON5UK (right). (Photo by Marc de Moor, ON1GR)

On BRT II (Belgian Radio and Television — second program), there is a very popular program every Saturday from 8:00 to 10:00 in the morning; already +650 emissions. The program is made by Jos Ghysen. Stickers with the name of the program can be bought to stick on a car. I bought such a sticker for our friends, to put on their mobile home, to take with them along their trip in Europe.

I wrote that story to the program-maker. He found it interesting that I made publicity for his program in that way, and he asked me to call him during his program. So I did, and I told the story for his listeners. The BRT sent me money to buy a cake. I did and the cake was eaten with our friends the weekend of 07-08 May.

MARC DE MOOR, ON1GR
De Pinte, BELGIUM



Kirby Cunningham, VK7KC, and family visiting Bruges. (Photo by Marc de Moor, ON1GR)

who died in World War I. In the Zoo of Antwerp, our friends saw animals from ... Australia!

Easter is a big day for children in Belgium. Children are told that all the bells of all the churches go to Rome on Maundy Thursday to get chocolate eggs, which they hide, coming back on Easter morning. When children wake up, they look for the eggs in the garden, when the weather is good, or in the house. For us it was an occasion to speak English. Our native language is Dutch. Our children (Tom 6, Peter 4, Jan 2) found it nice to play with English-speaking children (Dale 5, Helen 4). They hadn't problems to understand each other; language of children is universal.

When they started their trip in Europe on 05 April and left us, we missed something. They had become a part of our family. They promised to come back before going to Great Britain, in May. They did, and spent again a weekend with us (07-08 May). On Sunday evening, Mother's Day, they left us in Bruges — one of the oldest and most beautiful towns in Belgium. It gave us a melancholy impression to leave somebody and to know that chances to see them again are very, very small.

Ham news from Sweden

Despite not hearing from me for a while, I always read *Worldradio* fully, every issue, both personally and in part onto tape for about two dozen HANDI-HAMS and a few SWL's. One-fourth are Norwegians, clever enough to understand my south-influenced Swedish. I clarify somewhat in Norwegian, however.

The subscriber to *QSP* — now 9 years old, on Aaland Island (OH0) — is now too busy to read, and on the Danish Bornholm Island in the Baltic also, OZ9KG got severely sick a few years ago, leaving only OZ9JV ("Jolly Velociped" — a bike technician and salesman).

Despite my attempts, HANDI-HAM radio and SWL'ing is still quite rare in Sweden compared to Norway, England, the United States, etc., I'm sorry to say. On my initiative, the production of a small, cheap but effective SW to MW ("AM") converter is now on. Mats Bjork, SM3FQK, another HANDI-HAM, takes care of that. A version can be used with car radios, too.

For queries, we need reply postage and an address label (U.S. mint stamps will do).

ERLAND BELRUP, SM7COS
Kullboarp
S-570 16 Kvillsfors, SWEDEN

'To be a YL, is to live on joy...

My ham friend in Recife, Brazil, OM Cruz, PY7AHJ, sent along a translation of some sentiments of a Brazilian YL, Inge PY2JY, which he read in the January 1984 issue of *OTC — LABRE CENTRAL*, a Brazilian counterpart of *QST*. Cruz describes what follows as: "A meditation made by YL Inge on the eve of high-risk surgery in December 1983."

I thought *Worldradio* readers might be interested in this because of the great ham community feeling Inge expresses. Her words, as translated by PY7AHJ, are:

"Oh Lord, if I die now, I'll be happy for I knew friendship, tenderness, aid, dedication. From the first moment in Amateur Radio until now, nobody failed me. From east to west, from north to south, I have friends who are happy to hear me. Most I'll never meet in person, but only through letters and QSL cards. But by voice or by the keyer, I felt their joy of meeting. Some whom I did meet in person, in some distant world location, received me always as their sister. And we met in joy, as true friends.

"When an emergency came, I never was alone. My on-the-air friends always helped. In this we learn that ham radio is teamwork. When I myself needed aid, someone always quietly said, 'I'm here.' True friends!

"To be a YL is to live on joy — the joy of having magnificent friends you always rely on, the joy of helping some soul in need, the joy of meeting others, the joy of meeting old friends again, the joy of receiving help without a second thought, the joy of accomplishing a mission in life. I am happy to say I am a YL!"

Those who are new to Amateur Radio might be interested in sharing the intense feeling about our hobby Inge expressed. I know that, for my part, it gave me a new slant on the sometimes smiled-at designation, "YL".

MARY MACKENZIE, KA7FEF
Portland, Oregon



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A 'wet patch'??

At 9:30 a.m., Thursday, 15 March, I was sitting in my car in the garage of my home (in Sacramento, California), talking to Marv Sugarman, N6EQU (of Millbrae), on the Mt. Delux repeater (145.33 MHz). Marv was operating a handi-talkie and was "maritime immobile." That is, he was sitting in his bathtub taking a bath. He also had a cordless telephone at his side, so he could answer any phone calls that came in while he was in the tub.

Well, sure enough, about halfway through our QSO, my 88-year-old mother — who lives in a nursing home near Marv — phoned him to inquire when I was coming down to see her. Well, Marv had me on the 2-meter link and my mother on the cordless phone, so he proceeded to make what we call a "wet patch".

I heard my mother and she heard me fairly well, but it was rather difficult for Marv, who had both hands quite busy in the bathtub. This unusual phone patch was heard by Lou Potter, K6VT, of Martinez, and Len Bohnet, W6AVO, of Lodi, in case you think I'm kidding. Hi.

This would probably qualify being published in the *Guinness Book of Records* as a "first" in Amateur Radio.

PAUL WOLF, W6RLP
Sacramento, California



Robert James, VE8DX, at his station in Pond Inlet, Northwest Territories, Canada.

Radio, Arctic-style

I am located 73°N 77.58°W, 421 miles (672km) north of the Arctic Circle and 511 miles east of the magnetic pole (north). Pond Inlet (Northwest Territories) has a population of 903 — 98 percent Eskimos.

I work all bands, RTTY, SSTV, CW and SSB. The bands are fantastic here — a lot different than down South. For instance, from 10 November to 03 February, we have 24 hours of darkness. It is not uncommon to work Europe at 10:00 or 11:00 a.m. EST (1500Z), or North Africa at noon (1700Z) on 75. I worked South Africa, ZS4PB, on 3796 during lunch hour. The temperatures during winter are -35 to -63 C. On the other hand, we have 24 hours of daylight from 30 April to 09 August, which is not hard to take.

I own a cable company here. I receive TV here via satellite and distribute it, so I have lots of time for Amateur Radio. I have lived here for two years, and am a permanent resident here. The Northwest

Territories cover a land mass area of 1.3 million square miles, which is 70 percent tundra. Contrary to popular belief, it isn't a land of ice and snow. It is semi-desert here. The annual precipitation (snow and rain) is 2.5 inches.

The cost of living is very high, and the mail is atrocious. We only have one mail plane a week. By the time I get Worldradio, QSL, and CQ, they are a month old.

The gear here is FT-101E 80-40; FT-101ZD 20-15-10; KWM2 on 10 MHz. Antennas are inverted Vees on 160; 2-element wire beam on 75; 3-element wire beam on 40. Due to high winds, a 4-element is on a 42 ft. beam for 20 meters; 4-element on 24 ft. beam for 15; and 15-element on 2 meters. Enclosed is a picture of the 2-meter beam in an 85 mph wind.

BOB JAMES, VE8DX
Pond Inlet, N.W.T., CANADA

DaLee flooded with mail from hams

Just a quick card to thank you for printing the item about DaLee McCormick on page 3 of the April issue. The response has been absolutely overwhelming. She has received over 400 QSLs and letters from all over the country, and even a few DX operators.

She is actively working on her license, with the help of an "Elmer," in Vern Vogel, NN6K. Her medical problems have made this a slow process, but there's no doubt that her interest in Amateur Radio has helped keep her going.

She is trying to answer every card, and so far has kept up with the mail pretty well.

JOE MOELL, K0OV
APRIL MOELL, WA6OPS
Fullerton, California

CW not cheap

Who said CW was cheap? I just paid \$125 for a tooth guard (a mini-version of those worn by boxers) to prevent grinding my teeth while copying code tapes.

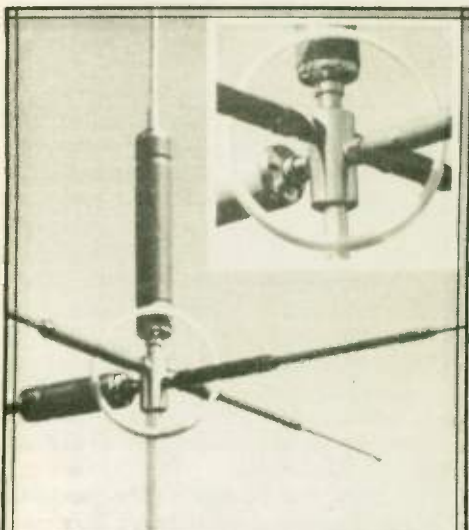
FRANK WILLIAMS, KA8PIV/IV3
Trieste, ITALY

Disaster info needed

I'm interested in contacting people who have information about major engineering disasters or snafus and can provide news clippings, stories or photos for use in a book.

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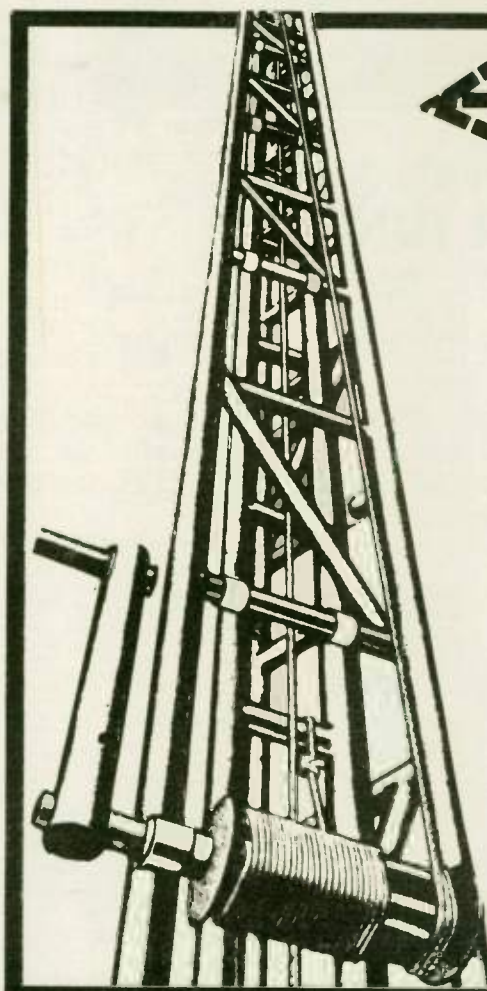
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Focus on Amateur Radio

J.A. "Doc" Gmelin
W6ZRJ

At a recent meeting of the 1984 Pacific Division Convention Committee, there was a discussion about holding the ceremony of the Royal Order of the Wouff Hong — traditionally held at midnight — during a National or Division ARRL Convention.

While this discussion involved finding someone to host the "initiation," rather than a discussion of what the Royal Order of the Wouff Hong (ROWH) is and specifically, what is a Wouff Hong, I was surprised to find so many amateurs who had never heard of the Wouff Hong or the ROWH.

The discussion did trigger memories of my own induction into the ROWH in July of 1954, at midnight on the middle day of the Pacific Division Convention.

While the ROWH only goes back to the 1930's, the Wouff Hong itself goes back to the 1920's and the days of the "Old Man" who wrote a regular column in QST. Many of the "Old Man's" columns discussed the poor operating habits of radio amateurs, and any operator who was consistently a poor operator was guilty of "rotten operating," according to the "Old Man."

The Wouff Hong itself can be best described as an "instrument of punishment" and was supposed to be applied on someone who was guilty of "rotten operating."

In all the articles I've read and in discussions about the Wouff Hong, I've never heard anyone explain just how it is to be applied, but its shape may give away something of application.

It was finally told what the dreaded device looked like and pictures began to appear of the infamous object. It looked something like the muzzle end of a rifle, with bayonette attached.

Since it is made of wood, instead of metal, its application might not be exactly the same as a weapon of war. But you can draw your own conclusions, as everyone has done through the many years of pictures of the Wouff Hong in QST.

The Wouff Hong was not the only instrument of punishment discussed by the "Old Man." Another "item" was the "Rettie Snitch."

I'm not sure of the spelling of the name of this object, and in fact I've never found out what the "instrument" looks like or how it is supposed to be used. It was said that one application would be enough to straighten out any "rotten operators."

At the same Pacific convention where I "joined" the ROWH, I learned there is a third instrument of punishment — the Ugar Ump. (Hope I have that right.)

George Hart, W1NJM — long-time ARRL Communications Manager and now Honorary Vice President — told me about it over a cup of "refreshment." At the time, George was National Emergency Coordinator and head of the then very new National Traffic System, which I operated on through 6th Region Net.

From what George told me about the Ugar Ump, it would have been used more to correct poor CW sending than for correcting poor operating habits and procedures.

To make an Ugar Ump, one takes a standard telegraph key and unscrews the sending knob, thereby leaving a hole. Then under the hole, one puts an old-fashioned phonograph needle, placing it so that it comes up through the hole in the key when you push the key down.

The punishment is to have the "punishee" send a CQ on the key with his finger placed over the hole where the knob used to be. Guess that would really smart.

Come to think of it, I had some rigs that did the same thing if you touched the wrong part of the key.

Some of the old-timers will remember that the cheap and easy way to key a transmitter was by using the cathode ground. Did cause clix and chirps though.

Best way to solve that was by keying

the final. It could get pretty hot if you keyed an 807 final with 600 or 700 volts on the plate.

Every try keying an 813 with 2K volts on it? I did. That was really a hot key. We sure learned our electronics and radio the hard way in those days. We made our own "torture devices." Didn't need a Wouff Hong.

I remember one other common torture device many of us had in our shacks in the days of good old AM phone.

In AM, the final runs all the time during any transmission. These modern table top finals could never stand that. You had to have your final on full blast for 5, 10 or 15 or ... well, as many minutes as you held the transmission.

The class B modulator did the talking and the final just sat there cranking out

the power. The only trouble with that was that many of us never bothered to have an earth ground on the rig, or if we did, it went to some water pipe clear across a room or two or maybe downstairs.

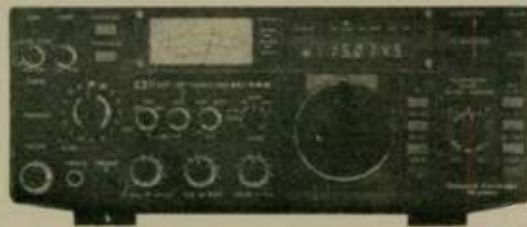
The ground wire became an antenna. When you ran a gallon (KW) or whatever, it was common that everything in the shack was RF hot, and at some pretty good voltages. That meant that when you touched any metal when the rig was running, you might get an RF burn.

It wasn't too bad except that the mike was hot, and if you accidentally hit the mike with your lip, you lit up pretty well for a minute or two. That smarted too, probably as bad as the Ugar Ump was for CW. In fact, I guess the homebrew rig I had on the third floor of my folks' house in San Jose was just that — an

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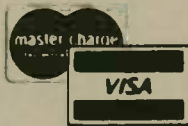


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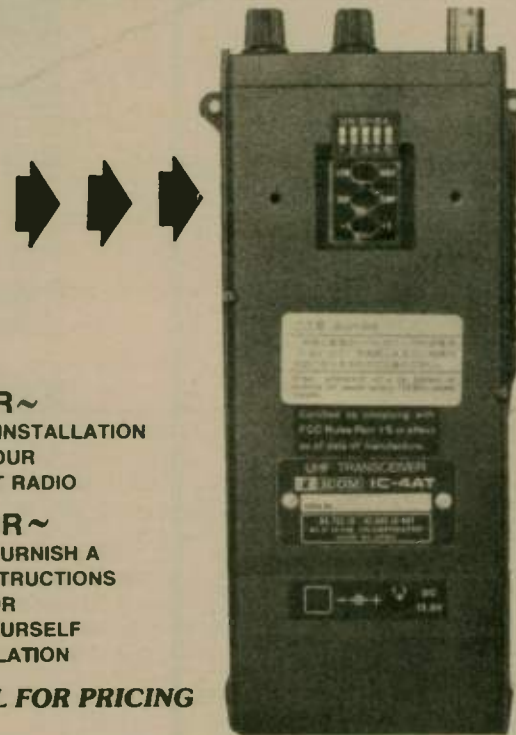
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Packet radio

Norm Brooks, K6FO

They call it the future of Amateur Radio. I'm convinced that statement is true.

Packet radio is two or more computers connected through an Amateur Radio link to provide error-free communications. The mind-boggling part is the "link." It could be simplex on VHF or HF, or a relay through another station on simplex, or a VHF repeater, or even on a satellite. In every case, if there is communications at all, it is error-free.

I had the privilege of attending the Packet Radio Introduction and Applications Workshop at the Dayton Hamvention, 27 April 1984. Two-and-a-quarter hours were allotted to this seminar. The presentations were so interesting that the time flew by quickly. Bob Neben, K9BL, was the moderator who introduced the "high-tech" speakers.

Paul Rinaldo, W4RI, Technical Editor of ARRL, started off with the history of packet radio. We learned that it started in Canada, where amateurs were first permitted to use the ASCII code. A group in Vancouver, British Columbia designed circuit boards to do the job. United States amateurs followed as soon as the FCC authorized ASCII here. A group in Washington, D.C. started on a VHF voice repeater. Then a group in San Francisco Bay area set up a dedicated simplex repeater. A high-tech group in Tucson, Arizona brought out boards and software, and the explosive growth of this new form of communication was on!

There was one major problem to be solved. Protocol, or standards for packet

radio, had to be established if worldwide communication was to become a reality. Paul said that developing the protocol was probably the most gentlemanly development that ever happened in Amateur Radio. There were no wars. No factions fighting with each other. There has been competition, but it's been healthy competition. Any adrenalin that flowed was productive. The high-tech types that participated had a lot of respect for each other. "That guy's

pretty smart; maybe he's right!"

We now have mature software. It's now about a year old. The get-togethers of the packet radio buffs show a lot of maturity. Now they're looking at proposals for networking. That is, tying local systems into a worldwide system.

Most packet radio work has been on VHF, but it is also getting started on HF. Unfortunately, Paul knows of no meteor scatter work being carried on, and packet radio is a natural for meteor

scatter. Work is going ahead using OSCAR-10.

In the future, they are planning a dedicated packet radio satellite, which would bring automatic repeating via the satellite between any two amateurs in the world.

How does it work?

Pete Eaton, WE9FLW, of the Tucson Amateur Packet Radio Group then gave us a "gee whiz" introduction to the

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Focus

(continued from page 17)

Ugar Ump for phone operators.

Never got that rig grounded right. In fact, the end of the antenna was only 5 or 6 feet from the shack, just outside on the roof. Probably the rig, the ground wires, all the metal objects around, and sometimes even the operator, were all part of the antenna system.

Ah yes, the good old days. Did make a lot of friends in contacts with that old homebrew 813 rig, though. Some have been my friends for nearly 40 years. Amateur Radio does have its rewards.

And we did learn a lot of electronics the hard way. Did I ever mention the 10-meter rig that I had that I "smoked?" Well, I didn't really smoke it; it caught fire.

I was transmitting and looked over, and then commented to W6YQN that my rig was flaming. Then I turned it over to him.

I blew out the fire, keyed the rig again, and it seemed to work. So I carried on the QSO for another two hours.

Guess we were like teenagers on the telephone today, only we used Amateur Radio.

Learned a lot building those old rigs from the junk box. Wonder if young hams have as much fun today as we did then.

Wonder whatever happened to those old rigs. Sure wish I had that 813 rig back now. Bet it's a collector's item. Would be to me anyway.

So go ahead and make a transmission, old man. "This is W6ZRJ standing by." (Got to let the 813's cool off anyway.) □

mode. Packet radio uses channel sharing. You don't have to look for a clear frequency. You can have multiple QSO's going on at the same time on the same frequency. Packet radio provides experimental opportunity. Contacts often include "have you tried . . .?" Also, for the power of the system, it is relatively inexpensive.

The packet

If we could see a packet, what would it look like? It is data in the middle of a "packet" of information sent out in a very short burst. The data could be anything. Right now it's about one-and-a-half lines of printed words off a CRT screen. In the future, it could be digital voice or digital video — all sent at 50 kilobits a second.

It takes several packets to send an average message, and the equipment acknowledges correct receipt of one packet before it accepts the next one.

The packet has information at the beginning and end called "flags." These flags are simply synchronization. Pete says, "This stuff is flying back and forth so incredibly fast that you have to tell the smart black boxes how to deal with it."

The packet includes two addresses, "from" and "to." Just like a letter in the mail. We use our unique Amateur Radio call signs. Then there is the Frame Check Sequence, or FCS. The black box comes up with a code for each packet of information. On the receiving end, the black box also computes the code. If they agree, there is a very high probability the packet was received accurately. And it's all done automatically.

Terminal Node Controller

The black box referred to is the Terminal Node Controller (TNC). It assembles and disassembles the packet. These are the circuit boards developed by the Vancouver and Tucson groups, as well as several now being offered by commercial manufacturers. All are excellent.

There's also a modem (modulator-demodulator). It converts the computer pulses to audio tones so they can be sent out on VHF. It also does the reverse, converting the received audio pulses back to computer pulses. What does a packet sound like? It's a raspy BRAAAP!

Some amateurs have said, "Why should I buy a TNC, which is another microcomputer, when I already have a computer? Why can't my computer do both jobs?" At first the answer was that it couldn't be done. When you tell that to a high-tech amateur, he goes ahead and does it. Software is now available for your computer to do both jobs.

The scenario

Let's describe the scenario of packet radio at work. Let's say you're in the St. Louis area, where packet radio is on the simplex frequency of 147.555 MHz. If two stations came on that frequency with voice and chatted back and forth, you'd say the frequency was in use. Not so with packet radio. The information is sent in bursts. During the dead air time between packets, there is no reason why other amateurs can't get on and converse back and forth with packet radio too. Remember, the packet has "to" and "from" addresses, so there's no mix-up.

All stations have error-free communications. Each pair of stations need not even know the others are there on the same frequency. When a lot of packets go back and forth, it sounds interesting. People with scanners stop and listen and wonder what's going on.

So far, we assume simplex operation. We can put a repeater in a high spot and use it too, on the simplex frequency. The repeater stores the packet in memory for a second and sends it out again on the same frequency. No desense! No duplexers! CW identification is no longer required. Back when it was, amateurs coming across the packet signals would hear the CW identification and assume it

was a regular repeater. The first thing they'd try to do was "kerchunk" it. They'd go up 600 and down 600 kHz and it wouldn't "kerchunk." They would then check the Callbook and the telephone book and call and say, "There's something wrong with your repeater!"

You can have multiple simplex repeaters on the same frequency. This drives frequency coordinators wild. The TNC's do something a lot of amateurs don't do — they listen before they transmit.

Do we call CQ? No. In packet radio we "connect." However, there is a bulletin mode which invites other stations to call you.

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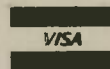
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Getting more info

Do you want to learn more about packet radio? Read an excellent two-part article — "Amateur Packet Radio," by Margaret Morrison, KV7D; Dan Morrison, KV7B, and Lyle Johnson, WA7GXD, in the July and August 1983 issues of *Ham Radio*. The article includes many references and a bibliography.

Also, there is a newsletter, *PSR*, put out by the Tucson Amateur Packet Radio Corporation, P.O. Box 22888, Tucson, AZ 85734.

Who knows? Some day you and I may "connect" on packet radio! □

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

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• Silent Keys •

Herbert Breuer

Herbert John Breuer, W6JN, signed "SK" on Monday, 09 April 1984. Born in Emeryville, California on 13 July 1904, Herb had lived in Sacramento since 1941.

W6JN began his radio career as a youngster during the days of spark and was first licensed as a radio amateur in 1922. A member of QCWA, SOWP, ARRL, APCO and IEEE, Herb served

two years in the U.S. Army Signal Corps, traveled around the world as radio operator on a number of freighters and served the state of California in communications for the Departments of Agriculture, Fish and Game, Forestry, and the California Disaster Office.

W6JN was one of the "Big Signals" on 10 meters during early experimental days, and in more recent years, the call was prominent on the amateur bands as the State of California RACES station.

In 1951, Herb co-founded the California Civil Defense Net (CCDN). A statewide network of radio amateurs for the Office of Civil Defense, CCDN formed the nucleus of the State of

California Radio Amateur Civil Emergency Service program in 1952 and is still functional today.

Breuer retired in 1969 as Chief, Communications Section, California Disaster Office, after 42 fruitful years of service to the State of California. He is survived by his wife of 56 years, Gladys, daughter Paula, son Arthur, brother Gustav, six grandchildren and five great-grandsons.

— Marion Henson, W6NKR

Hugo Romander

Hugo Romander, W6CH, died at the age of 83 on 02 April in San Francisco,

California, after a heart attack. An electronics engineer and Amateur Radio operator, he retired in 1965 from Western Development Labs of Ford Aerospace in Menlo Park, California, following a 40-year career in communications engineering, that also included General Electric in Schenectady, New York (1925-1928), and Federal Telephone and Telegraph in Newark, New Jersey, and Palo Alto, California (1928-1947). He developed state-of-the-art military communications equipment in the 1950's and 1960's in the Philippines and Guam. He holds 10 patents in the field of radio transmission.

Born in Coquille, Oregon, his lifetime interest in radio communication began when — as a teenager in Smith River, California — he assembled a crystal set that allowed him to listen in on military news and ship-to-shore communications during World War I.

Romander was a graduate of Lick-Wilmerding High School in San Francisco and the University of California at Berkeley. In 1922, he obtained one of the first Amateur Radio operator licenses issued by the FCC. At the time of his death, he held the highest rating of Amateur Radio operators — the Extra.

He was an active member of Amateur Radio operator networks, devoting much of his time in retirement to helping American servicemen and missionaries overseas communicate with their families in the United States via radio-telephone patches. Other activities included providing emergency communications during disasters such as the Managua earthquake, enabling servicemen aboard an early Apollo splashdown recovery ship to talk with relatives at home, and providing communication for an international chess competition.

A fraternal member of Eta Kappa Nu, he was also a senior life member of IEEE, the Institute of Radio Engineers, the Society of Amateur Radio Operators, ARRL and SOWP.

Jerry Jensen

On Monday, 26 March, Jerry Jensen, KB6VD, died of pancreatic cancer. Although he was an Amateur Radio operator, he was probably better known to San Francisco (California) Bay Area residents as a TV anchorman. His last 14 years were spent as co-anchor of the KGO evening news with Van Amburg.

