

World Radio

Year 14, Issue 2

August 1984 • 85c

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W6CUF
000586 0000

Field Day 1984

Field Day is "Numero Uno"! More of the licensed Amateur Radio operators will participate in this event than will enter all the contests combined.

This annual exercise, sponsored by the American Radio Relay League, started 51 years ago. It is a 27-hour drill in



A tent, antennas and a transceiver ... It's Field Day, as nearly 2,000 groups participate in the annual drill. Here's N6WR in action from the Sacramento Valley Section.

which the purpose is to practice providing communications under true emergency conditions.

Over 30,000 radio amateurs test their ability to function without electricity furnished by the utility companies and away from the comforts of home. From this practice comes the unique ability to electronically link a community or the nation in time of need.

The Federal Communications Commission states five reasons that justify giving a portion of the radio spectrum to individual and private use. The very first reason is "... the value of the amateur service to the public as a voluntary noncommercial communications service, particularly with respect to providing emergency communications."

And provide they do! This phrase: "Virtually all communications with the outside were interrupted, with Amateur Radio operators handling emergency calls." has appeared so often on newspaper teletype machines that the wire services should put it into the memory with automatic instructions to insert as paragraph five.

It is indeed testimony to the drive and determination of the amateurs when they, also residents of an affected community, can set into motion a system to link public safety agencies after the municipal communications have been destroyed.

Words of praise and appreciation have (please turn to page 12)



Ken Trigg, WA0OBI, operating "Torch 1" — the Net Control operating position for the Olympic Torch Relay. (Photos by Norm Brooks, K6FO)

My week with the Olympic Torch

Norman Brooks, K6FO

America is still a flag-waving, patriotic country. I say this because I just spent a week with the AT&T Olympic Torch Relay team, carrying the Olympic Flame across the country. I was with the torch from Tupelo, Mississippi to Altoona, Kansas; from 02 June to 09 June.

The patriotism brought tears to my eyes. Sometimes it was the school children brought by their teacher to the side of the road. Or it may have been the little child throwing rose petals at the runner from a little wicker basket. Perhaps it was a huge banner saying "God Bless America." Or it may have been the high school bands that played welcoming music at the side of the road. In any case, your sentimental old reporter repeatedly choked up, observing the flag-waving crowds of people cheering the Olympic Torch bearer as he or she ran through their city, town or countryside.

I was the Amateur Radio operator on one of the two drop-off vehicles. Our job was to drop off each runner in the right place at the right time, to receive the flame from the previous runner. From this vantage spot, I was able to see the people just before the runner arrived.

But I'm getting ahead of the story.

1984 Olympic Torch Relay: making history

When the Olympic Torch is carried into the Los Angeles Memorial Coliseum on 28 July 1984, it will mark the

beginning of the XXIIIrd Olympiad of the modern era. It will also mark the ending of a journey of 81 days, covering 9,100 miles, through 33 states in the USA — the longest Torch Relay in history.

AT&T Communications, in cooperation with the Los Angeles Olympic Organizing Committee, has planned and underwritten this unprecedented event. On 08 May, the Olympic Flame arrived in New York. From there it was passed to thousands of Americans — young and old, men and women, novices and experienced runners alike. And all along the route, handling the thousands of details involved in preparing and running the 1984 Olympic Torch Relay, were the Telephone Pioneers of America.

Who are the Pioneers?

The Telephone Pioneers of America is the world's largest voluntary association of industrial employees, current and retired. Established in 1911, it is made up of more than 580,000 men and women who have served 18 or more years in the Bell System Companies, certain Canadian Telephone Industry Companies and the Rochester Telephone Corporation. Alexander Graham Bell was registered as the first official member.

The Pioneers' role

The Pioneers started work months in advance to make this longest-ever Torch (please turn to page 6)

U. S./Belize third-party agreement signed

A third-party agreement was signed on 23 May, permitting amateurs of the United States and of Belize, prefix V3, to exchange messages on behalf of persons other than the amateurs involved.

The agreement contains the usual restrictions against business traffic and against messages sufficiently important to justify using the common carrier networks. The agreement became effective 22 June. □

FCC denies petition

The FCC has denied the ARRL petition for rulemaking. RM 4040. The League had requested that cable TV operations be prohibited on amateur frequencies, but the FCC felt this was too drastic an action.

However, it is not a total loss for Amateur Radio. In denying the League's request, the FCC used strong language to remind the cable TV companies of their responsibilities not to leak excessively and to eliminate harmful interference even if leakage is within FCC limits.

WANTED: VE's for 6th call district

Volunteer examiners (VE's) are wanted by the Greater Los Angeles Amateur Radio Group, says Steven Shafit, NE6L, chairman of the group. Extra Class amateurs are especially encouraged to sign up, although Advanced operators are welcome too.

The group is one of the two VEC's (volunteer examiner coordinators) for the

6th call area, which includes Hawaii. SANDARC of San Diego is the other VEC for that area.

Extra and Advanced operators who are interested in becoming VE's should contact Steven Shafit, NE6L, 21921 Lanark St., #201, Canoga Park, CA 91304; (818) 340-8159, between 6:00 and 10:00 p.m. weekdays, anytime on weekends. □



Worldradio

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

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August 1984

Vol. 14, No. 2

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

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

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

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

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2nd district VEC's

Five members of the Metroplex Amateur Communications Association were appointed by the FCC as VEC's (Volunteer Examiner Coordinators) for the U.S. 2nd district call area, in March 1984. The five amateurs headed by Jim Greer, KK2U, included Bert Grebin, K2KLN, president of Metroplex; Alex Magocsi, WB2MGB, vice president; and Metroplex members Dave Hancock, KY2R, and John Lupinski, WB2PAG.

The responsibilities of this group include appointing hams in the 2nd call district to act as volunteer examiners, and setting up programs of regularly scheduled Amateur Radio exams. The exams had previously been administered by the FCC's Personal Radio Bureau which was, in the last few years, forced to implement austerity measures.

Taking over this program from the FCC is a monumental responsibility because the 2nd call district encompasses a large geographic area, and includes many metropolitan centers which will require testing sites.

The first volunteer examinations held in the 2nd call district were given on an experimental basis by the VEC group itself. More than 50 candidates at the BARA hamfest in Paramus, New Jersey on Sunday, 06 May, took the Novice, Technician and General Class Amateur Radio exams.

The entire event ran very smoothly and, with greater than 48 percent of the applicants passing, the tests were seen as a highly successful indicator of things to come.

The code test and written exams given in Paramus were issued by the FCC. Future exams will be made up by the VEC's. The code test was on a cassette tape and played over a loudspeaker system, and the written exam was the standard 50-question multiple-choice type. Either or both of these parameters can be changed by the VEC. Those who passed the code test, but failed the written exam, were given code credit slips which are valid for one year.

Those who passed both parts received their interim permits "on the spot." The first upgrade from Novice to General Class was Dave Goldryn, KA2UHY, of Brooklyn, New York. Congratulations to all who passed their exams, and a hearty "well done" to the VEC group for a fine showing of the ham spirit.

Metroplex is one of the largest Amateur Radio repeater groups in the United States, with 1,200 members worldwide. Volunteers are always welcome to contact the club at Box 237, Leonia, NJ 07605; (201) 592-1579. (For VEC information, please include an SASE.) — *Hank Goldman, WA2ONG*

Correction

On page 12 of the July issue of Worldradio, a picture was run of W6RO's 5th anniversary celebration. However, the people in the photo were

incorrectly identified. Joseph F. Prevratil, President of Wrather Port Properties, Ltd., is in the center, not on the right. Nate Brightman, K6OSC, Station Manager and Special Projects Chairman, is on the right.

ARRL seeks VE's

The ARRL is preparing to serve as a Volunteer Examiner Coordinator (VEC) in each of the 13 FCC call areas (more than one VEC may serve in a particular area).

In anticipation of becoming a VEC this summer, the ARRL is recruiting licensed Advanced and Extra Class radio amateurs to serve as Volunteer Examiners. Applicants are *not* required to be ARRL members to participate. Applicants must, however, hold a current Advanced or Extra Class license, have no history of license suspension or revocation, and be at least 18 years of age.

If you qualify and are interested in participating as a Volunteer Examiner with ARRL's VE Program, please request an application by writing to Volunteer Examiner Accreditation, ARRL, 225 Main St., Newington, CT 06111.

Answers to VEs' often-asked questions

The Volunteer Examiner Program covers testing for Technician, General,

Advanced and Extra Class licenses. Novice exams will continue to be given by Novice Examiners under the new Novice rules (97.27 (a) and (c); 97.28 (b); et al.); Novice license testing is entirely separate from the Volunteer Examiner Program.

Under the Volunteer Examiner Rules adopted by the Commission, only Advanced and Extra Class licensees may administer exam elements above the Novice level (97.28 (a)). Extra Class licensees may administer all written and Morse code elements; Advanced Class licensees may administer only exam Elements 1A, 2 and 3 (Elements required for the Technician license). And of course, you must be accredited as a Volunteer Examiner by a VEC before you are authorized to administer any upgrade examinations. — *Steve Place, WB1EYI*

CONTENTS

FEATURES

- Arizona rainfall brings trouble to Mesa — 15
- CCRL — new service for amateurs — 27
- Close encounter with disaster — 12
- Father Moran visits USA — 4
- Field Day 1984 — 1
- His invention a first in Amateur Radio — 46
- K5WF schedule — 3
- MARCE assists Project Explorer mission — 27
- My week with the Olympic Torch — 1
- Ohm-Brew — 27
- Worldradio at Field Day 1984 — 12

COLUMNS

- Advertisers' Index — 56
- Aerials — 39
- AMSAT/OSCAR — 26
- Clubs — 32
- Contests — 52
- DX World — 20
- FCC Highlights — 8
- Hamfests — 52
- Maritime Mobile — 30
- MARS — 40
- MART classifieds — 54
- New Products — 47
- Off the Air — 16
- Propagation — 23
- QCWA — 34
- QRP — 43
- Silent Keys — 40
- Special Events — 10
- SSTV — 44
- Station Appearance — 19
- Subscription, Worldradio — 9
- Teacher — 41
- Traffic — 38
- With the HANDI-HAMS — 36

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K5WF schedule

Below are listed the frequencies on which to listen for K5WF, the Amateur Radio station located at the Louisiana Amateur Radio Exhibit at the Louisiana World Exposition. The station is now on the air daily.

General/Extra SSB	CW	RTTY	SSTV
10M 28.600	28.020	28.090	—
15M 21.365	21.035	21.090	—
20M 14.265	14.035	14.090	14.230
40M 7.235	7.035	7.090	—
80M 3.910	3.535	3.590	—

Novice/Tech.	2-meter repeater	2-meter SSB & simplex
10M 28.150	Pri. 146.34/94	*144.200
15M 21.150	Sec. 146.01/61	**146.550
40M 7.125	Backup 146.16/76	
75M 3.725		



K5WF, World's Fair station



The ribbon cutting ceremony at the opening of the Louisiana Amateur Radio Exhibit (LARE), with John Uhl, KV5E (third from left), having the honor of doing the actual cutting. The others shown here are (left to right): Ray Crain, KB5GA; Tony Paladino, WA5ORS; Wes Strauch, W5VBX; Phil Spencer, W5LOH; and Leon Lessard, WB5ZED. John, Tony and Phil formed LARE three years ago, for the purpose of setting up this exhibit.

* Ready in Early June
** For QSL's only and scheduling to be announced on local nets

Skywarn busy during tornado emergency

Bob McCaffrey, K0CY
Bob Heitman, WD0DOK

Tornadoes are a regular springtime activity in Iowa. On 07 June, a record number of tornadoes were spotted and tracked, and unfortunately, four weather-related deaths were reported.

The Central Iowa ARES has an excellent working relationship with the National Weather Service (NWS) in Des Moines. The NWS is located at the airport and is equipped with a 2-meter rig and outside antenna. Dialogue between the amateurs and meteorologists is constant during an area storm.

The ARES Skywarn net is composed of 16 counties around Des Moines and operates primarily on W0AIX/R (Mingo 146.07/67). If information is needed from

other surrounding counties, we relay through various repeaters. The net is called when requested by the NWS or when severe weather affects the 16 primary counties.

At 5:45 p.m. local time, Ralph Wallio Jr., W0RPK, initiated the net on request of NWS. Bob McCaffrey, K0CY, and Harry Keibel, KB0ZP, manned the NWS station while Steve Smith, WA4VWV, backed up the net control station (NCS). When the net ended six hours later, 35 tornadoes were confirmed, and four weather related deaths had been reported.

The net received severe weather reports from 58 stations representing 33 counties. Because of net discipline, we did not receive "good weather reports" from the 150 monitoring stations. Western counties were able to report to the NWS at Omaha as well as Des Moines.

Since 07 June, the Central Iowa ARES has activated five times. One does feel that the reports that alert the NWS to issue a warning might have given extra time to those involved, to prevent a fatality. □

History being made by TSRAC members

Members of an area Amateur Radio club are making Amateur Radio communications history.

On 28 May, Jay Paulovicks, KD8GL, using a small hand-held transceiver, running one-third of a watt of power, contacted a station in Los Angeles operated by Karen Henderson, who was running 1 watt of power on a similar hand-held transceiver. Both the ARRL and AMSAT are crediting this feat unofficially as being the first time such communications have been accomplished in this manner.

These experiments are being conducted by the Triple States Radio Amateur Club using a club repeater located at Sherrard, Illinois, or one at McMechen, West Virginia. The experimental calls are then sent through the Amateur Radio satellite operating station of Don Knollinger, WB8ZTV, to Amateur Radio satellite OSCAR-10, which was 34,000 miles above Hawaii at the time of the contact.

Ralph McDonough, K8AN, of Adena acted as net control to hook the two together. To further demonstrate the possibilities of this new facet of operations, he had two female operators make

a mutual contact using low power.

Faith Tabeling, N8EQO, of Glen Easton contacted a woman in Lake Havasu City, Arizona, for the first such low-power contact between two women operators.

On 27 May, members of the group contacted Ian Ashley in Auckland, New Zealand to show the long-range capabilities of this newly designed system. The system connects a short-range repeater with a long-range repeater, called a transponder, based on a satellite far out in space.

McDonough had approximately 19 operators from the three-state area make the contact.

Approximately 13 club members contacted Norman Guilford of Norwich, England, on 26 May, when the satellite was 23,000 miles above the Atlantic Ocean.

The idea was proposed by the AMSAT organization, and Knollinger attended a training seminar in Maryland before directing the group's efforts. Members normally conduct their experiment on weekends using the club repeater frequencies of 146.91 or 147.15 to coordinate their operations.

— *News-Register, Wheeling, WV; submitted by Fred McGee* □

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.33 pf; 1.90 ea .68 pf; 3.90 ea

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Father Moran visits USA

Following is a list of hosts at whose homes Fr. Marshall Moran, 9N1MM, will be staying during his three-month visit to the United States. 9N1MM's tour was arranged by Edward Konop, W3WGS.

stop and give time of arrival and flight. When possible, have Fr. Moran check-in on 21.292 at 1800Z. (Information and photo submitted by Bob Dymond, N6APW)

All hosts are required to call the next

Sept. 1	Boston, MA	Jack Moran, W1ZLG, (617) 438-2788 120 Collincote St., Boston, MA 02180
Sept. 3	Simi Valley, CA	Dick Smith, KB6UI, (805) 522-0194 3728 Township Ave., Simi Valley, CA 93063
Sept. 4	San Francisco, CA	Brook Byers, K4TKM, (415) 931-2066 2682 Broadway, San Francisco, CA 94115
Sept. 5	Santa Rosa, CA	Loren Peterson, K6EDV, (707) 545-2635 845 Romona Dr., Santa Rosa, CA 95404
Sept. 7	Portland, OR	Gus Amato, KC7XB, (503) 232-3856 1524 SE 31st St., Portland, OR 97214
Sept. 9	Seattle, WA	Don Coleman, W7HCH (206) 938-3402 3402-39th Ave. SW, Seattle, WA 98116
Sept. 12	Nanaimo, B.C.	Roy Norman Berhan, VE7BRI, (604) 722-3498 RR #2, Nanaimo, B.C. V9R 5K2
Sept. 13	Chicago, IL	Brother John Moran, (312) 246-3460 123 Acacia Dr., Indian Head Park, IL 60525
	Chicago, IL	Mike McGirr, K9AJ, (312) 534-2370 13 Oak Hill Dr., Crete, IL 60417
Sept. 19	Kansas City, MO	John L. Chass, W0JLC, (913) 462-7388; office (816) 821-8528 Rt. 27 Box 277, Parkville, MO 64152
Sept. 20	Salina, KS	
Sept. 21	Colby, KS	Bruce Frahm, K0BJ, (913) 462-7388 412 Smith Dr., Colby, KS 67701; (Bill Freeland, AC0A, Assistant) John E. Vidas, WD0BFT, (303) 364-5012 1740 Galena, Aurora, CO 80010
Sept. 22	Denver, CO	Brother John Moran Ted Drake, W8JBI, (313) 644-6464 3766 Darlington, Birmingham, MI 48010
Sept. 26	Chicago, IL	
Oct. 1	Detroit, MI	John Evans, W8BXM, (313) 363-8932 1920 Cypress, Union Lake, MI 48085
Oct. 4	Union Lake, MI	David Bowker, W0RJU, (314) 921-3257 1120 Meadowgrass, Florissant, MO 63033
Oct. 5	St. Louis, MO	Walter Brown Jr., K0DMB, (402) 451-1072; (sub. for Charles Peaker, KC0DB) 6206 Spegue St., Omaha, NE 68104
Oct. 8	Omaha, NE	P. Rona, WB4NFO, (703) 683-4845 29 E. Chapman, Alexandria, VA 22301
Oct. 10	Washington, D.C.	William C. Conner, W2GBC, (914) 693-3631 36 Beachdale Ave., Dobbs Ferry, NY 10021
Oct. 16	New York, NY	Linn H. Selby, (212) 988-3345 117 E. 72nd St., New York, NY 10021
Oct. 16	New York, NY	Paul Shafer, KB1BE, (203) 242-4379 7 Fern Dr., Blomfield, CT 06002
Oct. 19	Blomfield, CT	Bill Greaham, W5IXP, (504) 892-6770 54 Riverdale, Covington, LA 70433
Oct. 21	New Orleans, LA	Bud Whitney, K7RMT, (512) 847-3325 121 Hill Country Trail, Wimberley, TX 78676
Oct. 24	San Antonio, TX	Harold Johnson, W4ZCB, (813) 734-7344 2717 Pinewood Dr., Dunedin, FL 78676
Oct. 27	Tampa, FL	Richard Burdick, (513) 554-4662 4141 Fox Hollow Dr., Cincinnati, OH 45241
Oct. 31	Cincinnati, OH	Jim Vaughan, K4TXJ, (502) 933-1123 5504 Datura Ln., Louisville, KY 40258
Nov. 1	Louisville, KY	Frank B. McCormick, N4WJ, (606) 272-8544 1031 Elmendorf Dr. Court C., Lexington, KY 40502
Nov. 2	Nashville, TN	Dr. William W. Fulcher Jr., N4WF, (615) 824-7810 217 Bluegrass Dr., Hendersonville, TN 37075
Nov. 3	Memphis TN	John Bennett, WD4HZQ, (901) 346-7042; office (901) 346-1820 1608 Kirkwood Dr., Memphis, TN 38116

Nov. 7	Tucson, AZ	
Nov. 9	Phoenix, AZ	
Nov. 11	Prescott, AZ	
Nov. 13	Pittsburgh, PA	
Nov. 16	Detroit, MI	
Nov. 19	Chicago, IL	
Nov. 24	Mexico City	
Nov. 26	Boston, MA	
Nov. 29	Good Bye God Bless	

Phil Doersam, KX7J, (602) 625-0720
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Edward Blasczyk, N7EB, (602) 972-2646
12802 Sun Valley Dr., Sun City, AZ 85351 (QSL manager)
Val Popof, K7AW, (602) 778-0921
1513 Willow Way, Prescott, AZ 86301
Edward F. Konop, W3WGS, (412) 486-2835 (Control)
125 Wetzel Rd., Pittsburgh, PA 15209
Frank Nagy, N8BIB, (313) 753-4521
14315 Waltz Rd., New Boston, MA 48164
Bill Brown, K9LF, (312) 234-5018
1275 Green Bay Rd., Lake Forest, IL 60045
Luis Chartarisky, XEILCH, (915) 596-1058
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Jack Moran, W1ZLG, (617) 438-2788
120 Collincote St., Boston, MA 02180
London, ENGLAND



Father Marshall Moran, 9N1MM

New Yorkers walk for March of Dimes

Charles Salzman, WB2JQD

On Sunday, 29 April, more than 20,000 New Yorkers participated in the annual March of Dimes "Walk America" — the largest walk-a-thon in the city of New York. The \$2 million that was raised will go toward the March of Dimes program to prevent birth defects.