Although Jensen covered his share of hard-news stories, (he was the first reporter ever maced by police, during a draft board sit-in), it was his flair for the upbeat and warmly human that set him apart. He made a tradition of ending every newscast on a frivolous or inspirational note.

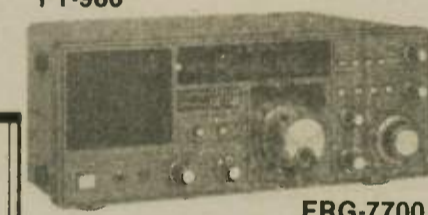
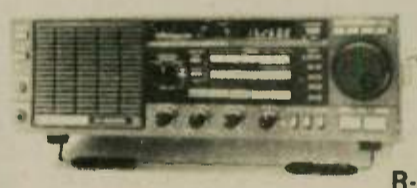
"I want you to know," Jensen's farewell statement said, "that besides reporting the news every day, I have always tried to brighten what the news is by bringing you those stories which point up the best there is about life and people." His sign-off was simple: "God bless you all."

One of Jensen's fans — Ralph Calcagno, K6LTT — wanted to thank Jensen while he was still with us, but unfortunately wasn't able to. "I never had the pleasure of working Jerry on the ham bands," Ralph wrote. "Perhaps some of your other subscribers did have that opportunity." — Ralph Calcagno, K6LTT; biographical info from article in *San Francisco Examiner*

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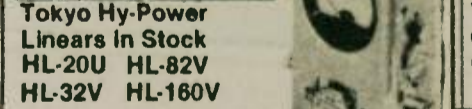
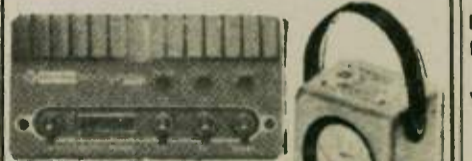
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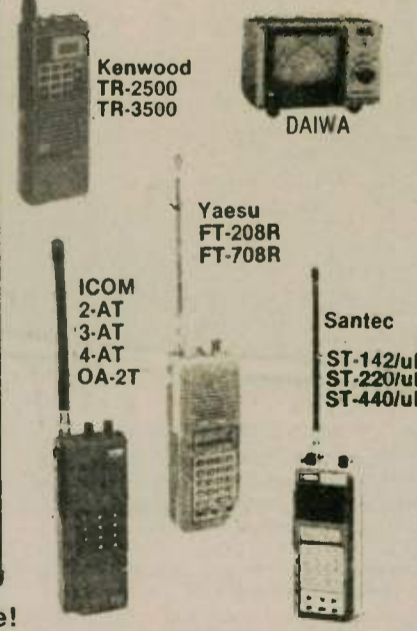
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Zimbabwe (Z2)

In our January column, we made a remark regarding the lack of much activity from this country. Reader Mal Geddes, Z23JO, responds, "I cannot understand that only six stations have been reported active from this country. There are at the present time about 90 Z2 ham stations. From my records, I would say that the following stations are fairly active."

Mal lists 24 calls and their specialties. If you are looking for a RTTY contact with Zimbabwe, look for Z21CE, Z21CL or Z25JS.

Mal says that when their calls were changed from ZE to Z2, the rest of their calls remained unchanged. The second digit means nothing with regard to what part of Zimbabwe they are situated. This country formerly went by the name of Rhodesia.

Checking through the various DX bulletins I receive, the following have been reported active recently. Frequencies and time are in MHz and UTC, respectively:

Z22JE	14.180	1400
Z22JS	7.013	0100
Z22JU	21.176	1600
Z22JE	3.792	0415
Z22JK	14.178	1300
Z21GC	14.161	1400

Source for the above reports: *QRZ DX*, *DX News Sheet* and *The DX Bulletin*. If any other stations have been active on the bands, they have not been reported. This is not saying they are not active — they just have not worked the stations who make it a point to report to the various DX editors of the activity.

Great 30 DXpeditions

Hugh Vandegrift, WA4WME, one of the members of the 1978 Clipperton DXpedition, responded to our recent comments on the Clipperton DXpeditions. What Hugh had read was incorrect information regarding the recent Clipperton attempt. He felt that one of the members should have contacted a member of the past Clipperton DXpedition. What we had incorrectly said was the team was not allowed to land. This was not the case, and this was followed up later with the real problems that caused the termination of the Clipperton DXpedition for the time being.

Hugh also commented on his beautiful sunburn that we mentioned. The burn was in the center of his back about the size of a coffee cup, and was all the way through to the backbone. When he arrived in Cabo San Lucas, he put a piece of Saran Wrap over it, put on a shirt, and went on inland for a stay in Acapulco before flying home to St. Louis.

The only fear that Jacques Caillet, F5II (who was a doctor), had was infection and shock. Hugh told him that shock was unlikely as he had been shot up in the war and no wounds bother him unless they are bleeding. As Hugh could not see the "wound" on his back, it wouldn't bother him.

When he arrived in St. Louis, Hugh went to the burn center and they could not understand how he could walk in.

The burn is all healed now and is hardly noticeable.

Although Hugh isn't into DX any longer, he is still on the lecture and show circuit with three different DX shows under what he refers to as "Great 30 DXpeditions". The three shows are:

Show I: Color slides of the 27 greatest DXpeditions of all time spanning the past 30 years. It does not include the slides of the three Clipperton Atoll DXpeditions. Requires 1½ hours.

Show II: Color slides and movies shown simultaneously, on adjoining screens, of the 1954, 1958 and 1978 Clipperton Island DXpeditions. This show requires one hour and is titled: "The Clippertons Revisited".

Show III: Color slides of 18 of the best of 30 greatest DXpeditions of all time and includes a shortened version of the only three Clipperton DXpeditions in radio history. Requires a one-hour time slot.

The shows are non-commercial and Hugh makes no profit. All he requires is travel and lodging. Sponsors will be required to provide all equipment needs, (color TV set and a standard VHS format video home system playback recorder — not Beta-Max). A requirement list will be sent. Sample press releases for programs, DX newsletters and club bulletins are also available.

If interested, please write to Hugh G. Vandegrift, 2308 Zinnia Court, Killeen, TX 76542. All engagements are on a first-come first-served confirmation basis.

East Bavarian DX Association

The East Bavarian DX Association recently elected their new officers for a two-year term ending November 1985: President, Gerhard Jaeger, DF2RG; Vice President, Dieter Dippel, DF4RD; Secretary, Ruediger Goetz, DL2RBK.

This group is active in contests with the club call sign of DF0EB. Contacts made with members of this club are good for the Bayern Ost Diploma. (Details for this award are in the October 1983 issue of CQ.)

Gerhard DF2RG is a holder of Worldradio's Worked 100 Nations Award, certificate number 143, issued on 13 October 1981.

Southeastern Michigan DX Association

This Michigan club consists of about 50 DX'ers residing in the Detroit area. Meetings are held at the Red Cedars, 23055 Telegraph Road, just north of Nine Mile Road at 8:00 p.m. the second Friday of each month. Those interested in dining together prior to the meeting should arrive there at 6:30 p.m.

Annual elections are held each June meeting, with the new slate taking effect 01 July. This club will be involved with the DX activities at the Michigan State ARRL Convention, to be held at the Schoolcraft College in Livonia with the Banquet at the Plymouth Hilton on 30

June. Any Southeastern Michigan area DX'er interested in membership should check with any of the members present. Dues are \$10 per year.

Reader comments

Lou Williams, W9GSB, writes, "I evidently worked a bootlegger, as did several others on April 23rd." This station was signing DU5Q, giving his name as Leon, and to QSL via his "good friend" Lloyd Stearns, W6HHG. Lloyd returned Lou's QSL card with the note, "Sri, but am not a QSL Mgr for anyone. From the number of cards I got for DU5Q, am inclined to believe the guy is a phony. He is not listed in my Callbook. Can't imagine why he would give my call, as he is sure not going to get any QSL cards. Got over 30 cards for him."

Obviously, this DU5Q (or wherever he was) had no desire to receive the cards in the first place. Why does one do something like this? Probably for many different reasons. But whatever, signing an unauthorized call is a big lie to your fellow amateur.

Antique QSL Department

This bit of nostalgia comes to you courtesy of George Heitzman, W7AHX, of Veneta, Oregon. The first card is from Surrey, England, from the year 1931. George worked G5BY, operated by an H.L. O'Heffernan, on 20 meters, 07 July 1931. The card is multi-colored, with the border and "G" in green, "5BY", the ARRL emblem and the print on top and bottom in red, and the rest in blue — all on a buff card. Of course, the flag is red and blue. The note at the bottom says, "First British Station to work Japan, Alaska and British Columbia."



The other card George submitted is from someone I'm sure many of you have worked. This is K6CGK of Honolulu, (he doesn't use that call anymore), a member of the Hawaiian DX Gang. George worked Katashi Nose back on 14 February 1935 on 40 meters, CW. Next time you meet Nose on the bands, tell him you

saw his old K6CGK QSL card in Worldradio.



QSL routes

A4XJV	-WD8RTK	JW1UW	-LA1UW
A22DP	-W7GVC	JW6BDA	-LA5NM
BV0AA	-OH2BH	JR8AQ	-W6ORD
C6ADR	-KC8ON	K2KTI/PJ7	-K2KTT
C31LBL	-EB3BG	K9VAL/6Y5	-K9VAL
C53DU	-DJ6SI	KD7P/NH2	-K57L
C53DZ	-DJ6SI	KG4DX	-WB2CPV
C53T	-OH2FQ	KK7K/2U2	-WB7NOB
CE3DPD	-F5IL	KR4C/PJ7	-KR4C
CS0RS	-CT1YH	KX6LA	-WB4PRU
CS1BWY	-WD4HRO	LU1JA	-LU4JJ
CS1SL	-CT1SL	LU6EYK/X	-LU4ETN
CS5RCL	-CT1AHU	N6CUQ/KH2	-WA4GLE
CT2CE	-AG1K	N8DCJ/8P6	-KZ8Y
CT2CQ	-W1RM	N8DCL/8P6	-KZ8Y
CU1XKA	-CT1XK	NC4U/PJ7	-NC4U
CX2ET	-CX1EL	OE6BVG/KH2	-OE6BVG
CX3BBH	-AC2J	OH0BA	-OH2BAZ
CX3BR	-W3HNN	OH1MA/CT3	-OH1MA
CX4AAU	-CX3AN	OH9TH/4U	-OH9RJ
CX4CQ	-CX3AN	ON5NT/IT84	-ON7FK
CX5BO	-CX3AN	OX3LV	-W3HNN
CX5CO	-CX7BY	OX3SG	-LA5NM
CX6CP	-CX3AN	R9Z	-UA9YEW
CX7BY	-W0JN	RM8WCY	-UK8MAA
CX9AU	-CX2SA	RV1WCY	-UK1ADZ
CZ3PCA	-VE2DZE	RV3WCY	-UK3ADZ
DF2AL/9L1	-DF2AL	SP7WCY	-SP7KTE
DF4RD/SV9	-DF2RG	SP9WCY	-SP9PDE
DL1BA/3A	-DL1BA	T30AC	-K6EDV
DL8YR/LX	-DL8YR	T32AB	-N7YL
DX7DX	-DU6JM	TE5DX	-TI2CF
EL7W	-K4SE	TF5BG	-F6CXV
EN4L	-UA4LM	TF5TB	-DL7MQ
ET3PS	-DJ9ZB	TG9XHQ	-JA4FGD
F5RV/TK	-F5RV	TI0HE	-TI2VVR
F6HIX/J73	-F6EYS	TI5MRC	-VE3MR
F6HIX/V2A	-F6EYS	TJ1AF	-WA4VDE
F8BYK	-F6EMY	TL8CK	-F6EWM
FG0BKZ/FS7	-F6AJA	TL8ER	-F6GQK
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FG0HIU	-F6EYS	TR8WCY	-TR8JLD
FG7BP	-KA3DSW	TR8WR	-F6ERG
FK8AU	-I0PU	TZ6CY	-N8US
FK0AQ	-F2BS	U1A1Y	-UK1AAU
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F08KP	-F6GXB	U5FOO	-UK5FAD
HB0CBJ	-DJ1BP	U9Z	-UA9YEW
HG1Z	-HA1XR	UK1PGO	-UK3SAB
HK0HEU	-HK0FBF	V2AZN	-VE3DUS
HL1SF	-JH6YBW	V3CAG	-KB0G
HL9FY	-KC0LG	V3CAG	-W0JLC
HL9JT	-N2AEW	V3CAI	-K0RWL
HL9RC	-KC0LG	VK0AG	-VK3BER
IP9IARU	-IT9FWD	VK9LL	-W6REC
IT84KFKQ	-IT9ZGY	VP2KBP	-K1TJV
IT84VDM	-IT9TQH	VP8A1B	-G3VPW
IY4FGM	-I4IKW	VP8KF	-G3VPW
J6LJG	-W2LZX	VP8LF	-G3VPW
J41JG	-SV1JX	VR6KY	-LA7JO
J28DM	-F6GYU	VY1AB	-VE3AZJ
JD1BDX	-JE2PXG	W3TB/TF	-W3IVG
JT0DJT	-I8YGJ	WB9TIY/	-WB9TIY
JT1BR	-Bureau	VP2V	
JY8CQ	-WB3CQN	XU1SS	-JA1HQQ
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" " " " " " " " " " " "	80, 40M	\$ 49 "
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Contributors this month include W3BBL, K6ZDL, KF6AW, W9GSB, WA4WME, Z23JO, WB2CPV, W9LNQ, KS2C, W7AHX. Southern California DX Club, Redwood Empire DX Association, Kansas DX Association, Kansas City DX Club, Southeastern Michigan DX Association, Grupo Argentino de CW, Radio Sweden, *The Long Island DX Bulletin*, *The DX Bulletin*, *DX News Sheet* and our most recent DX newsletter, *QRZ DX*.

Here it is a Sunday afternoon and I sit here trying to think up a concluding statement to my column, and I am thinking back to my earlier days of Amateur Radio.

Come mid-June, I will have been a licensed amateur for 30 years. I was in the Army at the time and was assigned to the local MARS station at Fort Dix in New Jersey. Talking to these weird people called "hams" in the various MARS nets I checked AA2WAO (K3WAO) into got me interested. I was hooked. But thinking back, I think I had more fun with Amateur Radio during those first few years than now. Perhaps that is the same with all of us.

Take a look at your local clubs. Who is the most active in club affairs and other amateur activities? It is the new ham! 73 es GL DX, de John, N6JM.



Eddie Schott, DK3CI is a builder and experimenter, as well as an operator. The right half of his bench is his Amateur station — 80-10 meters, general coverage receiver, 2-meter FM and SSB. He has a fully equipped test bench including test equipment, tools and technical library.



Tony Reindl, DL6MG's station is one to stand back and be proud of. Check out the Collins general coverage receiver, computer RTTY-CW keyboard and TU, video monitor, 80-10 meter transceiver, transmatch, and behind Tony, 2 meters and 70cm. From his QTH in Unterschliesheim, Tony can work repeaters in Austria and France.

Propagation

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AUGUST 1984

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	16.8	21.0	26.0	12.7	21.7
0200	14.3	21.4	25.9	12.0	21.6
0300	13.6	21.9	25.8	11.6	20.6
0400	17.2	21.3	25.6	12.1	18.9
0500	15.9	19.6	24.7	13.0	17.7
0600	14.3	18.0	22.5	13.9	16.1
0700	12.6	17.1	20.5	12.9	13.7
0800	10.9	16.6	18.5	12.4	11.8
0900	9.8	15.7	16.7	10.7	12.6
1000	9.7	14.6	15.2	11.1	14.9
1100	10.6	13.3	14.5	11.4	14.2
1200	12.2	12.4	14.5	12.5	14.6
1300	14.3	12.6	14.6	14.5	16.9
1400	16.4	14.4	14.8	17.1	19.5
1500	17.9	16.0	14.8	19.0	20.7
1600	18.6	15.3	14.2	19.2	20.7
1700	18.8	15.3	12.7	19.4	21.0
1800	19.1	15.6	11.4	19.8	22.6
1900	19.3	16.6	12.5	20.2	24.6
2000	19.3	18.7	16.3	20.0	26.0
2100	19.2	21.0	20.8	18.8	26.5
2200	19.4	22.2	23.8	17.1	25.5
2300	19.2	22.0	25.2	15.6	23.4
2400	18.3	21.4	25.8	13.5	21.9

Eyeball QSOs in DL land

Doug Smith, WA6GON (ex-WA6GON/DL)

My recent trip to Germany had many high points. Probably the highest were the opportunities I had to have eyeball QSOs with German radio amateurs (Funkamateurs). I was received with overwhelming hospitality and friendliness at DARC (Deutscher Amateur Radio Club) chapter meetings, on the air, and in amateurs' homes. Mitch Wolfson, DJ0QN/WA6GSN, whom I visited in Munich, Bavaria, arranged all of my visits. Mitch and his wife Waltraud and new son Michael gave me the experience of a lifetime — one I will always be grateful for.

Pictured here are just three of the amateurs I had a chance to meet. There were many others I chatted with on 2 meters and on the low bands when I operated there. Many European amateurs speak English as a second language, so getting to know some of the OMs and YLs was no problem. (I highly recommend learning the language if you plan to visit, though. I didn't, and I left Germany wishing I had. I missed getting to know even more amateurs.)

I would like you to meet Tony Reindl, DL6MG; Eddie Schott, DK3CI; and Wendelin Blokesch, DG2ML. Mitch and I visited Eddie, DK3CI first. We went to Eddie's home one cold wet Bavarian evening — great time to be indoors enjoying good company. I met Eddie's beautiful wife Angela, who is also an amateur, DG3MX. Angela served us delicious sausage, meats, bread and homemade pastry that was out of this world. After the goodies, Mitch helped translate, and I learned some fascinating things about Eddie and his profession. (Mitch has learned to speak fluent German, even a little Bavarian.)

Eddie is a Master Mechanic by profession. Don't let the word mechanic fool

you. Eddie's knowledge and expertise in mechanics makes Mr. Good Wrench look like a backyard tinkerer.

To become a Master Mechanic, a German goes through a most difficult apprenticeship, classroom instruction, and final exams that would make your hair curl. The lengthy process, though trying, was well worth it for Eddie. He knows automobiles, trucks and mechanical devices like the engineer that designed them. His training included not only a technical education, but also study in

business procedures and ethics, law and accounting, and starting a business. You see, by German law, only a Master may open his own business. Eddie doesn't have his own business yet, but the road to owning is now wide open! Eddie is a true Master.

Eddie's love and enthusiasm for his wife, son and his work is matched by his attachment to Amateur Radio. His knowledge, through technical study, has enabled him to build a station of which I was truly envious. Eddie is a shining ex-

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ample of the pride the German people have in seeking technical educations. Close behind Eddie is his young son, who is an active HO train hobbyist and model builder. He's a credit to his dad and mom.

Next comes Tony, DL6MG. I spent the whole day with Tony seeing sights in Munich most ham tourists can never hope to see. Tony and his wife Anneliese went out of their way to make a total stranger welcome in their home and their country. The warmth of their friendship I will long remember.

Anneliese is also an amateur, DC9MR. (She has Tony's old call sign.) Anneliese didn't speak English, but I think we communicated just fine with our smiles. She is a wonderful woman and a terrific mother, who has raised two pretty and intelligent daughters, 12 and 17 years old. Anneliese is a Class C amateur (2 meters and above). She operates primarily 2 meters so she can check up with Tony during the day. I could see Tony was very proud of her.

There's no one in Bavaria that Tony doesn't know, it seems. This has helped him become one of the greatest amateur equipment scroungers I've ever met. (Amateurs are the same everywhere, hi.) Presently, Tony is negotiating with the owner of an abandoned airport to obtain the old control tower to use as a ham station for the DARC C-26 Chapter. As of this writing, everything looks good. The Mt. Diablo Amateur Radio Club (MDARC) wishes you luck, Tony.

Tony's resourcefulness and good nature is nothing compared to his technical expertise in Amateur Radio. As you can see in his photograph, he has put quite a station together. (His low-band beam, dipoles and satellite array occupy a lot of air space over the house.) Tony is active on 80-10 meters, 2-meter FM and sideband, OSCAR and RTTY. He operates HF mobile with a handy Kenwood TS-120, complete with no less than a kilowatt amplifier powered by separate storage batteries mounted in the trunk.

Tony is an engineer who works as a plumbing and air-conditioning inspector/supervisor for the city of Munich. His responsibilities include anything that has to do with pipes and plumbing in homes and industry. What Tony says goes. I had a chance to visit Tony's office; his boss and co-workers are a terrific bunch of fellows.

Wendelin, DG2ML (Class C), was at Eddie's place sharing the good company and light snacks the night I met him in person. He's quite a character. Wendelin is a very humorous, easy-going, fun-loving

person with an uncanny knack for conversation. I discussed everything from beer to politics to Amateur Radio with Wendelin, finding him also to be very sharp and aware. Someone in DL land has to persuade Wendelin to get his Class B ticket so he can talk with us Californians on the low bands! (Got that, Mitch?)

Wendelin is fluent in English, as someone in his position has to be. Wendelin is in top management at Texas Instruments in Munich. His favorite state in the USA is — you guessed it — TEXAS! We shared our impressions of the Lone Star State, since I had been to visit my father's family there many times. Hopefully I've convinced him to visit us



Wendelin Blokesch, DG2ML is shown punching a frequency into his Yaesu FT-207 HT with a Helles Bier perched expertly on his knee. DG2ML operates 2 meters exclusively, 144-146 MHz. Get into a conversation with Wendelin and he is sure to keep you on your toes!

in California one of these days.

I didn't get a chance to see Wendelin's station. The week we were to get together for a few pictures was marred by the passing of his wife's mother. MDARC's con-

dolences and prayers go out to the Blokesch family. I did get a good photograph of Wendelin as I would like to remember him, however. In one hand is his FT-207 handi-talkie, and perched on his knee his favorite Helles Bier, hi. (German beer is the best in the world.)

Germany itself was like walking into a story book. The country was a photographer's paradise and a culinary delight. You should have tasted Waltraud Wolfson's home cooking. What a meal!

My first QSL from a Germany amateur (Alfred Artner, DJ0GM) was hand-carried to me by Mitch while I was in Germany. Alfred is an Austrian working and living in Germany. Alfred also invited me to his home with Mitch to see his station and share a beer or two. Alfred's favorite pastime besides Amateur Radio is underwater photography. He and his wife are avid skindivers.

I'm still a little late on QSLing the friends I met on the repeaters in Munich, but I won't forget that I promised. I want the German amateurs I met to know I had a terrific time in their country. I plan to go back. I don't know when, but I plan to go back. '73 DL land, I'll miss you! □

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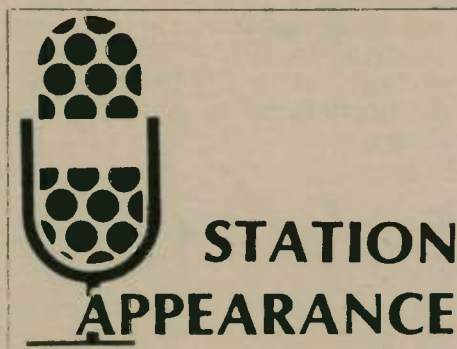
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John Schwandke, KJ0H, of Muscatine, Iowa, is the winner of this month's Station Appearance. As John states in his letter, station equipment "doesn't necessarily have to be 'matched gear' to show a semblance of neatness."

"I'll tell you the biggest secret to keeping your station appearance neat," KJ0H says. "Locate the station on the main floor of your home, immediately adjacent to the living room. Your wife then automatically assumes the responsibility of making sure YOU keep the station neat!"

"The second nice feature about this arrangement is that you are within easy view of the family television set, which becomes your TVI monitor — hi!"

John's station is "simple and straightforward," as seen in the picture. (Top row, left to right): 12V power supply; phone patch system; 2-meter rig with GMT clock atop and time zone clock on the wall; rotor control; and weather alert radio. (Bottom row, left to right): Heathkit SB-200 amplifier; Yaesu FT-101ZD; FRG-7 for SWL'ing and split-frequency work; and the Nye Viking keyer.

The antenna system consists of stacked Yagis on a 60 ft. tower, 2-element 40-meter on top, 11-element 2-meter in the middle and the KLM KT-34A tri-bander on the bottom. Also, a roof-mounted vertical groundplane for general, all-band use, and a long wire for 80 meters.

"My favorite mode is CW," writes John, "and I especially enjoy DX'ing and ragchewing. I am 40 years old and have been licensed for seven years."

John will be enjoying a free year's extension of his subscription. □



John Schwandke, KJ0H, shares his secret of keeping a station looking neat.

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If you have ever wanted to be part of the crew at a major contest station or operate from the "other end" of a DXpedition, there now exists a way in which you can get your chance.

In response to a letter to the *National Contest Journal* regarding the difficulty of recruiting good operators for a 1983 DXpedition, an operator referral service was begun by volunteer staff.

This service is provided at no cost to either operators or to organizers. Amateur Radio operators who wish to be considered for staffing a multi-operator or guest operator contest station or being part of a DXpedition now have the opportunity to get together with organizers of such events.

Operators fill out an information form giving their name, address, telephone number and information about their interests, qualifications and experience. Organizers can specify the type of qualifications they are looking for, and will be supplied a listing of prospective operators who meet their requirements.

Note that the operator referral service does not recommend operators to organizers nor endorse operations. The purpose of the service is only to supply lists of people who have expressed an interest in a particular type of operation to those people who are organizing an operation that matches their interests.

To obtain copies of either the operator's registration or the operator request form (used by organizers to request a list of operators), send a large SASE to: NCJ Operator Referral System, P.O. Box 125, Holton, KS 66436.

Please pass the word about this service to all your acquaintances, radio clubs and Amateur Radio newsletters.

Ohm-Brew

Maria Evans, KT5Y, of Macon, Missouri, is our July Ohm-Brew winner. For the answer, see page 53.



All "Ohm-Brew" entries should be neatly drawn on 3" x 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.

• "People reaching People" •
Amateur Radio is what Worldradio is all about.

Pack rat cleans house

Many years of collection of surplus goodies are waiting for some lucky club or organization to pick up for *FREE*. I would like to give this stuff to anyone who could find some use for it, consisting mostly of tube-type gear such as military, commercial, some old amateur gear, chassis, transformers, meters, and on and on and on. There are no valuable antiques, though. Those I am saving for museums. No dealers, please. You will need several pickup trucks to haul the stuff, and I will insist on an *ALL OR NOTHING* deal.

This could be a good project for a club to get together, disassemble for parts and sell at swapmeets or even get operational. Many pieces of gear could be usable and in working condition.

I, myself, do not even know what is in this mess any more, but I need to clean house. If you or your club would be interested or if you know of some school or other organization, please have them drop me a line and we can make the arrangements. This is too good to haul to the dump.

Address is: Don Bremer, KB6LO, 3200 Tobin Ln., Santa Rosa, CA 95407. No phone calls, please.

Shrine ARC at the circus

The Moslem Shrine Radio Club of Detroit, Michigan provided communications for the annual Shrine Circus in April.

Club members with hand-helds were placed in strategic locations around the coliseum. A base station was set up in the first aid room. When reports of injuries came in to the first aid room, the medics were sent to the proper location with minimum lost time. During the course of 38 shows, there were several injuries reported, which were handled promptly. — Paul Marshbanks, W8ROT

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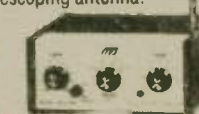
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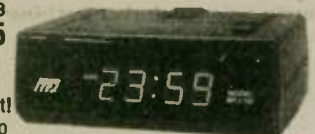
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Fun with OSCAR-10

Byron Lindsey, W4BIW

I have been having the time of my life, since 12 August 1983, on OSCAR-10.

AMSAT has finally got it settled down with very little flutter and QSB, now that they have deployed the high-gain antennas and made other adjustments.

The first night I was on, I worked eight DX stations in a row and then decided I'd better try a U.S. station just to see if I was dreaming. I wasn't. Some nights recently, I guess I could have worked 25 or more DX stations if I had so desired. I work about half CW and half SSB. Those are the modes now being used, but there is and will be RTTY and other types. I suppose any mode is legal, but don't look for FM or AM, due to the duty cycle drain on the batteries.

I believe I did make one of the first, if not the very first, phone patch the other night. That may be common soon, as well as special interest groups such as EME, RTTY, SSTV and computer groups.

It is fun not to have to be in a hurry on this bird. Since apogee is about 35,000 miles up, as opposed to 200-300 miles for previous OSCARs, it doesn't appear to move much and one can peak up on one's own carrier and get instant field strength readings on any changes made. But don't try to monitor your CW because there is a second or so delay in coming back, due to the distance.

At first it took about 1kW ERP to get a good signal in but now you can do it with about 500 ERP. This means 50 watts and about 10dB of antenna gain. If you run too much power, you will get "hate mail" I suppose, since this is a shared power facility.

I use an ICOM 451A exciter into a Mirage 100 watt amplifier, running at 75 watts, on the uplink of 435 MHz. It goes into a 20-element Cushcraft twist antenna with right-hand polarization. Likewise, I use right-hand polarization on the downlink antenna which is just a 10-element twist. These are mounted on the chimney at 25 ft. height. I have a GaAsfet pre-amp behind the chimney mounted in a waterproof gallon bucket with two lantern batteries running it. The pre-amp has been running two months constantly and the batteries still read 5 volts each.

I think the antenna mounted pre-amp was the best thing I did. It establishes a good signal to noise ratio right on the spot.

I use one Advance U100 rotator for elevation and another for azimuth. Works FB. You do need to cover the elevation motor to keep water out and prevent freezing next winter.

Anyway, I want to recommend this bird to you. It is nothing like the others. I remember that by the time Old Man Lindsey got ready to talk on OSCAR-8, the pass would be half over.

Not so on OSCAR-10. You can take your time. In fact, if you want to make

an occasional "filibuster" transmission, go ahead. This bird will still be there.

If you want some detailed orbital information and highly technical information on any of the satellites, tune in around 8:30 p.m. on 3850 kHz on Tuesday evenings for the AMSAT Net.

One other thing. You will need to use hardline to the transmitting antenna on 435 if the run is over 50 feet. Also, some low loss line from the receiving antenna. I use this new Belden 9913 for both. It is between hardline and RG/8. Has 2.5dB loss at 400 MHz and only about 1.3dB per 100 feet at 2 meters.

Your signal should be about the same strength as the beacon, which is on 145.81.

— Atlanta RC, GA

.....
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Worldradio

Disaster plan successful

Roy Engehausen, AA4RE

At 1:16 p.m., 24 April, Morgan Hill was a quiet city on a sunny California spring day when the earth started to move. Twenty-five seconds later, the earthquake subsided. The quake had measured 6.2 on the Richter scale and was centered in Hall Valley, just a few miles northeast of Morgan Hill.

Throughout the affected area, people lifted telephones to check on families, friends and relatives. Under the strain, the telephone system collapsed. Throughout the Northern California area, amateurs checked in on their local emergency frequencies.

Among the first amateurs on the K6THR/R repeater (147.825 MHz) was Vern Gwinn, W6GKY, Assistant Emergency Radio Coordinator (AERC) for the South Valley Ham Radio Emergency

Corps (SVHREC). He set up an informal net to take down reports in an attempt to establish the epicenter of the quake. Roy Engehausen, AA4RE, Emergency Radio Coordinator (ERC), got on a few minutes later after a made dash to the car in the parking lot near his office. It seemed to be a normal California earthquake. Plenty of shaking, but no real damage.

That thought was shattered when Jim Cheadle, WA6VUP, an off-duty fire captain for the California Division of Forestry, reported from the Raymond Gwinn Elementary School in San Martin. One wall had sustained some damage, and there were several injured children.

The request for an ambulance was handled by Tom Vasquez, KA6HDW, AERC for the City of Gilroy, who had set up shop at the South Dispatch Center for Santa Clara County, located in Gilroy. Leland Farrer, K6KBE, at the KLM/Mirage Plant in Morgan Hill, was soon on the air reporting several injuries at his location. Another request for ambulance service was made. Guylin Dudley, N6YK, reported minor damage at the Paradise Valley Elementary School in Morgan Hill, but no injuries.

At this point, AA4RE made the decision to activate the SVHREC and headed south from his work location in San Jose. Vern W6GKY, AERC for Medical Services, was sent to the Wheeler Hospital in Gilroy. Ed Parr, KA6SXW, another AERC, moved to assist Tom KA6HDW at the Gilroy Emergency Operations Center (EOC), as it was set up. Robert Brentnall, WB6ZVW, was instructed to go to the District CDF Office, just south of Morgan Hill.

A liaison was established with the San Benito and Monterey County areas through K6JE/R, 145.47 MHz, on Fremont's Peak. Net control was Phillip Stacy, WB6CAN, and later, Cliff Wiley, K6TEH, at the Monterey County EOC in Salinas.


Contact was also made with the ARES groups that handle emergency communications in northern Santa Clara County on WB6ADZ, 146.715 MHz. N6KFR from San Jose acted as liaison station. Barry Thaysen, WB6UGG, EC for the county, was told of the damage and injuries, and decided to activate the station at the county EOC in San Jose.

When Robert WB6ZVW arrived at the CDF office, he contacted Captain Mauldin, who is in charge of the Volunteers In Prevention program in the area. The CDF was establishing a command post in the Jackson Oaks area of Morgan Hill because of the damage there. Scott Loftness, W3VS, N6YK and N7GBD were instructed to head for that location. Later they were joined by NX60.

The county EOC station asked for communication to Morgan Hill's city hall, and Peter Murphy, KO2S, was dispatched. Donald Lehan, KA6CWI, a local telephone company employee, toured the area, giving invaluable eyewitness accounts of the damage.

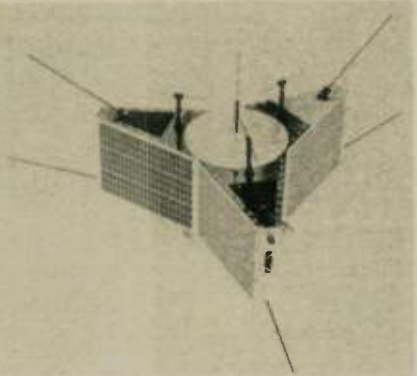
Other stations reporting in were Ken Holladay, K6HCP, and Art Rice, KB6HG, from KLM/Mirage; Greg Knapp, N6GK; Sam Ricker, AJ6D; Jim MacKnight, WB6OWE; Wayne Emerson, N6FCR; Kevin Levonius, NJ6L; Nicholas Carman, KA6DAO; and George Masterson, WA6YMB. G8HJD/W6 and G8PUX/W6 also checked in and later served a relief shift at the CDF headquarters.

(please turn to page 47)



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*Although an Amateur Radio license is required for two-way communications via OSCAR satellites, you do not have to hold such a license to be a full voting member of the AMSAT team.

Malaga

continued from page 1

seas got bigger. The autopilot couldn't handle it any more, so we were taking turns hand-steering. N6GMW and Dick Henderson, WB5IVT, checked in with us every hour till Marcia and Ted got the hook down at Isla San Francisco about 10:00. They had been underway for two days and nights so, understandably, crashed! Dick stayed up all night with us.

At 0130 MST, the wind and seas increased. It was very black outside. The creaking of the jury-rigged backstay as it strained to hold the mast upright was very unnerving. As we'd come down off a wave, we could see the mast shudder, and we were terrified it was going to come down any minute. I came on a few

minutes early for our 0200 sked, as I wanted to report our position before the mast crashed. There is a net that comes up at that time on 7.235 in Southern California, but when Dick explained we were running priority traffic, they were very nice. Jim Young, WB6FNI, offered any help they could give us.

We continued hand-steering — a half-hour on, half-hour off — with the wind howling in the blackness and the seas crashing over into the cockpit. By now we were in our foul weather gear, as it was cold getting wet in that wind. We were getting so exhausted we just mechanically kept the boat going in a direction as kindly as possible to the boat.

Dick plotted our course for us, and — armed with the information of the course we were able to steer — found an

anchorage we could go to on the east side of Isla Partida.

It was daylight when we got there. Just as Dick predicted, the wind and sea moderated in the lee of the island and our spirits improved. The stick was still up. The end was in sight. We could see a large powerboat in the anchorage, and soon we were hailed by Jim Hollywood, KA6PAK, on *Tura Lura*, with information about the anchorage and offer of help with anchoring.

We thought it was the most beautiful cove in all the world. What a relief to have the hook down! *Malaga* transformed herself from a rearing, bucking, wet monster to a cozy, floating home.

Dick loaded a crew of three into his speedy powerboat, *Esperanza Viva*, and steamed out to our QTH. Jim KA6PAK transferred Frank Lara, KA6OTT, from *Amistad*; Bob Oakley, KA6AJI, off *Sisu*;

and Lee Leonhard, W6NPQ, off sister ship, *Mar y Vent*, onto *Malaga* in his dinghy which was already in the water.

The delivery crew ordered the regular crew below. I went below and went to sleep promptly. Carl was so strung out he couldn't relax, so he reclined in the cockpit and talked to the relief crew all the way back to La Paz.

Sailing friends who hear this story always want to know just what failed. We lost a cotter pin holding the yoke to the masthead. That allowed a 5/8-inch stainless steel pin, which held the backstays, to pop out. It moved about an inch and hung up on the place where the triatic and the topping lift are fastened. That held it for a time, but sailing with everything up in pretty brisk wind, it worked itself through that place. That's when it all came down! □

Tornadoes

continued from page 1

were passed over, but the compassion and regret for our neighbors to the east and south. The pride in Amateur Radio, that our fellow hams had mustered their forces and gone in to provide help. Emergency nets throughout the two states operated continuously, passing health and welfare messages for the Red Cross and other public service organizations.

There is a hard lesson to learn from what we have seen. It is: be prepared. Know what measures of safety should be taken when warnings come. Never scoff at reports from the Weather Service. Heed these warnings and take cover when a tornado sighting is reported.

Amateurs should initiate weather nets for reports of imminent danger, to increase the time lapse between warnings and hits. Discuss this in your homes, and make a tentative "plan of operation" in the event of severe weather warning.

A letter of appreciation was sent by James B. Hunt, governor of North

Carolina, to Amateur Radio operators throughout the state of North Carolina, thanking them for their "effort and accomplishment in the disaster areas." — *Mary Weddle, WC4T; Shelby ARC, NC*

South Carolina had its share of emergency activity, too. James Walker, WD4HLZ, South Carolina Section Manager, was one of the many amateurs who participated in communications for emergency operations.

"We are frequently involved in supplying communications and other aid in times of emergency, and we got a pretty good idea of just how effective we can be, during the tornadoes that ripped through the midlands and Pee Dee (River) on the night of 28 March," said Walker.

More than 40 amateurs moved into Bennettsville (South Carolina) shortly after a tornado left a path of devastation and death across the heart of Marlboro County. More than 200 people were injured and nine were killed.

"We had 200 ARRL operators on

backup, ready to come in if they were needed," said Walker. "I'm proud of the way our people responded. They did a remarkable job."

He recalled the work done by Ernest Smith of Bennettsville. Three members of his wife's family had been killed by the tornado, but that didn't keep him from his emergency duties.

ARRL members gave the Bennettsville area several valuable minutes of warning time before the tornado hit. Jack Pegues heard an alert from the Cheraw Police Department. He spotted the tornado at 6:54 p.m. and radioed, "It is headed on a straight line for Bennettsville." At 7:25 p.m., the tornado flattened the Northwood Shopping Center, two large apartment complexes and dozens of houses in north Bennettsville.

The emergency center set up by amateurs became Bennettsville's only reliable communications link in bringing in emergency equipment from adjacent counties. Walker said that volunteer hams, at their own expense, set up units at the shopping center, Marlboro Hospital, the county jail, the police stations and other key points.

"We could not have operated without them," Bennettsville Rescue Squad Captain John Driscoll said. "They kept us in direct contact with the hospital at all

times. They made it possible for us to transport and transfer emergency patients."

The National Weather Service in Columbia got its first word about the tornado from Amateur Radio operators. — *Information from article by Laverne Prosser, The News & Courier, Charleston, SC* □

CP/M Users Net

The CP/M Users Net meets every Sunday night, at 0300Z, on 3.968 MHz.

The primary purpose of the net is to find/exchange public domain software that is CP/M 2.xx compatible that will run CW, RTTY, AMATRON, ASCII, RCP/M, BBS, etc. There are gads and all manner of PC's out there waiting for CP/M compatible, public domain or low-cost software.

Dues: an amateur license and interest. No newsletter yet. Net control — Bud Atkinson, K5DHZ; Alternate Net Control and Co-founder — Barry Bettman, WB6UTY; Net Database Manager — Gary McDuffie, AG0N.

This net should be of interest to all Kaypro, Morrow Design, Osborne, Xerox 820, Big Board, etc. users. □

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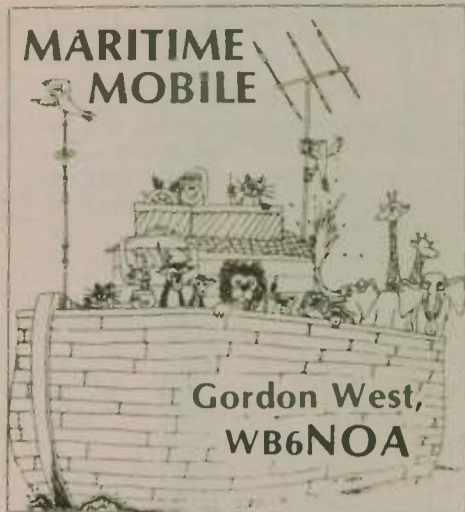
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Summertime super range

This summer, expect some great VHF and UHF super range. You won't believe your ears when you hook up with a station 400 and 500 miles away! It's going to happen this summer, and it could very well happen to you on your boat, at home, or just about anywhere in the country on VHF and UHF frequencies.

Local weather conditions will rarely affect your worldwide HF communication capabilities. Whether it's snowing or 110 degrees in the sunshine, worldwide range is seldom influenced by local atmospheric conditions. However, on VHF and UHF frequencies, "line-of-sight" range can be dramatically influenced by local weather phenomena.



A quality amplifier will increase your VHF and UHF range.

VHF and UHF groundwaves normally travel 20 percent further than optical "line-of-sight" distances. Optical horizon line-of-sight uses the actual Earth's radius, while VHF radio line-of-sight uses a larger radius (one-third larger). VHF and UHF radio waves travel slower as they pass over soil and sea water than they do at high altitudes, and are refracted slightly around the Earth.

The VHF and UHF radio propagation "line-of-sight" distance is the length of a line, between the heights of two antennas, tangent to a sphere with a 4/3 Earth's radius. That's what the books say.

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Check channel 2 for DX signs.

On VHF and UHF frequencies, working other stations located close to the Earth will result in a maximum range of only about 20 miles. Working repeaters, you might be able to reach out as far as 100 miles — depending on how high the repeater is.

Then comes summertime, and you will sometimes find distances up to 500 miles available on VHF and UHF frequencies!

A local weather phenomenon called tropospheric ducting will many times capture your VHF and UHF signal and bend it far over the horizon up to 1,000 miles away.

Tropospheric ducting occurs when warm, stable, dry air associated with a stationary high pressure system is sandwiched in between cool, moist air just above the surface of the ocean and cool air acting as a cap on the sandwiched warm air mass at about the 1,000 ft. level. If you live near a large city, we commonly refer to this trapped warm air as an inversion level. In Los Angeles, we simply call it the smog belt that seems to hang for weeks over our fair city.

Stations well beyond optical line-of-

sight distances can easily communicate with low power levels via the trapped VHF and UHF radio waves in these ducts. It's even possible for stations in California to communicate with stations in Hawaii via tropospheric ducting during the August Pacific high pressure duct. Same thing on the East Coast, in the Gulf Coast area, and in Mexico — plenty of long distance calls on ham and marine VHF frequencies.

You don't need to do a thing to prepare yourself for tropospheric ducting. Just listen to a distant repeater, and watch the signal build in the later afternoon or early evening hours. During periods of windless days where the inversion layer is easily defined, tropospheric ducting will usually take place. Over the water, it's more pronounced, so take advantage of it this summer.

Sporadic E

Another summertime bonus to VHF 6-meter and 2-meter operators is a meteorological phenomenon called "Sporadic E" skip. Highly ionized in visible patches up in the ionosphere drift from west to

east during the summer months. These act as VHF radio mirrors to signals above 30 MHz all the way up to 200 MHz.

Early morning and late afternoon hours in June, July and August seem the best time to look for Sporadic E openings. In less than 20 seconds, a seemingly "dead" band on 6 and 2 meters will jump alive with signals from stations 1,000 miles away! Occasionally, double-hop E-skip will occur on the 6-meter band where you may hear stations up to 3,000 miles away. The condition may last for minutes — but rarely beyond an hour.

Low power levels are more than adequate to work these distant "skip" stations that will come in louder and stronger than most local stations. Instead of hearing your favorite repeater, you may hear three or four repeaters all coming through on one frequency. Try unused local repeater channels for activity, and you may be talking with a station through a repeater thousands of miles away.

The signals usually remain stable and strong until the invisible ionized cloud moves away. The signals will usually take a quick dip or two, and then immediately disappear.

You can sometimes predict Sporadic E openings by watching for strong-moving, high altitude weather fronts in between you and the potential stations with which you may wish to communicate. Thunderheads as high as 40,000 to 60,000 feet may sometimes spark Sporadic E openings. Some link Sporadic E with high altitude wind shears associated with massive high altitude weather fronts.

You can always spot a Sporadic E opening by watching Channel 2 or 3 on your TV. When you begin to pick up multiple ghosts on an otherwise clear channel, turn on your 6- or 2-meter radio and get ready for some real fun. A heavy black bar running across or down your TV usually signifies that a distant skip station is coming through on TV Channel 2 or 3.

For mariners, both Sporadic E skip and tropospheric ducting are enhanced over sea water where noise levels are lower. When the local weather or meteorological conditions are just right this summer, get ready for some VHF and UHF super range.

Attenuation

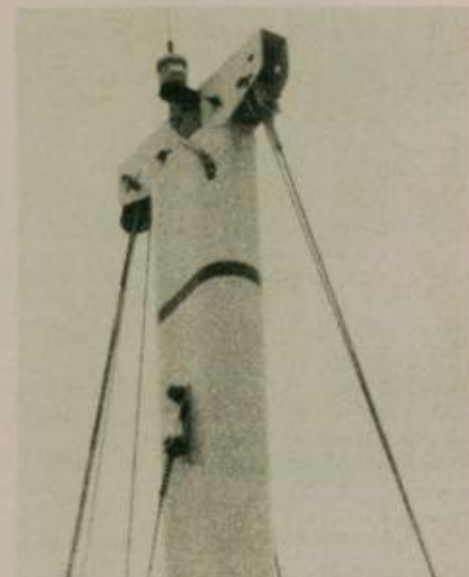
Two factors are involved in the attenuation of the VHF radio signal. The first is free space attenuation, and the second is rapidly increasing attenuation associated with the defraction of the radio

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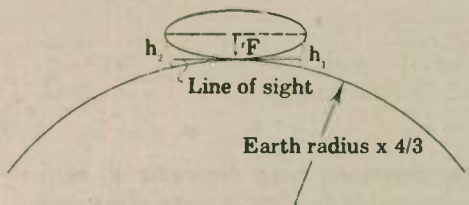
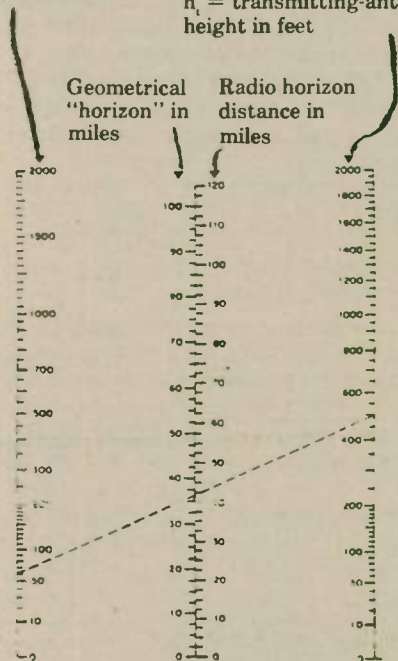
wave by nearby reflective bodies (like the surface of the Earth).

Free space attenuation is the easy one. It is simply $A = -20 \log (l/d)$, which means that every time the distance between antennas doubles (or halves), the attenuation changes by 6dB (power changes by a factor of 4). Unfortunately, this information is not of too much use to us as free space attenuation only applies when the path clears the Earth by at least the minor-axis of the first Fresnel Ellipse, as shown below.

What this means in a practical situation is that the antennas must be 175 feet high at 20 mile distances to provide the 300 ft. clearance for the ellipse.

h_r = receiving-antenna height in feet

h_t = transmitting-antenna height in feet



Salute of the Month

This month, we proudly salute the following:

- The Southern California chap who invented the tiny audio amplifier that fits in the ICOM IC-02AT to give it some real audio output power.
 - The shoreside maritime net controller who terminated a phone patch when they started talking about insurance and insurance premiums.
 - The Southern California Yachting Association for an organizational meeting of yacht clubs with Amateur Radio base stations and the establishment of a Pacific Coast chain of "radio active yacht clubs" to promote safety at sea.
 - For Yaesu and their 757 transceiver that is ideal for maritime and regular mobile installations, that offers more for less.
 - A salute to Russ Faudree, KA7HVA, for conducting Amateur Radio net workshops at his home QTH.
- Have a good summer, and pleasant sailing.

NEXT MONTH: A review of the new TE systems 2-meter and 432 MHz amplifiers.

VHF FM in Europe

Channelized VHF FM activity began in Europe around 1970, but not until 1972 was a European FM channelization system standardized. The channel system is now (almost) the same from the north of Norway to the south of Italy and is based on a 25 kHz channel spacing.

Since 1980, a small number of additional channels have come into use on the 12.5 kHz half channels. The European 2-meter band, which carries the vast majority of the FM traffic, is only 2 MHz wide (144-146 MHz), and only the 145-145.775 MHz sector is allocated to channelized FM (see Tables A and B).

Note that repeaters are known by their channel number rather than their frequency (i.e., "R1" not "025/625").

Ch. No.	Input	Output
R0	145.000	145.600
R1	145.025	145.625
R2	145.050	145.650
R3	145.075	145.675
R4	145.100	145.700
R5	145.125	145.725
R6	145.150	145.750
R7	145.175	145.775
(R8)	145.200	145.800
(R9)	145.225	145.825

Table A (repeaters)

S 8 - 145.200	Working channel
S 9 - 145.225	Working channel
S10 - 145.250	Working channel
S11 - 145.275	Working channel

S12 - 145.300	RTTY AFSK
S13 - 145.325	Working channel
S14 - 145.350	Working channel
S15 - 145.375	Working channel
S16 - 145.400	Working channel
S17 - 145.425	Working channel
S18 - 145.450	Working channel
S19 - 145.475	Working channel
S20 - 145.500	CALLING CHANNEL
S21 - 145.525	Working channel
S22 - 145.550	Working channel
S23 - 145.575	Working channel

Table B (simplex)

In addition to the above eight repeater channels used internationally, France and Austria use additional repeater channels (8 and 3, respectively) which have been devised unilaterally due to historic and geographic reasons. At this point, it is worth mentioning that there are still a few repeaters operating on two channels (R8-R9), whose outputs lie in what is now the satellite sub-band (145.8-148 MHz). These are gradually having their channels changed.

The 70cm band differs from that in North America, being 430 MHz — not 440 MHz. Not only is the band different, but five different repeater offsets are known on this band (-1.6, +1.6, +4.6, +7.0, and -7.6 MHz). Unless you intend a long stay in any one country, the likely level of activity available means that the effort of modification to your UHF rig is probably not worthwhile.

From a linguistic viewpoint, the North

American visitor to Europe must appreciate that his home language will not be universally understood throughout a European tour. Whilst English is fairly widely understood in many countries, many amateurs with a limited knowledge of the language may be reluctant to demonstrate this on the air.

Your knowledge of French will be invaluable in France, Belgium, Monaco and Luxembourg. Visitors to Italy and the Iberian Peninsula will find a knowledge of the local languages to be highly desirable. In Central and Eastern Europe, if you do not speak the local language, you may find that a knowledge of German and/or English will get you QSO's. In Scandinavia and northwest Europe, you should find no problem in making QSO's in English if you do not speak the local language. Be tolerant of the "dialect" of English that you will meet on the air (even in England!).

As a result of the limited number of repeater channels available and the high density of the amateur population, the coverage area of most of the European repeaters is smaller than is common in North America. (Most repeaters run no more than the International Amateur Radio Union recommended 25W ERP.) A consequence of this is that many long-distance QSO's take place on SSB using high-gain antennas. SSB activity is almost exclusively on horizontal polarization, whereas most FM activity uses vertical.

The limited number of VHF repeater channels also usually results in there being only one or two VHF repeaters serving a particular area, though large metropolitan areas may have three or four. There is, therefore, a much higher level of FM simplex activity than is experienced in North America. This activity level also results partly from the fact that nearly all European countries have a VHF/UHF code-free license class. In the case of the United Kingdom, approximately half the amateurs hold this class of license.