The Hall of Science ARC, WB2JSM, provided checkpoint communications for this event, which consisted of a round-trip walk starting from the Central Park bandshell at 72nd Street and ending at Battery Park — a distance of 18.6 miles.

The event was a huge success and the Hall of Science ARC is looking forward to again participating in this very special fund-raiser in 1985.

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Westlink ARN woes

The Westlink Amateur Radio News, which produces a weekly Amateur Radio news program by telephone nationally, may soon cease operation due to financial woes. It should not be confused with the Westlink Report, which is funded entirely by subscriptions. — Honolulu Star-Bulletin, HI

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Olympic

(continued from page 1)

Relay a reality. They had to survey and map the route, obtain permits and clearances, and locate service facilities for the 37-vehicle caravan that would accompany and support the torchbearers. They had to mark and provide services for all "Youth Legacy Kilometers," those stretches of the Relay sponsored by individuals, community groups and businesses.

Telephone of America Pioneers

Officials of the Olympic
Torch Relay Route

The proceeds will support amateur athletic training programs for young people through some of our most distinguished youth organizations: Boys Clubs of America, Girls Clubs of America, Family "Y's" and others. Each day of the Relay, Pioneers have been there to assist the benefit runners and help distribute the more than 10,000 Olympic Torches that will be used.

My involvement

It all started on Wednesday afternoon, 30 May. Bud Kitchen, the Telephone Pioneers' California State Director for the Olympic Torch Relay through California, called me. "They are short of Amateur Radio operators for the Torch run next week," he said. "Would you like to go?"

"Of course," I replied, "Where are they?"

"Memphis, Tennessee."

"Wow!"

Friday, I was on my way, with a ticket

paid for by the Los Angeles Olympic Organizing Committee.

Saturday afternoon, in Memphis, we were given five hours of orientation on Amateur Radio operations, vehicle operations, maintenance and housekeeping items. At 6:00 p.m., we had a quick "box" supper and headed southeast, in vans, to Tupelo, Mississippi. At Tupelo we joined the caravan of 37 vehicles accompanying the Torch across the country. The Saturday overnight stop was where the crew changed for the week. Interestingly, it was camped at Elvis Presley Park, near Elvis Presley Lake. Tupelo loves Elvis Presley!

I was assigned to sleep in van 25 and work in van 26. We used the vehicle numbers as "torch" numbers. Thus, I worked in "Torch 26." Torch 25 was a large mobile home, specially modified to sleep eight people. We stowed our gear in tiny closets and crawled into the bunks and tried to get some sleep.

At 6:00 Monday morning, we were having breakfast in the "diner" vehicle. This was one of three huge tractor trailer-sized vans operated by A.R.A. Services, the official caterer for the Torch Relay. One of the three vans was a kitchen, another a refrigerated food storage vehicle, and — of course — the diner was the food serving/eating vehicle. The food was tasty, even exotic. Outstanding in every way but one — the coffee. It had a chlorine taste, and it was that way all week.

The team consisted of 70 people, including 16 runners. The group was made up of volunteers who worked for one full week, Sunday through Saturday, preceded by the Saturday afternoon briefing session.

The 16 runners were AT&T employees, also on their own vacation time. They were grouped into four cadres of four each. This week we had three male cadres, and one cadre of women. Each runner ran with the lighted torch for four miles, and he or she did this twice a day. Sixteen runners at eight miles per day



The torch caravan (right to left): the 8 mph lead vehicle; Kate Washburn, torch runner; the security vehicle; Torch 7, the Emergency Medical Vehicle.

equals 128 miles a day that the torch progressed — at about 8 mph. More arithmetic tells you it took 16 hours a day to do this.

Wherever there was a Youth Legacy Kilometer, the AT&T runner lighted the torch of the sponsored runner, put out his own torch, and accompanied the sponsored runner at his or her own pace. Sometimes the sponsored "runner" was

in a wheelchair!

The caravan

The Torch runner, carrying the Olympic Flame, was preceded by a lead car. It was a 1985 Buick convertible, especially modified to go 8 mph for 16 hours a day. It had special radiator cooling, a special transmission and a special emission controls system. Re-

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member the runner was behind this car as he or she ran four miles, and we didn't want the runner to be bothered by exhaust fumes. They told me the emission control system was so good, the exhaust "fumes" were cleaner than the air taken in by the engine!

The runner was followed by a van manned by security personnel. Their job was to protect the runner from any hazards, especially human. There was always the concern that some "kook" from the crowd might try to harm the runner or grab the torch. Security measures were developed and rehearsed. I'm happy to report there were no adverse security incidents during my week.

Following the security vehicle was the EMS (Emergency Medical Service) van. This was practically a mobile hospital, always manned by a doctor, a nurse and a physiotherapist. They changed regularly as we went along. Sometimes they were staff medical people from AT&T. Sometimes they were local people in private practice. During my week, we had no reportable accidents, but the physiotherapist had plenty of business with cramped muscles and the like.



Tom Hain, KV8Q, torch caravan ANCS, waves from his post in the Emergency Medical Vehicle.

The Amateur Radio operator for the caravan was in the right front seat of the EMS vehicle. He acted as Alternate Net Control Station (ANCS) for the entire operation. During my week it was Tom Hain, KV8Q, of Powell, Ohio. Tom was an unusually competent NCS, which resulted in efficient Amateur Radio communications. The EMS vehicle, being numbered 7, became "Torch 7."

Torch 7 was followed by the pick-up car. Their job was to snuff out torches and take the exhausted cadre of four runners back to their mobile home.

Of course, the lead car was preceded, and the caravan followed, by state and local police cars.

Drop-off and pick-up

The caravan could not proceed without a new runner waiting on the road every four miles. It was my job to see that he or she was there, with a fresh torch in hand. The new runner's torch was lighted by the old runner's torch. The exhausted, sweaty runner was picked up by the pick-up vehicle which was, in our case, Torch 27. Bob Stanek, W0HAH, of Minneapolis, Minnesota — the Amateur Radio operator in Torch 27 — complained to me, "You get 'em showered and fresh. We get 'em sweaty and sooty!"

Staging areas

Months before the Torch came through, members of the Telephone Pioneers of America scouted the roads and determined the best places for vehicles to rendezvous. They obtained advance permission to use parking lots, etc., as staging areas.

Visualize the caravan moving along at 8 mph, 128 miles per day. Two pairs of

drop-off and pick-up vehicles leapfrog along the route, picking up fresh runners from their mobile home, transporting them to the "firing line," and then delivering them, sweaty and exhausted, back to their mobile home. For this we used Amateur Radio 2-meter repeater stations, and were able to communicate between the runners' homes to the drop-off and pick-up vehicles even when

spread over 30 miles. We would meet at the staging areas to transfer our passengers.

The "A" team

In addition to the four cadres of runners, there were always from one to three additional runners who rode in Torch 7, the EMS vehicle. Among the (please turn to page 19)

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Borrowing heavily from Yaesu's HF transceiver experience, the FT-726R comes equipped with a speech processor, variable receiver bandwidth, IF shift, all-mode squelch, receiver audio tone control, and an IF noise blanker. When the optional XF-455MC CW filter is installed, CW Wide/Narrow selection is provided. Convenient rear panel connections allow quick interface to your station audio, linear amplifier, and control lines.

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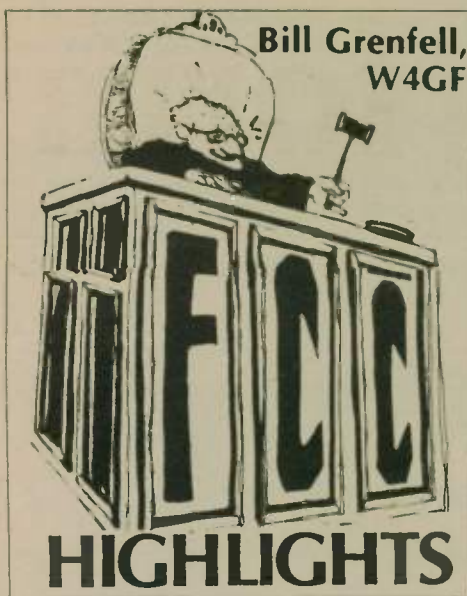
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Bill Grenfell,
W4GF

HIGHLIGHTS

The target for FCC action on the matter of allowing reimbursement of expenses of volunteer examiners and coordinators was 12 July. However, that may be wishful thinking, was the word I got from FCC at the time this was written (early June). The staff will try to get it on the agenda before August, before many of the Commissioners take their vacations.

The FCC has now received applications from would-be volunteer examination coordinators (VEC's) from or for all of the 13 regions over which it has licensing jurisdiction. The regions coincide with the 10 amateur station call sign areas of the 48 states, plus Alaska, the Pacific (Hawaii) area and the Caribbean (Puerto Rico, Virgin Islands) area.

A list of those approved and those for which the approval process had not been completed by 05 June (*) follows:

All 13 areas — *Fred Maia, W5YI Report, P.O. Box 10101, Dallas, TX 75207. Region 1. *W5YI. Region 2. Metroplex Amateur Communications

Assn., P.O. Box 237, Leonia, NJ 07605. *W5YI. Region 3, Laurel ARC, Inc., Box 91, Annapolis Junction, MD 20701. *Mountain Radio Club, Cumberland, MD. *W5YI. Region 4, Central Alabama VEC, 606 Tremont St., Selma, AL 36701. Western Carolina Amateur Radio Society, P.O. Box 1488, Asheville, NC 28802. *VEC Region IV, Inc., P.O. Box 2411, Knoxville, TN 37901. *W5YI. Region 5, Dallas ARC, Inc., P.O. Box 173, Dallas, TX 75221. *W5YI. Region 6, Greater Los Angeles Amateur Radio Group, 21921 Lanark St., #201, Canoga Park, CA 91304. San Diego County Amateur Radio Council (SANDARC),

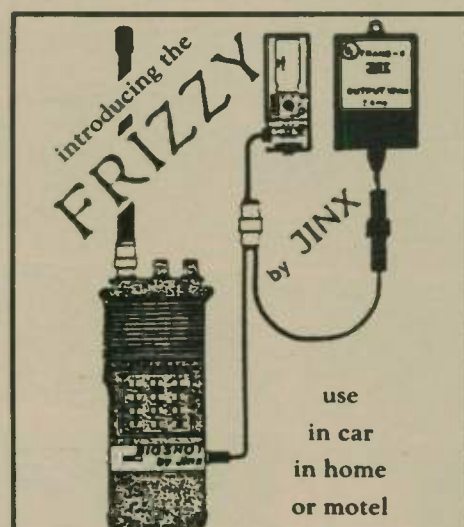
P.O. Box 82642, San Diego, CA 92138. *W5YI. Region 7, Boeing Employees Amateur Radio Society, P.O. Box 3707, Seattle, WA 98124. *W5YI. Region 8, Dayton Amateur Radio Assn., P.O. Box 44, Dayton, OH 45401. *W5YI. Region 9, DeVry Amateur Radio Society, 3300 North Campbell Ave., Chicago, IL 60618. *W5YI. Region 10. *W5YI. Region 11 (Alaska), Anchorage ARC, P.O. Box 101-987, Anchorage, AK 99510-1987. *W5YI. Region 12 (Caribbean Insular Areas), Director, Military Affiliate Radio System (MARS), P.O. Box 7388, Cidra, PR 00639. *W5YI. Region 13 (Pacific Insular Areas), *W5YI.

The ARRL has asked the FCC for a temporary waiver of FCC Rule Section 97.112(b), which provides that control operators of a club station (such as W1AW) may only accept compensation when transmitting code practice or bulletins. The request was for an initial one-year period to "... allow the station employees to make QSO's on the air when not transmitting bulletins or code practice ... to see if interest in regular W1AW contacts would warrant a permanent rule change." (ARRL Letter, 05/24/84).

Citing the international definition of the Amateur Radio Service, the Commission's letter in response denied the waiver with the conclusion that "To grant the requested waiver would seriously jeopardize the 'no pay' character of the service."

Temporary third-party traffic agreements between Zimbabwe (Z2) and the United States and between Hong Kong (VS6) and the United States will be in effect from 01 July through 31 August. This will allow U.S. amateurs to exchange third-party traffic between the Los Angeles Olympic Village and the two countries.

Amateur license statistics as of 27 April were: Extra Class, 35,041; Ad-



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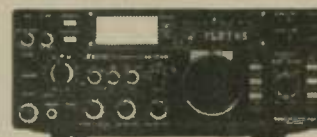
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Special Events...

International Ham Olympic Picnic

The International Ham Olympic Picnic will be held on Sunday, 29 July, from 10:00 a.m. until about 3:00 p.m. at the El Dorado East Regional Park in Long Beach, California. It is an event at which all Amateur Radio operators — from out of state and from other countries who are visiting Southern California — will be welcomed as guests of local amateurs, to get acquainted and share mutual interests.

The picnic will be held in the Sycamore Grove area of the park. The park is located northwest of the intersection of the 405 and 605 freeways, and can be reached by exiting at Studebaker Road (for travelers southbound) on the 405

Mountain trek

The Somerset County ARC will sponsor its 3rd annual DXpedition to the highest point in Pennsylvania — Mt. Davis. The trip begins on 04 August at 1400 EDST, and ends 05 August, 1400 EDST.

Frequencies: upper 25 kHz on the General portion of the bands, and CW in the Novice portion of 80 and 40 meters, with 40 being used in daylight hours and 80 at night.

Each contact wishing to receive a beautiful certificate must send a 4½" x 9" envelope (or larger) to Box 468, Somerset, PA 15501.

Fox River's 60th year

The Fox River Radio League (FRRL) will be operating a special event station to celebrate the FRRL's 60th year of continuous operation.

The FRRL will be operating from the Kane County Fair Grounds, St. Charles, Illinois, on 26 August from 8:00 a.m. until 4:00 p.m. using the FRRL call sign W9CEQ. (Times are CDT.) Suggested frequencies are 10 kHz up from the lower portions of the General Class phone bands on 40, 20 and 15 meters.

For a certificate or QSL, send your QSL and SASE to: Fox River Radio League, P.O. Box 443, Aurora, IL 60507.

freeway, or by exiting at the Katella/Willow exit of the 605 freeway. Local participants are encouraged to bring picnic tables and chairs as there are only a few available at the site. A fishing lake is adjacent to the picnic area.

The idea for the picnic was conceived by Sandra Blumenkranz, KA6WAH, president of the Ladies Amateur Radio Association (LARA) being shared by Sandra, Kathy Schaffstein, WA6FAH, of the Mt. Wilson Repeater Association (MWRA) and Warren Hoffnung, KF6VV, of the West Coast Amateur Radio Club (WCARC).

Local amateurs and clubs are encouraged to participate by spreading the word about the picnic and by showing up with extra food to share with our out-of-town guests.

RSVP's would be greatly appreciated in order to be better prepared for the event. RSVP's and requests for further information may be addressed to Kathy Schaffstein, WA6FAH, c/o MWRA, P.O. Box 1552, Monrovia, CA 91016. Please enclose an SASE with requests for information.

Smokey the Bear

The Bemidji ARC, using the call K0MJ, will be commemorating Smokey the Bear's birthday at the home of Paul Bunyan and Babe the Blue Ox on 11-12 August, 1400Z-2200Z. Operating frequencies will be 10 kHz up from the lower edge of the General Class phone bands on 20, 40 and 80 meters.

To receive special tri-color certificate, send 9" x 12" SASE to Bemidji ARC, P.O. Box 524, Bemidji, MN 56601.

'Drive safely'

The Tri-City ARC will operate special event station KA1BB from the Waterford, Connecticut I-95 weigh station to promote safe holiday auto travel.

This event is in conjunction with the second annual stay-awake offered by BSA Troop 24, Niantic, Connecticut. Mobile operators are especially encouraged to call. Operation will be from 1700Z, 01 September through 1700Z, 03 September on 14.295 and 7.245 phone and on 7.130 CW.

Talk-in to coffee stop on FM-146.52 direct and CB channel 19. QSL via Tri-City ARC, P.O. Box 686, Groton, CT 06340.

Contact Worldradio for hamfest prizes.

21st anniversary

The Bergen Amateur Radio Association will operate K2TM from 1500Z to 2400Z, 18-19 August, to celebrate the club's 21st anniversary. Frequencies:

7.235, 14.275, 21.375, 28.675, 146.520; Novice — 7.125.

Certificate for large SASE and QSL via Warren Hager, K2UFM, 31 Forest Dr., Hillsdale, NJ 07642.

Old Threshers Reunion

The Mount Pleasant, Iowa ARC will once again be operating a station at the 35th Annual Midwest Old Threshers Reunion in Mount Pleasant from 30 August through 03 September. Using club call W0MME, they will be on 3970 and 7280 kHz throughout the event.

A special Old Threshers QSL card is being issued to those who work the station, and can be obtained by sending an SASE to Dave Schneider, WD0ENR, 507 Vine, Mount Pleasant, IA 52641.

Mount Pleasant amateurs will also be handling emergency communications on the grounds and will provide talk-in on 147.99/39 and 449.95/444.95 for those

attending.

The Old Threshers Reunion is an annual event which returns to yesteryear with steam engines, antique cars and tractors, old-time electric trolleys and other memorabilia from the past. There is ample room for camping in an adjacent 60-acre campground.

Old Threshers is a non-profit, educational organization. Two amateurs — Don Carlson, KA0EPA, and Steve Pacha, K0JWO — are on the Board of Directors.

Heading the Amateur Radio operation will be Bill Barber, KA0BTE; Dave Schneider, WD0ENR; and Gary McMeins, N0FIB.

Kickapoo Pow Wow

The 37th Street DX Association of Topeka, Kansas, will operate a special event station from the Kickapoo Nation near Horton, Kansas, in conjunction with the Kickapoo Tribe Pow Wow.

Operation will be on 10-80 meters in SSB, CW and RTTY, from 1500Z until 0300Z, 01-02 September and 02-03 September. Special permission has been obtained from the Kickapoo Tribal

Council for these operations. On phone and RTTY, the call will be "CQ KICKAPOO"; on CW, "CQ KP". Participating stations will sign their own call signs. Usual special event station frequencies will be utilized.

A QSL and informative literature will be available for a #10 SASE or 3 IRC's for DX stations. Submit reception reports to John Wallis, WB0YJT, 3605 Humboldt, St., Topeka, KS 66605.

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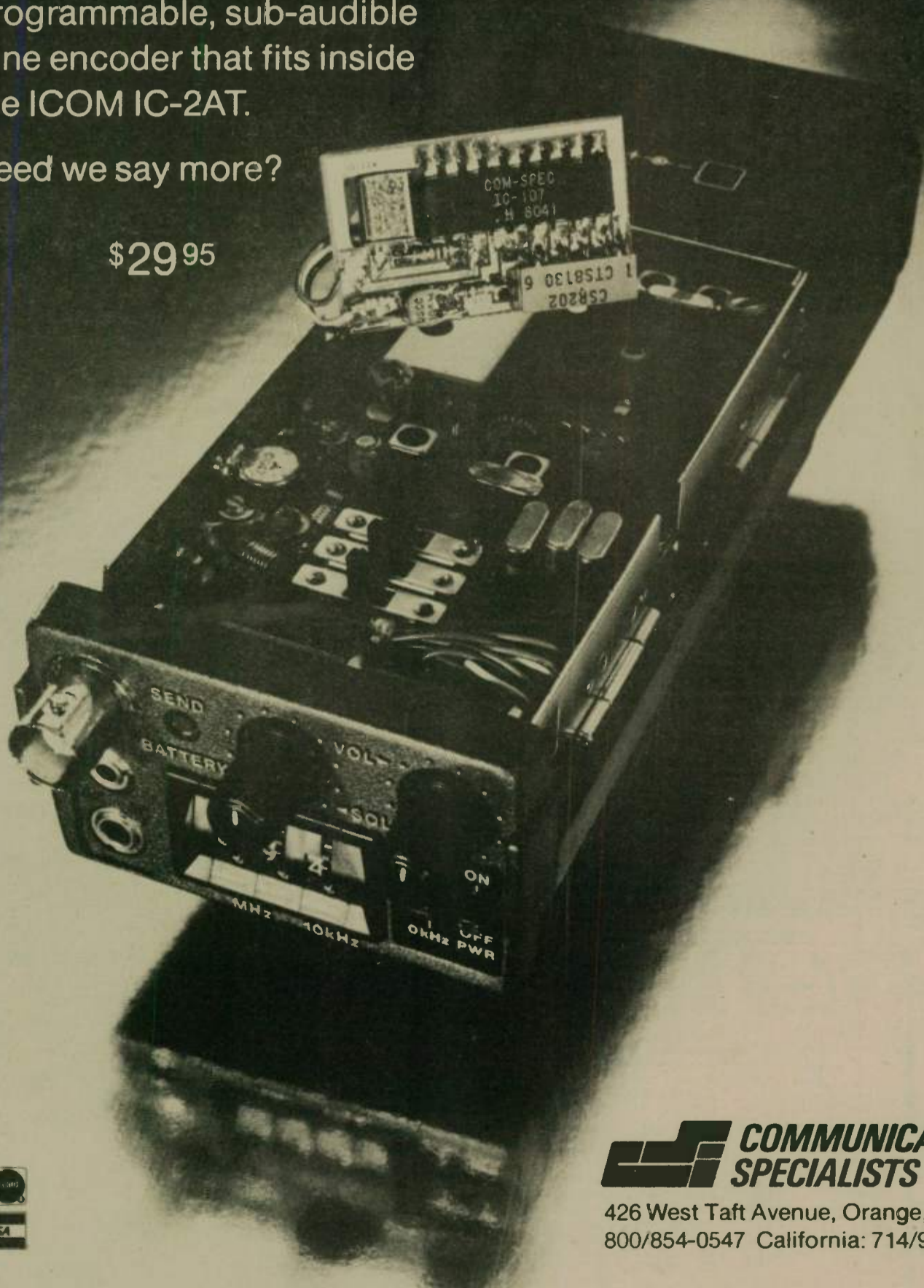
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Worldradio at Field Day 1984

Worldradio is 13 years old, and this was the 13th time the staff has gone on Field Day together.

Due to a vacation, a college 25th year class reunion and pressing matters, our intrepid crew was down to but three operators. But, powered by our trusty 100-amp battery, we strode forward.

Propagation seemed a little strange this year as we worked seven stations in Missouri, five in Iowa and none in Kansas. We worked six stations in Northern New Jersey and none in Eastern New York. We missed five U.S. sections and four Canadian sections, but the B.C. section was the third greatest contact provider (20), after Orange (22) and Washington (21).

In going through the logs, we saw that we worked VE7OHM and VE7LAW. They should sit next to each other at a hamfest wearing large call sign badges.

Norm Brooks, K6FO, and Armond Noble, N6WR, started off the proceedings by getting a Butternut vertical up 20 feet and getting on the air. When Jack Schwartz, WA6TRZ, got off work, a 3-element Yagi — the Palomar DX-33 Penetrator — was erected.

Our location was a football field-sized field located at the California Almond Growers Exchange near downtown Sacramento.

There was a lot of sharp operating heard during this Field Day. Again, KA1R impressed us. He has the ability, no matter how much QRM, to pull out a call.

We'd like to thank the many who took a minute (upon hearing our call) to say "Hello *Worldradio*" and the like. As the temperature was 99 degrees, all pleasant-tries helped make things more bearable.

Look for us in next year's Field Day, Sweepstakes, Radiosport, CD parties, etc.

Field Day

(continued from page 1)

come from governors, mayors, police chiefs, disaster relief agencies and the people affected and assisted.

Amateurs who have been through floods, tornadoes, hurricanes, earthquakes and blizzards — operating their radios "for real" — still go out for the annual (call it if you will, "rehearsal") "basic training", "practice" or whatever. For there has not been a community that has not been affected by a natural or man-made emergency.

And in Field Day, there is an aspect that appeals to the competitive urge. The more contacts a team can make, the higher they rank in the standings published in *QST*. But in this "contest", every group that enters, and the public at large, are winners.

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Close encounter with disaster

George Threewitts, KB4CWN

It was a restless night. Outside my window, the wind whined through the tall Carolina pines, spraying heavy splashes of water against the glass pane. A bolt of lightning bathed the darkness and like a flashbulb, it captured in my eye the sight of trees bent and branches tangled. The picture and sound transmitted by a local TV station turned to snow and static.

"I think I'm in a tornado," said a voice that broke the squelch of my 2-meter transceiver. It was Richard Kelley, N4BKK, a Greenville, North Carolina Amateur Radio operator who was driving home from a nearby town. His car was being blasted from all directions by a violent wind that was unlike anything he had ever experienced.

"Road signs are being ripped up. Street lights are falling. I know my eyes must be as big as saucers. I can't believe it," Kelley said. "What is the procedure in a tornado?" he asked.

Another voice responded. "The safety procedure in a tornado is to find a ditch and get in it. Get down as low as you can," said Bernie Nobles, WA4MOK, another Greenville ham who was aware of the tornado watch issued for the area and had been monitoring the repeater channel for emergency traffic. Nobles is the Emergency Coordinator for the Brightleaf ARC.

The nightmare was beginning. It was spawned by a series of violent tornadoes that mowed through the Carolinas on 28 March, killing 57 people, injuring 1,240, and bringing terror and despair to thousands. In Pitt County, in the eastern part of North Carolina, nine people died and more than 150 people were injured. It was a night of disaster for rescue workers, firemen, emergency personnel, police, doctors and nurses. It was a night when the voice of Amateur Radio spoke clear and proud.

Amateurs react quickly

I began monitoring the radio around 9:00 a.m., and it was shortly after I turned it on that I heard Kelley begin his account of the storm as it hit the town of Ayden, which is about nine miles south of Greenville. As Kelley grappled to control his car in the wind and gave subsequent assistance to rescue workers in helping rescue a woman from her demolished home, other amateurs signed into the network with emergency information.

Tommy Forrest, N4GVK, a photographer for the local newspaper, reported blocked streets, broken electric wires and destruction to an apartment complex as he rushed to the disaster site.

"I've got to go to work," he said a few minutes later. He meant he had to exchange his radio for a camera.

Meanwhile, Doug Ferris, K4ROK, hurried to the emergency communications command center in the basement of the courthouse. The command center functions as a communications link between law enforcement, rescue personnel and the medical center during emergencies. Ferris was joined later by Wayne Ross, WD4JPQ, and the two amateurs remained there through the night relaying messages between the network of emergency workers and Bobby Joyner, the county's emergency operations chief.

"I need a rescue truck for a woman pinned under debris," said Kelley in Ayden, who had left his car to help pull a woman from the rubble of her home.

"The cloud is headed northeast," another ham called in.

"I'm looking at the darkest cloud I've ever seen," announced Chuck Collingwood, W9TS, from the porch of his home near a part of the Eastern Pines District, southeast of Greenville, that was soon to be ravished by the twister. He could see the massive wall of air and debris as it (please turn to page 14)

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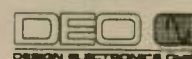
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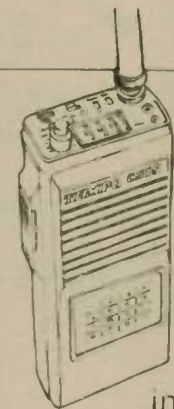
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Disaster

(continued from page 12)

loomed less than a half-mile away.

My home is less than a mile from Collingwood's, and here too the wind whistled outside my window and in the distance. I heard a somber, rumbling noise. Was it thunder or was it that sound usually described as a train or jet engine that precedes the onslaught of a tornado?

"Taylor's trailer park has been hit on highway 43," announced Ferris from the command center. Amateur Carl Evans

responded by heading from his home to the disaster scene. Communications with Evans was soon lost, however, when rain water soaked his HT.

By this time, David Caniglio, N4JVD, arrived at the hospital and activated an emergency frequency that would link the hospital with the command center in the courthouse. Victims arrived and N4JVD relayed a call for additional medical personnel to report to the hospital.

Other amateurs checked into the emergency network control to offer assistance and to report on road and damage conditions. Nobles says he counted 38 "report-ins" who were standing by to

render assistance. Some of those who checked into the net were from towns as far as 80 miles away, which is about the distance range of Greenville's 800 ft. 147.090 repeater.

"Simpson has been hit," reported Ferris from the command center. The small community is in the Eastern Pines District, which stretches from about four to eight miles on the southeast of town.

"Do we have amateurs in the Eastern Pines District?" asked Nobles, who was controlling the amateur emergency net. Collingwood replied first.

"Stand by," said Nobles, waiting for a directive from the command center.

"We have reports of people laying in fields. Victims are being taken to the Eastern Pines Fire Station. We need an operator at that fire station," said Ferris from the center.

"W9TS, this is WA4MOK. Chuck, can you make it to the Eastern Pines Fire Station?" Nobles asked.

"It's less than a mile. I'm on my way," Collingwood replied.

Within minutes he arrived at the fire station and reported broken power lines across the highway and numerous victims arriving at the station. He also relayed a request for a doctor, but the reply from the hospital was that all medical personnel were needed in the emergency room.

I reported my presence in the Eastern Pines District and was told to stand by. Hearing the call for medical attention, I advised the net that my wife, a nurse practitioner, and I were available to go to the fire station.

"Proceed at once to the fire station," came the reply.

At the scene

The two-mile ride was delayed by a caravan of curious onlookers who had monitored emergency calls on their scanners and CB radios. I decided to drive the last half-mile on the left side of the road to get around the vehicles. Although I was driving across wires and debris, I knew the road was passable from the reports provided by Collingwood. Later it was announced that the National Guard was being called in to help clear the roads for emergency vehicles and to enforce a curfew imposed on the stricken areas. The guardsmen, however, were instructed to permit access to amateurs. In fact, the call to the state capital to request the deployment of guardsmen was made through Amateur Radio because phone lines were down and the county's communications equipment was tied up with emergency and rescue traffic.

The scene at the fire station was almost identical to those mock disaster sites you may have seen or read about. Victims laid on tables and on mattresses on the floor. Those able to sit used chairs, while others stood quietly, waiting to be attended by the nurses and to be taken to the hospital by overburdened rescue paramedics. Rescue squads had carried the first of those considered most critical to the hospital. My wife and two other nurses worked with a woman whose face had become discolored and whose wounds, internal, were impossible to treat in the garage area of the fire station.

Rescue units arrived from neighboring Beaufort and Edgecombe Counties while firemen hurried in and out of the building as they searched for and retrieved victims. Those who were uninjured but had lost property stood quietly in varying states of shock and disbelief, unable to comprehend how their homes and belongings had been so quickly torn to shreds and carried to heaven knows where. Some people had been reported missing.

Meanwhile, another ham — Jan Beckwith, WA4YDJ — established a shelter for the homeless at a nearby but undamaged high school. She was joined later by Frank Tate, W4OCT, and in the early morning darkness, amateurs delivered food and coffee to the many who found shelter at the school.

Rufus Keel, KA4RPZ, and Alan Merritt established an emergency shelter at

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Grimesland, another small community in the southeast portion of the county. Fortunately, the shelter was not needed as those requiring shelter found it elsewhere.

There were 16 amateurs who assisted in the disaster, according to Nobles, the Emergency Coordinator. Their jobs varied from establishing and maintaining communications at relief centers to delivering food and escorting nurses who were needed to help treat people injured during the storm. Other amateurs provided valuable information ranging from street condition assessments to barometric pressure change reports. The barometer, by the way, dropped to 28.85 when the tornado struck and then moved up slightly before it dropped again as a second wave of strong, but non-lethal, wind and rain roared through the area.

Numerous health and welfare messages were also relayed over the emergency network. Such messages have been the tradition of Amateur Radio in times of disaster. The more fortunate victims relayed the message "I'm all right" to friends and family.

Security restored

It was nearly 3:00 a.m. before a feeling of security was restored at the Eastern Pines Firehouse, where I was stationed. Many of those with damaged or destroyed homes left with friends or with relatives while others moved to the designated school shelter.

At 4:00 a.m., the battery indicator on my Santec flashed its warning that its power was almost depleted. I was surprised that those rechargeable nicads had lasted so long because they had been used continuously for almost six hours. I informed the net controller that I was closing the amateur station.

The drive home was at a much slower pace than when I arrived. In the darkness, my eyes glimpsed telephone and power lines dangling limply at the side of the road. Tall pine trees, now broken in half, resembled spikes rising from the ground along the highway. Empty automobiles reflected the outer perimeter of my headlights as they sat motionless in fields and ditches.

I was glad to be going home. I tried to imagine that I was experiencing a terrible dream and that I would soon awaken to discover that it had never happened. But my mind wouldn't accept that notion. In reality, it had been a night of disaster that would be remembered by many for a long time to come. But there was one consolation. The role of Amateur Radio in this disaster had been a significant one.

The word "ham," denoting a radio amateur operator, had been injected with a healthy dose of respect from law enforcement, rescue and medical professionals who had learned a lot about the value of Amateur Radio in times of emergency. I felt humble and proud. □



Three YL's get together at Dayton Hamvention. From left to right: Yoko Arakawa, JG3FAR; Kay Eyman, WA0WOF; and Lee Shaberly, KB8RT. One of the topics of conversation was the 1985 Young Ladies Radio League Convention, to be held in Las Vegas in June 1985. (Photo by Taizo Arakawa, N2ATT/JA3AER)

Arizona rainfall brings trouble to Mesa

Larry Kuck, WB7CRK

The Phoenix, Arizona area ended a record-setting 91 consecutive days without rain on the morning of Friday, 06 April, when a trace of rain was first recorded at Sky Harbor Airport in Phoenix.

There was a nice steady rainfall all day long, one that would be given every opportunity to soak into the parched ground. In fact, the day's total rainfall of nearly half an inch set a record for the date.

The rain not only soaked into the ground, but also into a ventilation duct in a Mountain Bell Telephone switching facility in downtown Mesa, a suburb of Phoenix. Rainwater poured out of the duct onto the central processing unit in a continuous stream, flooding the basement of the facility and causing the system to fail at 4:08 p.m.

Downtown Mesa lost approximately 43,000 telephones, including those of the police and fire departments and three major hospitals.

Radio amateurs were called into action when a non-amateur employee of Mesa

Lutheran Hospital hooked up an old Hammarlund VHF transceiver that had been converted to 2-meter amateur service on the Superstition ARC's WB7TJD repeater, and announced over the repeater, "This is Mesa Lutheran Hospital. We have an emergency situation here. Is there anyone on this frequency?"

Meanwhile, police were setting up radio communications between police and fire stations, and city's schools and other contact points. Announcements went out on the broadcast radio and TV stations, including information regarding an emergency telephone number from which information was radioed to the police dispatcher.

Mesa Lutheran's call was received by Marge Glaze, K1Y CZ, shortly after 5:30 p.m. Her husband, Bill, and their son, Nelson — both soon-to-be Novice licensees — began manning the telephone, calling Bill Johnson, WB7QZB, and Jane Allen, WB7FDF.

Other volunteers heard the emergency communications in progress and volunteered their services and, by 6:30 p.m., the emergency net was fully established.

The Superstition ARC has participated in many hospital drills with Mesa Lutheran, including drills that involved several hospitals, police and fire depart- (please turn to page 42)



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Just a few lines to let you know how much we enjoy each copy of your excellent publication. We've been a subscriber for several years now and still look forward to each issue, so please keep up the great job.

As you've probably noticed, I use the term "we", which is correct since there are three licensed hams in our family. I'm "Mick" (Paul D. McBride), W3ILG; my wife is Althea, WB3FUR; and our 13-year-old son Matt is presently KC3MY. We also have a son, Jason, who at age 9 is beginning to show some interest in our fine hobby.

Matt is an 8th grade middle school student at the Lycoming Valley Middle School here in Williamsport. Today (5/9/84) he traveled to the FCC office in Langhorne, Pennsylvania, and passed the Extra Class license. He had earned his 20 wpm code credit in December 1983



The "McBride Tribe", from left to right: Jason, Mick W3ILG, Althea WB3FUR, and Matt KT3G.

at the same office.

The rundown on Matt's climb up the ladder is as follows: Novice ticket earned in September 1981, General in November 1983, Extra code credit in December 1983, and Advanced in February 1984.

One little interesting side note is that his mother had held her General Class ticket since 1978 and after a couple of unsuccessful attempts at the Advanced, had given up on making that step.

The evening prior to Matt taking his General, he asked his mother if she would take another shot at the Advanced if he came home with his General or higher ticket. At a weak moment, she

said yes, so after Matt got his General, there was plenty of studying going on with lots of in-house competition. This all paid off when both of them upgraded to Advanced in February.

I'd like to add that one of the main driving forces behind Matt's success was one of his science teachers, H. Vince Bardsley, KB3OM. Vince gave Matt his Novice exam and continued to guide him from that point on.

In my opinion, Vince really deserves a "tip of the hat" for a job well done.
PAUL "MICK" McBRIDE, W3ILG
 Williamsport, Pennsylvania

Ham ingenuity saves the day

Last month, my YL, Elverta KA7JQX, and myself KV7P, were on our way to Las Vegas, Nevada, from our home at Mohave Valley, Arizona. We stopped at a restaurant in Searchlight with gambling on the side, to have breakfast and lose a few nickels.

We had started our van and were backing out when a lady tapped on our window and said, "Could you help us? We have locked our keys in our motor home and need a piece of wire to reach them."

I was rummaging around in the back of the van when my YL said, "How about your 1/2 2-meter antenna?" I unscrewed it from the mount, the lady gave it to her husband, and he reached through a small, partially-opened window and stuck the ball of the antenna through the key ring that was on the table on the other side of the motor home. The keys slid down the antenna into his hand.

The couple was grateful and thanked us profusely. My wife said, "Don't thank us; thank ham radio for that."

BARNEY RIEFF, KV7P
 Mohave Valley, California

WWII veteran looking for crewmates

I was a crew member on a B24 crew during World War II and flew in the Pacific with the 307th Bomb Group of the 13th Air Force. It would be great to hear from any other hams who also flew in the 307th Bomb Group.

Specifically, I am looking for four of my old crewmates who I have not heard from since 1945:

John Hasselback — co-pilot, Middletown, Ohio; Donald E. Shaw — radio operator, North Hollywood, California; Fred Z. Content — armorer gunner,

Michigan; and Charles E. Anderson — gunner of Walton, New York.

We were all members of William S. Blackman's crew, who — I have been informed — is deceased. I have listed the last known towns for each.

If anyone can shed light on the whereabouts of the above fellows, I will be very grateful.

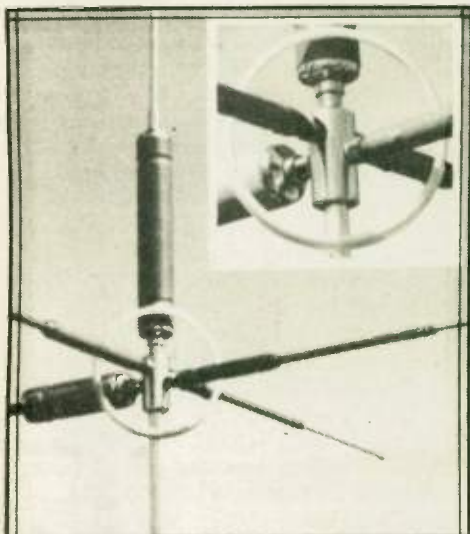
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W1HWG sends patches

During the period from December 1981 through 24 April 1984, I have run 630 phone patches, totaling 6,362 minutes for an average of 10.09 minutes per patch.

Over half the patches (344) originated in KC4-land down in the Antarctic, 197 were from ships, 48 from South America, and the rest from Israel, Grenada, Virgin Islands, Haiti, Trinidad, Mexico, Puerto Rico, and one from a TWA airline flying at 35,000 feet over Nebraska.