European amateurs have established a single FM calling channel — 145.500 MHz (known as S20). QSO'ing on this channel is frowned upon, and in this way, S20 is quite different from the North American '52' National Simplex Frequency. An exchange of call signs and QSY arrangements is all the traffic that should take place on S20.

The use of CTCSS (PL) tone-controlled squelch on European repeaters is almost unknown. On the other hand, the use of Tone-burst access is very widespread, and in many countries it is obligatory. The universally used tone frequency is (please turn to page 35)



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W9AA's 50th anniversary

Hamfesters Radio Club (Chicago), in conjunction with their 50th anniversary celebration, arranged with the help of club president Steve Schipitsh, K9UVN, to hold an Amateur Radio exhibit at the Chicago Ridge shopping mall.

The mall is located in the adjoining suburb of Oak Lawn, Illinois, and we were pleasantly surprised at the excellent cooperation we were accorded from the mall's management. They provided a very suitable location — antenna facilities as well as local publicity throughout the mall.



Judy Witt, KA9BVS, Chairman of the 50th Anniversary Committee, stands next to one of the signs announcing the Hamfesters Radio Club celebration. On the other side is club president, Steve Schipitsh, K9UVN.

The club's 50th anniversary committee, which was the prime mover in coordinating this event, consisted of the following: Richard Marks, KA9BUK; WA9DYR; Judy KA9BVS and Doug Witt, KB9KD; Steve Schipitsh, K9UVN; Wanda N9AIB and Robert Hotz, W9CA; and Dorothy N9ALC and Bob Truhlar, W9LNQ.

Many meetings were held in advance of the exhibit date to insure adequate publicity, equipment, displays, antennas and operators. The ARRL was most helpful in supplying brochures and other materials, which were made readily available to the public. Amateurs were on hand to answer questions.

Stations operated on 40, 20 and 2 meters, as well as RTTY and SSTV displays. Contacts were established throughout the United States and other parts of the world, and the club's call — W9AA — was well represented.

In the three days the exhibit was held, thousands of people became aware of Amateur Radio and its many aspects. We also provided a sign-up sheet for the club's code and theory classes and an

invitation to attend our monthly club meetings.

All in all, a very successful presentation of Amateur Radio. I strongly urge all other clubs, if they have not already done so, to become involved in similar undertakings to promote Amateur Radio. — Robert Truhlar, W9LNQ

The treasurer

Cape Fear Amateur Radio Society's NEWS passes on an item from ARC Bulletin:

Herb Lipson, W8FBH

If you have read some of my writings, you'll know that I have been involved in radio clubs and other organizations since high school in 1934. Over the years, I guess I have occupied every office at one time or another, and have been treasurer a dozen times, more or less. Among my memories are some of the comments that go with the office. These are no specific persons — just memories stored in the attic of my mind.

"What's that \$1.35 miscellaneous? You trying to hide something?"

"How come you bought 65 stamps and we have only 62 members?"

"Five bucks for an 807 for the club rig? I got some in my garage. How come you didn't ask me before you bought 'em?"

"Here's my check for dues. By the way, I deducted 50¢ for parking to buy the doughnuts. I bought sugar last March, so I deducted for that. And I forgot to turn in 15¢ for three stamps last year to mail the . . . etc."

"Hey, I gotta have a check right away for antenna wire for Field Day. Can't you sign it alone? Then how about you give me the cash and make out a check to yourself?"

"Receipts? Musta lost 'em. Just enter it as picnic expenses. What's a few bucks more or less among friends?"

"I know I paid my dues. Remember? I handed you the \$5 bill while you were running to catch the train to town."

"Here's the books. A few items didn't add up right, but it's only a ham radio club. Nobody checks anyway."

From a president: "Herb, I'm a little short this week. Issue me a check for 25, and I'll get it back to you next week."

"Here's 20 raffle tickets for last week's drawing. The money is in the envelope. Hope I got a winner here."

"This here bill is for six dozen doughnuts, one pound of coffee, and one speeding ticket."

From a letter: "Please renew my membership and my subscription to QST. My Diner's Club card number is . . ."

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VISIT YOUR LOCAL RADIO CLUB.

ARIZONA

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

CALIFORNIA

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

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

Conejo Valley Amateur Radio Club
Home Federal Savings and Loan
164 W. Hillcrest Drive
Thousand Oaks, CA
1st Thursday/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.
Wawona Middle School; 4524 N.
Thorne; Fresno. W6TOR 146.34/94

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

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

Sacramento Amateur Radio Club, Inc.
Contact: Norm Nelson, KA6YRC, (916) 428-7122
after 6 p.m. Meets: Army Reserve Ctr., Army Depot
Fruitridge and Florin-Perkins Road
2nd Wednesday/monthly - 7:30 p.m.

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

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

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

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

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

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

South Bay Amateur Radio Association
P.O. Box 91 • Fremont, CA 94536
Fremont School, 4023C Laidolo 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

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.

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

West Coast Amateur Radio Club
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Call KA6RRR (714) 636-8661 for dates

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

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

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

CONNECTICUT

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

FLORIDA

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 rpt.

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

Vero Beach Amateur Radio Club W40T
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 146.29/88
2nd Tuesday/monthly - 7:30 p.m.

ILLINOIS

Bolingbrook Amateur Radio Society
215 Monroe, Bolingbrook
(312) 739-0045 / call in 147.93/33
3rd Monday/monthly - 7:00 p.m.

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

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

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

NEW YORK

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

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

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

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

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

OHIO

Ashtabula County ARC
Ken Stenback, A1BS (964-7316)
County Justice Center
Jefferson, OH
3rd Tuesday/monthly-7:30 p.m.

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

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

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

OREGON

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

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, W85MDJ

VIRGINIA

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

Southern Peninsula Amateur Radio Klub (SPARK)
Repeater 146.13/146.73 - K4DHO/R
Salvation Army Community Center (Big Bethel Rd.)
Hampton, VA
1st and 3rd Tuesday/monthly - 7:30 p.m.

WEST VIRGINIA

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

WISCONSIN

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

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

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

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

INDIANA

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

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

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

Northeastern Indiana ARC
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.

MICHIGAN

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

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

MASSACHUSETTS

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

MISSOURI

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

NEW HAMPSHIRE

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

NEW JERSEY

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

"Got a new rig, huh? Maybe you're siphoning a little off the top. I think all treasurers should be bonded." Gr-r-r.

From *The Call Letter*, Poway Amateur Radio Society, Inc., Poway, California. Secretary George Chaet, W1RGH, comments:

I extracted the following letter from the October 1982 issue of the *QRZ Newsletter* of the Middlesex ARC, Newton, Massachusetts. The letter's author is about 17 years old, to the best of my memory. I'm sure that many who read this letter could apply it to PARS or any other Amateur Radio club. There is much food for thought in this young man's feelings.

I want to clear up one thing about my resignation as vice president of the club. I am upset because the club is a do-nothing club. I put a lot into it, but there is a void of things coming back to me... felt as though I was being short-changed, but it goes deeper than that, insofar as there is a vast difference in age brackets in the club and aren't enough activities within the club to satisfy the needs of each general age group.

There are so many things we can do, such as have our own club contest effort, our own public service group, our own club DX group to exchange ideas, DXpeditions into the field, and other programs to create interest with members from every age bracket. We could air DX bulletins on our repeater with the touch of a button, have club bulletins, or a calendar of amateur activities around the area to be heard at the touch of a button. We could have a phone patch on the repeater.

Such features would be of interest to all hams in and outside the club, and could possibly attract others to join the club. All it takes is for someone to do it, but it is always the same few doing the bulk of the work, or so it seems to me. What is the matter with such a lethargic club; are we just biding our time until we get to the graveyard or are we going to wake up and be a creditable club to the community and Amateur Radio?

I have checked around with others in my approximate age group, and they have a zest to want to do things in the name of the club

but seem to get nowhere. What's in it for them?

Realizing how things were going against my thinking, I didn't feel as though I could provide good leadership as the vice president and, after careful consideration, decided to resign.

With best wishes for the future of the club I remain, sincerely, Ivan Pagacik, KAIYQ.

From Silvercreek Amateur Radio Association, Inc., Barberton, Ohio, newsletter:

RAAL numbered radiograms

The Rational Anonymous Amateur's League (RAAL), in its finite wisdom, has sanctioned the use of certain numbered texts for the relaying of routine messages. This procedure eliminates the unnecessary lengthy transmissions of complete texts, freeing up valuable air time to allow the discussion of such important topics as the length of your coax, the unexpected rise in your SWR from 1.1 to 1.2, or the gory details of your latest operation.

Simply send the appropriate RAAL message number in place of the text itself. The letters RAAL are inserted in the preamble before the check but after the cash. Hard cash always takes precedence. What could be easier?

RAAL # Message

- 1) We're all in danger; please worry.
- 2) We're all OK except for strange Uncle Ernie, who has six toes.
- 3) The fire department managed to save the house but they drowned the cat.
- 4) No need to worry; the radiation life of plutonium is only 5,000 years.
- 5) Suggest you remain where you are. The earthquake shook things up a bit and the place is a mess.
- 6) I have arrived safely, but my baggage is lost.
- 7) My baggage arrived safely, but I am lost.
- 8) My baggage and I arrived safely, but the plane is lost.
- 9) Please acknowledge if you did not receive this message.
- 10) In response to your questions, the answer is a mealy-mouthed maybe.
- 11) In response to your request, the seven sheep and the four gallons of peanut butter are on their way, but the walrus trusses are not to be found.
- 12) I would if I could, but I can't so I won't.
- 13) Your last message does not compute. Please check your data banks.
- 14) Okay. It sounds better than sticking my finger in an electric socket.
- 15) Please hurry home. I'm waiting for you.
- 16) Expletive deleted.
- 17) Happy Birthday to you and yours.
- 18) Sorry I forgot your birthday last month, but I was busy feeding my iguana.
- 19) Have a darn good Arbor Day.
- 20) Merry summer solstice.
- 21) Congratulations on your parole.
- 22) Best regards to your fish.
- 23) Congrats on your complexion clearing.

(from Santa Barbara Key-Klix by Ron Thompson, N6DGC)

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John T. Little
K8KRG
146.10/70

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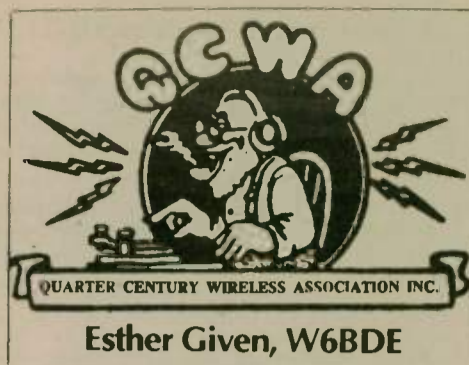
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Few of us can pinpoint the time when our thinking changed from looking ahead to looking back. When did we switch from the kid's carefree joys to the nostalgic memories of the old goat? This uncomplimentary title and attitude is sometimes applied to QCWA because it is a rare member who becomes eligible for membership who is under 40 years of age.

In our Western culture, we have failed to esteem and revere the valuable accomplishments and contributions of our elders. Instead of listening to the storyteller around a council fire, relating factual family or tribal history, we depend on the radio, television or fictional writings to entertain us. Frequently, these renditions are neither factual nor instructive.

QCWA's 10,000 active members hold a wealth of adventure, anecdotes, history and knowledge ready to be tapped. Next time a program or speaker is needed, why not contact your nearest QCWA chapter? They will be glad to supply a member whose experiences and background will please any audience. Listen to the tales and adventures spun by a spark-gap R/O on a banana boat; hear about the thrill of receiving radio signals resulting from touching a galena crystal with a "cat's whisker"; share the emotions of the military draftee who was shunted off to radio school, thus discovering a rewarding hobby.

Countless sources of remarkable accomplishments and humorous recollections are waiting to be related. Take advantage of the tremendous reservoir of knowledge, experience and wit of these electronic pioneers whose contributions helped establish what we now call the "state of the art."

A cooperative agreement between QCWA, Inc. and the ARRL, Inc., including its Canadian Division, was signed by the presidents of both organizations on 31 March 1984. The purpose of this document is to formalize cooperation, recognize each other's capabilities, and mutually maintain a continuing

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liaison to provide support in the general protection, promotion and advancement of the Amateur Radio Service.

Upon request from QCWA Headquarters, the League will provide designated QCWA chapters with information mailing normally provided ARRL/CRRL-affiliated clubs. In the future, other areas of mutual cooperation may be developed.

QCWA Headquarters in Irving, Texas is undertaking the job of collecting and properly binding full sets of QST, CQ, 73 and other amateur publications of note. This material will be maintained as a research library available to members. Photocopies of articles will be supplied for a nominal fee.

In order to carry out this project, old issues and binders are being solicited. Any gifts will be welcomed and tax deductible. Contact QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061; (214) 438-8038 during morning hours. □



F. Wendell Tietsworth, W2SUE (left), receives his Elmer-of-the-Year award from Elmer Committee Chairman Gordon Gregory, N2IN.

Elmer of the Year

F. Wendell Tietsworth, W2SUE, was chosen as QCWA's Northern New Jersey Chapter's 1983 "Elmer-of-the-Year" from a field of nominees by a committee which included such prominent local amateurs as Joseph Painter, W2BHM, head of the W2 QSL Bureau, and William Mumford, W2CU.

W2SUE has been teaching Amateur Radio courses since 1965, and is being sponsored by the Hackensack, New Jersey Radio Club, WA2LYJ, 1970-1982. He currently teaches Novice classes at the Nutley, New Jersey Red Cross Building, and is active in Army MARS as AAR2JP. — Gordon Gregory, N2IN □

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QCWA chapter's 'Elmer of the Year'

Named in honor of all the "Elmers" who, since Marconi, have given of their time and talents to help others become Amateur Radio operators, the Northern New Jersey Chapter of QCWA has established its Elmer Award.

The award will recognize as "Elmer-of-the-Year" the radio amateurs in Northern New Jersey who has done the most to pass on the knowledge he or she has gained over the years to the next generation of Amateur Radio operators.

The award will consist of two appropriately engraved plaques. The first will carry the name of each year's winner and rotate annually; the second will carry the name of the current year's winner and may be kept permanently.

The winner will be selected by a panel of five judges, three of whom shall be members of the Northern New Jersey Chapter of QCWA; two will be prominent local amateurs.

Presentation of the award will be made

to the 1984 winner at the chapter's annual meeting, the evening of Friday, 26 October.

Rules

1) Nominations for the award may be made by any licensed Amateur Radio operator in northern New Jersey.

2) Nominees must be licensed Amateur Radio operators who reside in northern New Jersey.

3) Each nomination shall be accompanied by a statement (of 500 words or less) detailing the reasons the nominee is deemed worthy of the award.

4) All nominations must be received on or before 15 September 1984 by the chairman of the Chapter's "Elmer Award" Committee.

Please direct all communications to: John J. Brischler, W2SGI, 34 Franklin St., Little Ferry, NJ 07643; (201) 641-4251. □

K2FD wins Elmer award

Robert McGarvey, WB2EVF

Central New Jersey Chapter 138 of the QCWA has selected George Miller, K2FD, of Perth Amboy, as the latest recipient of its Elmer award. It is given to those who have devoted their time and skills to enabling others to qualify for Amateur Radio licenses.

George, a retired captain of the Perth Amboy Fire Department, has held an amateur license nearly 50 years. He also served as a Coast Guard radio operator 14 years and holds the amateur Extra Class ticket.

While in the fire department, Miller conducted Novice radio classes for seven years, despite the pressure of his official duties. After retiring a couple of years ago, he continued teaching, offering evening instruction at Perth Amboy High School to would-be radio operators. Another successful class was held this year.

George continues to be active in Amateur Radio and is a past president of the

Raritan Bay Radio Amateurs in Sayreville.

The anniversary dinner of the local QCWA was held Sunday, 06 May, at Spring Lake Heights, with Charlie Gspann, W2ZEE, presiding. Other officers are Harry Landau, W2IX, vice president; Robert McKinley Jr., W2OMR; secretary; and Jerome Havel, W2RRX, treasurer.

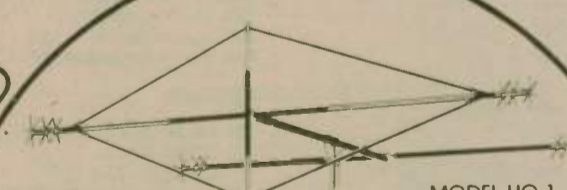
K2FD was nominated for the Elmer award by Stan Krenzel, W2HEN, of South River, who cited the years Miller has devoted to licensing instruction of anyone interested in becoming a radio amateur. Many dozens of amateurs are on the air today because of this devotion, Stan noted.

In ultimate proof of the effectiveness of Miller's teaching, Krenzel offered as evidence the licenses of his own wife, son, daughter-in-law and grandson — all Novice graduates of K2FD classes and all now holding upgraded amateur licenses.

— Home News, NJ □

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VHF FM

(continued from page 31)

1750 Hz, and generally a 500ms burst length will suffice. All Belgian repeaters and a number of other individual machines require a minimum of three seconds of tone. Use of ALL repeaters is open to ALL amateurs — there are NO closed private repeaters. Autopatch is not available through European repeaters, nor is any interface to the public telephone network permitted. Linking of repeaters is not common.

Having decided you like the idea of operating whilst on your trip around Europe, you will need to make application for temporary operating permits to each country individually. You should first check with your National Licensing Administration or your National Society to see if the countries you are intending to visit will issue you with a permit to operate. Most will, but almost without exception, there will be a fee payable for the issue of the permit. In nearly all cases, the application has to be made on a special form, and these are available from the licensing administration of the country in question.

Make sure your present license will be valid for the period of your trip. All applications will require a photocopy of your license. We recommend a total lead time of three months to obtain, complete, return and await processing of the application. No two administrations seem to have the same requirements, and there are wide differences in the magnitude of the fees demanded and the methods of payment required. Dollar bills are not usually acceptable!

Customs formalities for your gear are generally not a problem, provided you hold a valid operating permit for the country you are entering. An exception is France, where additional paperwork is required. The United Kingdom requires a special permit for equipment that is capable of operating between 26.1 and 29.7 MHz.

To guide the visiting amateur through the "jungle" of paperwork and to provide comprehensive maps and lists of repeaters in most European countries (and beyond — to Australasia and South Africa), the authors of this article publish a regularly updated book entitled *The International VHF-FM Guide*. In it will be found details of the requirements of each of the individual countries you will be visiting, including the address of the country's licensing administration, details of the information required, the advance notice recommended, the fees and charges, and the customs formalities (where relevant). Maps show the position of each repeater and listings give call sign, channel, power, talk-through time, etc.

The UK has a special domestic edition of the book which is recommended for visitors to the UK. This edition contains an additional section which gives expanded details of individual UK 2-meter repeaters. The book may be purchased from a number of outlets or directly by mail from: Julian Baldwin, G3UHK, 41 Castle Drive, Maidenhead, Berks SL6 6DB, ENGLAND (Tel. (0628) 37837).

The cost (by airmail to North America) of the current 6th edition is: Basic Overseas ed. £2.10 = US\$3.50 = Can\$4; UK Domestic ed. £3.50 = US\$5.50 = Can\$6.50. Acceptable forms of payment are: British currency, Cheque, M.O., cash; Canadian currency, cash; U.S. currency, Check, M.O., cash. Odd fractions may be sent as IRC's.

(Copyright 1984 — G3UHK and G8AUU)

YLRL YL-OM Contest winners

Winners of the *Phone* portion of the 1984 YLRL YL-OM Contest are as follows: **Gold Cup** — (YL) Ursel Falk, DF9YY, and (OM) Dave Thompson, K4JRB; **2nd Place** — (YL) Martha Wessel, K0EPE, and (OM) Stefan Melcer, OK3CGP; **3rd Place** — (YL) Liliane Leplat, ON6GQ, and (OM) Manuel Greco, K2LFG.

Winners of the *CW* portion of the contest are: **Gold Cup** — (YL) Club Station, Banovce n/ Bebravou, OK3KEG, and (OM) Jerry Skaife,

W7ULC; **2nd Place** — (YL) Margita Lukackova, OK3TMF, and (OM) Anthony Truhlar, W9LNQ; **3rd Place** — (YL) Fernando Rocca, I2RLX, and (OM) Dave Kuniholm, W1HOZ. □

Amateur Radio Week

The week of 17-23 June 1984 was named Englewood Amateur Radio Association Week by Englewood, New Jersey Mayor Steven Rothman, in celebration of the 25th consecutive Field Day exercise that the Englewood Amateur Radio Association has participated in. □

Awards, VEC program

Ted Wolfe, WD4KHL

The ARRL Section Manager for West Virginia — Karl Thompson, K8KT, Charleston — has been selected to receive the ARRL Roanoke Division's 1983 Service Award. The award is not another Amateur-of-the-Year thing. The criterion for selection extends back for as long as the individual has been licensed as an amateur. The recipient is chosen by previous winners of the award.

•••••

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'Sip and puff' popular with HANDI-HAM

Bob Montgomery, KA3LEZ, of Broomall, Pennsylvania — an ALS patient since 1973 — has not been able to

speak for the last four years, but he manages to communicate with people from all over the country with the aid of a ham radio.

This is made possible by a special system incorporating pneumatic switches which record changes in negative and positive air pressure. Montgomery operates the system with what is known as a "sip and puff" device into which he breathes.

The device is wired to an electronic keyer that translates negative pressure into dots and positive pressure into dashes and allows Montgomery to communicate with others in Morse code.

A quadriplegic since 1977, he is one of several hundred respiratory patients in the United States involved in Amateur Radio.

Montgomery, 49, a former Air Force navigator and real estate broker, was able to do the code at 30-35 wpm when he was in the service. Now, with the sip and puff device, he is able to operate at a speed of 20-25 wpm.

Montgomery says it takes less effort to operate the sip and puff device than it does to sip water through a straw.

KA3LEZ is in the process of working on an Advanced Class rating. Since receiving his Novice rating, with the help of Advanced operator John Bartholomew, he has contacted operators in more than 25 states and Ontario, Canada.

"The radio he uses is ideal because it doesn't require a lot of readjustment. You tune in the frequency you want and you send the message," says Bartholomew.

The radio was loaned to Montgomery by HANDI-HAMS, a nationwide organization based in Minnesota which provides education, equipment and

fraternity to physically handicapped students and members.

"It is not difficult for severely handicapped people to become hams," says Montgomery. "Morse code with the sip and puff method has been my best means of communicating with friends, family and the outside world."

Occupational therapist Barbara Parnam is the one who originally got Montgomery interested in Amateur Radio. Amateur Radio is not a vocation, it's a realistic goal, but look what it can do — it can keep you from going bananas," she says. "Depression is something that all handicapped people suffer from and I think many could benefit from Amateur Radio."

Parnam, in addition to all her other contributions, has been instrumental in helping to raise funds for a permanent radio for Montgomery.

Organizations such as the American Legion, the Rotary Club and Belmont Baptist Church have pledged money for the equipment.

(Anyone interested in obtaining more information about HANDI-HAMS can write: Courage HANDI-HAMS, 3915 Golden Valley Rd., Golden Valley, MN 55422.

— ALSSOAN



Radio campers unfurl the Courage flag as they prepare to leave Los Angeles, California for Camp Joan Mier — site of the West Coast radio camp.

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Virginia Beach Amateur of the Year

Linda Crawford, KA4JXZ

At the Virginia Beach ARC Christmas party, Ron Young, W8RJL, was named Amateur of the Year.

Ron first became interested in Amateur Radio when he was in the Boy Scouts. While in the Scouts, he learned to send Morse code by the use of wig-wag flags. In the 7th grade he became licensed as WN8RJL in April 1953, by taking his Novice test at the Dayton Hamfest. He obtained his General Class license nine months later in Columbus, Ohio. At this time his call became W8RJL. He now holds an Extra Class license, obtained in November 1978.

His family was very supportive of his hobby while he was growing up. They allowed him to install a 75-meter AM mobile rig in the family car when he was in high school. They were not licensed at the time, and it was quite a feat to talk his parents into letting him put this large antenna mounted on the back bumper and a dyna-motor under the hood.

Ron holds a first class commercial radiotelephone license. While still in Ohio he worked as a DJ, and later, in a television and radio station as a transmitter engineer.

He has lived at his present QTH for the past 11 years and has been active in all phases of Amateur Radio in this area.

Being affiliated with an Amateur Radio club started back in Ohio. Ron is a member of HRRR, the Virginia Century Club, and received his DXCC over a year ago. In 1980, he was elected president of the VBARC and served on the Steering Committee in 1981. He is also the un-official official club photographer and has made possible the club slide shows.

Ron has always supported Field Day and has been on the picnic committee for the past four years. He has also taught Novice and Tech/General classes and has helped many amateurs get their Novice licenses. He has been instrumental in getting many amateurs on the air and help put up their first antenna.

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

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Get it right!

It is sometimes enlightening to listen to various nets as they pass the same piece of traffic along in further relays. It can be downright discouraging when you hear how garbles can be added because someone is careless along the line. "Dead stumps" becomes "dead skunks," "Greenville, NC" becomes "Greenville, SC," "DeTour, MI" becomes "Detroit, MI," "My father is deaf" becomes "My father is dead."

The only way to prevent this is for every operator to be certain the message has been copied correctly before giving receipt for it. One hundred percent accuracy is not the ideal to aim at; it's the minimum acceptable performance.

Getting fills

With conditions being what they are on the amateur bands, there are going to be times when even the best operator will not be sure of having perfect copy. A static crash, a tuner-upper, the Russian Woodpecker, an unclear transmission from the sending station, or a sneeze by the receiving operator can cause something to be missed or the operator to be doubtful about having received it correctly. There's no need to apologize for asking for fills. And there's no valid apology for *not* asking for them when you need them.

There's a proper way to ask for a fill, but even more important is to make it clear exactly what you want. If you ask

for the word after "Virginia," that should be clear, *unless* the word appears several times in the message. In that case, maybe you could ask for the word after "Richmond, Virginia," if that particular combination appears only once. But be prepared even then to get something other than what you want. The sending operator might decide to give you the whole message all over, or the word before instead of the word after.

Remember, the poor conditions often, in fact usually, affect communication in both directions. Keep your cool, be patient, don't worry about the time. Accuracy must never be sacrificed to speed.

When operating CW, the following abbreviations are standard: AB, all before; AA, all after; BN . . . AND, between . . . and; WB, word before; WA, word after. Note that AB does *not* mean all between as some operators seem to think. Some also ask for fills BN . . . ? . . ., using the question mark to indicate what was missed.

If you copied something, but are not sure it is correct, you can ask the sending operator to *confirm*, then give it as you copied it (or as you think it should be). On CW, the abbreviation is CFM.