The longest patch was for a missionary in Brazil, who talked for 47 minutes with



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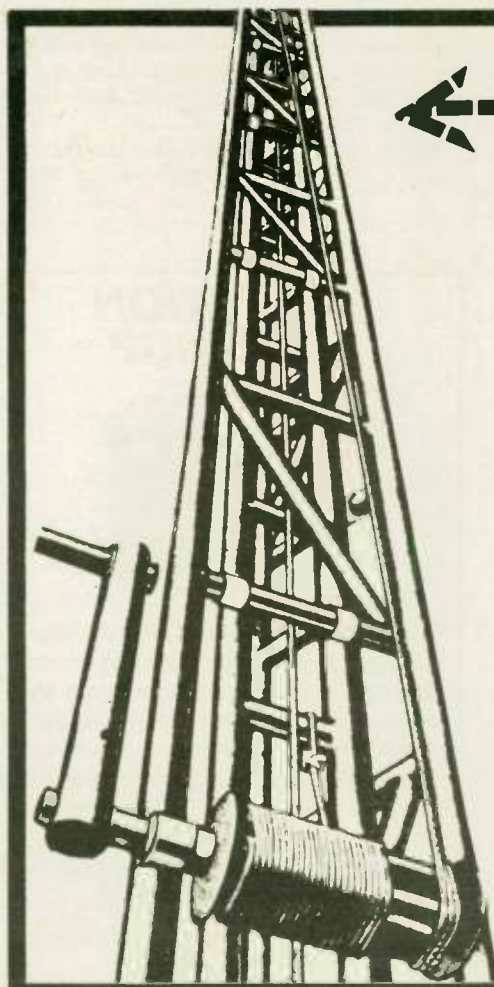
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his mother and father in Massachusetts. My call letters are W1HWG, and they stand for Wow 1 Hard Working Guy. It is appropriate because I am 75 years old and work every day but Monday at my hardware and plumbing supply store.

The most rewarding patch I ever ran was from Jack Ronalter, KB1DP/mm3 — who at the time was over 2,000 miles southwest of Cabo San Lucas, Mexico — to his mother who was in the John Dempsey Medical Center in Farmington, Connecticut. Jack did not know she was in the hospital. He thought she was at home, but I knew it and dialed his call direct to her room at the hospital.

They talked for 17 minutes and he was very much surprised to find out where she was. It gave me great satisfaction to be able to make this patch possible.

CHARLIE STEVENS, W1HWG
Stafford Springs, Connecticut

use this same system again, but with more up-to-date equipment. The generator and commercial power would never get on the power line at the same time. The generator does not need to be disconnected at any time. All that is needed is safe switching equipment so the generator can be switched off the power line when the commercial power comes back on.

Notice that I did not mention automatic switching. That's because this system can fail much faster than manual switching.

I will agree with AJ9U on trying to wire a fuse or breaker box. I know how to wire both of these, and you do have to be an electrician to be on the safe side.

I learned how to do this type of wiring in school. If the equipment used today has something in it which I am not familiar with, I ask someone who is an

electrician about it. Then I can wire it with no problem.

I took a car radio transformer and connected a 1.5-volt size D battery to the leads on one side, and no spark was visible when I touched the leads together on the other side of this transformer. I then connected this battery to the other side of the transformer, touched the other leads together, and produced a spark large enough that it looked almost like an electric arc welder.

No matter what the power supply is, when you step down the power with a transformer like I did the first time, then step up the power the second time, you can get quite a spark from a 1.5-volt battery when stepping up the power with a transformer like I did. Everyone should know what they are doing while working with electricity.

MELVIN FRESE, KA5TFB
Amarillo, Texas

Ham cartoonist

I was intrigued by the article about Otto Eppers, W8EA, in the last issue (June Worldradio, page 24) since I knew him when he lived in Clearfield, Pennsylvania. This was before he did any of his famous cartoons for any commercial company.

During 1931, I was working for United Radiobuilders, a mail order company that advertised in QST. One of their full-page ads in QST had a cartoon at the bottom of the ad. A few weeks after the issue was out, a letter came from W8EA with cartoons in it and said if we were interested, he would like to draw for us. We agreed to discuss the matter further with him.

United was just in the process of making a mimeographed catalog, and I was elected to go to Clearfield with a batch of stencils and have Otto draw up

Comments on warning

In the 'Off the Air' column, Worldradio, June 1984 (page 10), there is an interesting letter by Robert Runnels, AJ9U, of Milwaukee, Wisconsin — "WARNING: Wiring can be lethal." Since I have worked with what is mentioned in this letter, I would like to send you my response to what AJ9U wrote.

I used to crank up a generator and supply power to the surgical and X-ray departments of the military hospital unit I was assigned to every time the commercial power was out. This commercial power went out often. Not once did I ever get the commercial power and the generator trying to put power into the same line at the same time. The reason for this is I used a dpdt knife switch on the control panel of the powerhouse where the generators were to separate the commercial power and the generator.

The generator never had to be disconnected from the power line. The generator was cut out of the power line by the dpdt knife switch by throwing this switch over to the commercial power side when commercial power was back on. Then I just shut down the generator. This system worked very good. No one ever got hurt this way, and the generator was never on the line at the same time the commercial power was. I did not have to worry about damage to the generators by the commercial power coming back on due to the dpdt knife switch on the control panel of the powerhouse where the generators were to separate the commercial power and the generator.

If I ever again have to use a generator of some kind, like in my home, I would

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Worldradio

Please see page 9

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some cartoons on them. Only one copy of this catalog still exists, and I have it.

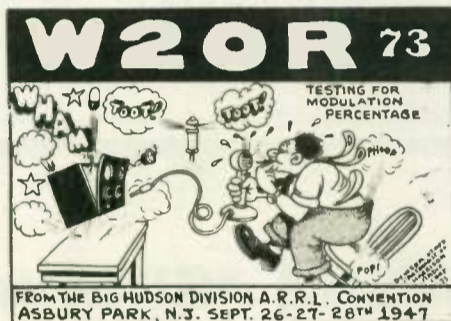
W8EA said on his QSL card, pictured in last issue and dated 10/10/29, that he was using a 35 ft. end-fed Zepp with 9 ft. feeders.

His work at that time was as a security guard for businesses in Clearfield. I know because I walked the streets with him two nights while he checked stores and doors all over town. He was also interested in identification by fingerprints and gave me a lecture on that complete with enlargements of some types. On another day, during another visit, he took me up in the hills to a swimming hole where all the kids yelled, "Come on Otto, go off the high dive (12 feet). It's not as high as the Brooklyn Bridge." He didn't dive off of it.

It was during my visit he suggested drawing QSL card cartoons. I had him draw several, which I gave to the amateurs whose calls I gave him. He suggested that he draw personalized QSL's for United customers that purchased \$10 or more. This offer was included in the catalog and included in an ad in QST, April 1931.

United went out of business in 1934, and I never saw him again until we met at the 1947 2nd District Convention. He was then working for Harrison Radio and was drawing cartoons for any hams that wanted them.

He was quite a character and a self-taught cartoonist. He always signed his cartoons with W8EA or later W2EA. His one cartoon will go on forever — the



logo of the QCWA. It is one of a few of his drawings that do not carry the W2EA call sign.

I went through my copies of QST from 1925 to 1948, looking for any 8EA cartoons other than in ads. I didn't find a one. Between 1932 and 1947, I could not find a cartoon in QST by W8/W2EA. Mention was made that he worked for Uncle Dave's Radio Shack. If he did, there was never a cartoon in Uncle's ads with a drawing by W8EA. Uncle Dave used the same cartoon in all his ads for over one year, 1931-1932, and it was not one of W8EA's drawings. Uncle Dave's ad stopped in late 1932 and never returned to QST.

In late 1947, Otto joined Harrison Radio as staff cartoonist. Some of his work appeared in Harrison ads in QST, but were usually only of one character, and no W2EA credit was given to him on any of the drawings.

Here at W2OR, I've been a ham since 1924. QCWA member #148, DXCC Phone Certificate #94; getting 100 coun-

tries at that time was a job. Still active on 2 and 20 meters. I've been using an Apple II since April 1978 and would like to swap programs with some other hams.

Thanks, WMWS!

I would publicly like to thank the West Morris Wireless Society of Flanders, New Jersey, for everything they did for me in Amateur Radio.

They pushed me to keep with it, and as a result, I received my Novice license. After I was licensed, they were always there for me. I greatly appreciate it.

I would especially like to thank Mike

Know of any with Apples?
ERNIE HUFNAGEL, W2OR
 11 Post Rd.
 Pompton Plains, NJ 07444

KD2EU, Bernie Brownstein, WB2YOK, and Pete Orlando Jr., KS2M.

My dad was transferred to Georgia in March, and I had to say good-bye to a great bunch of guys. I'll miss them. This letter was a small way I could show my gratitude for all they have done for me. Again, thanks.

TOM POWER, KA2TLW
 Marietta, Georgia

ZL amateurs journey around the world

As a subscriber to your publication, I thought I might be able to pass on a little information about a world trip my wife and I are about to take, which may be of interest to some of your readers.

To introduce ourselves, I am Dave Johnston, ZL1AMN. I have been an amateur for 25 years and have been on two DXpeditions — firstly, to the Kermadec Islands as ZL1AA/K and later with my wife, Aola ZL1ALE — an amateur for 20 years, on a Tri-Island DXpedition with the call signs of 5W1CA and 5W1BY; ZK2DJ and ZK2YL (I think Aola is still the only YL to have ever operated from Niue); A34DJ and A35YL, respectively.

We both have reasonably high DXCC totals; my own is 316-304 and Aola's is 304, minus 11 deletions.

Our world trip is planned as follows:

Singapore	14-16 August
London	17-19 August
Scottish tour	20-25 August
London	25-26 August
Gothenburg	27 August
Stockholm	28-30 August
Copenhagen	30-1 September

Hamburg	1-2 September
Amsterdam	2-4 September
Heidelberg	4-5 September
Lucerne	5-7 September
Innsbruck	7-8 September
Vienna	8-10 September
Venice	10-11 September
Florence	11-12 September
Rome	12-15 September
Nice	15-17 September
Barcelona	17-19 September
Madrid	19-21 September
Zaragoza	21-22 September
Lourdes	22-23 September
Angouleme	23-24 September
Paris	24-26 September
London	26-28 September
To Toronto	28 September

Our Scottish trip will be with Trafalgar Tours and is called the "Best of Scotland." Our European trip is "Travellers Viewfinder Global Tour 890."

Once in Stateside, we have an open ticket on United Airlines, but due to the limiting conditions of our round-the-world air ticket, we will most likely move from Toronto to arrive in Seattle on 02 October, for my 60th birthday.

We hope to spend something like four (please turn to page 24)

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Are you radioACTIVE?

Dean LeMon, KR0V sure is! Dean got active in Amateur Radio when he was 16 years old and earned his Extra Class license in less than four years! "It's a fascinating hobby and a great way to meet all kinds of new people from all over the world."

Dean has cerebral palsy and got started in Amateur Radio with help from the Courage HANDI-HAM System. The HANDI-HAM System is an international organization of able-bodied and disabled hams who help people with physical disabilities expand their world through Amateur Radio. The System matches students with one-to-one helpers, provides instruction material and support, and loans radio equipment.

Isn't it time you got radioACTIVE with the Courage HANDI-HAM System?

Call or write the Courage HANDI-HAM System
 W0ZSW at Courage Center,
 3915 Golden Valley Road,
 Golden Valley, Minnesota
 55422, phone (612) 588-0811.



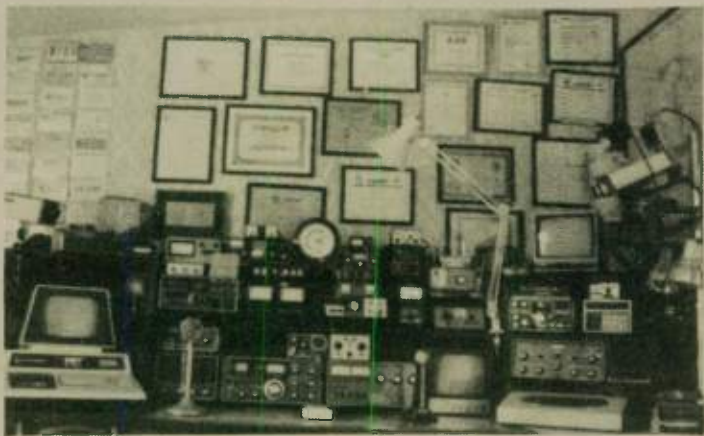
STATION APPEARANCE

We have two winners this month — a husband-and-wife team from Leon, Guanajuato, Mexico. Fernando and Juanita Munoz (XE1AAK and XE1HT) are Associate Members of ARRL and Life Members of AMSAT. Both have been on the air for several years — Fernando since May 1974, Juanita since February 1977. Juanita was the first female radio operator to work OSCAR-7 and 8 in Mexico.

This couple's Amateur Radio interests include DX, OSCAR, SSTV, RTTY and



Fernando Munoz, XE1AAK, uses the mike at his station, as his XYL, Juanita XE1HT, watches. Both are active on the air and have radio interests ranging from DX to computers.



Another view of Munoz station

1984 DX-YL to NA-YL

The winners of the SSB portion of the 1984 DX-YL to NA-YL Contest are: (North America) Gold Cup — Martha King, WD4NKP; Second Place — Darleen Magen, WD5FQX; Third Place — June Braunz, KM8E; (DX) Gold Cup — Susi Liebig, DJ2YL; Second Place — M. Paulina Bloemen, DJ0EK; Third Place — Christa Elksnat, DJ1TE.

Winners of the CW portion of the

contest are: (North America) Gold Cup — Martha King, WD4NKP; Second Place — June Braunz, KM8E; Third Place — Elizabeth Anderson, VE7BIP; (DX) Gold Cup — Susi Liebig, DJ2YL; Second Place — W.A. Davies, VK4BSQ; Third Place — M.E. Stafford, VK3KS.

The Combined Score Plaque winners are Martha King, WD4NKP (North America) and Susi Liebig, DJ2YL (DX) — Martha Silver, NY4H

Olympic

(continued from page 7)

three was Dick Boehner, the Torch Relay manager. These runners did not change from week to week; I called them the "supervisory runners." They not only watched out for the welfare of the runners, but also rode with the drop-off and pick-up vehicles on Sunday to make sure we knew how to do our jobs.

These "super runners" were always

available to pinch hit for any runner who might have muscle cramps or who couldn't run for any reason. I'm proud to say that at no time during the week did Cadre A have to substitute because of our failure to spot a runner on time — although we did have a couple of close calls.

(ED: Next month, Norm will continue his story, focusing more on the Amateur Radio aspect of the Relay.)

computers. Fernando is also Chief Pilot for the country's second largest shoe manufacturer and retailer.

A description of the equipment used in the Munoz station follows:

HF transceivers — Yaesu FT-101E; Atlas 210X; **VHF transceivers** — Kenwood TS-700A; ICOM IC-21 and DV21; Kenwood TR-7950; **UHF transceiver** — KLM Echo 70; **SSTV gear** — Robot 400 and 88C; Seltchel Carlson 10M915 10" monitor; Panasonic 9" B/W monitor; RCA TC-1000 CCTV camera; Panasonic WV-1400 CCTV camera; **Power amplifiers** — Yaesu FL-2100B; KLM (2 meters) 80 watts and KLM (70cm) 70 watts;

Antenna rotators — KLM 400 and KLM 500 AZ-EL rotators for satellite work; CDE Ham III; **RTTY gear** — Robot 800C; Teletype KSR 33 (not seen on the photo — is far from the other equipment because of the noise); XITEX UDT-170 terminal unit; Commodore PET-2001 (also used for SSTV); **Antennas** — Mosley Classic CL-33; Cushcraft A144-11 and A430-11; 6-turns Helix (designed by Bill Allen, W7US); 10-meter turnstile homebrew; **Preamplifiers** — Ameco PT-12; Janel QSA-5; Lunar 430 MHz.

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11-12 August	DARC European DX Contest (CW)
25-26 August	JARL All Asia Contest (CW)
08-09 September	DARC European DX Contest (SSB)
13-14 October	PPC Rio DX Party (CW)
27-28 October	CQ World Wide DX Contest (SSB)

W-100-N

Here is another applicant for the Worked 100 Nations Award (W-100-N).

235. YB2BOT Soengeng Wijono

Soengeng submitted a list of 110 nations, all on SSB, with his application, and resides at Solo, Java, in Indonesia.

Complete rules for this award will be in next month's issue. Included with the rules will be the latest Nations List.

Southern Sudan (ST0)

Michel Loizeau, TL8GE/ST0, has been easing the need for this one and has been showing on the INDEXA net on 14.236 MHz after 0330 UTC.

St. Pierre (FP0)

Ralph Hirsch, K1RH, will be operating from St. Pierre on all bands (except 160 meters), using the call FP0RH, on or about 03 August. Along with Ralph will be Elmer Yates, W1CCN, and Richard Reed, KA1CI.

Listen up 25 kHz from the low edge on CW and 225 kHz on SSB. (What is this on 75, 15 and 10 meters? ED.)

Macquarie Island (VK0)

Tony Borgia, K6DR — a local DX'er here in Carmichael — received a very interesting letter from Bill Verrall, VK5WV, concerning Macquarie Island. Tony passed the letter to us to share with Worldradio readers.

This will probably end up a rather long letter, but I guess I should explain why Macquarie Island is so hard to work. Firstly, please accept my apology for such a late reply to your letter and IRC's of 11 January 1984, but I have been attempting to get all the relevant info before replying.

You should forget your 1969 QSO with VK0KJ because this is now untraceable and all indications are that it is incorrect. I found my old Australian Callbooks in my shack for 1969, '70 and '71, and there is no VK0KJ listed. I am sure you either worked a pirate or you have the call sign incorrect. It is now virtually impossible to trace the holders of these old VK0 calls. All VK0 calls are issued from Melbourne/Victoria by the Department of Communications, and there is no way I can get access to these records.

Your only hope now is to try and work Macquarie again, but this is highly unlikely during calendar 1984. I know quite a lot about the VK0's as I was QSL manager for Ken Hanson, VK0KH, for his three trips to

Antarctica, and he did two tours of duty to Macquarie — the last being in 1980. He held the call of VK0IN for his earlier trips and VK0KH both for Antarctica in 1976 and Macquarie in 1980. He is now permanently residing in Melbourne, and I have more or less lost contact with him.

There are many difficulties in setting up a successful amateur station in Macquarie because of the difficulties in maintaining aerial systems. It is located slap bang in the middle of the "Roaring Forties" and is an extremely windy place. You can count on the fingers of one hand the number of days per year that the wind speed does not exceed 20 knots maximum.

Several hams have tried various HF Yagis, etc., over the years but most have only lasted a few weeks before being wrecked by the

winds. Therefore, all hamming is restricted to using wire antennas. There is a KWM2 in the amenities room for use by any visiting hams but no antennas — no materials are available or the enthusiasm is not there to erect a permanent antenna system for the KWM2.

However, Ken VK0KH got over the problem by taking his own rig down to the Island and using it in the radio shack, which is some distance from the amenities hut and kitchen complex. The last I heard, there were two 5kW commercial transmitters and a series of rhombics and V beams directed towards Australia which carry all commercial traffic to the ANARE base, now located in Hobart/VK7.

All commercial traffic is via CW and RTTY, and one of Ken's jobs was to maintain all radio communications equipment on the Is-

land, including the 5kW transmitters. When these transmitters were not in use, he would use one of the commercial antennas connected to his ham rig. This was quite successful for 10, 15 and 20 meters, but not so good for 40 and 80. But at least he had permanent aeriels, although directional in a north/south area only.

There is no mail service to Macquarie, therefore I used to keep regular skeds with Ken on 20 meters during 1980 to get his log info. One of the big problems is that many hams who do a tour of duty to Macquarie do not make prior arrangements to handle QSL's back in Australia. Therefore, log details for many VK0's are not available for sometimes in excess of a year after they commence operating. Therefore, many QSL's are lost in

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MACQUARIE Isl
54°30'S 159°E



Macquarie Island 54°30'S 159°E and 1500km SSE of Hobart, Tasmania. (Photo is by Ken Hanson, VK0KH, via Bill Verrall, VK5WV, and Anthony Borgia, K6DR.)

the mail system or ignored by many VK0's when they return to Australia, and there are often many disappointed hams like yourself who don't receive their VK0 QSL.

Another problem is that the Macquarie team members are changed over once per year during the November-January period. During the period November to May, all team members are so busy that there is little time for hamming. Also during this period, many of the teams are away on field trips and don't have access to ham equipment.

Also, we never know whether there are any hams in the replacement team until they come up on the air, (e.g., there were no hams in the 1982 team).

There is another problem for USA and the rest of the DX world. Macquarie is far enough south to be influenced by Antarctic propagation, and sometimes they can't be copied in Australia with their 5kW transmitters.

The best time to work Macquarie from the USA is on 20 meters, around 0900 to 1200 UTC, during the latter equinox — say, September-October — each year. You are wasting time trying other bands. The April-May period is also OK, but most hams on Macquarie are too busy to spend time in the shack during the earlier equinox.

So what are your chances of working Macquarie this year? I would say NIL!! There is one ham on the island — David Rasch, VK0CK, whose home call is VK5CK. I know him but he is a VHF freak!! Not interested in HF. His QSL manager is Eric Jamieson, VK5LP, who I also know, and I have attached a copy of his letter in reply where I tried to drum up some HF activity so you may work VK0CK this year. The latter half of Eric's letter deals with another interest of mine in vintage radios. hi!