Count the check

On commercial telegraph circuits, the *check* — the number of words in the message — is important for accounting purposes, because the charge for the message is based on the length. We don't have to worry about charges in Amateur Radio traffic handling, but the check still performs an important function — it provides additional assurance that the message was received correctly or warns us that something is wrong. But it does this only if we use it.

The way to use the check is to copy the message as you receive it in groups of five words. If you write small enough, or use a typewriter, you can get two groups of five words to a line. Write down five words, leave extra space or make a mark, then write five more. If you don't have

room for 10 words to the line, make it five. Then, when you have copied the whole message, it's easy to verify the check.

What if your count doesn't agree with the check? Straighten it out somehow with the sending operator. One way is first to ask the sending operator. One way is first to ask the sending operator to confirm the check. Don't be surprised if the sending operator tells you to wait, and then tells you your count is correct, tells you to make the check "seventeen corrected to sixteen" (on CW 17/16), and if you still wonder if you have the message as originally sent, you have good reason to do so.

Whenever you encounter a "corrected" check, you know that at least one person has goofed before the message reached you. If it was the originating operator who miscounted the words, the first relaying operator was also to blame for not discovering the error. If the error occurred later, someone has garbled the text.

If, however, the sending operator insists that the check is correct, one of you should read through the text for comparison. Usually you'll find an X omitted, or a compound word counted by one operator as a single word, by the other as two, but occasionally you will find a really significant omission.

On CW, the QTB procedure is usually followed. The sending station gives the first letter of each word — something that is occasionally done by voice operators, too, using a phonetic alphabet. Use whatever procedure you wish, but be sure the check is counted.

Break-in, QSK

One problem with the procedures given above for getting fills is that if several are needed, you may forget some. Operating break-in makes it possible to get fills as you go along, and not wait until the end. And break-in can help prevent you from giving a monologue when conditions make it impossible for the other station to copy you.

It's frustrating to be told at the end of sending a message, "Sorry, old man, I didn't get any of that." It's also frustrating when you're not copying anything and are unable to tell the sending operator he's wasting his breath, as you

wish in vain that he would take his finger off the mike button between phrases.

Words twice, QSZ

It takes almost twice as long, but often saves time by eliminating the need for fills, when the sending station sends each word or group twice, like this: "each each word word or or group group twice twice." This is helpful when conditions are bad because of static or interference. If you miss it the first time, you may get it the second.

The CW signal for this procedure is QSZ. It is seldom used in voice work; more commonly, the sending operator will repeat phrases rather than individual words.

In both modes, this procedure of repeating has advantages over merely slowing down when conditions are bad. This way, you are talking or sending at a speed closer to your regular speed, making it easier for the receiving operator to grasp it.

Try some time, for instance, to copy CW at 3 or 4 wpm with all dits and dahs stretched out in proportion. Furthermore, the receiving operator gets an extra chance to catch the message.

Don't do it unless it's needed, but if you find the receiving operator consistently needing a lot of fills, go ahead and QSZ. Of course, it may be that you were sending too fast for him, but if you're sending the same speed he sends to you, he has only himself to blame.

MARS fills

I haven't heard it used by amateurs, but on the MARS nets there is a precise form used to ask for fills when operating in voice modes.

The receiving station needing a fill will say, "Please say all after . . . and before . . ." The sending station will say, "I say again all after . . . and before . . ." The sending station will say, "I say again all after . . . and before . . ." then gives the word or words that were missed, usually spelling them out phonetically. Thus, for example, if a receiving operator had missed the word *it* in the first sentence of this paragraph, a fill would be requested, "Please say again all after *heard* and before *used*. Over." The sending operator would reply, "I say again all after *heard* and before *used*. *It*, I spell, India Tango, *it*. Over."

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One might feel a bit self-conscious using it on an amateur net, but it does have the advantage of being clear, and as a strictly structured procedure it might be understood better in marginal conditions where the more easy-going amateur ways wouldn't be able to get through.

Regardless of what procedure you use, however, remember that all these procedures are only means to an end, and that end is 100 percent accuracy — not an ideal to aim at, but the minimum acceptable standard. Get it right! □

Florida hams try for W5LFL contact

A small dose of best wishes from the space shuttle *Columbia* landed on Panama City (Florida) Amateur Radio operators Friday evening, 02 December, as they heard Mission Specialist Owen Garriott broadcasting.

Ham operator Mike Hagans, KA4VRC, had just finished sending his call sign and was explaining that the shuttle was going over Texas when a voice broke through the radio static.

"That's him!" Hagans shouted. But the thrill of transmission was short.

"This is W5LFL signing off for the night," Garriott said: "Thank you very much. 73's."

Most of the ham operators gathered at the temporary station in Panama City Mall were setting up an exhibit when the call came over, but the small group immediately clustered around the radio, broadcasting their call signs and congratulating each other.

Mike Adams, N4EVS, a Haney Vocational-Education Center electronics teacher, had been broadcasting his own call signal before Garriott's transmission.

Although the temporary radio station had been set up in the mall since Wednesday, 30 November, this brief transmission was the first direct contact the Panama City ARC had had with the shuttle astronaut.

"It was worth every effort made," said Bette Vietinghoff, N4FEO, who had been manning the station.

On Sunday, 04 December, a stronger transmission was received from the astronaut, although the Panama City Mall station was never acknowledged.

"He was over us for just a few seconds," said Bette. "The most exciting thing, however, was that when we switched back to his frequency, he was giving the call signs of some of the stations we had heard from."

— Information from *News-Herald*; submitted by Mike Adams, N4EVS □

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WDSN members ready to provide backup

Members of the Worldwide Space Division Network (WDSN) remain ready and able to provide backup HF radio communications to HQ Space Division and its subordinate units. They proved this recently when four of its members here initiated and completed communications links with other net locations in support of the Space Transportation System (Space Shuttle) Launch 11.

The network was activated from its base station at Los Angeles, as part of the 24th WDSN test designed to determine propagation (the quality of communications to any other station on the net at a particular time of day) of the frequencies in use.

Four members spent five hours at the local MARS station performing this task. Maj. Barry Priddy, K5VIP/AFA6CT; Maj. Ed Warren, K8RD/AFA6AZ; Lt. Col. Bill Stanfill, K4YCD/AFB6ME; and Paul Turkheimer, WA6NKL/AFA6YJ/AFF6P — all volunteers, made contact with other Space Division subordinate locations in Hawaii and Guam, Patrick AFB, Florida, and Sunnyvale and Vandenberg AFB's, California.

The test was successful. If the primary means of communications became inoperative, this system would have been used to support the mission.

The manager of the WSDN is Lt. Col. Dean Boiuvier, KB5MW/AFA6SL. The installation MARS director is Larry Savell, WA2USL/AFA6UL. Turkheimer is the base support team manager.

— Paul Turkheimer, WA6NKL/AFF6P □

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Shown operating two of the three HF radio positions are (left to right): Maj. Barry Priddy, K5VIP/AFA6CT; Maj. Ed Warren, K8RD/AFA6AZ (foreground); Lt. Col. Bill Stanfill, K4YCD/AFB6ME; and Paul Turkheimer, WA6NKL/AFA6YJ/AFF6P. The HF radios are Collins KW2A and 30L1 linears. Antennas include a Log Periodic, dipoles and "V" configurations.

B-N-T and News tie

In the ARRL Roanoke Division's club newsletter competition for 1983, there was a tie for first place honors in category 2-B. The winners were the Triple States Radio Amateur Club (TSRAC) newsletter *B-N-T*, edited by Ralph McDonough, K8AN, and the Mecklenburg (NC) *ARS News*, edited by Mary WC4T and Clyde Weddle, KF4WY.

Another West Virginia winner in its classification was the Jackson County

ARC's *Loud 'n Clear*, edited by Robert D. Morris, WA8CTO.

TSRAC serves amateurs in eastern Ohio, the northern panhandle of West Virginia and western Pennsylvania. It has well over 1,000 amateurs as members, and they live all across the nation.

Another note from TSRAC: As of 01 March, the new address for the Detroit Field Office of the FCC changed to 24897 Hathaway, Farmington Hills, MI 48018. The telephone number remains the same as before the office move. □

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Aerials



Lil Paddle

You made an old woman cry. Yes, tears rolled down my cheeks. I received a letter from an amateur who said, "How come you call a matching system an antenna tuner instead of a plate fooler?" And the writer had a two-letter call.

I do not call it a plate fooler because it is not! After all we have written in this space, (and all that is written in the professional journals), for some amateurs to still go around believing nonsense is truly tragic. Who was it that said that if a lie is repeated enough, people will begin to believe it?

I've heard that tripe for years. When hams say it at a radio club meeting, I just cringe, but I don't say a word. (That is why we stay incognito — so we don't get into arguments with otherwise nice people.)

"An antenna tuner doesn't tune the antenna, it just fools the radio." That statement is FALSE, FALSE, FALSE!!!

The next time you hear someone say that, look them straight in the eye and say, "Sir, you are a buffoon!" Turn around and walk away.

Actually, any semi-bright child armed with a transmitter, an antenna tuner, SWR meter and a field strength meter could see what really happens.

We have explained, in this column, exactly what happens. We've talked about minus j and plus j. We've told how the broadcast stations do it. Why do some people insist upon fighting the facts?

The publisher of Worldradio, Armond Noble, N6WR (I've often wondered how he got that particular call), was at Dayton. He told us, on the telephone, that a rather well-known amateur, who just turned in a spectacular contest effort, said to him, "Kurt Sterba is right when he says an antenna tuner truly matches the antenna, but that is only on transmit, not on receive."

Noble, wondering if Kaptain Kurt could be wrong, asked Lou McCoy what was what. Lou assured him that if it performed properly on transmit, it would do so also on receive.

Worldradio sends our columns to another party for checking before they are printed. (I didn't know this until quite recently.) Noble called his "checker" for verification on this.

I was told that the man, regarding the question of whether a tuner could tune on transmit but not on receive, replied, "Only if the laws of reciprocity have been repealed."

Regrettably, I must, unfortunately, embarrass the party who started this entire discussion and unnecessary phone call charges.

Remember when general coverage receivers had a knob and the lettering on the panel said: antenna trimmer? You turned the knob and the received signal

improved. Behind the panel, attached to the knob (via a shaft), was — what we called then — a condenser. It was a variable one, to be more specific.

Finding the proper setting of the antenna trimmer made the signal louder. That was because there was now maximum power transfer from the antenna to the grid. We had, of course, "tuned" the antenna. The more things change, the more they stay the same.

And once again, someone trying to prove Kurt wrong goes down in flames.

We had a friend come to our town, and we had a long and pleasurable lunch at one of the nicer restaurants.

He works daily with television broadcasting antennas, in the design, fabrication, adjustment and final measurements, which include radiation pattern and VSWR. In TV antenna practice, he told us that the requirement is for 1.1 to 1 maximum, and for some antennas, 1.05 to 1. This must be obtained over a bandwidth of 6 MHz! That's the entire TV channel bandwidth.

On channel 2 it represents about 11 percent, which is a very difficult achievement. On the UHF antennas, 6 MHz may be only 1 percent on channel 35. He has a couple of antenna patents, which earn him royalty since his patents are being used in commercial antennas, which are sold every day. We discussed several topics, and he said:

Low VSWR is not proof of a good quality antenna system.

It does not necessarily indicate that the system is working efficiently. Rather, it may be a clue to poor operation due to high losses in the transmission line and antenna, which constitute the antenna system. For example, the input end of an antenna system may show a reflection improvement of 10dB, if the transmission line loss is 5dB. The system improvement is twice the coax line loss because the power going to the antenna is reduced by the line loss, and it is reduced again when that power is reflected back to the line input.

Low VSWR at the system input, achieved naturally or with an antenna

matcher, will help the transmitter put power into that system. The real requirement for low VSWR at the transmission line input in communications systems is to permit the transmitter to put its rated power into that system. Another point he makes is:

High VSWR in a coaxial transmission line will not cause that line to radiate.

For the line to radiate, RF current must be flowing on the outside of the line. Normal uniform current distribution or maximum-minimum nulls and lobes of current (high VSWR) on the inside of the line do not radiate. Coaxial lines do radiate when there is current put on the outside of the line from a radiating antenna, just as there is from a metallic tower structure. He wants amateurs to know:

VSWR in a transmission line cannot be adjusted or controlled by varying the line length.

Varying the line length only changes the phase angle of the reactance. This is easily seen when working with VSWR on a Smith Chart.

It is possible to improve the matching ability of a limited-range antenna tuner or transceiver output circuit by changing the length of the coax line. The mismatch reactance will change when the line length is changed, as will the resistance. The reactance cancelling ability is usually the limiting factor in most tuners and transmitter output stage adjustments. Therefore, when we adjust the line length, we fool ourselves into thinking the change reduced the VSWR, when in fact it did not.

Our friend, whose name shall remain unwritten (let's call him Bruce A. Ray), told us of an experience of his several years ago. An FM broadcaster had installed an antenna on top of a 500 ft. tower, about 600 feet from the 10kW FM transmitter. The station owner, in order to save money, had purchased some used 3/8" diameter rigid copper coaxial 50-ohm line. This had been lying outside the original purchaser's transmitter building for about two years, and the copper coax was heavily corroded with copper oxide on the inside, including the inner conductor. The customer complained to the antenna manufacturer that the VSWR was so good as to be unmeasurable, but the station had a very poor signal into a town located only 10 miles away. The transmitter worked well and checked out into a dummy load at 10.1kW. What was the problem? A poor signal, at best, but excellent VSWR.

A field engineer with test equipment soon learned that the 1,100 feet of 3/8" corroded coax line had a loss of 14dB! Normally, this line would have a loss of 0.102dB per 100 feet at 96.9 MHz and a loss of 1.122dB for the 1,100 ft. run. This is an efficiency of 77.23 percent and would put 7,723 watts into the FM broadcasting antenna on top of the 500 ft. tower.

Instead, however, the 14dB loss has an efficiency of only 4 percent, and thus, only 400 watts arrived at the antenna. This was the reason for the very poor FM signal strength in town.

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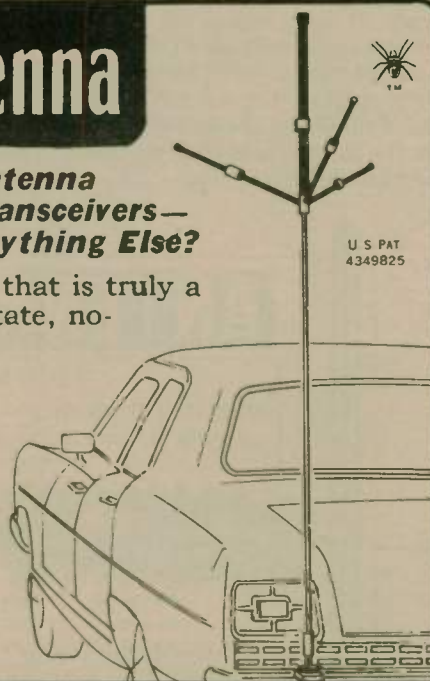
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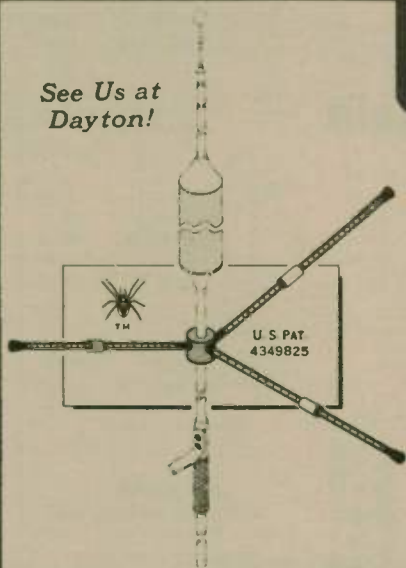
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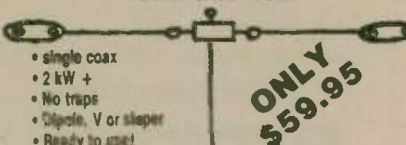
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But why was the VSWR so good? Let's assume this coax line was not connected to the antenna at all. The loss in the power would be 14dB going out to the open end (400 watts). The open end would completely reflect this power back to the transmitter, with another 14dB loss, so 4 percent of 400 watts (16 watts) would return. 10,000 watts forward with 16 watts reflected represents a VSWR of 1.09 to 1, but the actual antenna VSWR was 1.1 to 1, representing 26dB.

When connected, the total reflected power loss was 14dB going up to the antenna, 26dB reflection loss in the antenna and 14dB loss coming back to the transmitter, for a total of 54dB. This figures out to 1.005 to 1 which is indeed difficult or near impossible to measure with the best test equipment!

The copper coax line was removed and taken to a large anodizing shop, where the 20 ft. lengths of line were "bright dipped." This chemical process removes all the copper corrosion, yielding a bright copper surface. The line was re-installed, and this time, made air-tight with O rings, and pressurized to keep out moist air. The power to the antenna was now 7,723 watts. The 12-bay circularly polarized 50kW ERP, signal coverage was excellent, the broadcaster was pleased and his engineer could now read a VSWR of just under 1.09 to 1. Everyone was happy!

Our friend chortled at the end of the story and said: "In the words of Cervantes, 'Time ripens all things; no man is born wise.'"

In next month's column we'll have something very special, and I mean very special. The words you will read here will be worth the entire admission price.

(Lil Paddle must refuse all the requests for autographed pictures. Flattered that she gets the same attention that Rita Hayworth and Betty Grable received, she must decline, for if her features were known, she couldn't sit and laugh up her sleeve at the meetings of her radio club.)

Improvement for HW-8 CW waveform

Tim Groat, KR0U

My Heath HW-8 had a problem found in many rigs — poor shaping of the CW waveform. This simple change improved the signal, and can be adapted to other transmitters which need better key-clock suppression (some published "homebrew" designs come to mind).

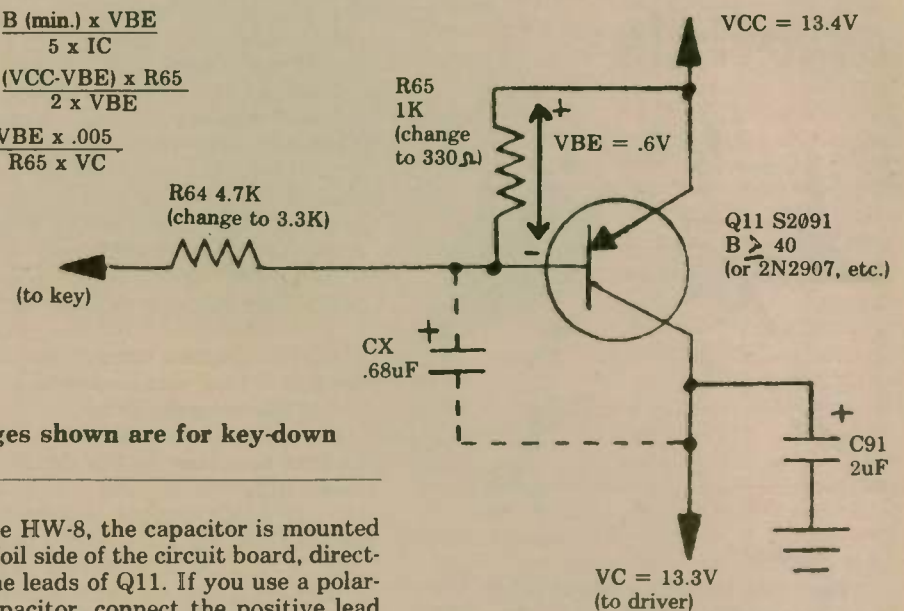
When I checked my HW-8 on a 'scope, I found the rise time was too fast (1 millisecond or less). This occurs because the rise time depends on how much current is supplied by Q11. This, in turn, is controlled by the gain (beta) of Q11. Unfortunately, gain is not very consistent in different batches of transistors, so the rise-time will also vary between different transmitters with the same circuit.

By connecting capacitor CX between the base and collector of Q11, the stage is converted into a "Miller integrator." The rise and decay times of the transistor are determined mainly by the capacitor CX, and the currents in R64 and R65. The gain of Q11 makes little difference, as long as it is enough so that the required base current is small compared to the current in R65. Capacitor C91 is no longer used to control the waveform, but it is left in the circuit to provide adequate bypassing for the driver stage.

$$R65 = \frac{B(\text{min.}) \times VBE}{5 \times IC}$$

$$R64 = \frac{(VCC - VBE) \times R65}{2 \times VBE}$$

$$CX = \frac{VBE \times .005}{R65 \times VC}$$



Voltages shown are for key-down

In the HW-8, the capacitor is mounted to the foil side of the circuit board, directly to the leads of Q11. If you use a polarized capacitor, connect the positive lead to the base. To avoid short circuits, put some spaghetti tubing on the capacitor leads and stick the capacitor down to the board to keep it from moving. (I use double-sided tape.) The resistors R64 and R65 must be changed to 3.3K and 330 ohms. The original values make the keying decay too soft, so the signal would be hard to copy.

With these changes installed, the rise and decay times were both close to 8 milliseconds. Listening checks (with a

dummy load and external receiver) confirmed that the keying sounded good: no clicks, and no long "tails" between the dits and dahs. So give it a try. With a few parts and a bit of time, your rig can sound better than many of the expensive ones! — Boulder ARC, CO

Product Review

Timekubel/Weatheradio™

Chuck Clark, K4ZN

For several years, Radio Shack has been marketing crystal-controlled receivers for WWV and for National Weather Service VHF broadcasts. Now they have offered a receiver that performs both functions, and sells for \$39.95. Powered by a 9-volt battery, the unit is intended to sit on a desk or table, and give instant weather or time information at the touch of a button. A dial on top of the cabinet provides convenient conversion from Universal Coordinated Time (UTC) to local standard or daylight time.

Switches on the bottom of the cabinet select the WWV channel (5, 10 or 15 MHz) and weather channel (162.4, 162.475 or 162.55 MHz) to be used, depending on one's location. A telescoping antenna is attached to the cabinet.

The instruction manual provided with the receiver says that a service manual may be obtained by writing Radio Shack's National Parts Department, 900 East North Side Dr., Fort Worth, TX 76102. Your reviewer wrote, and was informed it would cost \$2.97, plus \$1.50 for postage and handling.

The manual is a 20-page booklet, quite complete, giving parts lists, a schematic diagram, circuit board layout, alignment and service instructions, and technical specifications. Both receiver sections use 455 kHz IF circuits, with an AM detector for WWV and a limiter-discriminator FM for weather broadcasts, and a common audio circuit for both functions.

The WWV section uses three crystals to cover the three channels, while the weather section uses a single 16.202 MHz crystal, with the tenth harmonic coupled into the mixer by stray circuit coupling. Using a 455 kHz IF leaves the receiver open to possible problems with images, particularly because there is only one tuned circuit ahead of the WWV

ANTENNAS & TOWERS

THIS MONTH'S FEATURES:

HY-GAIN EXPLORER-14 — \$264.95 HY-GAIN TH7DXS — \$399.95
CUSHCRAFT A3 — \$202.00 CUSHCRAFT R3 — \$254.95
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- Transmitting/Receiving Capacitors
- Air Variables: Cardwell — E.F. Johnson
- Hammarlund — Millen
- Doorknob: Centralab — Jennings
- Iambic paddles
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- GaAs FET 2 Meter Mast Head Pre-Amplifier
- 2 Meter Pre-Amplifier
- 2 Meter Converter
- UHF (70 cm) Pre-Amplifier
- UHF (70 cm) Converter
- UHF (70 cm) to VHF (TV) Converter
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1984-85 Catalog 50 cents

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mixer and only two ahead of the weather mixer.

The technical specifications admit the problem: image rejection at 15 MHz is only 10dB nominally, with 6dB as a lower limit. And at 162.55 MHz, it must be quite close to zero dB. Fortunately, at this location, images proved no great problem.

The VHF images fall into bands used by railroads and by maritime mobile coast stations, so would give problems in only a few locations. But the lack of front-end selectivity could make reception of WWV rather unsatisfactory in many locations.

It may be well to have an understanding with the Radio Shack store when you buy it that you want to try it first and see if it gives satisfactory reception at your location.

Sensitivity is more than adequate. The blurb in the catalog said it receives weather broadcasts at distances of up to 50 miles. Switching to a channel not used locally, I heard a broadcast originating 100 miles away.

Whether you want weather information, time signals, propagation and ionosphere data, or a standard frequency, this unit will give you what you need, as long as its poor image-rejection performance gives you no trouble.

ARRL

(continued from page 4)

160-meter band plan. They reported the voluntary plan was not working. SSB operators have taken over the DX CW window. They recalled that on 2 meters, the FCC saw a violation of a recognized band plan as a violation of FCC rules. Could this apply to 160 meters? Dave Sumner, W1ZZ, General Manager of the League, fielded this question.

In 1981, when the FCC took the power restriction off the lower half of the band, the ARRL put a plan together. Right now, we're all clustered at the bottom half of the band, and there is pressure from the offshore oil radiolocation interests to take over the top half of the band. We can now operate with full power in the upper half of the band. It is time to take another look at the 160-meter band, and Dave promised the League would do so.

Volunteer Examiner program

A member asked how much of the \$4 to be charged the applicant will trickle down to the Volunteer Examiner. League Vice President Len Nathanson pointed out that the League, as VEC, will have to insure the integrity of the examinations.

The League will give from 80,000 to 100,000 examinations a year. It will prepare exams, print and distribute examination packets, provide postage over and back, furnish computer time, estab-


lish a staff of four or five people to handle the exams expeditiously, and get the passed ones to Gettysburg promptly.

Dave said, "We wouldn't undertake the job unless we could do it right." When a member pressed for a better breakdown of the \$4 fee, he promised that when the information is available, it will be published in the Annual Report. It was a misconception that volunteer examiners would get a part of the \$4 to offset gasoline bills for travel, out-of-pocket cost of meals and lodging,

etc. There are many volunteers willing to drive 50 miles to give an examination. They can write off their out-of-pocket expenses as an income tax deduction. □


●●●

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



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	MAP-64/2 Microamtor Patch	199.00		442 UP 440Mhz	319.00
	PKT-1 Packet Controller	489.00	HAL	CRT 100/CRI 200 Computer Interface	\$225.00 / \$270.00
	144 Isopole Antenna	45.00	HYGAIN	TH7 DXS Tribander	\$425.00
ALLIANCE	RD-73 (10.7 Sq.Ft.) Rotator	\$109.00		TH5 MK2S Tribander	389.00
	U-110 Small Elevation Rotator	49.95		Explorer 14 Tribander	289.00
ASTRON	RS7A 5-7 Amp Power Supply	\$ 49.00		CD45 8.5 Sq. Ft. Rotator	129.00
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AZDEN	PCS 4000 2M Mobile	\$280.00			
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BENCHER	BY-1 Paddle	\$39.00			
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CUSHCRAFT	A3 Tribander 3EL	\$215.00			
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Computer Nut Net

The Computer Nut Net meets every Saturday morning at 1430Z, on Standard Time frequency 3.939 MHz; Daylight Savings Time frequency of 7.232 MHz.

The purpose of the net is to discuss and learn about all aspects of personal computers. The only dues required is an amateur license and interest. Net Control is Bud Atkins, K5DZH, looking for alternates. □

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WELZ	SP-600 Wattmtr HF-500 Mhz	\$144.95
	SP-400 Wattmtr 130-500 Mhz	97.95
	SP-250 Wattmtr 1.6-50 Mhz	69.00
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This list was compiled 5/15/84. Our used equipment changes daily. Please write or call for our current listing.



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DENTRON	MT 3000A Tuner	\$225.00
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	TR7, 500hz, fan/PS7, Fan	95.00
	RV4 VFO	75.00
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ENCOMM	ST 7T 440Mhz	\$169.00
HAL	CT 2200, KB2100	\$ 675.00
HEATHKIT	SB 220 2Kw Amp	\$550.00
	SB 102 PS, CW	325.00
	HW 101, PS	269.00
	SB 630 Console	69.00
	SB 600 Spkr	25.00
	SA 2040 Roller Inductor Tuner	139.00
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	PS 9000 PS., Spkr, Clocks	169.00
HYGAIN	HG-70HD Crank-up Tower	\$1,875.00
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	740, Internal P.S., FL44	789.00
	701, P.S., Spkr	499.00
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KENWOOD	TR 9130 - All Mode, T.T. Mic	\$365.00
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	208 CW Filter (Argonaut)	19.00
YAESU	FT-102 Xcvr	\$589.00
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Interest in QRP operation has come recently from the Soviet Union.

Robert Brown, N7DGZ, of Anacortes, Washington, reports having worked 4K1F, a Russian station on the South Shetland Islands on 20 meters with 5 watts output, in late February. When Bob sent his QSL to the omnipresent Box 88 in Moscow, he sent along a letter extolling the virtues of QRP and asking if there was an organization in Russia.

Back came a letter from V. Bondarenko, chief of the Central Radio Club of the USSR.

"He thanked me for my letter asking about QRP and said there is no such organization in the Soviet Union but that they do encourage QRP and that many operators use it," says Bob, who bought a dictionary and translated the letter.

Bondarenko then referred Bob to H. Kazansky, UA3AF, the vice president of the Radiosport Federation, for additional information on low-power in the Soviet Union.

"I found it very interesting that they would reply to my letter," says Bob. "That shows there's some interest there."

However, at last report, Bob still doesn't have his QSL from 4K1F.

Australia's new CW Operators QRP Club is off to a roaring start, including a new motto: "We do more with less."

Len O'Donnell, VK5ZF, the driving force behind the bunch, has just mailed the first edition of the club's quarterly newsletter, *Lo-Key*, a 12-page effort loaded with club news and technical articles.

The club boasts members in seven of Australia's eight states, including eight QRP'ers in the elusive Tasmania (VK7), and several DX members. Len says the club will again stage the famous VK Versus the Rest of the World Contest. It will be in November, but the dates are to be announced.

Len also advises that the correct yearly dues for the club are \$4 for

Aussies and \$10 for the rest of us, with the difference going to offset increased costs of sending the bulletin by air mail.

A footnote from this issue of *Lo-Key*: Drew Diamond, VK3XU, is producing a QRP handbook. "Drew is a very experienced and dedicated QRP'er and CW operator, as well as a very capable experimenter," says *Lo-Key*.

Speaking of QRP handbooks, Adrian Weiss, W0RSP, the QRP editor at CQ, is going to publish his long-awaited handbook on his own.

At the same time, Circuit Board Specialists in Colorado says the Doug DeMaw's *W1FB QRP Handbook*, which has been looked forward to for almost a year, has been delayed until late 1984.

Closing out the international QRP news this issue is word that Carlos Moura, PY2FNE, is the new manager of Grupo QRP, the low-power organization in Brazil.

He says he has been working with QRP since 1976 and actively pursues awards.

Moura's equipment includes homebrew transmitters for 40 and 20 meters with 5 watts output and another for 15 meters with 1.5 watts out; a Eudert a2 receiver; an inverted Vee antenna for 40, 20 and 15 meters at a height of 12 meters; and a homebrew frequency meter.

The address for Grupo QRP is: Cx. Postal 98, 11100 Santos, SP, BRASIL. Send along an IRC or two. □

Eagle Scout amateur

Ben Shatz, N6COG, of Pacific Palisades, California, was recently awarded the rank of Eagle Scout. He is a sophomore honor student at Pacific Palisades High School. He has been active in scouting since 1980, with Troop 223 in Pacific Palisades.

His Eagle Project was to organize and direct scouts from his troop in re-landscaping a plot of ground outside of his synagogue. This included weeding, replanting and laying a water sprinkler system.

Ben is 14 years old. He was first licensed as a Novice in 1978 at the age of 9 and upgraded to General in 1980. He has earned WAS and DXCC awards. He is active on HF and 2 meters, along with his father, Arnie N6HC, and mother, Sheryl KA6DOW. — Arnold Shatz, N6HC □



TEACHER

Alan Kline, KB1DJ

P.O. Box 54
West Lynn, MA 01905

In parts I and II, I wrote an overview of how our Fall 1983 Educational Program developed. How we coordinated the teachers, rooms, students and PR in the short time of eight weeks. In the last two parts, I'll give you my thoughts on how we tried to complete these projects successfully.

Now, back to our nighttime program. I decide who will teach what class and send them copies of all the current FCC and ARRL teaching info that pertains to that level. They pick the textbooks they want to use, and I call the local Heathkit store to warn them to have plenty in stock.

It is now two weeks before the classes are to start. The XYL and myself are heading for the airport to fly to the Hotel Del Coronado in San Diego. I have been looking forward to this business trip for the last few months. I promised myself and XYL that I would leave all my work and class worries back in Massachusetts — and I did.

Our San Diego trip was one of the best vacation/business trips we've taken. The weather was great, my meetings went

smoothly, and we got to spend some time with friends. I had to check into my office twice a day, but only to solve minor problems. I had them keep all my Amateur Radio calls for me to make when I got back. It is not uncommon for me to get a dozen or so calls about an upcoming ham class the week or so before it starts.

By the time we returned home, class registrations had filled up my post office box. Over 20 Novices and 10 Generals had signed up. Even the family business survived without me.

I had made an accurate list of what I had to do for the final class arrangements upon my returning back to Massachusetts. The first one was to call our contact and supporter at the local school to have his department leave me a video machine to use the first night of class. We would need it to show the potential Novices some videotapes about Amateur Radio.

During this short week before classes were to start, more developments took place. The ARRL sent us our copy of the STS-9 videotape. I wanted to expose it as much as possible, so we formed a separate sub-committee to show the tape as much as possible.

Our AV specialist, Jon Hannaford, K1SPI, immediately copied the U-MATIC tape onto another U-MATIC tape and several VHS and BETA copies were made. The Polaroid Corporation did the same. The department head for Operations and Technical applications of audiovisuals, Arnie Zunick, K1BPM, graciously arranged their assistance. It's great to have friends with such complete duplicating labs.

Both Arnie and Jon sensed I was running out of time to do much with the STS-9 tape. Jon took it upon himself to have it shown in all the elementary schools in the town of Danvers (the town we teach in). This was to create even more problems later, though. Arnie had it shown on two different CATV systems.

By showing it to the elementary school-aged kids, we got no less than six requests to show to either Boy Scout troops or Cub Scout packs. We arranged for a ham to show the STS-9 videotape and do a simple 2-meter demonstration. These six demonstrations led to yet another project.

On the weekend of 15-16 October, there was the JOTA ("Jamboree on the Air"). This is when scouts of all ages, past and present, get on the amateur airwaves and have QSO's. Short contacts are not encouraged.

The potential for scouts to enter into Amateur Radio is so great, I plan to devote some separate columns to just that topic. A radio amateur can spend a lifetime being a merit badge instructor alone.

All of this took place by the middle of October, so I have really jumped ahead of myself. Going back to the week before class started, I spent one night checking out the Atlas 210x we decided to use for our new school station. I had to call for help when I couldn't get any output on phone. Actually, I gave up that night. I was satisfied that it worked OK on CW. I left the repair of it to the newly formed "Morning Team". The retirees had the time and patience to get it working in only two hours. I was grateful for their help.

I was very relieved, when they told me I had been loading the Atlas wrong. They got it all working correctly and made a few DX contacts with the rig. I was grateful we didn't have to send the



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rig back to where we bought it.

Everything seemed to be progressing OK. I was more concerned with work — as I should've been — than if the classes would start off all right. I was expecting 20-25 students to show up in each class, plus I had solid commitments from six instructors.

I look forward to the first night of class because I only attend the first few. I collect all the money, type class lists, add new names to the mailing list, and let the respective instructors teach their classes in their own way.

My job as chairman of the educational committee takes a breather here. I might show up during the classes, but this is only to snap a few pictures of the teachers and their classes.

In the case of the Novices, I come back to help administer the final exams, both code and theory. With the Technician, General and Advanced candidates, I hire a bus and take them all to the FCC as a group.

(To be concluded) □

Radio network expands youths' horizons

The Legacy Program has been designed as a model learning environment which respects all cultural traditions while exploring relevant uses of modern technology. Last year, 123 youths (ages 9-18) and 45 staff members from 18 countries joined together for the six-week summer experience.

Here, youths are exposed to Amateur Radio, video, computers, accelerated language learning, community maintenance projects and creative expression through art, music and drama.

The Legacy International Youth Amateur Radio Network was started last year in order to facilitate global communications among young people regarding relevant global issues. This summer, youths from around the world will be trained in radio technology and Morse code during their stay at the Legacy program. They will be encouraged to set up clubs in their local communities and become part of the network.

Legacy's interest in Amateur Radio has been fostered by its founder, J.E. Rash, KI4EQ, and Meera Behrens, KI4FR, Youth Director. A small station was built last year, using donated equipment, including a Ten-Tec transceiver, Tri-X tower, TET 5-bander, Microlog computer interface and AEA trainers.

A significant aspect of 1984 plans is a concentration and development of our International Youth Amateur Radio Network. This includes:

1) Proposal for International Youth Year (IYY) for new third-party agreement.

2) Expansion of participation in the Amateur Radio program, encouraging youths from outside the United States.

3) Expansion of the Amateur Radio facility at Legacy.

4) DXpedition in Greece during the '84 Travel Program. A follow-up DXpedition is planned for the World Youth Environment Conference, June/July 1985. We are currently working with a Greek radio club.

5) Announcement of plans for IYY in projected article for Fall issue of 73 Magazine.

6) Proposal for an Amateur Radio station at UN Pavilion, EXPO: 85 (Tsukuba, Japan).

Legacy is a non-profit, tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code; tax ID

number is 51-0249070.

To expand our 1984 program, we have the following needs: transceiver — 160-10 meter coverage with 150 kHz-30 MHz general coverage, with SSB, CW, AM and optional FM; 2-meter base station; 2-meter hand-helds (6); linear amplifier for 2-meter equipment; Bearcat Scanner 300 or 20/20; world clock; hand-held multimeter; portable antenna; power supply — continuous duty amps (25) and ICS amps (25); antenna tuner; satellite dish (for Dexcel — DXP 1100); 70-75 ft. tower, 40 ft. tilt-down; multi-band vertical antenna; and 300 ft. hardline. □

Being 'old' pays off

On 28 April, registering at the Bemidji (Minnesota) ARC annual hamfest, Armond Brattland, K6EA/0, was asked the date of his first amateur license. It was in April 1916 he received 9EA at Ada, Minnesota. It is listed in the 1916 U.S. Government Radio Station List.

His Honor, former Bemidji mayor, Howard Menge — now KA0DFV — the club Master of Ceremonies, presented K6EA/0 with a 1983-84 ARRL Amateur Radio Call Directory, amidst the hand-clapping, which such radio old-timer said

was most unusual for distinctions resulting from longevity.

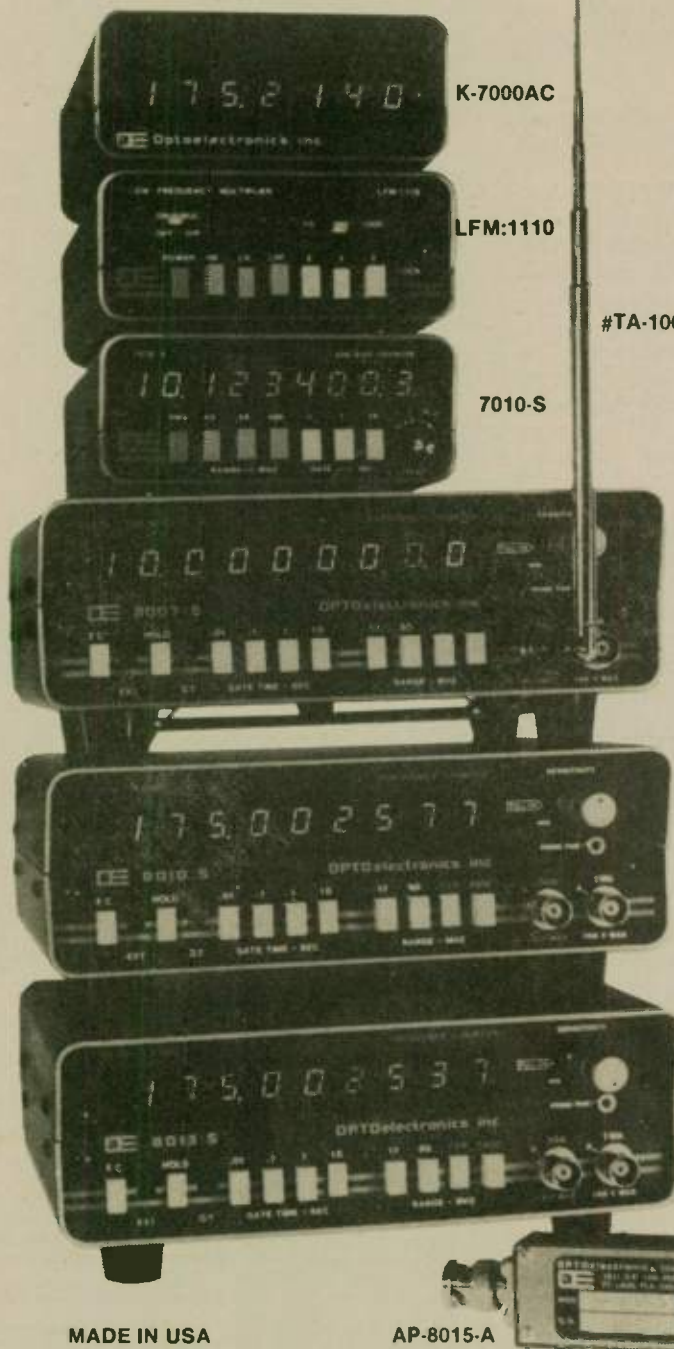
The next in line, having been first licensed in 1925, was Harold Duncan, W0WAS, of Park Rapids, Minnesota. There were quite a few other old-timers attending — enough for the start of a Dakota Division Old-Timers Club.

Former ARRL President Vic Clark, W4KFC, presented K6EA with an ARRL 50-year membership plaque and pin two years ago, at the ARRL Dakota Division Convention in Moorhead, Minnesota. — Armond Brattland, K6EA/0 □

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		FREQ	STAB-DESIGN	BELOW 500 MHz	ABOVE 500 MHz		12 MHz	17 MHz	60 MHz	175 MHz					MAX FREQ
K-7000-AC	550 MHz	5.24288	±1 PPM-RTXO	15 mV -24 DBM	N/A	(2) .1, 1 SEC	10 Hz				100 Hz	No	No	Yes	No
7010-S	600 MHz	10.0 MHz	±1 PPM-TCXO *±0.1 PPM-TCXO	10 mV -27 DBM	20 mV -21 DBM	(3) .1, 1, 10 SEC	.1 Hz	1 Hz	10 Hz		Yes	No	Yes	No	
8007-S	700 MHz		±1 PPM-TCXO			(4)									
8010-S	1 GHz	10.0 MHz	*±0.1 PPM-TCXO *±0.05 PPM-OCXO	10 mV -27 DBM	20 mV -21 DBM	.01, .1, 1, 10 SEC	.1 Hz	1 Hz	10 Hz	Yes	Yes	Yes	Yes		
8013-S	1.3 GHz														

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Ron Flynn, KB8LU

This year's Dayton Hamvention was one of the best I can remember in recent years. The weather, the people, the exhibits, the meetings and forums were all good! I got to meet — in person — many friends, and see old friends again.

I really had a whole week's vacation at the end of April. Since spring work had begun on my farm, and my seasonal landscaping consulting business was also getting into high gear, I really had to work overtime to entertain an out-of-town guest and then go to Dayton. That guest was an old SSTV friend who I first met in person two years ago at Dayton — Gerald Klatzko, ZS6BTD.

Gerald is one of the most active and enjoyable SSTV'ers to work. Since I met him in 1982, Gerald has had a standing invitation to come and visit me at my home QTH. This year, he took me up on it, in conjunction with a visit to Dayton.

Gerald flew into Chicago from London, and I picked him up there on 22 April. We had a super time together here on my farm. We left Bangor, Michigan early in the morning of 26 April for the six-hour drive to Dayton.

I took my family along, and we stayed at the Holiday Inn North with perhaps 100 other SSTV'ers. They came from all parts of the country, and doubled and tripled up in some rooms. Unlike other years, a large number of SSTV'ers arrived on Thursday, even though the Hamvention didn't open until Friday noon. We all visited in the bar, around the pool and in various rooms until late Thursday night — and for some, I'm told, into the wee hours of Friday morning.

ZS6BTD, my son Andy, and I headed for Hara Arena about mid-morning on Friday, 27 April. We donned our press passes and headed out to take some photos before the doors opened and the crowds swelled in. One of the first booths we came upon was the Worldradio booth. I met Helen and Armond Noble for the first time, and we had a nice visit and took a couple of pictures while they were setting up the booth.

Five SSTV companies had booths at Dayton. Robot Research displayed their line of SSTV equipment plus the Robot 800C terminal unit for CW/RTTY and SSTV graphics. They demonstrated SSTV picture printing by snatching live pictures of individuals into a new Robot unit and then printing them out in B&W hardcopy.

However, the most attention was received by the display of prototypes of the new Robot 1200C, high-resolution color SSTV scan converter. I'll report on this new unit in detail in an upcoming column.

Everyone I talked to reacted favorably to its excellent quality picture resolution and color reproduction. Production models are expected to be shipped in July.

Robot also introduced three hardware computer interfaces to connect either the 450C or 1200C to popular personal computers for picture processing or complete computer control of the scan converter. Interfaces are available for the VIC-20, Commodore 64, and TRS-80 Color Computer.

Ed Cox, AA4BB, of vicCOMM was demonstrating his SSTV computer interface hardware and software for VIC-20 and Commodore 64 computers. Until recently, virtually no work had been done for SSTV with these two popular home



The new Robot 1200C high-resolution color SSTV scan converter pictured with monitor.

computers. Ed is a doctor and his free time is obviously precious and little, but he had developed a very good low-resolution B&W SSTV system for these computers.

Volker Wraase, DL2RZ, came from West Germany to display his SC-1 high-resolution color SSTV scan converter, which also has provisions for sending one speed and receiving several speeds of FAX.

Al Woodman, W9RUV, was at the Microcraft booth, where all of the popular Microcraft equipment for CW, RTTY and SSTV was being shown. Their Videoscan 1000 high-resolution B&W scan converter was displaying some very nice pictures. At present, there are no plans to add color SSTV to the Videoscan 1000.

Sam Mormino, WA7WOD, was at the Interface Systems booth, showing his color SSTV modification to the Robot 400. In addition, Sam showed a prototype of a color universal board.

This is basically a memory expansion board, plus other circuitry, which can be interfaced to computers or other SSTV equipment. Sam had mounted one of these boards inside a Videoscan 1000 and was showing high-resolution full-color SSTV out of that unit.

The board can be interfaced with virtually any computer, if proper software is written. Depending on the installation, a SSTV front-end and FSTV snatch circuitry may be additionally required. If there is sufficient interest in this board, Interface Systems will go into production of these boards.

Forums and meetings

The Friday night SSTV experimenters get-together was hosted by Don Miller, W9NTP. Robert Suding, W0LMD, was emcee, and there was a long list of speakers, so space does not permit too much detail of each.

Dick Kinney, W8MBD, explained a new receive-only SSTV program he wrote for Commodore 64 computers. Ralph Taggart, WB8DQT, spoke briefly about the K6AEP Software for SSTV and FAX. Abe Mackay, VE6AMU, mentioned a new computer interface for Commodore 64's being imported from Holland.

Ben Blish, N4EJI, explained in detail the features of the Magnum SSTV system for TRS-80C computers he developed. He announced the development of a new medium-resolution display board to go with that system. He also explained some new software he wrote to interface the TRS-80C and Magnum IF with the Robot 450C scan converter. Finally, Ben unveiled a prototype of the first camera interface for the Color Computer.

Clyde Miller, WB4AOH, told of the introduction of an improved display board, Photoviewer, developed by COMMSOFT for SSTV on the Apple computers. Clyde set up his Apple SSTV system for people to see after the meeting. Sam Mormino, WA7WOD, and Volker Wraase, DL2RZ, explained their products as outlined above.

Gerald Klatzko, ZS6BTD, next made SSTV TODAY magazine's award presentations to outstanding SSTV'ers. Brooks Kendall, W1JKF, was honored for his dedicated service to SSTV. Bill Wells, W4CVS, was honored for his outstanding SSTV programming. Ben Blish, N4EJI, received the award for outstanding technical achievement.

Don Miller and Robert Suding closed out the evening by mentioning their thoughts and goals for the future for SSTV. The Saturday afternoon ATV/SSTV Forum was mainly about ATV and FAX, but Ralph Taggart, WB8DQT — in his presentation — touched on the SSTV features of a SSTV/FAX program for the TRS-80C. He had some beautiful slides to illustrate possible results with that system.

SSTV on a space shuttle

It was made public at Dayton that NASA, about two months ago, had approached at least one SSTV company to make a proposal to accommodate one-way SSTV picture transmissions by an amateur astronaut on an upcoming shuttle mission early next year. If this comes to pass, it could be an exciting boom for amateur SSTV and a needed shot in the arm.

More details on this exciting development in next month's column.

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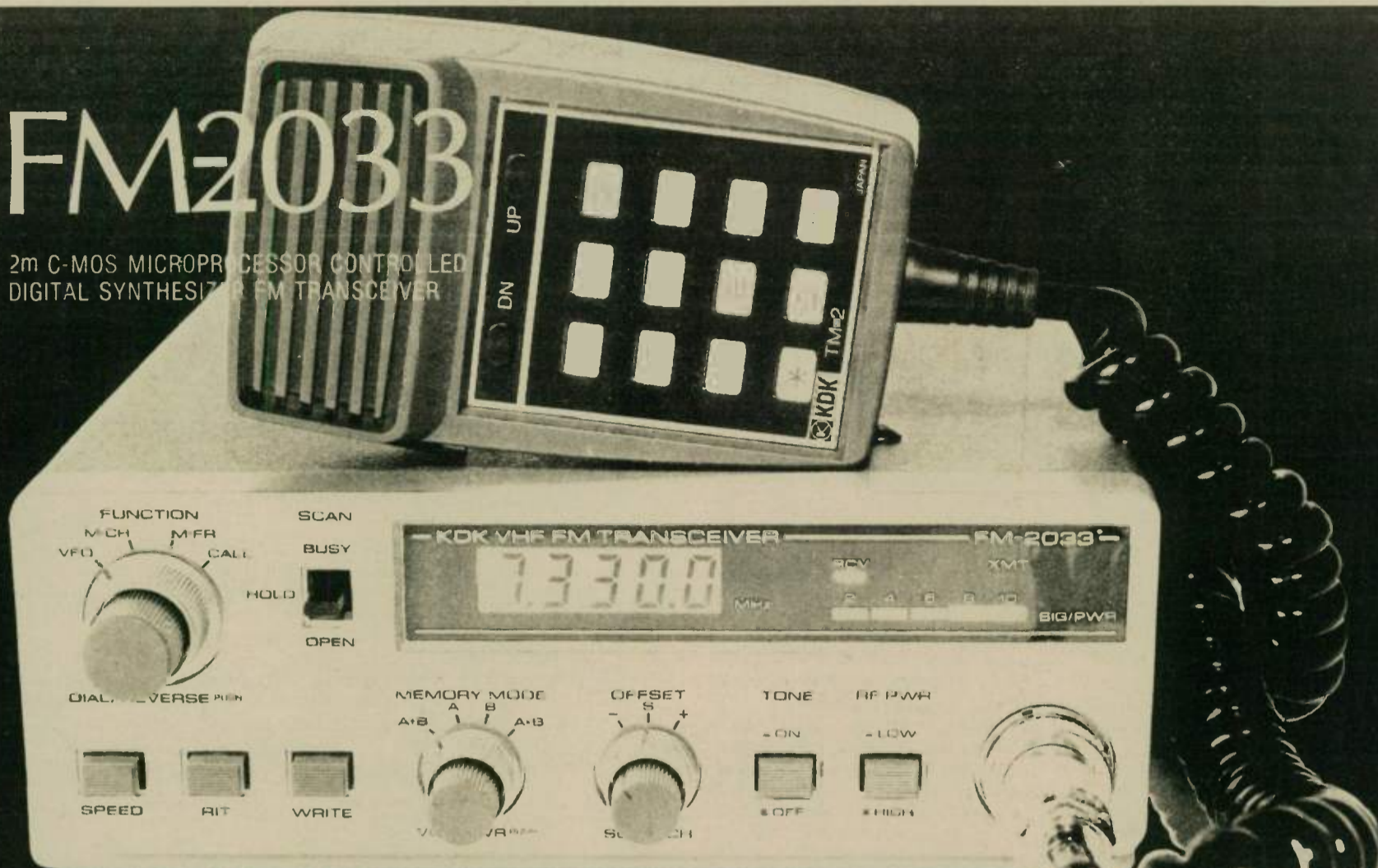
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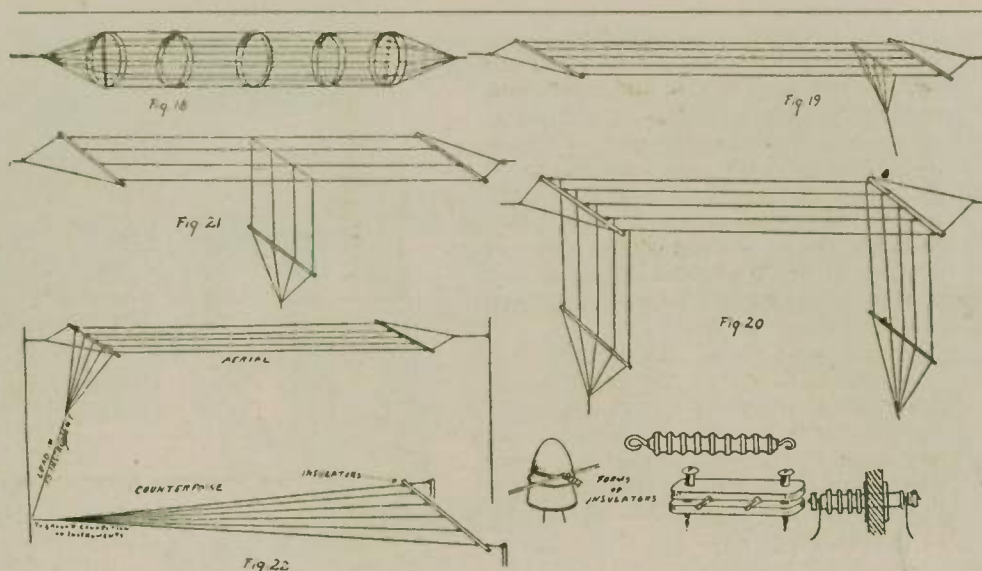
He remembers DeForest

A letter from Martin M. Hellman, K2TAJ, opened a door to additional facts about radio in the pre-Kaiser War and early post-war days. Martin lives in Staten Island, New York, but as a boy — during summer vacation in 1915, he worked in the DeForest factory at such jobs as sweeping floors and preparing wires to go into the first radiotelephone transmitter sold to China.