Finally — a little about Macquarie Island. I have included a photo of the base — several copies were given to me by Ken VK0KH from his 1980 trip. The island is long and skinny, elongated almost north/south. It is of volcanic origin, approximately 1400km north of Antarctica. It is 33km, long and about 5km wide with a central plateau 300 meters above sea level, rising steeply from the sea. The highest point is Mt. Hamilton (433 meters). The first Australian expedition was in 1948, and currently about 18 people is the full complement for the winter-over period.

The ANARE base is on the extreme northern tip of the island called Hasselborough Bay. The photo is taken looking in a northeast direction from a hill on the west of the base site, which is only accessible by walking. Ken VK0KH was much fitter than I. hi!!

So, Tony, this is what I will do. I will retain your QSL card etc. in my QSL drawer and await the outcome of the 1985 expedition. If there are any HF operators in the replacement team, I will endeavour to find out if and when they will be on and try and arrange some sort of sked for you. But don't expect to hear from me until perhaps around this time next year — not very satisfactory, but we need extreme

patience to work Macquarie hi!

Just a little about myself. I am 49 years old, first licensed in 1960, married (we celebrated our Silver Wedding last year), no harmonics but we have a dog and cat. I am a senior contracts officer with the Australian Defence Department working on stuff that is so highly classified that even I do not know what I am doing hi!

I have been DX'ing since I purchased my first SSB rig in 1970 and have 13 countries to work and confirm to complete my DXCC. For interest, there are S9, KC4 Navassa (on CW only — still need it on phone), PY0 St. Peter and Paul, PY0 Trinidad, 3Y, CE0X, CE0Z, TT, 5X, 70, BY, XZ and ZA.

I am awaiting a QSL for a 15-meter QSO with BY1PK and have XZ5A and XZ9A QSL's, which are not acceptable. I also worked F6BFN/TT about six weeks ago but will not waste IRC's, etc. until I find out whether Serge is acceptable for TT.

When I hear anything about Macquarie Island activity in the future, I will drop you a line — probably in a year's time. Best 73, Bill Verrall, VK5WV.

Clipperton Island (FO0X)

The latest information of the California Clipperton DXpedition is that they were looking at another attempt between mid-May and early July. It is now early June at this writing, and we have heard nothing. One report has it as a possibility of using seaplanes to get there.

Spraty Islands (1S)

All sorts of stories on this one as to why it still has not surfaced. Such rumors include the unexpected military activity in the area and the lack of funds. Wishful thinking has an operation this fall after the monsoon season is over.

Prefixes

The call R0K was recently on the bands to commemorate the 50th anniversary of the Chelyuskin Epic. Activity took place from the site where the Chelyuskin sank in Chukotskiy oblast.

The call CS9IS is for a DXpedition to Selvagens Island by the Madeira DX Group, from 09 August, for seven days of operation.

Chad (TT)

A station signing TT8RP was active on 15 meters a couple of months ago and was reported on 21.170 MHz around 1830 UTC. QSL cards for this one should be sent via F6KGU.

Mount Athos (SV/A)

Chances of an operation from this one

are not good. The monks, who live there, have rejected requests for DXpeditions there. This includes Greek operators as well.

IOTA

Now and then in this column we mention the Islands on the Air awards program that is sponsored by Geoff Watts, formerly Editor and Publisher of *DX News Sheet*. This publication is now a function of RSGB. Geoff retained his IOTA program, with the activities still listed in *DX News Sheet*. I have gleaned from past week's issues to include several islands that have been reported.

EU-62 Alsten Island	LA8YBA	14.251 MHz	1345 UTC
EU-79 Runde Island	LA5VAA		
EU-56 Haroy Island	LA5VAA		
NA-41 Mietkof Island	WL7ALG	14.285 MHz	0645 UTC
OC-75 Riau Island	YC5NOF	21.315 MHz	1545 UTC
EU-36 Hitra Island	LA9PX	14.195 MHz	1145 UTC
AF-44 Selvagens	CS9IS		
EU-35 Novaya Zemlya	RZ1OWB	14.152 MHz	1600 UTC

In some cases, no frequency or time was given. This is due to the fact that this was a coming or past DXpedition to that island. Keep in mind that these islands are not always considered a DXCC country, and in several cases more than one DXCC country will make up one IOTA island group. It is confusing. To become unconfused send to Geoff Watts for the rules and list of qualifying islands. Send a few IRC's (or "green stamp"), to Geoff Watts, 62 Belmore Road, Norwich, NR7 0PU, ENGLAND.

Russian oblasts

Not only did the Soviets change their call sign structure on 01 May, but several new oblasts were formed which brings the total up to 191. In oblast 189, a station signing UI9AWO was active and had been reported on 21.238 MHz around 1000 UTC working Europeans.

UT4JWB, worked on 14.187 MHz at 1945 UTC, is in oblast 187, and UL7GWB, worked on 14.287 MHz at 1600 UTC, is in oblast 190.

There will be a Soviet DXpedition to oblast 049 in Uzbek, ASSR in September. This is reported to be the rarest of the USSR oblasts and will take place from Mubarek in Uzbek. Operators included in this operation will be UA4WCE, UA4WBJ, UI8CAJ, UI8CAL and UI8CAM. The call sign expected for this DXpedition will be RI8C.

The additional oblasts are as follows: 186 — Kiev city; 187 — Sevastopol city; 188 — Minsk city; 189 — Tashkent city; 190 — Alma-Ata city; 191 — Ashkhabad city.

The oblasts 171 and 172, Arctic and Antarctic, have been deleted from the R-100-O list.

DXpedition to North Cooks

The following is Ron Hill's account of his DXpedition to the North Cooks this past spring. Ron operated as ZK1XL and is a member of the Northern California DXC 100 and resides in Hanford, signing K6OZL.

Fulfilling a childhood dream is as rare as hen's teeth once the years start rolling by, but this DX'er had a chance to fulfill two at once: live in the South Pacific and go on a DXpedition. The opportunity came about when I happened to run into Tuatai Tupou, ZK1CY, on 20 meters one evening, and Tuatai mentioned he had to go up north on government business. I just asked casually if I could go along and do some operating as we had talked about this before. Tuatai came back and said "YES" without any hesitation.

I arrived in Rarotonga, South Cooks the evening of 06 February, soaked to the bone with sweat and little did I know then that I would sweat every day until my arrival back in Los Angeles some 12 weeks later!

Preparations got underway almost immediately for the trip north. Immigration had to give permission to go up to the northern group, something Tuatai had worked on even before I had arrived.

Food had to be obtained as there are no supermarkets in the northern group. The list grew and when we left, we had two large crates packed with provisions. One antenna box was donated by Pat Doherty, VE3HFS, and Bill Klemacki, VE3XJ. Needless to say, I worked every VE3 I heard calling.

Vic Rivera, ZK1CG, gets letters every year from hams who want to be booked into a nice hotel for a week or so in the northern group. Well, it just ain't that way. All known civilization is left behind once the small coastal freighter leaves Raro. The boat ride up is hot, smelly and totally beyond what I have experienced as a radio officer aboard USA tankers. There are at least 80 people living on the covered hatches outside, and you can imagine what the most popular room onboard looked like after one day at sea. The crew hosed the head down daily with a 3" hose at full blast to try and clear the clogged toilets.

Finally, on 22 February, we arrived at Penrhyn Atoll, some 540 miles south of the equator. By the way, the former name is Tongareva, but that's another story.

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I soon learned that you have to have connections when going on a DXpedition. The doctor is the brother of Tuatai's wife, and we stayed with the doctor and his family on Penrhyn. There is no house to rent or place to stay by yourself on Penrhyn. You must obtain permission from the Chief Administrative Officer (CAO) before arriving on any island in the Northern group, as places to stay are almost impossible to find. We were well warned beforehand about the Penrhyn people, and had to watch the house 24 hours a day to be sure our gear didn't walk away some night or weekend when the doctor's family went out to the numerous motu's to gather pearl shells.

Operation began on 23 February, after the antennas were up temporarily at a low height. Tutai brought with him a transceiver that was for the Health Department's use on Penrhyn. A very simple random wire was strung up from the house to a palm tree, and that was the antenna — something similar to the way of life as they know it in the South Pacific. Two skeds a day were maintained daily on 12 MHz back to Raro, and I had to QRT during those skeds, so the operation was limited in that respect.

The Europeans were a big disappointment at first. I couldn't hear any, but as the days went by I could hear them long-path; then short-path opened up. I had to fight off the JA's and stateside over the North Pole short-path into Europe, so I used CW most of the time. The feedback I was getting out of Europe was quite encouraging, and I worked them nightly. In fact, one CQ and the Europeans had found me, and the fun began in earnest. I had to choose to either stay on 20M and work Europe or QSY to 80/160 for the USA.

Living in the South Pacific on a remote atoll is very simple — either you like it or you hate it. Nothing else. After a month or so, Tuatai and I had our fill of Penrhyn. We were ready to leave.

We started asking Raro on the health department's radio when the next boat was scheduled to leave Raro. I wanted to leave in time to attend the International DX Convention in Visalia, California, and I was getting worried about making it.

Finally, I couldn't stand it any longer. I asked Tuatai to talk to Tereappai, ZK1AA's XYL, and run a phone patch for me to Air Rarotonga to see about chartering an airplane to fly to Penrhyn. Tereappai got the owner on the patch and I must have said the correct magic words "American Express Gold Card," as he didn't back down. The flight was going to set me back \$4,800 (New Zealand). Finally — a way out of here!

The Americans had a nice long runway built during WW II and had recently come back and worked on it (1962). The only stipulation from the CAO was that no airplanes could land or take off on Sunday. It so happens that the only day Air Raro is not flying is Sunday. We made another patch to the owner. This time I got their working frequency of 3030 kHz and I talked to them direct daily, using my TS430S and 160M dipole fed with open wire.

More complications were beginning to creep into the works. The Cook Island government had found out about the charter and would not allow the plane to leave Raro unless a group of government officials were on the plane to visit Rakahanga, then fly on to Penrhyn — all at my expense. Meantime, the cut-off date for the DX convention came and went. Reluctantly I sent a cable cancelling the plane. Spirits were pretty low then, but the pile-ups were a good escape for our problems.

The rumors were flying that the next boat was leaving Raro on 11 April; another sked with Tereappai confirmed this. Spirits were

raised and to celebrate, a hog was prepared for the big feast, South Pacific-style. After daily meals of beans for breakfast and corned beef for dinner, it was a good meal, believe me. Another outstanding meal was the fresh crayfish caught in the middle of the night on the reefs. All you have to do is get out of bed at 3:00 a.m. and walk out to the reef and pick them up! Crayfish tails are the same as lobster tail and excellent. Coconut crabs are plentiful with legs some 13" long.

The big day finally arrived and the small coastal freighter came, and on 17 April, we said our final 73's on the ham bands and took the beam down, packed one large crate and left Penrhyn at 6:00 p.m.

I had worried about leaving Penrhyn because the doctor started getting visits from worried natives in the middle of the night regarding a sick patient. This worried me also because one of the customs on Penrhyn is if someone dies, all work on Penrhyn stops for a mourning period of 30 days! I told the doctor that the boat will be here next Monday and for God sakes, keep that patient alive for a few more days. I WANT OFF OF HERE!!

The boat ride back to Raro was hot as usual, and the cabin temperature was never below 90 degrees, so it was better to stay up on deck and sleep there. We arrived back in Raro on 23 April, a holiday. Since Wednesday was a holiday too, I had Tuesday to get my business done and leave Wednesday, 25 April, my 40th birthday.

The plane was delayed six hours but at 9:00 p.m. on 25 April, I left the runway bound for Tahiti, a scant hour-and-a-half away by jet. It was a tearful departure and a joyous one to say thank you to Tuatai ZK1CY/ZK1MA for such a successful DXpedition.

18,935 QSO's were made using a TS-430S/Yaesu linear and also a Hal CWR-6850 RTTY terminal. CW was the major mode, as I like CW better than SSB, and ZK1CG had made 10,000 SSB QSO's on the last DXpedition to North Cooks.

Four hams made it into the ZK1XL log on seven bands, number one being Frank McCormick, N4WJ. Frank gets a genuine Penrhyn Atoll pearl shell and pearl, worth a lot of money if Frank ever wants to cash it in (he will have to go to Penrhyn to do it). Congratulations go to Bill Poellnitz, K1MM; Jim Dionne, K1MEM; and Steven Tolf, K1ST for 7-banders too.

Hot shot DX operators

During the Visalia DX Convention, Jim Neiger, N6TJ, presented his annual Code Copy Contest. Each year, this event becomes more difficult, especially this year where several calls were run together at different speeds and tones.

During the Dayton Hamvention, the Kansas City DX Club put on their CW Pileup Contest. Although we were not in Dayton to compare the contests, we assume that it was just as difficult as Jim's contest.

Taking a glance at the top 10 for the Kansas City group's contest, we see that two of those were also in the Visalia top 10. Randy Thompson, K5ZD, placed 7th (he was in a four-way tie for sixth place in Visalia), and Francis Donovan, W3LPL, placed 9th (he was number 3 in Visalia).

The Kansas City DX Club commented that there were no entries from the 6th call area. Perhaps this was due to the

fact that the Dayton Hamvention closely followed the Visalia DX Convention, and many of the sufferin' 6's were still recovering.

Clubs

New officers of the South Florida DX Association include Don Murray, W4WJ, as president; Doug McDuff, WB4MAI, as vice president; Donald Fay Jr., K4CEF, as secretary; and Tom Mannix, WA4YLD, as treasurer.

CANAD-X

The Canadian DX Association, CANAD-X, is administered by the Toronto DX Club, a group of radio amateurs devoted to DX. Membership is open to all amateurs. The following services are provided with membership: 1) *Long Skip*, a monthly bulletin of DX-oriented information; 2) free outgoing QSL bureau, (DX, W and VE cards are accepted).

The association also provides financial support to DXpeditions on a case-by-case basis.

To join CANAD-X the annual fees are \$20 (Canadian funds for Canadian, and U.S. funds for the United States and DX). For a matter of interest, one Yankee dollar is worth about \$1.25 in Canadian funds. Send your request to CANAD-X, Box 717, Station Q, Toronto, Ontario, CANADA M4T 2N7.

A sample copy of *Long Skip* will be sent on request for 2 IRC's or equivalent (to cover postage costs), to Garry Hammond, VE3GCO, 5 McLaren Ave., Listowel, Ontario, CANADA N4W 3K1. This would be for 74 cents in Canadian postage. Garry is the editor!

Tiurai

Ross Forbes, WB6GFJ, sent in the rules for this year's Tiurai an annual Tahitian Amateur Radio event. The activity takes place from 14 July through 21 July. All times are UTC.

This activity, the Tiurai, coincides with the French Bastille Day activities and attracts visitors to French Polynesia from all over the world. The activities include song and dance competitions, canoe races and other Polynesian activities. The rules for participating in this event are included below.

Although the fee of 12 IRC's may seem high, Ross says when you see the award, you will see it is worth it. QSL cards are not required for the certificate.

Official rules for Tiurai Certificate 1984

To celebrate the National Holiday (Tiurai) on 14 July, the Amateur Radio

operators of French Polynesia have announced the Special Tiurai '84 certificate.

The Tiurai is celebrated throughout all of French Polynesia, and visitors will see many traditional Polynesian activities, colorful parades and traditional Polynesian customs, plus many important visitors each year.

To allow Amateur Radio operators from all over the world to obtain their Tiurai certificate, Amateur Radio operators throughout all of French Polynesia will be active on both phone and CW, on all bands. The 1984 Tiurai activities will take place from 0000Z, 14 July 1984, to 2359Z on 21 July 1984.

(NOTE: As many activities take place during the day, look for FO8's/FO0's to be more active between 0200Z and 1000Z each day. This is the late afternoon to early morning hours local time in French Polynesia.)

The specific rules for the certificate are as follows:

1) Stations in Europe and Africa need to contact three stations in French Polynesia on any band.

2) Stations in North and South America, plus Asia and Oceania, must contact three stations in French Polynesia on at least two different bands. (A total of three stations spread out over two bands is necessary.)

3) All contacts must be made within the official Tiurai time period of 0000Z, 14 July 1984 to 2359Z, 21 July 1984.

4) All requests for a certificate must be received in French Polynesia by 31 December 1984.

5) To obtain your certificate, just send a copy of your log information (date, time, station worked, frequency, mode) and 12 IRC's to: Tiurai 1984 Certificate; CORA; B.P. 5006, Pirae, Island of Tahiti; FRENCH POLYNESIA, SOUTH PACIFIC.

6) Frequencies used by stations in French Polynesia on SSB may be as close to the following as possible: 28.600, 21.300, 14.240, 14.180, 14.110, 7.090, 3.800.

The Tiurai '84 Trophy

In addition to the certificate, a beautiful trophy will be awarded to the highest scoring station on each continent during the Tiurai '84 time period: 14-21 July. To receive the Tiurai Trophy, a station must contact the most FO8/FO0 station during this week-long activity. Therefore, participants should look for station in French Polynesia on all bands and all modes!

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and not the trophy, or you can apply for the trophy alone. There is *NO* charge for the trophy!

CORA is pleased to announce the following winners of the Tiurai Trophy for 1983: *Europe* — Javier Ledesma, EA4BVE; *North America* — Glen Singer, KA5GRP; *Oceania* — FK8EH; *French Polynesia* — TO00FB.

The actual Tiurai Trophy is a beautiful mother-of-pearl shell, carved with the winner's call and date on it. It is the most unique trophy I have ever received!

Official rules for the Tiurai Trophy

1) Only contacts made from 0000Z, 14 July to 2359Z, 21 July 1984 will be allowed for the trophy.

2) Valid contacts are those on all current Amateur Radio bands.

3) The trophy will be granted to a single-operator station only.

4) Good operating practices must be observed at all times.

5) Stations participating on SSB will call "CQ Tiurai" and on CW will call "CQ FP".

6) The overall idea is to have all Amateur Radio operators throughout the world work only stations in French Polynesia. Contacts between stations not in French Polynesia do not count for the trophy.

7) The exchange report: Stations in French Polynesia will give the RS(T) plus QSO number. Stations outside of French

Polynesia will give the RS(T) and their CQ zone number.

8) Cross-mode contacts are *NOT* valid.

9) To determine your score:

Stations *outside of French Polynesia*: each contact with a station in French Polynesia counts 1 pt. Your multiplier is the number of French Polynesian stations per band.

Stations *within French Polynesia*: Each contact is worth 1 pt. Your multiplier is the total number of CQ zones per band.

10) Submit your results as a log in chronological form. Show only your contacts with French Polynesia. Use your standard CQ or ARRL DX contest system of showing your results from each band.

11) All entries *must* be submitted by 31 October 1984. Results will be announced during January 1985. Send all results to: Tiurai 84 TROPHY Competition; CORA; B.P. 5006; Pirae, Island of Tahiti; FRENCH POLYNESIA; SOUTH PACIFIC.

12) Stations with over 3 percent duplicate contacts will be disqualified.

International DX Convention

The International DX Convention will be back in Fresno in 1985. The move back was due to the limited accommodations at Visalia (and, as we have said before, where is Visalia?). Mark your calendars for the weekend of 19-21 April at the Fresno Centre Plaza Holiday Inn.

A total of 700 rooms is available within walking distance of the hotel. For reservations, call (209) 268-1000.

Reader comments

Robert E. McClure, (no call given), of Diamond Springs, California, would like to obtain information on operating in Oman and what reciprocal agreements exist. We don't have that information available here and would suggest that you write to ARRL headquarters in Newington to see what they have.

Carl Henson, WB4ZNH, recent feature

speaker at the Visalia DX Convention, mentions the upcoming DXPO Atlanta, to be sponsored by the Southeastern DX Club. Carl, if you remember, has been a thorn in the side of the pro-list people and writes, "The pro-list people's number one argument is my largest source of disagreement with them. They make it sound like DX'ers that have large antennas are all independently wealthy and should be penalized for their wealth. My experience has been that the pro-list 'little' people generally have just as large an income as the 'big' DX'ers. The only difference is in their level of dedication. I have always maintained that you are only as 'little' as you want to be!"

If my memory serves me correctly, this list business was not created for the little guy or the inexperienced operator, but the DX station on the other end. That operator often lacked the skills, the equipment or the patience to fight the pile-ups. Rather than have him throw the towel in, the idea of a list was created and they went along rather well. Unfortunately, they got out of hand.

This DX editor, personally, doesn't care for the list operations. But let me say this. If the only way to work the needed station is to get on the list, I am not going to be that stupid and QSY!

ZL1AMO trip

QRZ DX reports that the Carolina DX Association is making plans to bring Ron Wright, ZL1AMO, to the United States during the month of July. He will be available to visit with sponsoring clubs or organizations during his visit.

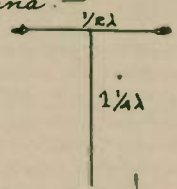
Ron was one of the operators during the recent Kermadec DXpedition signing ZL8AMO. Interested groups should contact Ted Goldthorpe, WA4VCC, at (803) 547-6980.

Antique QSL Department

John Swinnerton, G2YS, sent us this QSL early this year, and comments, "It has several unusual aspects: Firstly, that it was virtually unknown for an Amer-

ican amateur to operate from the USSR or if the operator was not an American citizen, for him to have a U.S. license. (I checked the Callbook at the time, and he was listed with a USA address.) Secondly, the QSL appears to have reached me via the USSR Bureau, and obviously originated from the USSR. Thirdly, it is written in Russian, and you would expect it to be in English."



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SEPTEMBER 1984

UTC	AFRI	ASIA	OCEA	EURO	AM
0100	20.5	25.3	28.5	11.2	24.3
0200	15.9	24.3	28.6	10.3	21.9
0300	14.1	22.8	28.1	9.5	18.6
0400	15.1	20.7	26.4	9.5	16.8
0500	13.8	18.3	22.8	10.7	16.6
0600	12.9	16.3	20.1	12.5	16.8
0700	11.9	15.1	18.8	12.0	16.4
0800	10.7	14.4	18.1	11.3	13.5
0900	9.8	14.0	17.6	10.6	14.7
1000	9.4	13.8	17.3	11.0	15.5
1100	10.1	13.3	16.8	10.4	14.2
1200	11.7	12.3	15.4	11.2	14.7
1300	14.2	12.1	14.1	13.2	17.7
1400	16.8	13.9	15.2	15.9	21.6
1500	18.9	15.5	16.8	18.3	23.9
1600	20.1	15.2	15.4	19.6	24.7
1700	20.8	15.2	13.2	20.0	25.5
1800	21.3	15.4	12.5	21.2	27.2
1900	21.8	16.8	14.9	20.2	29.1
2000	22.1	19.6	19.5	18.5	29.5
2100	22.6	23.0	23.7	16.4	28.7
2200	23.3	25.5	26.2	14.5	27.6
2300	23.8	25.9	27.3	13.3	26.0
2400	23.6	25.9	28.0	11.8	24.5

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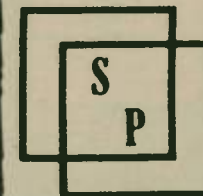
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I went to my favorite Russian translator (my father-in-law who was born there and was on the "wrong" side when the October Revolution broke out), to get the meaning of this.

From his notes, it reads: "Good Health (How are you) G2YS! You were very much involved QSO'd at Novorossiisk, R.S.F.S.R. under name W3JAK/U(A6). Yours RST 579 received 2:19 pm, December 30, 1946 on length(?) 28090 kc/s. Thank you for QSL OM! Radio: Howard 430. Radio forwarding: 6V6G X osc 6L6Gfd - 30 watts".

There may be some errors there as my father-in-law is not a radio amateur and knows little about it, and he is 86 years old.

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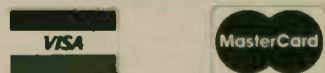
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FG9IIK	-K2KTT	TR0AB	-F6AJA
HH5JS	-K8JH	TU72	-AK3F
HR1DAP	-K8CC	TZ6CY	-N8US
K7RLS/J8	-K7RLS	U2ANM	-UC1AWW
KA0CYR/SV9	-WB4TDB	VP2EAJ	-K2KTT
KB4ATV/4S7	-W4FRU	VP8AOR	-G3VPD
N4JTE/C6A	-N4JTE	VQ9AC	-KA3EDN
OA6EL	-K8JH	XJ3SAS	-VE3FOI
OY7A	-LA9PCA	XT2BJ	-DL6FAL
PUBAY	-PY1DMX	XT2BM	-OE3KOA
PU9AAF	-PT7WCJ	YB0ARA	-K6DLV
SO5DCA	-LA4DCA	ZD9BV	-W4FRU
	(See Note 1)	ZL7AMO	-ZLIAMO
SO5PBA	-LA4DCA	ZY8BI	-PY8BI
	(See Note 1)	4S7NMR	-KZ8Y
		4U9ITU	-W1RR
			(See Note 2)
T32AB	-N7YL	5X5DC	-DL2KAD
TA8CN	-N8CQ	8P6NX	-W0SA
TE5DX	-TI2CF	9M6MO	-KO2A
TE9XHQ	-JA4FGD		
T10HI	-TI2VUE		

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T2ADE	-P.O. Box 5, Funafuti, TUVALU, CENTRAL PACIFIC OCEAN
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TA1MN	-P.O. Box 33, Istanbul, TURKEY
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VP9LE	-P.O. Box 275, Hamilton, BERMUDA
VS5HG	-P.O. Box 980, BSB, BRUNEI
WB7BSJ/KL7	-c/o St. George School, St. George Islands, AK 99660
XU1SS	-P.O. Box 2225, Ramintra, Bangkok 10220, THAILAND
YC5NOF	-P.O. Box 55, Tanjung-pinan-Riau, INDONESIA
YN1MAT	-P.O. Box 1474, Managua, NICARAGUA
YS1TG	-P.O. Box 1476, San Salvador, EL SALVADOR
ZB2BL	-Jimmy, P.O. Box 292, GIBRALTAR
6W1CC	-P.O. Box 1258, Dakar, SENEGAL
7X2FK	-P.O. Box 105, Bouibt, ALGERIA

Notes

1. If your Callbook is not a recent issue try: Nebbejordet 34, 1266 Oslo 12, NORWAY.
2. This applies for his own operations. Do not send 4U9ITU QSL cards for operators other than W1RR.

Contributors for the August issue include K6DR, WB6GFJ, VE3GCO, WB4ZNH, K1RH, G2YS, VK5WV, Kansas DX Association, Kansas City DX Club, Northern California DX Club, *The Long Island DX Bulletin*, *The DX Bulletin*, *DX News Sheet* and *QRZ DX*.

By the time you receive this issue of *Worldradio*, I should be back in New Jersey, the state where I grew up and was first licensed. It will be the first time in 21 years that I will be on the East Coast during the summer. I hope I will survive those hot humid days.

If you attend the ARRL National Convention in New York City, please stop by the *Worldradio* booth and say hello to a former New Jerseyite, (or New Jerseyan, as *New Jersey Monthly* editors prefer to be called). Hope you are enjoying your summer. 73 de John, N6JM.

Off the Air

(continued from page 18)

to six weeks proceeding down the Pacific Coast. During our stay, we have several known addresses and contacts: Toronto, c/o Vivian Taylor, VE3HGA; Seattle, c/o WA7LFD; San Francisco, c/o Clyde Schoenfeld Jr., W6KNH; Los Angeles, c/o Jerrie Stonier, K6INK.

We hope to visit San Diego, Las Vegas, Tijuana, and - if it could be arranged - a visit to New Orleans for a glimpse of the World's Fair.

We have been granted licenses in both Canada and the USA, so hope to make

ZS2 amateur confined to hospital

A QST to the many ham friends around the world of Joe Kirsner, ZS2ER.

Joe has been confined to the Folk Hospital in Capetown, South Africa, since the first part of May. He is recuperating from brain surgery.

Reports from his wife, Sylvia, via Clary McGuire, ZS2EV, and Iris Hayes, ZS2AA, is that Joe is presently undergoing therapy for paralysis of his left side.

For further updates on his progress, please break in on the Elephant Tail Feather's Group between 1300 and 1400 GMT, long-path at 14.245(±), weekdays.

Cards may be sent direct to the Folk Hospital or to Joe's home address: 21 Beatty Rd., East London 5201, REPUBLIC OF SOUTH AFRICA.

TO JOE: Your gracious, charming personality is greatly missed, and our

good use of our Kenwood TR2500 on your repeaters. We will be carrying our slides of the Kermadec, Tri-Island and Chatham DXpeditions, and hope to catch up with as many of our friends as is possible in the time we will have.

Until we leave New Zealand, we will make a point of being on 14.265 MHz at 0500-0600Z every Tuesday and Friday. I am net control of the Pacific DX Net on Fridays and normally would be available until at least 0700Z. We will both try to check in as often as possible to the CHC nets on 14.243 and also the ISSB System on Saturdays on 14.332 at around 0300Z.

DAVE JOHNSTON, ZLIAMN
Papakura, New Zealand

thoughts and prayers are with you for a speedy and complete recovery! "TOT SIENS" 73's and triple 88's from The Elephant Tail Feather's Group.

BETTY BRAVIN, AG6C
Santa Rosa, California



Joe Kirsner, ZS2ER

From nothing to Extra in one day

First of all, this incredible feat would not have been possible if it hadn't been for Daryl WB6CAH, Sandie Hammond, KF6XP, and Ron Martin, KB5VW.

My interest in Amateur Radio was sparked by a few QSO's conducted with WB6CAH and his XYL KF6XP as control operators. Although I had previously learned the Morse code and have a bachelor's degree in electrical engineering, I didn't know what the ham radio hobby was about. I wanted to learn how to be a ham, but I was reluctant to

dive into the hobby because of initial equipment costs and the feeling of being a neophyte in operating procedures. (For I knew I could make it to Extra Class and an Extra Class has operating finesse - right?!).

Putting all my doubts aside and procrastinating long enough, I had only one week to study for my Extra test. On 21 December, I walked into the FCC office in San Francisco, California for the first time in my life and asked to take the Extra test.

Upon my failure to produce any previous ham ticket, the FCC examiner proceeded to snicker as she informed me I would have to take the complete battery of tests - Novice/General

N4DW's new address

Dave Wilson, N4DW - the QSL manager for ZP5XDW and OA4DW - has moved. His new address is: 11434 Rex Baxter, El Paso, TX 79936.

FCC

(continued from page 9)

a hearing in July, as I indicated here last month.

He has 30 days after 10 May in which to file an exception. If he failed to file an exception by the deadline, the judge's decision will have been effective 50 days after 10 May.

The U.S. Attorney has sued Gerry Kerr to collect an unpaid fine of \$2,000 for operation after his license was revoked, and also moved to enjoin any future operation by Kerr. Kerr's application for renewal of his General Class operator license and his Amateur Radio station license, WA6JIY, was denied in early 1982 because of willful and repeated operation causing interference to another amateur station.

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Off the Air

(continued from page 24)

through the Extra. Of course, she thought I would never make it through the code, but incredibly, seven grueling hours later, I walked out with an Extra Class license! Of course, I couldn't operate "Interm SF", but I felt excited and relieved that I had made it to the top — and in one day too! Thanks to coaching from Daryl, Sandie and Ron, I am where I am today, enjoying an absolutely FANTASTIC hobby.

RAYMOND ARIAS, NX6Y
Mountain View, California

one two three four five six seven eight nine . . . Please repeat your QTH and name, QTH and name. Missed it in QRM — over, over."

Some of us get over-anxious, I guess, when working a DX station, and hope that giving an extra good report will help get a QSL faster, giving a 5-8 or 5-9 to a station that's barely 3-4 or 3-5.

DX stations, like us in the States, like to know how their antennas are working, so when working a DX station, give him an honest report. He, like you would, will appreciate it.

GARY PAYNE, KE6CZ
Fresno, California

Miner/hams have access to Academy station

Ted Wolfe, WD4KHL

The Federal Mining Academy is located at Beckley, West Virginia. Miners from all across the country come to the Academy for courses related to their work and mining safety. The length of the various courses vary.

The Academy has a fully equipped Amateur Radio station on the premises. Any miner attending the Academy who can demonstrate to officials there that he is a licensed Amateur Radio operator may use the ham shack and its equipment.

Gerry Ferrin, WA7RYS, a Federal

Mine Inspector from Salt Lake City, Utah, recently attended the Academy for a two-week period. While there, he made many 2-meter contacts through area repeaters, talking with a number of coal mining hams in southern counties.

When they contacted Gerry, they thought they'd have something in common to talk about — coal mining. But Gerry had to tell them he's not into coal. He inspects gold, silver and copper mines for the government in the Western United States. Still, it made for some interesting conversation on the air.

Too old for Radio?

The percentage of older people — that is, those over the age of 65 — is increasing annually.

A myth we have lived with for centuries is that old people become senile after a certain age; that they are disinterested in music, sports, intellectual activities, etc. This is now recognized for what it is — a tall story. It is no longer required to retire at 65. That age has been increased to 70. Our president, at 73, is running for reelection and could very well make it, according to current polls.

You're probably wondering what this has to do with Amateur Radio. Well, let me offer a little insight.

We have communicated with "hams" as old as 95 years, and they had all their faculties. Recently, a friend of mine (a medical doctor) at age 81 passed the test for the highest grade of Amateur Radio license, Extra Class — a goal for which many young people strive and fail.

Have any of you seen the TV show depicting a pet puppy or kitten given to an aged person in a nursing home, and watched their reactions? It was remarkable! They became animated. They opened their eyes. They smiled. They petted the animal, which responded to this show of affection by cuddling close or licking. Or consider their response to youngsters who volunteer to spend time with these lonely "discarded" oldsters who are ill — some unable or unwilling to speak, some incapable of walking. My, how it brings a little sunshine into an otherwise dull, dark life!

Amateur Radio is a pet, a youngster — a hobby which offers the world to a shut-in. It shortens those never-ending days. It inspires; it expands one's horizons! We meet others like ourselves. We talk to the young, to the old, to college professors, truck drivers, bankers, kings, and — of course — to the average man and woman who is anxious to exchange a few words with us.

Is anyone too old or infirm to enjoy this hobby? I think the answer is obvious!

ALFRED BEIN, K2BWQ
Clifton, New Jersey

A plea for honest signal reports

At times in Worldradio and other magazines, there are letters and articles written about giving honest signal reports on phone and CW. Apparently, some still haven't gotten the message. The following was noticed on 20 meters recently:

"Your report is five-nine five-nine fifty-nine fifty-nine five nine five nine fifty-nine . . . one two three four five . . .

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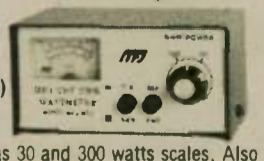
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AMSAT-UK's UOSAT-2, now known as AMSAT/OSCAR-11, is back in operation with some very mysterious observations being made as to why it suddenly decided to respond to the same command data that prior to its resurrection was unsuccessful.

The most likely cause of the failure of the spacecraft to respond is probably some very poor uplink command activity, related to a temperature cycle within the spacecraft that runs about 10 days. Since commanding may not occur over more than three to four days, the command activity may have occurred within the bottom of a cycle which resulted in low battery and command decoder temperatures.

Temperature within the spacecraft is a function of sun angle. If the spacecraft's antennas were pointing away from Earth during these low-temperature phases of the cycle this may have accounted for the failure.

An elementary magnetorquing manoeuvre is proposed by Stephen Hodgart at Guildford with which to control and therefore improve the average sun angle, thus controlling the temperature and at the same time maintaining the pointing of the antenna toward Earth when the spacecraft is over the Northern Hemisphere.

KB6DDQ in Los Angeles, California, and Jay Pauloviks KD8GL, in Wheeling, West Virginia — using hand-held 2-meter FM transceivers — maintained the first coast-to-coast QSO via gateway stations and AMSAT/OSCAR-10 on 28 May. Robert Dunham, W7LWE, in Lake Havasu, Arizona, then joined the amateur satellite communications with his hand-held. This was demonstrated the remarkable capacity of the AMSAT/OSCAR-10 to act as an easy access space com center for amateur communications where the users employ only minimal equipment. KR3V; Ralph McDonough, K8AN; Earl Whitt, K2QWD; Bill Robinson, N6IAW; Doug Spreng, W7MCF; and numerous others participated as soon as the nature of the event was obvious.

The day before, the Wheeling Gateway was operated for three hours through AMSAT/OSCAR-10 with I.T. Ashley, ZL1AOX, in Christchurch, New Zealand.

AMSAT/OSCAR-10 was one year old on 16 June. A Happy Birthday to all who participated in making this possible.

The Radio Society of Great Britain has

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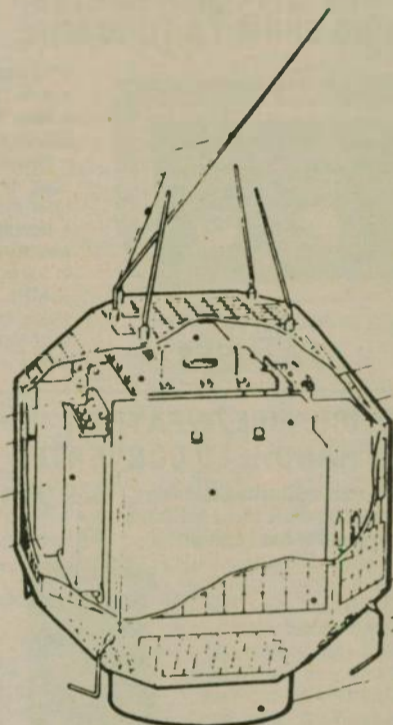
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scheduled Sunday new broadcasts over service channel H2 on AMSAT/OSCAR-10 145.962. The calls will be GB2RS or GB2AUK; the times selected are such that the signals will be heard in the home counties (England) between 0830 and 2030 UTC.

These signals might be heard in the United States, so it would pay to try to listen for them if the spacecraft is accessible. If you should hear the broadcasts, RSGB would be grateful for signal reports.

Send your QSL to RSGB QSL Bureau, or to AMSAT-UK London, E12 5EQ ENGLAND. An IRC will ensure a prompt reply and return QSL.

04 February 1986 is the presently scheduled launch date for JAS-1, the Japanese Amateur Satellite now under construction. Final acceptance tests are expected, along with thermal tests, in February 1985. Flight model 2 will be tested some six months later.



A reproduction of the appearance of the JAS-1. Most of the captions are in Japanese, so no attempt was made to include them.

JAS-1, when launched 04 February 1986 at 0730 GMT, should have a generally circular polar orbit of about 1500km, which will provide about seven consecutive passes each day lasting about 20 minutes each, available to

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middle latitude amateurs. The inclination is expected to be around 50. (Source: Miki Nakayama, JR1SWB)

ARRL has filed comments on General Docket No. 84-186, which proposed to amend the rules to make 2310-2390 MHz available to flight test telemetry stations. The League prefers to have the secondary status of amateurs in this range retained; it does not find a basis on which the band cannot be shared.

ARRL could work with the AFTRCC (Aerospace and Flight Test Coordinating Council) to establish satisfactory band-sharing plans on a geographical basis. ARRL also wants to retain Amateur Radio access to the 2.3 GHz band. This is the band in which there is experimental amateur satellite activity. 2.3 GHz beacons are aboard the UOSAT spacecraft and were also used on OSCAR-7.

There are several 2.3 GHz beacons on mountaintops in the Southern California and San Francisco Bay Areas.

Moonbounce Amateur Radio enthusiasts were active in the attempts to detect the presence of local oscillator operation from UOSAT-2. The moonbounce operation involves transmitting amateur signals from the Earth to the moon with the receiving station picking up the reflected signal bounced off the moon.

220 MHz has been the band used by the moonbouncers, because signals are line-of-sight and equipment is readily available. The power required is in the neighborhood of 1500 watts PEP into very large antenna arrays. The distance to the moon is just under a quarter million miles so that a delay in the round trip of about 2½ seconds can be anticipated. □

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- Please send additional free information on the Amateur Space Program and AMSAT membership. Enclosed is a business-sized, self-addressed, stamped envelope.
- Please send free information on home computer programs and other software for tracking the space shuttle, satellites, and other objects in earth orbit. Enclosed is a business-sized, self-addressed, stamped envelope.
- Yes, I want to become a member of AMSAT and receive *ORBIT* Magazine! Enclosed are my annual dues of \$24 (\$26 overseas - surface. Special rates are available if you desire air mail delivery service).

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- Please send me a sample issue of *ORBIT* Magazine. Enclosed is my personal check, money order, or appropriate credit card information, for \$2.
- I am very interested in the Amateur Space Program and the efforts of AMSAT. Enclosed is my tax-deductible donation in support of these efforts. Please send me the gift indicated.
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- Enclosed please find my check. Please charge my VISA/MC account.

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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.