After the Kaiser War, Martin went with the U.S. Army Coast Artillery as a radio operator. One of the stations he operated used a Telefunken 1/4kW quenched-gap spark transmitter. This station was located on Fisher's Island, outside of New London, Connecticut, and used wavelengths of 1090 and 1540 meters to relay traffic between New York and Boston, with Fort Adams, Rhode Island as an intermediate point.

At that time, the only continuous wave station of any importance (in the Army Coast Artillery network) was of DeForest manufacture, located at Fortress Monroe, Virginia.

Martin recalls that the Army started buying vacuum tube transmitters from



Cage, Inverted L, T, Inverted U, and Inverted L with counterpoise

Westinghouse in 1924. About that time, the Navy's Bureau of Ships had designed and built its famous SE-1420, a receiver covering all wavelengths then in use. It used two stages of audio-frequency amplification, and, if I remember rightly, had a crystal detector to fall back on if there were tube failures.

Field radio equipment depended on what Martin called "Norwegian Steam" (muscle power) to generate filament and plate voltages. One of the early transceivers — the SCR-67A, built by Western Electric — used two VT-2's in the transmitter plus one VT-1 in the receiver portion. One VT-2 served to modulate the oscillator, using the Heising circuit, with the audio VT-2 getting its input directly from the transformer used with the carbon microphone.

Besides radio equipment, Martin used several other systems of signaling, such as semaphore, blinker and telegrafie par sol. That last one is seldom heard of these days, but it was used in the Kaiser War for short-distance communication where wire lines were impractical. With it, electrical signals were sent through the ground.

In addition to Martin's letter, there was another — from Harry F. Holland,

W1GUG, 207 Bay Street, Taunton, Massachusetts. With it was a copy of a book printed in 1922, published by Harper & Brothers. Its author is A. Hyatt Verrill. The title is *The Home Radio, How to Make and Use it*.

As you can readily guess, it makes fascinating reading, although the technical accuracy is a bit thin, to be charitable. Ah, well... knowledge of electronic matters has been enlarged

over the past 62 years, but even in 1922 a well-informed author should have known the filament of a vacuum tube does not oscillate! Also, that radiotelegraphy signals can be received on single-wire antennas just as well as radiotelephone signals. Also, that the audio output of a receiver using a crystal detector can be amplified just as well as that of one using a vacuum tube detector.

To offset these (and other) boo-boos, one must give Verrill credit for excellent foresight, as the following quotation illustrates:

"... And the limit is far from being reached. Within a few years, or even months, the range of wireless telephony will be increased by hundreds or even thousands of miles, antennae or aerials will be entirely done away with, and the instruments for sending and receiving will be so improved, simplified and reduced that one may carry them in one's pocket, for while radiotelephony has already become highly perfected, widely used and absolutely practical, it is hardly out of its infancy and no man may prophesy what its future may be."

His time frame was a bit optimistic, but he didn't miss present-day hand-held transceivers relaying through satellites by too much!

The book was well-illustrated. One page shows a number of antenna types,

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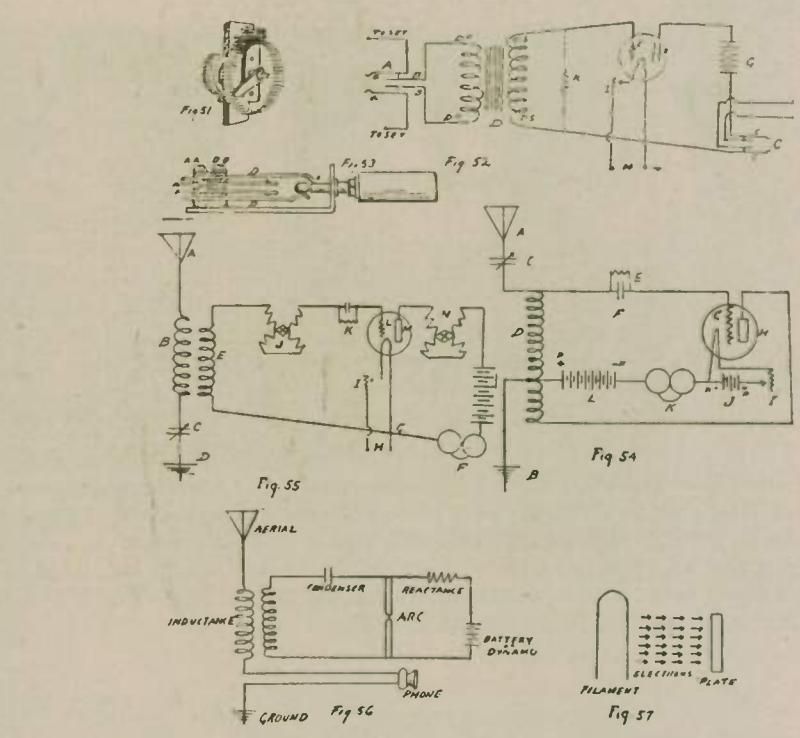
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any of which could find application as a broad-band radiator in a 1983 Amateur Radio station. Figure 22, the flat-top with a fanned-out counterpoise under it, shows a system well adapted for 160 or 80 meters: low ground loss plus broad bandwidth. Bear in mind that the diameter (or width) of a radiator greatly affects its bandwidth.

Another page features circuits for receivers and a one-stage audio amplifier. Figure 55 should have a bypass capacitor around its B battery headphone combination. But note Figure 56! That's a radiotelephone transmitter that slipped in with the receivers.

An arc transmitter much like this was used to transmit music in 1906, according to early records of the work of Reginald Aubrey Fessenden. Leave off the carbon microphone, and you'd have the circuit Fessenden patented to make possible heterodyne reception. He used this to enable the reception of the continuous wave transmissions from arc transmitters on the diode detectors then used.

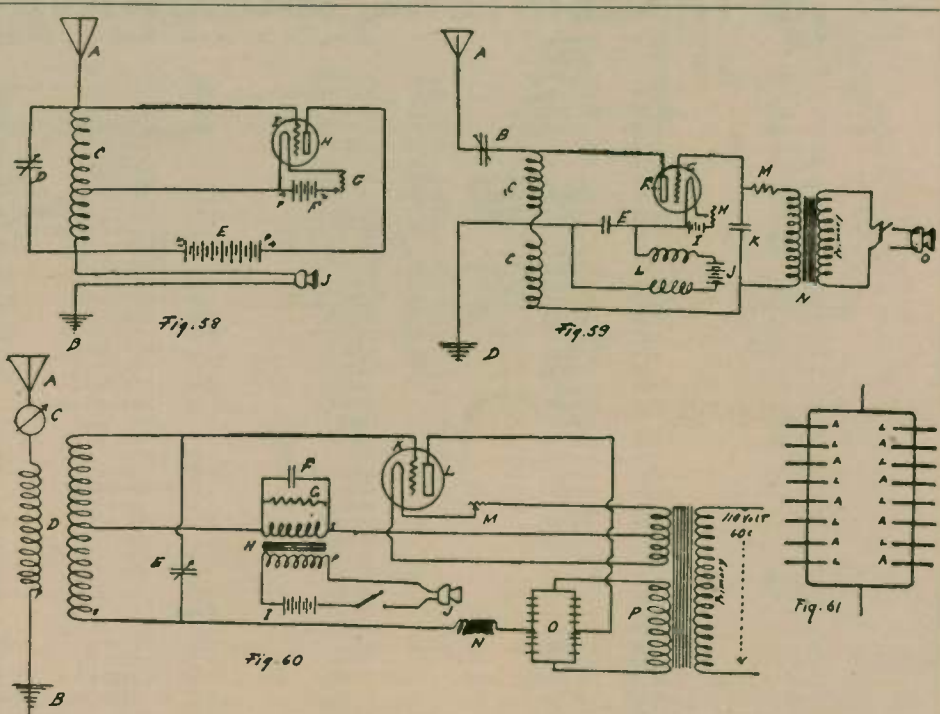
The page showing transmitter circuits features three versions of the Hartley oscillator. Figure 58 has a microphone in the ground lead for modulation, as did the arc transmitter. Figure 59's circuit is akin to the Hartley but was known as the "reverse feedback."

Compare it with Figure 54, noting the relative positions of grid and plate coils, and you'll see why it was so named! It uses grid modulation and needs a microphone battery in order to work. Figure 60 illustrates a chemical rectifier power supply, but one missing a filter capacitor to follow the smoothing choke. Note the location of the modulation transformer: in the center-tap of the filament transformer.

Many years later, we'd call that "cathode modulation" and claim (aided by a vivid imagination) all sorts of desired attributes! But it was the text that went with Figure 60 that made my eyes snap to attention. It recommended that a Ford spark coil be used for the modulation transformer.

It so happens that in 1923, without having heard of Verrill's book, my brother and I built a Hartley oscillator with plate modulation by means of a Ford spark coil. We'd dismantled it and brought out all four leads. (Old-timers will remember the coil had two leads to one terminal.)

That UX-201A transmitter, with 90 volts of B battery on its plate, put out a good radiotelephone signal for chatting around town — strictly unlicensed operation, of course. The same 6-volt battery that powered the filament also powered



Three Hartley oscillator radiotelephone transmitters

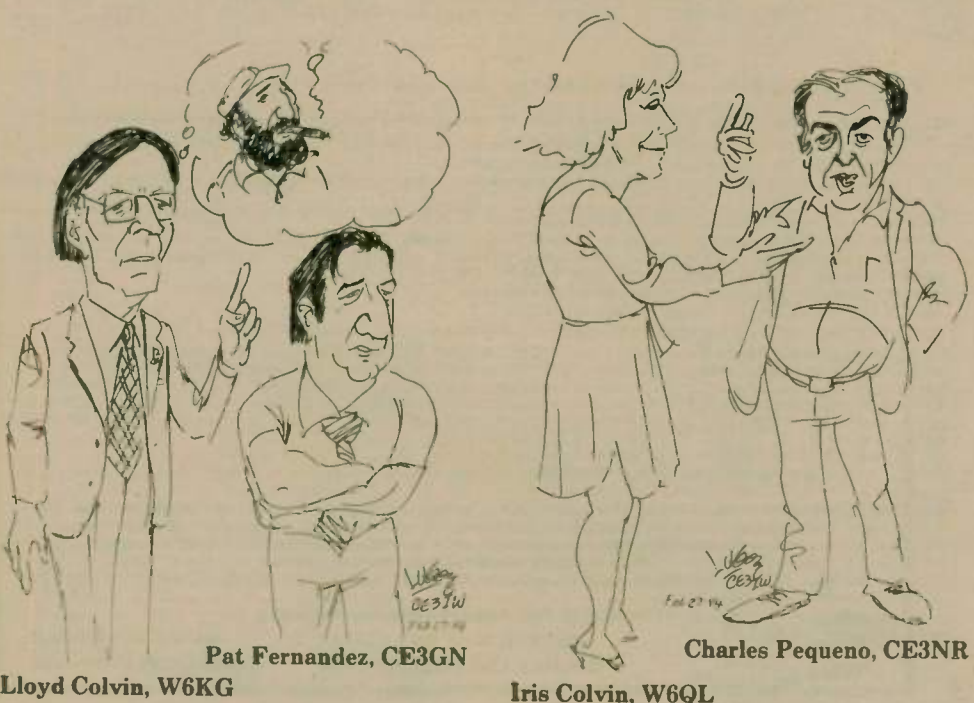
the carbon microphone.

The book awakened a thousand memories, and I'm grateful to Harry for lending it to me. Perhaps these words will stir other amateurs to write to me of their memories of the past. After all,

when we're gone, who'll know of the golden adventures we had, trodding unknown trails into the mysteries of "wireless", unless we put those memories on paper. And what paper is better than Worldradio? □



Lloyd and Iris Colvin, W6KG/CE0, had a chance to visit with Luis Goyenechea Zagarra, CE3IW (center), while in Chile. The caricatures shown here were drawn by Luis. He is a cartoonist for *La Nation* — a Chilean daily newspaper, and previously worked as cartoonist for the *New York Times*. Iris and Lloyd recently returned from a six-month operation in South America, visiting 13 countries and making DXCC under nine different calls, for a total of 55,000 QSO's.



Disaster

(continued from page 28)

From the time of the quake until the last activity died down around 7:00 p.m., approximately 200 pieces of traffic were handled. Initial ambulance calls for five injuries (of the total 19) were made by Amateur Radio. Amateur Radio also relayed the official declaration of a state of emergency to the county Office of Emergency Services.

Amateurs provided one of the first news announcements from the stricken area. In accordance with current FCC rules on not informing amateurs that they were being rebroadcast, KSBW-TV in Salinas had a reporter and camera crew listening to the operation. As we would report damage or lack thereof, KSBW would rebroadcast the information and put it on the wire services.

Amateurs gave the information as well as the source, and we tried to keep hearsay to a minimum. This public information side effect kept amateurs in the news, especially when we were able to deny several rumors based on our own personal observations. Amateurs were quoted on both radio and TV.

Several lessons were learned from the experience. ERC Roy AA4RE tried a new technique for net control. Instead of going to one of the EOC's or to the disaster site, he stayed home with radio and telephone access. This freed him from having to handle traffic and allowed him to concentrate on controlling both the net and resources. This method was very successful.

The only major problem that appeared was the insistence of the Red Cross to dispatch amateurs from San Jose into the quake area, when there was already sufficient manpower on hand to answer their needs. These out-of-town amateurs had to be guided to their posts, consuming valuable net time. It would have been better to allow the local amateurs to provide these services since they are familiar with the area.

In summary, this was the first opportunity for the SVHREC Emergency Corps to use their new disaster plan, and — barring a few minor mishaps — it worked successfully. The dedicated net control concept was proven to be a valuable tool. Morgan Hill and Gilroy are now more prepared to cope with the next big quake. □



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2N4428	1.85	2N6105	21.00	BFX44	2.50	35832E	50.00	MM8011	25.00	MRF515	2.00	PT3194	POR	40281	10.00
2N4430	11.80	2N6136	21.85	BFX48	2.50	35833E	50.00	MPS102	45	MRF517	2.00	PT3195	POR	40282	20.00
2N4957	3.45	2N6166	40.24	BFX65	2.50	35853E	71.50	MPSU31	1.01	MRF559	2.05	PT3537	POR	40290	2.80
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SD1074-2	18.00	SD1220	8.00	SD1416	50.00	SFR2147 Mot.	22.00
SD1074-4	28.00	SD1220-9	8.00	SD1422-2	24.00	SFR2356 Mot.	38.00
SD1074-5	28.00	SD1222-8	16.00	SD1429-2	15.00	SFR2378 Mot.	16.00
SD1076	20.00	SD1222-11	7.50	SD1429-3	15.00	SFR2584 Mot.	40.00
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SD1080-8	6.00	SD1229-7	13.00	SD1434-5	30.00	TIS189/MRF966	3.55
SD1080-9	3.00	SD1229-16	13.00	SD1434-9	30.00	TP312	2.50
SD1084	8.00	SD1232	4.00	SD1438	26.00	TP1014 TRW	5.00
SD1087	15.00	SD1240-8	15.00	SD1441	91.00	TP1028 TRW	15.00
SD1089-5	15.00	SD1244-1	14.00	SD1442	15.00	01-80703TO4/	
SD1095	15.00	SD1262	12.00	SD1444	6.00	458-949 Mot. Comm.	
SD1100	5.00	SD1263	15.00	SD1444-8	6.00		
SD1109	18.00	SD1263-1	15.00	SD1450-1	28.00	TXVF2201 H.P.	450.00
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Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Morse code program

COMPCODE is a hardware-less Morse code program that uses the computer cassette interface and cables for connection to a communications receiver and transmitter or transceiver.

To run COMPCODE, first load the program into your computer following the normal procedure outlined in the operator's manual provided with your system. Once the software is loaded and running, video prompts within the program will guide you as to what to do next.

First, you will be instructed on connecting the cassette cables to your rig. Then a summary of the keyboard commands will be displayed for your convenience. You will then be asked if you would like to fill the message buffers. There are five buffers that can be filled with 200 characters each, giving a total of 1,000-character memory at your disposal.

If you choose not to fill the message buffers, the screen will be cleared and you will be asked if you would like to receive or transmit. If you choose to transmit, you will then be prompted as to what speed you would like to use. This is a close approximation of output speed that is speed-requested.

If you choose to receive, the program will immediately begin to search for something to synchronize itself with. Once it senses the incoming code, it will lock on to it and track that speed (transmit speed does not change).

COMPCODE and a Model III have successfully decoded an electronic keyer at 85 wpm. So, in general, the faster the incoming speed, the better the program likes it.

Until you become accustomed to the characteristics of the program and how your rig affects it, I have provided a VERIFY mode to aid in the tuning of your equipment. Holding down the "V" key will activate this routine. What you will see is a train of graphics moving across the bottom of the screen, from right to left.

You then adjust your receiver's volume, RF gain, bandwidth and other controls for the best reception and the least amount of noise between code letters. This tuning procedure will vary between different makes and models of equipment. When the receiver controls are properly adjusted, you can actually see the dots and dashes moving across the screen. After the controls are set for best reception, pressing the "R" key will exit the VERIFY mode and put you in the RECEIVE mode.

When you are finished receiving and wish to begin transmitting, simply press the "T" key. The screen will be cleared and a prompt will indicate you are in the TRANSMIT mode. You then type the text that you want to be converted to code for transmission. The text is converted and keys your transmitter at the speed you requested earlier. If you can type faster than the speed you requested, you will be putting text into what is called a "type ahead buffer."

If you want to send a pre-programmed buffer, just hit the "BREAK" key and you will be prompted to enter a buffer number. Just enter the number that corresponds to the buffer contents you wish to send. The contents of the selected buffer will be taken from memory and placed on the video screen for transmission. As the program is keying your transmitter and sending the buffer contents, you can type more text at the end of the buffer display. This text will be sent as the program gets to it.

There is a split-screen feature in the TRANSMIT mode. The bottom half of the screen will show you what you are typing, and the top half will be updated as the code is transmitted.

Pressing the " " (up arrow) while in the TRANSMIT mode will return you to the RECEIVE mode. You may also display the instructions, change TX speed, load buffers, or exit the program.

COMPCODE is distributed on cassette for \$24.95 plus shipping and handling. Contact

WOODALL & ASSOCIATES, P.O. Box 284, Plainfield, IN 46168; (317) 271-2565. □



Heathkit catalog

A wide variety of electronic products in kit form are showcased in Heath's latest colorful catalog.

New Amateur Radio products include a Terminal Interface, Ultra-Pro CW Keyboard and QRP CW transceiver. The HD-3030 Terminal Interface works with any personal or home computer. It can send or receive ASCII/Baudot RTTY and Morse code messages around the world at up to 300 baud using any standard transceiver, TTY terminal or monitor and a computer with the appropriate software.

The versatile HD-8999 Ultra-Pro CW Keyboard sends letter-perfect code with programmable ease because of its customized microprocessor and the latest in comfortable, human-engineered keyboard design.

A four-level random practice mode allows 1,000 different and repeatable 3,000-character training sessions with a unique copy mode to teach typewriter proficiency.

The all-new HW-9 Deluxe QRP CW Transceiver has broad-band circuits which cover 250 kHz of CW in the 80, 40, 20 and 15-meter bands — expandable to 30, 17, 12 and 10-meter bands. Features include front panel relative signal/power strength meter, continuously variable RF output, receiver independent tuning and a wide/narrow audio-active filter.

These are just a few of the most than 400 electronic kit products offered in the new Heathkit Catalog. To receive this colorful catalog *free of charge*, write Heath Company, Dept. 150-295, Benton Harbor, MI 49022. In Canada, write Heath Company, 1020 Islington Avenue, Dept. 3100, Toronto, Ontario, CANADA M8Z 5Z3.

Free catalogs are also available at over 65 Heathkit electronic centers in the United States and Canada. Consult telephone directory white pages for the nearest store. □

CW transceiver

TEN-TEC has announced the Century/22, 6-band transceiver. Premiered at Dayton, the new rig is scheduled for production in July. A worthy successor to the popular Century/21, the Century/22 fills the need for a reliable, low-power, no-frills, yet effective HF CW transceiver.

It is ideal for beginners on a budget, as well as established amateurs as a second set, for mobile and portable operation. With power input up to 50 watts, communications can be worldwide, as was proved by its predecessor, Century/21. By reducing the power to 10 watts, a Century/22 owner can enjoy the fun and challenge of QRPp.



Features on the Century/22 include: direct frequency readout; full break-in (QSK); full band coverage; electronically switched S meter; forward power indicator; linear crystal mixed VFO; built-in compression-loaded speaker; and six-pole variable audio filter.

Dimensions: 4" X 10" X 10.5". Solid-state construction. Weight: 6 lbs. Price: \$389

For more information, contact TEN-TEC, Inc., Hwy. 411 East, Sevierville, TN 37862; (615) 453-7172. □

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H-5 — 12 sq. ft. ant. (for M-13 above) \$302.00 PPD. All Hazers include winch, cable & hdw.
TB-25 — Thrust bearing \$42.50
3-8 EE — 3/4" x 6 forged steel eye and eye tumbuckle \$10.75
6" diam. — 4 ft. long earth screw anchor \$12.75
1/4 OD — 7x7 Aircraft cable guy wire 1700 lb. rating .12 ft.
W-115 — 115 VAC winch - 1000 lb. load \$329.95
W-1000 — Manual winch 1000 lb. capacity \$23.95
W-1400 — Manual winch 1400 lb. capacity \$29.95
P-2068 — Pulley block for 3/16 cable \$5.65
50' M-18S — 18 inch face aluminum tower, stainless bolts HAZER, TB-25 bearing and hinged base system \$1523.00 freight prepaid
25860 — Martin Super Tower (nothing else compares) 60' galv. steel, totally freestanding in 100 MPH wind with 30 sq. ft. antenna \$2992.00

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Remote-A-Pad

This new product is being introduced especially for those interested in the remote control of his or her HF base station or the remote control of a 2-meter radio from another band, such as 220 MHz. This product makes the interface easy even for those not experienced in the art of remote control.

The key to this new product is the novel way in which control over a radio is accomplished. By using the radio's own digital frequency control inputs (keypad), we interface a simple eight-wire connection to the control pad of the radio. The audio which may be obtained from any source such as a 2-meter rig is decoded and turned into rows and column switches which provide the necessary logic to work in parallel with an existing keypad.

The "touch tones" from your hand-held's keypad are transmitted to another receiver which provides the audio link into the "Remote-A-Pad". The tone selected then activates the keypad. If you hit a #1 on the portable, a #1 on the radio to be controlled is activated.

When controlling radios like the ICOM 701 and using the RM-2 controller, the power of the microprocessor already built into the rig is unleashed. Many other radios can also be used with the Remote-A-Pad. In fact, any radio or rotator (Pro Search, for example) having a 3x4 or 4x4 keypad may be controlled since the rows and columns are found on all keypads which are used to control computerized devices. One has even been used to control a Hero 1 Robot.

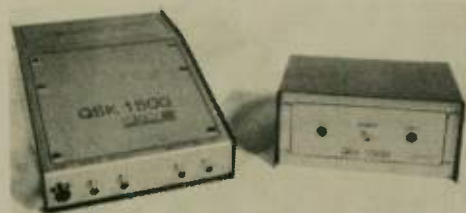
Here at NI6R, we are presently completely remote-controlling our base station working DX, and generally keeping the ham rig in the closet while enjoying it just the same. Many hours poolside with a portable have been spent working the base remotely, from a few hundred feet to over 30 miles away. We have even worked remote RTTY using the new Kantronics UTU and a portable computer (HX-20) into a hand-held 2-meter rig! The emergency capability is really mind-boggling.

Find yourself a radio which is now controlled with a keypad and install a Remote-A-Pad. Add a phone patch for audio link, and the Remote-A-Pad will also turn on and off your link, with two on board four-digit DTMF (touch tone) programmable decoders. You set the code to any series of the 16 DTMF tones. LED's on the board will tell you the status of the controlled device (on or off).

A momentary pulse is also provided and may be used directly into logic to control on-off devices. Relays may be added by using a transistor driver.

The Remote-A-Pad is shipped with a 22 (gold)-pin card edge connector, as well as a 16-pin dip socket ribbon cable for easy installation. Detailed installation instructions and schematics are provided, all for \$149.

For more information, contact Engineering Consulting, 583 Candlewood St., Brea, CA 92621; (714) 671-2009. □



QSK 1500 T/R switch

Design Electronics Ohio is proud to announce the introduction of the QSK 1500. The QSK 1500 is an all solid-state, American-made, T/R switch, which uses "state-of-the-art" high-power pin diodes for ultra-fast silent switching. The installation of the QSK 1500 between a QSK (full break-in) transceiver and any linear amplifier (including homebrew), allows "full break-in QSK" CW operation at the 1500 watt power level. In addition to allowing "full QSK CW," the QSK 1500 also allows the operation of high-power AMTOR with any amplifier.