MARCE assists Project Explorer mission

Ed Stluka, W4QUA

The Marshall Amateur Radio Club Experiment (MARCE) was planned and designed by the Marshall Space Flight Center Amateur Radio Club (MARC), in Huntsville, Alabama, for supporting the Space Shuttle Get Away Special (GAS) #007 student science experimenters. August 1984 is the planning date for a possible STS-17 (41G) Project Explorer mission.

Project Explorer is the name of the Experimental Program for GAS #007, the seventh Get Away Special in NASA's small self-contained payload program. Project Explorer is sponsored by the Alabama Space and Rocket Center, who paid the fee for GAS #007, and the Alabama Section of the Institute of Aeronautics and Astronautics.

The Project Explorer Integration Group, managed by Konrad Dannenberg and Alfred Orillion, asked MARC to provide an Amateur Radio experiment after no proposal was received from a nationwide solicitation for student experiments.

The MARCE objectives, as a guest GAS #007 experiment, are to provide: 1) primary power, networks, control and distribution; 2) an instrumentation system; 3) a data system; and 4) an RF transmission system for direct downlink or for any possible OSCAR A0-10 relay from the Orbiter Cargo Bay to radio amateurs and shortwave listeners around the world.

Description

The MARCE will provide information on the "mission-elapsed-time" and the operational status of student experiments (measurements in canister) during flight by down-linking data to Amateur Radio stations around the world. The data will be transmitted by voice in English so that Amateur Radio operators and shortwave listeners (SWL) around the world can participate. The identification signal "WA4NZD", as used by the MARC, will be included at the beginning and end of each transmission.

The radio experiment is expected to consume about 21 watts during transmissions, and 1.0 watt during "OFF" periods. Since this experiment is a long-term power user, it will provide central battery power for the entire package. A surplus SPAR battery will furnish the power at a nominal 28VDC and 20 amp. hours.

The mission time-line and orbiter inclination are needed to plan the initial transmitter turn-on as well as any subsequent turn-on periods. Measurements will be stored in a microprocessor memory for post-flight analysis. This data will be taken every 10 minutes for a total operating time of 120 hours. Receiving Amateur Radio stations and SWL's will record the measurement data and relay the information via high frequency Amateur Radio channels, or by mail, to MARC at Huntsville, Alabama and other NASA centers that might want to participate. It may also be possible to utilize an existing OSCAR satellite, AO-10, in orbit for this purpose.

In the event of objectionable radio interference with shuttle operations, the radio transmitter can be turned off to assure safety of shuttle operations.

The MARCE provides power, control and on-board storage of GAS #007 experiments, environmental and house-

keeping data. MARCE will acquire these data for input to analog-to-digital converters through signal lines. A voice synthesizer Digitalker system will convert the experimental data into "English language" and will modulate the transmitter.

A backup battery, consisting of two D cells, is used to retain memory when the CPU power is removed. A current of less than 1.0 micro-ampere is required from this memory battery.

The weight of all MARCE equipment, besides the battery, will be about 10 pounds and will take up a volume of less than 0.8 cu. ft. The SPAR battery has a volume of about 0.5 cu. ft.

Design

The following objectives, in addition to those stated in the third paragraph of this article, were considered in the design of MARCE:

- a) Demonstrate the feasibility of Amateur Radio data communication from the space shuttle Orbiter's cargo bay during a shuttle mission, on a non-interference basis with Orbiter and Orbiter payloads;
- b) Encourage broader participation of Amateur Radio enthusiasts in this space research adventure, capitalizing on the pioneering spirit of volunteer Amateur Radio operators and SWL's throughout the world; and
- c) Involve educational groups, from grade school up, to emphasize space communication opportunities for like-type ventures through volunteer research and creativity.

Contributors

Companies and individuals contributing hardware and effort to MARCE are listed below.

- 1) *Motorola* — Jim Worsham, WA4KXY, and the Fort Lauderdale, Florida Motorola Portable Products Division, provided the 5 watt FM transmitter. Jim modified the UHF MX 300 unit for the 435.033 MHz frequency, performed environmental tests and pro-

vided the mounting base.

2) *The Zero Corporation* — The electronic support assembly enclosure was provided by Jay Shorette and the Zero Corporation in Monson, Massachusetts. The MARCE data system, signal conditioning, power distribution and experiment control are housed in this enclosure.

3) *National Semiconductor Corporation* — Peter Lami and the Interep Association, Huntsville, Alabama, provided the CMOS modules for the microprocessor, memories, A to D converters, Digitalker System, crystal and related parts. Two sets were provided — one for the prototype and one for the flight unit.

4) *RCA* — The Newark, New Jersey facility provided an 1802 CPU data system, A to D converter and related parts.

5) *The SPAR Program* — The 28VDC, 20-amp hour battery, 7.5VDC regulator instrumentation sensors, and related parts were provided from surplus and unused spare parts.

6) *The University of Alabama, Huntsville, Alabama* — The University provided laboratory facilities for assembling and testing the GAS #007 package. The UAH machine shop performed the major amount of the GAS #007 structural fabrication, drilling, machining and final fitting work.

Consultation

Coordination with the following individuals provided guidance, recommendations and encouragement which has been very helpful:

Rich Zwirko, K1HTV; Gordon Hardman, KE3D; Art Feller, KB4ZJ; Bill Tynan, W3XO; Perry Kline, K3KP; John Johnston, W3BE, and James McKinney of the FCC Private Radio Bureau; Jack Gottlieb, John Annen and Clark Prouty of the Goddard Space Flight Center; Dick Fenner, W5AVI; Dale Martin, KG5U; and Art Reubens of the Johnson Space Flight Center; Andy Wheeler, WB4ZLW, of the Kennedy Space Center; Dick Daniels, W4PUJ, and Donna Miller of NASA Headquarters. □

CCRL — new service for amateurs

A new service for Amateur Radio operators — the Callsign Cross-Reference Library — was begun in 1983. CCRL has two main purposes:

1) To compile and constantly update the direct relationship between previously held call sign and the current call sign being held, whether it is an individual or group, such as clubs.

2) To make this cross-reference information available to all Amateur Radio operators who need certain QSL's when the call sign of the QSO is no longer listed in current Callbooks/directories.

CCRL knows that many U.S. hams have had several call sign changes in less than a year's time. The call sign changes allowed by the FCC cause many headaches for amateurs in search of QSL routes within the United States.

CCRL is growing rapidly, and will continue to be that vital source of information for hams worldwide. CCRL needs all (U.S.) amateurs who have not been listed, to send a current QSL showing correct mailing address with their past call signs and corresponding years they held each call sign. (Ex: KN4CLA 1954-55; K4CLA 1955-now)

Please try to list call signs and dates from past to present. Although the Callbooks and supplements, call directories, etc. have great current information, there is a desperate need for direct links between past and present call signs.

We ask all (U.S.) hams, clubs, etc., who have not listed their past call signs/dates with CCRL, to do so today. Your needed QSL may be waiting just for your current/past call signs to be known by CCRL.

CCRL has a backlog of inquiries waiting for past/current call sign information to be obtained and forwarded to inquirer. Please do your part to help others get your QSL's to you.

We urge (U.S.) amateurs to make the most of postage rates. Why spend 13 cents to send one QSL when 20 cents will carry several? We also urge clubs to collect QSL's from members indicating the information CCRL needs on each. (please turn to page 44)

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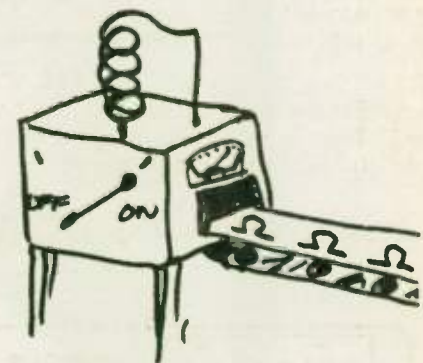
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Ohm-Brew

Jim Goudie, AF3Z, of Mt. Gretna, Pennsylvania, is our 'Ohm-Brew' winner this month. For the answer, see page 50.



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. □

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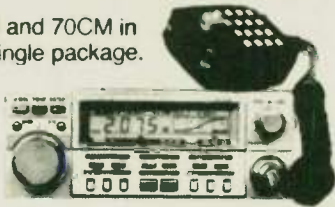
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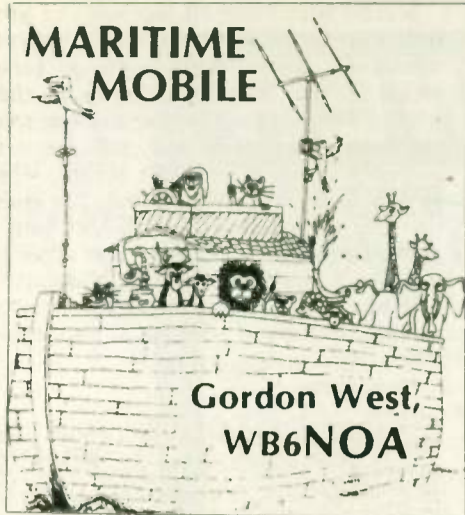


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Grounding techniques with copper foil

Good grounding techniques are essential for worldwide performance in maritime mobile installations, as well as home and remote locations where vertical and long-wire antennas are employed. Half-wave antenna systems, such as dipoles and inverted Vees, can also benefit from good equipment grounding to minimize stray RF currents from causing TVI.

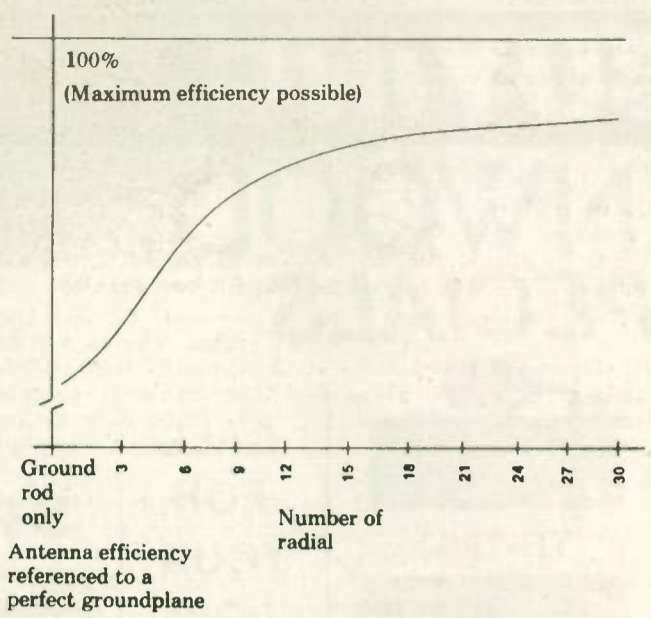
Good equipment grounding techniques are also important in maritime mobile installations where half-wave antennas are employed to minimize the chance of stray currents creating "hot" microphones or knobs that give you a jolt on transmit!

The key to any good ground is high conductivity surface area. This high conductivity surface area must begin directly at your transmitter and antenna tuner system, as well as at the exact spot your coaxial cable terminates into the long-wire or vertical whip antenna. Small wire jumpers between your equipment and the ground foil will look "invisible" to RF currents. Even large DC capacity battery cables look like they aren't even there when used in grounding the coaxial feedpoint to your ship's ground system or to the earth soil ground.

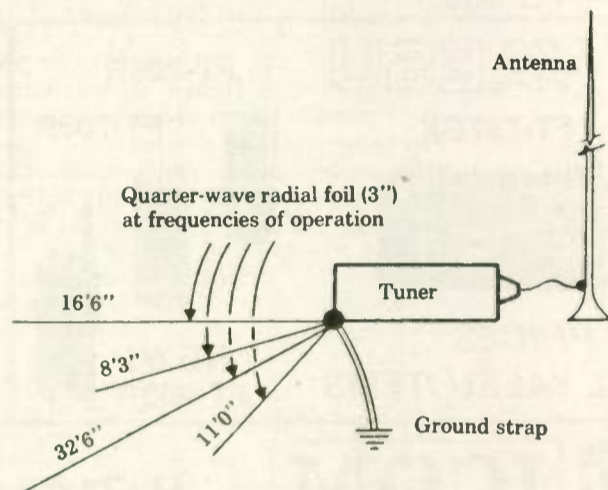
In other words, the copper 3" foil that we recommend for RF grounding purposes must be connected directly to your transceiver, directly to your antenna tuner, and directly to the braid side of your coaxial cable at the feedpoint. No substitution will work — the copper foil must be attached directly to these points.

Why copper foil?

Thin copper foil provides the greatest amount of conductivity and surface area for the dollar. Copper is third on the scale of conductivity, and makes an excellent RF ground. Copper foil that is 3" wide and annealed is quite easy to handle. With 5 mils of thinness, this



Effect of ground radials upon efficiency



Ground radial connection to tuner

copper foil is easy to maneuver between stringers in the bilge, as well as in between tight areas that will allow you to "push" the copper through from one end. Five mil copper is also strong enough to resist tearing.

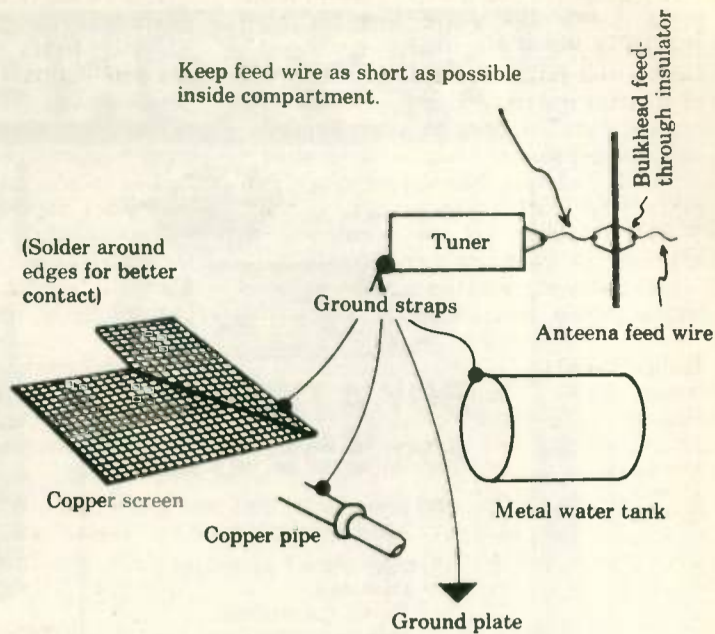
Maritime mobile grounding techniques for high frequency operation will require at least 100 square feet of surface area below the water line for a good ground counterpoise to a whip or long-wire (backstay) antenna. Now before you fall over, there are some easy ways to pick up this large amount of surface area without having to buy out your local copper foil company.

For sailboats, the encapsulated lead keel is an excellent surface area ground. Even though the lead doesn't actually contact the sea water, its capacity effect to the sea water when connected by

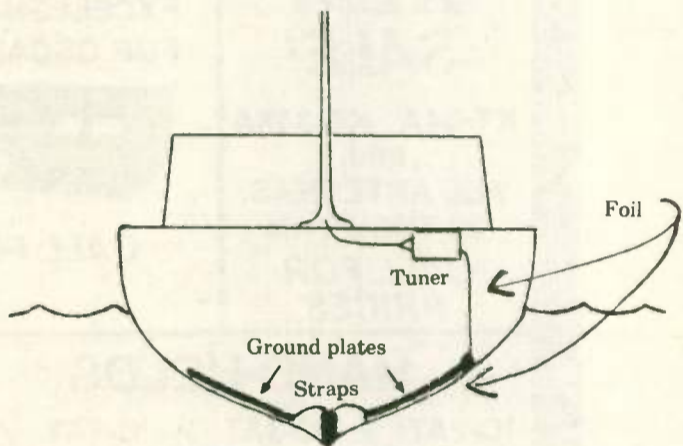
copper foil is all that is necessary for a super ground. The copper foil should go to an exposed keel bolt. If no bolt is present, you might sink a bolt into the lead keel. When you pull up some lead, secure your copper foil and then seal up the connection to prevent moisture. If you can't get at your lead keel, find a better way so you can get at it. Just because it's a little tough to get at the keel, don't give up — any other groundplane for a sailboat is less than adequate when compared to your lead keel.

If your keel is composed of lead shot mixed into fiberglass, then chances are you might as well forget it. In this case, you may need to make some grounding

Keep feed wire as short as possible inside compartment.



Ground system on fiberglass boat



considerations similar to what powerboats must use.

Powerboat owners might ground to stainless steel water tanks, or any other large amount of metal below the water line. Grabbing each through-hull by using a long run of copper foil is another good way. While each through-hull provides additional surface area of ground, that long copper run does wonders. No, grounding the through-hulls should not change your protection against galvanic corrosion. In fact, good copper foil ground techniques are recommended for both powerboats and sailboats in case of a direct lightning hit. (Perish the thought!)



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An alternative to a 100 sq. ft. ground-plane below the water line for high frequency use is the quarter-wavelength copper foil radial system. This consists of quarter-wavelength copper runs that emanate at the base of your home- or shipboard-mounted vertical antenna, or a sailboat backstay antenna at the chain plate. One-quarter wavelength, 3"-wide, 5-mil foil strips are all connected together at the coax braid.

The following lengths should be used on the popular ham bands:

Radial lengths

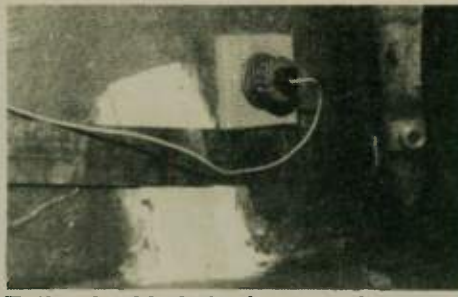
Band	Length
10 meters	8'3" (2.0 meters)
12 meters	9'3" (2.8 meters)
15 meters	11'0" (3.3 meters)
17 meters	12'9" (3.9 meters)
20 meters	16'6" (5.1 meters)
30 meters	23'0" (7.0 meters)
40 meters	32'6" (10.0 meters)
80 meters	63'0" (19.3 meters)

This tuned radial foil system is cut to quarter-wavelengths for each band. It's advisable to try and run radials out from the antenna base in as straight a line as possible. Yes, you can make some lazy double-back turns, but don't fold the copper foil back on itself.

It's also recommended to run one additional copper foil radial to a good water-contact ground, such as a through-hull or external grounding plate. This will further dissipate any stray RF that might be traveling along the radial system.

It's also recommended that each radial end be covered with fiberglass or duct tape because there is the remote chance of hot RF presenting itself at the extreme tip.

For home installations, a minimum of two quarter-wavelength ground radial systems should be employed per band. Although 5-band trap verticals usually



Foil to keel bolt for best results

specify No. 14 copper wire as a radial system, an ultra-dramatic improvement in range and a much lower angle of radiation will take place with 3"-wide copper foil strips in place of small wire radials.

If an antenna tuner is utilized to resonate a marine whip or backstay antenna, the tuner must also be foil grounded. Although you don't need quarter-wavelength ground systems, both the transceiver and the tuner should have a good ground foil run down to an underwater ground source, such as a keel bolt. From the keel bolt, one foil goes to the transceiver, another foil run goes to the tuner, and finally the last foil run goes back aft to the bottom of the chain plate that attaches to the insulator that supports your backstay system.

Copper grounding foil can eliminate the problem of feeding an antenna system with "open wire" from the tuner. Instead of using high voltage wire from the tuner, run coaxial cable (non-contaminating type RG.213-U) to keep the RF inside the cable and away from all of your other below-deck wiring.

Trying to use open wire below decks will lead to erratic tune-ups, tons of stray RF, and plenty of RF burns when you touch the metal mike. Running coax will relieve this problem, but coax only works if the antenna end of the coaxial cable braid goes into a tuned radial system, or to a good copper radial run down to an underwater groundplane.

Mobile whips run off the stern of your boat that refuse to tune up will snap into resonance immediately with a tuned radial system attached directly to their base. Even one long copper foil run from the base of a mobile whip will get it to resonate when it wouldn't before, when simply tied into your lifeline. It's quite possible to use mobile whips without a tuner for individual band operation by utilizing copper foil as the groundplane.