Since the QSK 1500 uses pin diodes instead of vacuum relays, its operation is totally silent. Installation of the QSK 1500 requires no modifications to either your QSK transceiver or your amplifier. Because of its broadband design, the QSK 1500 will operate from 1.8 MHz to 30 MHz without any additional switches or controls to adjust.

Now, for the first time, an external QSK T/R switch is available which has virtually no insertion loss on receive and does not degrade the front-end performance of any transceiver. Guaranteed insertion loss is less than 0.6dB, and typical insertion loss is 0.25dB.

The QSK 1500 also includes, at no extra cost, a custom-designed power supply and control panel, plus a receiver line protect circuit. The receiver line protection circuit prevents damage to the front end of solid-state QSK transceivers due to the presence of high-power RF fields (such as multi-contest operations or nearby amateurs running high power).

Installation of the QSK 1500 does not change the pattern or character of the transmitted waveform, nor does it produce any TVI or "electronic garbage" over the rest of the spectrum. The QSK 1500 will not change the quality of the signal that your QSK transceiver and linear amplifier produce; it only switches your RF and does not alter it.

The QSK 1500 comes as an attractive two-unit set, color coordinated to match most popular QSK transceivers. The two units furnished with the QSK 1500 are the RF switching unit, which mounts out of sight behind your operating desk, and the power supply/control unit which is placed at your operating position. After installation, there is only one control associated with the QSK 1500 — the on/off switch.

For the ultimate in silent, high-power QSK CW or high-power AMTOR operation, contact: Universal Amateur Radio Inc., 1280 Aida Dr., Reynoldsburg, OH 43068, ATTN: Ralph Rickett; (614) 866-4267, or Design Electronics Ohio, 4925 South Hamilton Rd., Groveport, OH 43125. □

Antenna reducer

A unique Amateur Radio antenna design program for the Commodore 64 computer allows the user to design a reduced size antenna in the frequency range of .5 to 15 MHz.

After inputting the desired frequency, the user can select an antenna design of 30, 40, 50,

60, 70, 80, 90 or 100 percent of full size. The user then selects the loading coil diameter of 1.5, 2, 2.5 or 3 inches using 4, 6, 8 or 10 turns per inch.

The program then calculates the antenna measurements and graphically displays the antenna design. Requires the Commodore 64 computer with tape dataset or disk drive.

Available from RAK Electronics on tape for \$7.95 or disk for \$10.95 plus \$2 shipping and handling. Catalog order number is WC836.

For more information, contact RAK Electronics, P.O. Box 1585, Orange Park, FL 32067; (904) 264-6777. □

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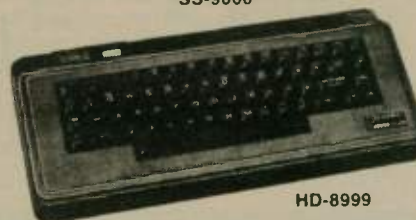


SS-9000



HW-9

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HD-8999



HW-5400



HL-2200

- HW-9 Deluxe QRP CW Transceiver covers CW in 80, 40, 20 and 15 meters, expandable to 30, 17, 12 and 10 meter bands.
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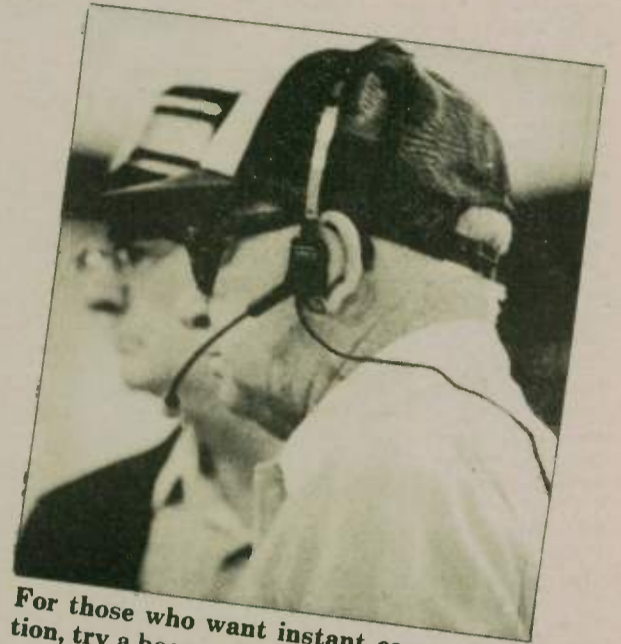
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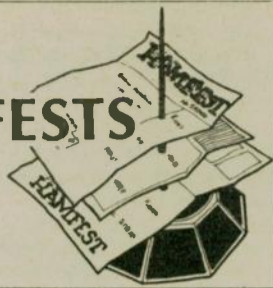


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HAMFESTS



Georgia

The 2nd Annual John Ross ARC Hamfest, sponsored by the John Ross ARC of Rossville, Georgia, will be held 14-15 July, in the Rossville High School Gym Annex.

Admission is free. Features will include inside swap tables, outside tailgate, air-conditioned inside dealer spaces, forums and CW contest, ladies activities, food and prizes.

Inside spaces with table, \$6 each for one day; inside spaces with table for weekend, \$10; tailgate spaces, \$3 each for one day; tailgate spaces, \$5 each for weekend. Discount motel accommodations available (request information).

Talk-in on 146.52, 147.93/33, 147.60/00, 223.34/224.94 and 3.975 MHz.

For information or space reservations, call or write: Murel Winans, (615) 867-7739, or Maxine Barrett, (404) 866-2302, John Ross ARC, P.O. Box 853, Rossville, GA 30741. □

Illinois

The DuPAGE ARC Hamfest/Computerfest will be held on Sunday, 08 July, at the Downers Grove, Illinois American Legion Post 80.

Large outdoor flea market and swappers row. Indoor commercial exhibits available. General admission \$2; \$3 for swapper's row sellers. Tickets available at the gate only. Plenty of free parking space. Food and drink available.

Talk-in on 145.490 repeater or 223.74 repeater.

For more information, send SASE to W9DUP, P.O. Box 71, Clarendon Hills, IL

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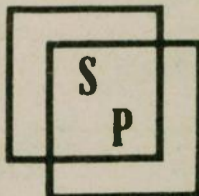
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60514 or call (312) 971-3298 between 8:00 a.m. and 9:00 p.m. □

Indiana

The Indianapolis Hamfest and Indiana State ARRL Convention, sponsored by the INDIANAPOLIS REPEATER ASSOCIATION, will be held 07-08 July. The two-day activity is packed with 18 forums, a large indoor flea market, a friendly outdoor "walk-way" flea market, and a separate commercial building with radio and computer booths.

Saturday activities start at 8:00 a.m. with flea market set-up and convention forums including repeaters, traffic, emergency communications, public information, FCC, clubs and official observers. At 6:30 p.m. there will be a hospitality hour, followed by a banquet at 7:30 p.m. with Larry Price, W4RA, ARRL President as the keynote speaker.

Sunday activities begin with the opening of the flea market and commercial building at 8:00 a.m. and will include forums on ATV, RTTY, computers, AMSAT, ARRL, FCC, packet radio and safety. On Sunday, Hamfest Chairman Dick McKenna, WA9FUD, will present the ARRL with a check for \$1,000 as a contribution to the Senator Barry Goldwater Scholarship Fund on behalf of the many amateurs who have supported the hamfest over the years. There is free overnight camping on Saturday night at the hamfest site. Rooms at the convention site are \$38 per room, with up to four occupants per room.

Hamfest admission is \$4 per person; banquet tickets are \$12 per person. The hamfest is at the Marion County Fairgrounds near I-74 and I-465 on the southeast side of Indianapolis; the convention is at Howard Johnson's Motel, I-70 and Post Road, on the east side of Indianapolis.

Talk-in on 146.16/76.

For additional information, write: Indianapolis Amateur Radio Association, P.O. Box 11086, Indianapolis, IN 46201. □

Kansas

The MOBILE AMATEUR RADIO AWARDS CLUB, Inc. (MARAC County Hunters) would like to invite all interested amateurs to the annual convention, to be held Wednesday, 04-07 July, at the Holiday Inn in Overland Park, Kansas.

A picnic will be held for early arrivals on Wednesday evening. Area tours and dinner theater on Thursday, followed by antenna and computer forums on Friday. Annual business meeting will be held Saturday morning. A hospitality suite will be open during entire convention.

For more information, contact R.L. Dyson, K0AYO, R1 Box 230 M, De Soto, KS 66018. Send SASE. □

Maryland

The BALTIMORE RADIO AMATEUR TELEVISION SOCIETY (BRATS) again presents the famous BRATS Maryland Hamfest and Computerfest on Sunday, 29 July, at the Howard County Fairgrounds, Route 144 at Route 32, adjacent to Interstate 70 in West Friendship, Maryland, about 15 miles west of the Baltimore Beltway (695).

Indoor tables along the wall, with A/C, \$20 each. Indoor tables in the center of the floor, without A/C, \$10 each. Quantity discounts and booths available. Plenty of outdoor tailgating. Dealer set-up begins Saturday at 2:00 p.m. with overnight security provided. RV hook-up available.

Talk-in on 146.76(-600); 147.03(+600) and 52 simplex.

For table reservations and information, write BRATS, P.O. Box 5915, Baltimore, MD 21208, or call Mayer Zimmerman, W3GXX, at (301) 655-7812. Table sales by advance reservation only. □

Michigan

The STRAITS AREA ARC Annual Swap-Shop and computer demonstration at Emmet County Fairgrounds 4-H Building, 21 July, 9:00 a.m. to 2:00 p.m. Tables \$3 each. Admission \$2.50. Table set-up 8:00 a.m.

Talk-in on 146.67 and 52. RV camping nearby.

For details: Irene Stein, KA8NKS, 4487 Robinson Rd., Pellston, MI 49769; (616) 539-8986. □

The COPPER COUNTRY RADIO AMATEUR ASSOCIATION located in the northernmost part of the Upper Peninsula of Michigan will be hosting the 1984 Upper Peninsula Hamfest. It will be held 28 July, on the campus of Michigan Technological Univer-

sity at the Memorial Union Cafeteria in Houghton, Michigan.

Amateur Radio operators from Michigan, Wisconsin, Minnesota, Illinois, Canada and elsewhere will be attending this festive event.

For further information, contact: Howard Junkin, N8FHF, Co-chairman U.P. Hamfest, 106 West South St., Houghton, MI 49931; (906) 482-4630. □

New York

The GENESEE RADIO AMATEURS (GRAM) announce their annual Batavia Hamfest, held this year at the Alexander Firemen's Grounds, Rt. 98, Alexander, New York, on Sunday, 08 July, 7:00 a.m. to 5:00 p.m. The Commercial exhibit area opens at 9:00 a.m.

Activities will include breakfast (6:00 a.m.), CW contest, OM and YL programs, 52 check-in contest, flea market, chicken barbecue, and hot air balloon rides. Free camping (hook-ups \$2). Admission is \$3 in advance (before 22 June); \$4 at the door.

Talk-in on 4.71/5.31 and 6.52 W2RCX.

For more information, contact GRAM, P.O. Box 572, Batavia, NY 14020. Tickets available from Knute Carlson, N2DRX, 26 Burke Dr., Batavia, NY 14020. □

North Carolina

The WESTERN CAROLINA AMATEUR RADIO SOCIETY announces the WCARS Hamfest and Computer Fair, to be held 28-29 July, at the Buncombe County Firemans Training Center, Asheville, North Carolina.

Tickets are \$4 for both days; \$3.50 if pre-registered by 15 July. Forums, CW contest, bingo, prizes and camping — no hookups will be featured. Dealer exhibits inside (\$5 per table, per day); flea market outside (\$2 per day). Free parking.

Talk-in on 31/91, 16/76 and 52 simplex.

For information, write: Nelda Williams, KA4WPM, P.O. Box 1488, Asheville, NC 28802. □

Ohio

The 20th Annual Wood County Ham-A-Rama — sponsored by the WOOD COUNTY ARC — will be held Sunday, 08 July, at the Wood County (Ohio) Fairgrounds, Bowling Green, Ohio. Gates officially open at 8:00 a.m., with free admission and parking. There will be drawings for main and door prizes.

Tickets are \$2; buy five for the price of four in advance. Trunk sales and food available. Advance table rentals \$5 to dealers only. Saturday set-up available until 8:00 p.m.

K8TIH talk-in on .52.

For more information or dealer rentals, send SASE to: Wood County ARC, c/o Craig Henderson, Box 366, Luckey, OH 43443. □

The NORTHERN OHIO AMATEUR RADIO SOCIETY is pleased to announce its 7th Annual ARRL-approved NOARSFEST, 21 July, at the Lorain County Fairgrounds, Wellington, Ohio.

Flea market set-up is from 6:00 to 8:00 a.m. Gates open 8:00 a.m. to 4:00 p.m. Donation is \$3 in advance, \$3.50 at the gate. Children under 12 free.

To order admission tickets, write to NOARSFEST, P.O. Box 354, Lorain, OH 44052. Huge black-topped flea market area. Flea market \$1 per car space. Large indoor exhibit hall. Dealers indoor exhibit space with 8 ft. tables at \$8 each. Campers may park overnight Friday at no charge. No hookups.

Talk-in on 144.55-145.15. Mobile check-ins on 146.52.

Send check for advance registration to John Paul Jones, WA8CAE, 4612 Timberview Dr., Lorain, OH 44052; (216) 282-4256. □

Oklahoma

CENTRAL OKLAHOMA RADIO AMATEURS will host "Ham Holiday" and State ARRL Convention 21-22 July at the Lincoln

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Plaza Inn and Conference Center, 4445 Lincoln Blvd., Oklahoma City, OK 73105. Program features are FCC, ARRL officials, DX, Packet Radio, Satellites, Computers with RTTY, and a host of special-interest events appealing to both the OM and the YL.

All activities will be under one roof, and there will be unlimited free parking for both cars and self-contained RV's. Dealer displays will be open Saturday and Sunday, but the flea market will be only on Saturday. Mail your reservation by 06 July to get registered for \$8; it will be \$10 at the door. Saturday evening banquet ticket, \$14; Sunday QCWA breakfast, \$7.20. Reserved flea market table, \$5 or, if available, \$8 at the door.

Mail reservations to CORA, P.O. Box 44091, Oklahoma City, OK 73144. Make your hotel reservation at special rate of \$47 (+ tax) for a double; call (800) 522-8034 if in Oklahoma, or (800) 654-8419 if out of state. □

Oregon

The 9th Annual Lane County Ham Fair will be held 21-22 July, at the Oregon National Guard Armory, 2515 Centennial, Eugene, Oregon. The event will be sponsored by the LANE COUNTY AMATEUR RADIO ASSOCIATION. Doors open at 8:00 a.m. Saturday and Sunday.

Major ham equipment suppliers will be present. Computer demonstrations, license exams, technical seminars, 2-meter bunny hunt, women's activities, prize drawings, all-day snack bar and free parking for RV's (no hookups) are a few of the things visitors can look forward to, as well as a Saturday potluck supper at 6:00 p.m.

Talk-in on 146.28/88, 147.86/26 and 52-52. Admission is \$5 (max. 10 per person); swap tables \$5 each (max. two per person). Tickets postmarked before 01 July received one free drawing ticket. Make checks payable to Lane County Ham Fair. Mail to Tom Temby, WB7WPU, 3227 Crocker Rd., Eugene, OR 97404. □

Pennsylvania

The Annual Firecracker Hamfest, to be held 04 July, is sponsored by the HARRISBURG RADIO AMATEUR CLUB. The location is the Bressler F.C. picnic grounds. Exit #1 of Interstate 283 Route #441 and follow signs to Bressler. Three motels are located at this exit and several restaurants.

Parking for 1,000 cars. Shade trees and pavilion with tables. Admission \$3. XYL and children are free. Tail-gating no charge. Door prizes and grand prize drawings.

For additional details and table reservations, contact Dave KC3MG, 131 Livingston St., Swatara, PA 17113; (717) 039-4957. □

The NITTANY AMATEUR RADIO CLUB will hold its annual Mt. Nittany Festival on 14 July, at the Pleasant Gap Firemen's Park, Route 26, Pleasant Gap, Pennsylvania.

The event begins at 8:00 a.m., with a wide range of prizes and other attractions. There is a large tail-gating area, including those within pavilions. Registration \$3.

Talk-in on 146.16/76 and 146.25/85. Contact Dave Buckwalter, KC3CL, 1635 Circleville Rd., State College, PA 16803. □

The 47th Annual SOUTH HILLS BRASS-POUNDERS AND MODULATORS Hamfest will be held on 05 August from 9:00 a.m. to 4:00 p.m. at the South Campus of the Community College of Allegheny County, Pittsburgh. Tickets \$3 each or 2/\$5. Indoor and outdoor flea market space available. Food and refreshments available. Plenty of free parking.

Talk-in on 146.13/73 and 146.52 simplex. Further information from Jack B. Wood, 448 Jenne Dr., Pittsburgh, PA 15236. □

West Virginia

The TRIPLE STATES RADIO AMATEUR CLUB will hold its 6th Annual Wheeling Hamfest at Wheeling Park, Sunday, 22 July, from 9:00 a.m. to 4:00 p.m. Easy access — on I-70 from east, Exit 5; on I-70 or I-470 from



Colombian Independence

The 1984 Colombia Independence Contest will be held 21-22 July, from 0000 GMT, Saturday, to 2359 GMT, Sunday. Modes used will be CW and phone.

Categories: a) Single operator, single band, CW only, phone only, or mixed; b) Single operator, multi-band, CW only, phone only, or mixed; c) Multi-operator, single transmitter, multi-band, CW only, or mixed; d) Multi-operator, multi-transmitter, multi-band, CW only, phone only, or mixed. (NOTE: There is only one single-band category; i.e., single-band operators using 14 MHz compete with those using 7 MHz, etc.)

Bands: 1.8, 3.5, 7, 14, 21 and 28 MHz
Contest call: Phone — CQ HK Contest; CW — CQ HK Test.

Exchange: Non-HK stations — (Phone) signal report plus three numbers, starting with 001 (Ex: 59001); (CW) RST plus three numbers, beginning with 001 (Ex: 599001); HK stations — (Phone) Signal report plus the number 174, indicating the celebration of the 174th anniversary of Colombia's independence (Ex: 59174); (CW) RST plus the number 174 (Ex: 599174).

Scoring: Non-HK stations — (with HK stations) 5 pts.; (with non-HK stations outside own country) 3 pts.; (with stations of one's own country) 1 pt. HK stations — (with non-HK stations) 5 pts.; (with other HK stations) 3 pts.

Multippliers: The combination of different countries worked on each band plus different HK districts worked on each band.

Final score: Total QSO points × multipliers per band.

Logs: Logs should include time in UTC, station worked, report sent, report received, multiplier, QSO points. Separate sheets should be used for each band. Multipliers should be indicated only the first time they are worked on each band.

A summary sheet should be included, indicating point computation, category of participation, name and address of operator, list of operators in case of multi-operator stations,

west, Exit 4. Dealers, commercial exhibitors all under roof. Flea market, auctions, refreshments, free parking, family park activities. Admission \$3. ARRL, SWOT, SMIRK, etc. booths. This hamfest is known for its many awards.

For four-page brochure/information, contact: TSRAC, Box 240, RD 1, Adena, OH 43901; (614) 546-3930. □

W-I-M-U

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For registration materials, contact: Betty Naylor, N7BCG, 1841 Herbert Ave., Salt Lake City, UT 84018; (801) 582-6691. For special room rates at The Virginian, call (307) 733-2792 and mention "Hamfest". □

standard contest declaration. Submissions not including summary sheet will be counted as check logs.

Prizes: Every station which shows at least 50 QSO's — at least 10 of which are HK stations for phone entries or five for CW entries — will receive a certificate of participation. Plaques or cups: (non-HK stations) Overall winner of contest; winner in each category, A through D, in each mode; second place in each category, A-D, in each mode; (HK stations) Same as non-HK stations, plus winner in each call area in each mode.

Other conditions of entry: a) Each participant must communicate with at least 10 HK stations on phone or five HK stations on CW in order to have the entry accepted by the contest committee. b) Each entrant must submit proof of a total of 50 QSO's, at least 10 of them with HK's if on phone, of five HK's if on CW, in order to be eligible for any prizes. c) If the entrant chooses to operate in the "mixed category, then only five HK stations need be worked on phone, along with five HK's on CW. d) Only one contact per band with the same station is valid. e) Cross-band or cross-mode contacts are not valid.

Disqualification: Violation of Amateur Radio regulations in the country of the participant, or of the contest rules, lack of ethics, phantom QSO's, duplicates in excess of 2 percent of the total number of contacts, may be sufficient to merit disqualification. In any such case, the decision of the LCRA Executive Committee on Contests will be final and not subject to appeal.

Mailing instructions: Logs should be mailed no later than 30 August 1984. Logs received after 30 December 1984 will not be eligible for consideration, though they may be used as check logs. Mail all contest logs or other correspondence to: LCRA, Contest Logs and Awards Dept., P.O. Box 584, Bogota, COLOMBIA, SOUTH AMERICA. □

CW County Hunters

The CW County Hunters Net invites all amateurs to participate in the 1984 CW County Hunters Contest. All mobile and portable operation from less active counties is welcomed and encouraged.

The contest period will last from 0000Z, 28 July to 0200Z, 30 July. The general call will be CQ CH.

Exchange: QSO number, category (mobiles or portables only: M or P), RST, county and state (U.S. stations); others send province or country. Stations may be worked once on each band and again if the station has changed counties. Mobile or portable stations changing counties during the contest may repeat contacts for QSO points. Stations on county lines

give and receive only one number QSO, but each country is valid for a multiplier.

Scoring: QSO's with fixed stations are 1 pt.; QSO's with mobile or portable stations are 3 pts. Total score is obtained by multiplying the sum of all QSO points by the number of U.S. counties worked. Independent cities may be counted as any one of their adjoining counties in accordance with USACA rules. Mobiles and portables who change states during the contest calculate their total score for a state-for-state certificate competition and total score for the High Mobile or High Portable Plaque.

Suggested frequencies: 3575, 7055, 14065, 21065 and 28065. On 20 and 40 meters, mobile and portable stations should call CQ or QRZ below the suggested frequencies. Fixed stations will CQ or QRZ above the suggested frequencies.

Certificates will be awarded in three categories:

F — Highest scoring fixed or fixed portable station in each state, province and country with 1,000 or more total score.

P — Highest scoring station in each state operating portable from a county which is not his normal point of operation with 1,000 or more total score.

M — Highest scoring station in each state operating mobile from three or more counties with a minimum of 10 QSO's in at least each of three counties.

Plaques will be awarded to the highest scoring mobile and portable stations in the United States who meet the above requirements for certificates. Additional awards will be issued where deemed appropriate by the Awards Committee.

Logs must show category, date/time (GMT), station worked, band, exchanges, QSO points, location and total score. All entries with 100 or more QSO's must include a check sheet of counties worked or be disqualified from receiving awards. Enclose a LARGE SASE if contest results are desired. Logs must be postmarked by 01 September 1984, and sent to: CW County Hunters Net, c/o Jerry Burkhead, N6QA, 7525 Baltic St., San Diego, CA 92111. □



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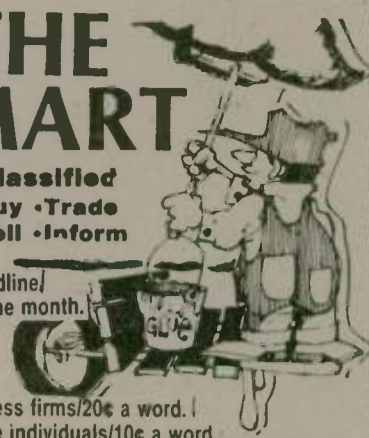
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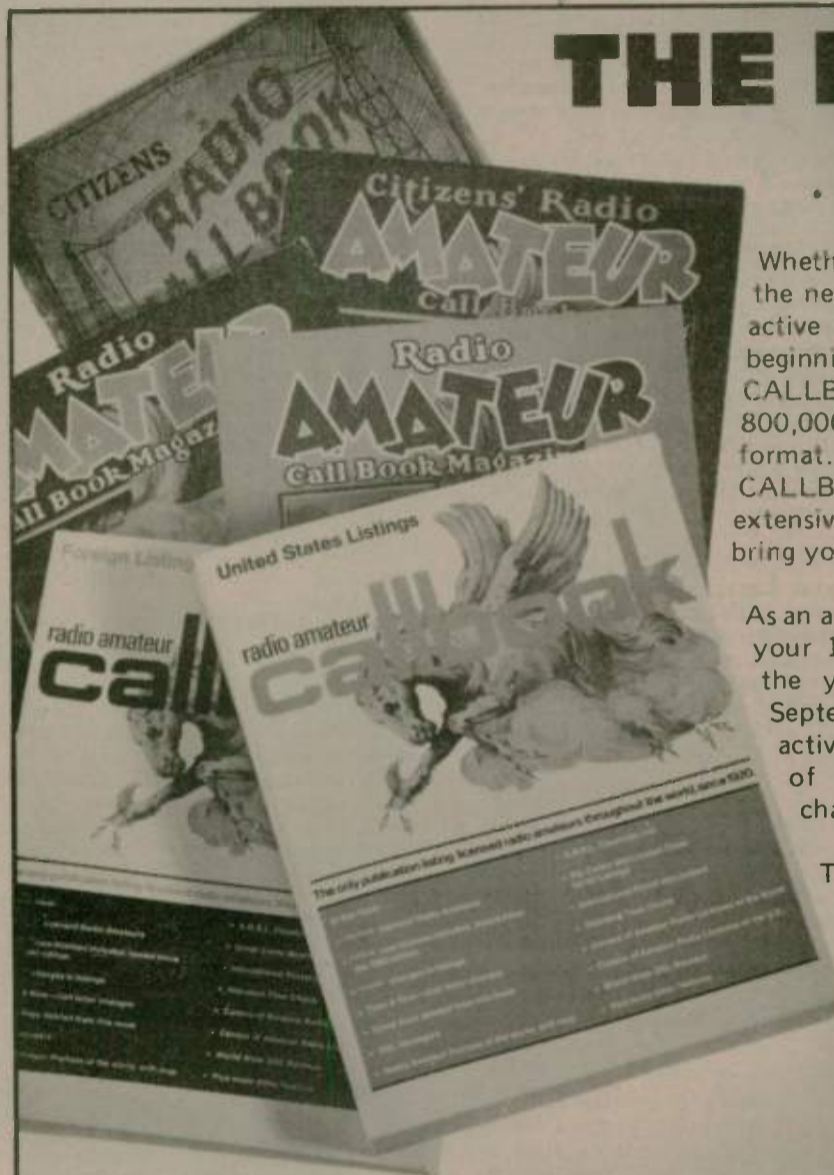
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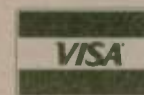
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