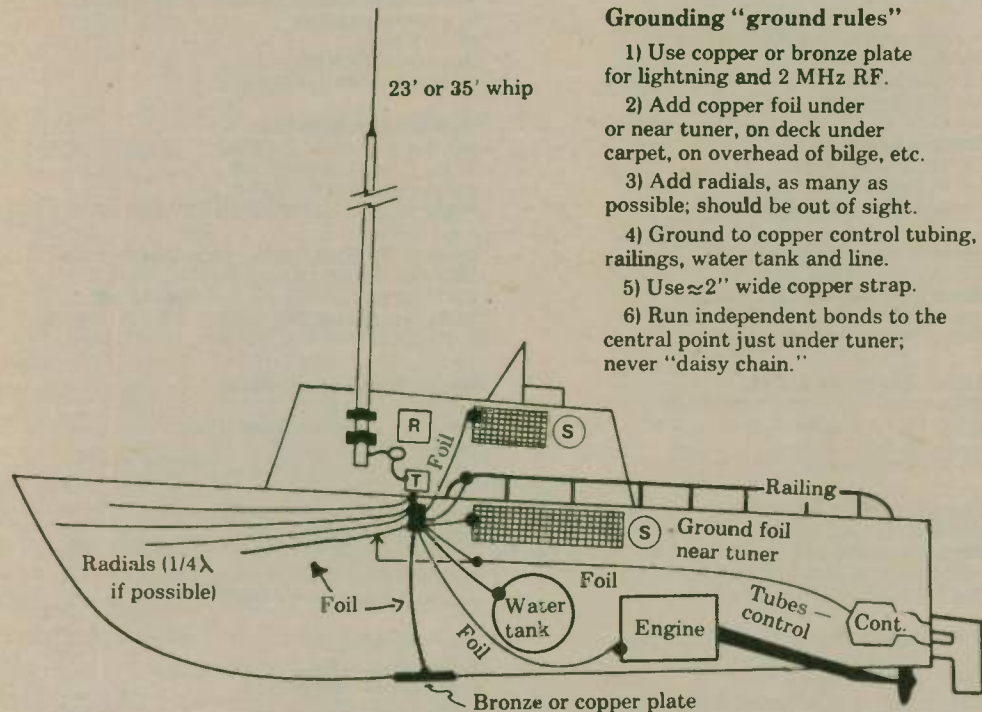
It's also possible to use the popular Spider multi-band whip with our copper (please turn to page 37)



Foil to the tuner



Foil for 80-meter radials



Grounding "ground rules"

- 1) Use copper or bronze plate for lightning and 2 MHz RF.
- 2) Add copper foil under or near tuner, on deck under carpet, on overhead of bilge, etc.
- 3) Add radials, as many as possible; should be out of sight.
- 4) Ground to copper control tubing, railings, water tank and line.
- 5) Use ≈ 2 " wide copper strap.
- 6) Run independent bonds to the central point just under tuner; never "daisy chain."

Non-metal hull grounding

The SpiderTM MaritimerTM Antenna

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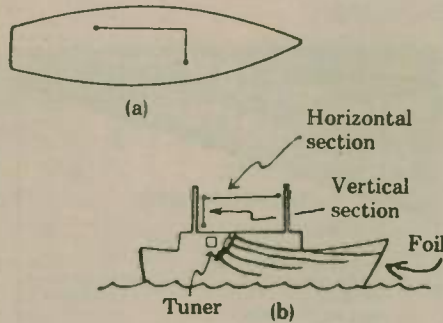


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Metroplex grows

Metroplex — a premier VHF-UHF repeater organization in the New York City, New Jersey and Connecticut area — is happy to announce that it has gone well over the 1,000 mark in membership.

According to the latest *Westlink* news release, Metroplex is believed to be "one of the largest amateur repeater clubs in the United States."

In only five years, the club has grown tremendously in membership and technical sophistication, and now boasts repeaters on 27, 145, 220 and 440 MHz, with interlinks between bands. The unique autopatch is a rarity for a densely populated area, and the repeaters have been linked to clubs in Dallas, Washington and Boston on several occasions.

Metroplex has had much national exposure, including participation in several Honeywell Telecommunications networks, and on the international front our autopatch members have had club-run two-ways with the United Kingdom, via satellite links. The official *Westlink* East Coast news outlet is via Metroplex.

Metroplex has strong ties to many of the large ham organizations, including the ARRL, and most ARRL W1 and W2-area officers are Metroplex members.

The U.S.-end of the "Grenada Connection" net was Metroplex member #842, Fred Jacobs, KC2PK.

The club has weekly on-the-air swap 'n' shop nets, an annual picnic, a Christmas party, and Field Day is always a "fun event". Metroplex monthly meetings have up-to-the-minute programs and attract members and guests statewide, nationwide and worldwide.

The inspiration for this open metropolitan forum, six years ago, was Burt Grebin, K2KLN, and Alex Magocsi, WB2MGB. Together with club volunteers, they keep this mammoth organization always on a personal and professional level.

Amateurs, worldwide, who are interested in receiving more information on this special system and a sample of the award-winning *Metroplex Newsletter*, can call (24 hours) or write: Metroplex ACA, Inc., P.O. Box 237, Leonia, NJ 07605; (201) 592-1579.



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Chaverim celebrates

The Chaverim of Delaware Valley — an organization formed to promote a closer relationship among Jewish Amateur Radio operators and their friends — held their annual buffet brunch and installation of officers on Sunday, 15 January, in downtown Philadelphia. The buffet menu consisted of a wide range of delicious traditional foods. Entertainment was provided by the Philadelphia KLEZ-MORIM. A total of 129 participants attended, including amateurs from Washington, D.C., Delaware, North and South New Jersey, and the general area of Philadelphia.

The Chaverim movement was founded in 1973 by Silent Key, Hal Crystal, K2BYB, who lived in Fords, New Jersey, until he met his tragic death in a plane crash. There are now many flourishing Chaverim groups scattered throughout the United States, Canada, South America, Europe, the Middle East and Africa.

The Chaverim of Delaware Valley has a membership of over 150 and celebrated their fifth year in existence at the brunch. Besides encouraging friendship through Amateur Radio, the local group fully equipped the Amateur Radio station in Kibbutz Sasa, Israel — the latter being issued the special commemorative call of 4X6BYB as a tribute to K2BYB. In addition to its social functions, the Chaverim of Delaware Valley conducts Amateur Radio classes, handles phone patch traffic on various nets, participates in parades, festivals, etc.

Amateurs and others interested in becoming affiliated with the Chaverim; who want more information about the organization; or who may want assistance in forming new groups, should contact Bill Soble, W3QXT (215) 676-6769; Jay Kuperman, WA3IFY (215) 289-4531; Sonny Gutin, WB2DXB (609) 853-7889, or write to the membership chairman, Sylvia Soble, W3SLF, 9357 Hoff St., Philadelphia, PA 19115. — *Bill Soble, W3QXT*

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WA6WYI 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
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Electronic Museum ARC
Foothills College, Los Altos
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(except January and December)

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets: 2nd Friday/monthly - 8:00 p.m.
Wawoha Middle School; 4524 N. Thorne; Fresno. W6TO/R 146.34/94

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Monterey Savings & Loan Public Room
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Gilroy, CA 95020
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North Hills Radio Club
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Sacramento Amateur Radio Club, Inc.
Contact: Norm Nelson, KA6YRC, (916) 428-7122
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San Fernando Valley ARC (W6SD)
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County Office of Emergency Service
1st Wednesday/monthly - 7:30 p.m. rpter 146.1373

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

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

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

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

West Valley Amateur Radio Club
American Legion Hall Post #826
5320 Fallbrook Ave.
Woodland Hills, CA
2nd Saturday/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
Net 145.19 Thur. at 8:00 p.m.

Yolo Amateur Radio Society (YARS)
Rolind Mahan, AJ6P (916) 756-8882
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 rptr.

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

Vero Beach Amateur Radio Club 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 146.28/88
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.

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.

Chicago Suburban Radio Association (CSRA)
Clyde Federal Savings & Loan Assn.
7222 West Carmak 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

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

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

INDIANA

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
146.1070 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.

MICHIGAN

The Metropolitan A.R.C.
Harper Woods City Hall
I-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

G.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

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

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

OHIO

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

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

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: —
146.1070; 144.55/145.15; 449.8/444.8; 223.10/224.70

OREGON

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

SOUTH CAROLINA

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

TEXAS

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

VIRGINIA

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

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.



Here are the members of the first Novice class to graduate from the Zephyrhills (Florida) ARC emergency communications station, which was set up in the town's fire station late last year. (See January 1984 *Worldradio*, page 16.) Left to right: "Ski" Karpinski, WB4AOG, instructor; Bill Putnam, KB4JQH (oldest — age 74); Richard Debell, KB4JQF; Mark Purvis, KB4JQB (youngest — age 14); Claud Coon, KA8IJY, assistant instructor; Dennis Davis, KB4JQE; Al Jump, KB4JQC; and Jim Coleman, WD4MVF, club president. Not shown in picture: Al Jump's XYL, KB4JQD, and Harry Metcalf, KB4JQG.



This is the first and only known photo taken of the Willapa Harbor Radio Group of Pacific County, Washington, taken by Paul Bale at the December 1983 meeting. Seated in the front row, left to right, are: Lee Phillips, N7EDW; Pete Lapinski, W7BMB; Clare Blackman, W7URK; Ken Hollingsworth, WB7UEB. Back row, left to right: Ken Bale, W7VCB; Phil Shults; Bob Johnsen, WB7CDU; Rich Jouper; and Cal Bogar, N7DLJ.

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82 years a ham

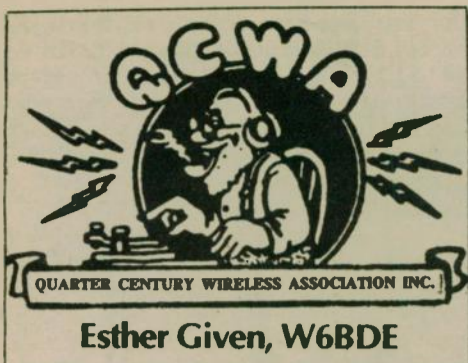
Art Ericson, W1NF, of Beverly, Massachusetts, has reached a milestone many amateurs might envy. As of April 1984, he has been an Amateur Radio operator 82 years. He turned 90 on 20 June, and recently won first place in antique gear at the North Shore Repeater Club. □

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The Quarter Century Wireless Association is pleased to announce the 1983 award winners and a new award category.

QCWA Hall of Fame

Donald C. Wallace, W6AM, has been selected as a member who has made a substantial, continuing contribution of outstanding nature to QCWA, Amateur Radio in general and in matters affecting communications which benefit the general public. Don was issued the call and license 6OC in 1912 when he was 14. The following year he passed his 2nd class operator's exam, went to sea on a coastal run during summer vacation, and obtained a 1st class ticket before he was 16.

Proficient in both International and American Morse Codes, he enlisted in the U.S. Navy in WWI and gained rank of Chief Petty Officer by his 19th birthday. His final Naval assignment was chief operator aboard the *USS George Washington*, President Wilson's yacht which not only transported the president to France but handled the traffic between the Peace Treaty Conference in Versailles and the U.S. State Department in Washington.

In 1923, Don was awarded the Hoover Cup for the best Amateur Radio station in the United States. The following year, QST honored him with a "Who's Who in Amateur Wireless?" write-up.

Following graduation from college, Don spent his business life in radio sales and factory representation in 12 western states. During that time, he developed over 100 improvements produced and utilized by various radio industries. An avid DX'er, he has held top honors in more than 60 DX contests in his 72 years on the air. Don's QTH is Palos Verdes, California.

QCWA Member of the Year

Elbert V. Gunn, W5FU, was voted QCWA member of the year. He was nominated by the Tulsa, Oklahoma Chapter #15, which he organized in 1962. Licensed in 1922, Bert has held 5FS and 5ZZA; the latter call was issued in 1928 as a portable call so he could broadcast while traveling. He formed the Tulsa

Amateur Radio Club in 1929 and was an early member of "Imperial Brass Pounders."

During WW II, Bert taught meteorology in the Air Force. Shortly after organizing the Tulsa QCWA chapter in 1962, he started a QCWA On-The-Air Meeting, which he has conducted for 22 years with dignity and good humor. His devotion to QCWA and dedication to Amateur Radio have been evidenced in his ability to accept and carry out duties and responsibilities.

John DiBlasi Award

Hal Sears, W5NC, is the first recipient of the newly established award honoring QCWA's first president, John DiBlasi, W2FX. Hal was first licensed in 1921 as 9CVP. He worked as a commercial marine operator in the late '20's and in aeronautical radio in the early '30's. He became interested in geophysical/seismic exploration prior to WWII, and at the outset of the war formed his own instrument company based in Houston, Texas, where he still resides.

Hal was elected to the QCWA Board of Directors in 1969 and served as international vice president 1977-1979. He will retire from the board at the end of his 1984 term.

As chairman of the QCWA Awards Committee for several years, he felt strongly that QCWA should give an annual award in the name of its co-founder and first president. Taking advantage of Hal's momentary absence from the board room in April, the Select Committee voted unanimously to recommend that Hal be honored as the first recipient of the award he sponsored with such intense dedication.

QCWA QSO Party

Top scoring members in the recent QCWA QSO Party were Jeff Balivier, K1IU, whose 402 CW contacts put him in first place. Earl Reichmann, W8NBK, and Jim Bobo, W5ODD, ranked second and third. SSB honors went to John Zwaska, W4WKO, who logged 376 contacts and runners-up were Bill Branch, K9CLO, and Herb Gleed, W6FQ. CW logs were submitted by 146 QCWA members representing 63 chapters. SSB logs totaled 138 from members in 66 chapters. A review of log entries indicated that 111 QCWA chapters had at least one member participating in the 1984 QSO Party.

QCWA Director Ethel Smith, K4LMB, was presented with the Dayton Hamfest's coveted "Special Achievement



QCWA National President, Stuart Meyer, W2GHK, visited Southern California recently and helped QCWA Chapter #7 hand out prestigious certificates to three whose hamming adds up to 160 years. Left to right: William Robinson, K6HLR, and Ted Sharp, K6UYK; each were honored for 50 years in hamdom, while Oka Stewart, W6CAR, received his award for 60. Stu Meyer, W2GHK, shared the ceremony with Moe Joffe, W6PHE, president of the chapter whose members live in the large area in and surrounding Los Angeles. Stu also entertained the luncheon meeting with a slide program on the history of two-way radio. (Photo by Bob Jensen, W6VGQ)

Award," recognizing her many years of contribution and outstanding service to Amateur Radio. Ethel has organized, headed or served on numerous committees at the local, national and international levels concerning Amateur Radio interests and promotion. She has served QCWA as secretary (1977-81), general manager (1974-76), and director (1981 to present). In addition, Ethel is the "spark" that kindled both YLRL in 1939 and QCWA in 1979.

Northern Virginia Chapter #91 voted unanimously to change its name to the

"Vic Clark Chapter," honoring W4KFC, a recent Silent Key, who was a founder, charter member and active supporter of the chapter.

The Upper Midwest Chapter #8 of QCWA reports that 36 members and two guests braved a minus-26 degree temperature with an accompanying wind chill factor plunging comfort to minus-86 degrees, to show up for a meeting in Minneapolis in January. The program must have promised a few hot numbers or a heated debate to elicit such a turnout against such odds. □

Society of Wireless Pioneers NET SCHEDULES

Net name	Day	Time	TZ	Freq.	NCS	ANCS
Trans-Continental (Oscar Harrison)	Thu	1000	E	14115	W4IKU-Sy	W1HRQ-Hank
Trans-Continental II	Tue	1000	E	14115	W1HRQ-Hank	K4NP-Vic
Trans-Pacific	Thu	2100	P	14010		W6EB-Elmer
VK3DGC Net	Daily	0700	Z	14055	PA0GL	
Pickerill	Mon	0900	E	3670	W3FYD-Jack	W2ZI/K2IC
	(FM)* Mon	1000	E	146.970	W2EEQ-Russ	(Mt. Beacon)
				145.135	W2EEQ-Russ	(Carmel) (Alt.)
	Sat (SSB) Sun	1000 1345	E E	7040 7260	K2IC-Earl K2IC-Earl	W3FYD/W1HRQ W1HRQ-Hank
Southeastern	Sun	1400	E	7055	K4TF-Bill	K4HDV-Dan
Richard Johnstone (No. So.)	Thu	2000	P	3555	**	
	Fri	1530	P	7084	W6KHA-Ernie	
Happy Hour (No. Calif.) (SSB) (So. Calif.)	Mon-Fri	1700	P	3947.5	W6OFL-Holgy	W6BFU-George
	Mon-Fri	1630	P	3947.5		K6AAQ-Robbie
Yankee	Sat	1000	E	7040	K2IC-Earl	
Capital	Sat	0900	E	7045	W4NH-Em	W4HU
	(SSB) Tue	1000	E	7243	W4NH-Em	
Jack Binns	Tue	2000	P	3555	VE7CHE-Ted	WA7CJV-Viggo
Inland Seas	Mon	1900	C	7048	W8TP-Ted	WA8HGH-Larry
		2000	C	3565	W8TP-Ted	WA8HGH-Larry
Central Gulf	Wed	0930	C	7048	W5SIW-Cy	W5SIW-Cy
		1900	C	3555	N6SL-Ben	
Swiss (Edelweiss)	Sun	1015	L***	7027	HB9XJ-Hans	HB9BYO-Harald
Gonzales	Wed	2030	P	3520	VE7DBJ-Dave	VE7ZH-Len

*Don Masten Memorial Net

**Rotating weekly NCS with W6BNB-Bob, N6FZE-Pete, and K6ZUR-Chuck

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Slow speed traffic net

John Harley, KT6D

The Southern California Net, second session (SCN2), is a slow speed National Traffic System net that meets daily at 8:15 p.m. PST or PDT on 3598 kHz to handle formal written traffic.

The net's primary purpose is to function as a CW traffic handling training net for SCN1 which meets on the same frequency at 7:00 p.m. The net speed is kept below 15 wpm, and anyone who checks in will always be answered at his or her sending speed, no matter how slow. We won't scare you away with a torrent of "Q" signals. Once the net is opened, you will rarely hear more than seven "Q" signals: QNC, QNI, QNX, QRU, QSP, QSY and QTC.

When the net control station (NCS) calls for check-ins, send a couple of letters from your call sign. When the NCS repeats those letters, give your full call sign. The NCS will then ask you for your name, QTH, and if you have any traffic. Don't worry about procedures after that. We'll take care of you, and you will simply learn as you go along.

If you have always wanted to check into a CW traffic net, but are not a speed demon and don't care to memorize columns of "Q" signals, or if you are just looking for a place to get a message to your friend in Cleveland some evening, this is it. We will make you feel welcome.

You would like to join us, but don't have room for an 80-meter antenna? Hogwash. My 80-meter antenna is a 30 ft.-long random wire. That's less than one-tenth of a wavelength. At its greatest height, it is only 9 feet above the ground!

It doesn't work DX, it isn't breaking anyone's eardrums and — as far as I know — it isn't causing TVI, but it works Southern California and that's all that it is intended to do. It's fed through MFJ's cheapest tuner, the 900, and runs through a hole in an aluminum screen, hangs over a tree branch, and the far end is tied down about 2 feet away from a chain link fence.

See you on SCN2. □

New Shriner net

Harold King, WA6IUI
BARC Communications Director

Ben Ali Shrine BASCO DAY — at the Woodlake Inn, Sacramento, California — was the setting for unexpected events that led to the opening of the 218th Ben Ali Radio Club Saturday Morning Net on 7265 kHz, 1000 hours local time.

As Les Turner, W7BKQ, was about to start the net — much to the surprise of the Nobles, members and participants in California, Washington, Oregon and Arizona — they were greeted by the Illustrious Potentate of the Ben Ali Shrine, Bruce Hart, via Amateur Radio.

This "Shrine first" for the club was made possible thanks to those who made it work: Dick Turner, KA6AGZ; Bill Randall, N6HSN; Gene Ertel, KB6CAK; and the Potentate Bruce Hart at the Woodlake Inn with 2-meter equipment and the WB6CUN repeater (146.025/.625), along with Harold King, WA6IUI, operating the 2-meter/40-meter link-up and Les Turner, W7BKQ, as net host for this very rewarding event.

The Ben Ali Radio Club has been active for more than four years. The 7265 kHz Saturday morning net has been

hosted by Russ Bennett, W6DTJ, for more than 150 of the 218 times on the air.

The group is comprised of members of Ben Ali Shrine, along with several other Shrine Temple members within the western area. It has, as its goals, good fellowship and the furtherance of communications assistance for the parents and loved ones of the crippled children and burn patients in the many Shrine hospitals.

We welcome any amateur who wishes to participate and help us in our goals. □

WV repeater news

Ted Wolfe, WD4KHL

Two repeaters are now operating at St. Mary's/Ben's Run — one 2-meter, the other 6-meter. The 2-meter machine with the WB8ECC call is on 147.63/03, while the 6-meter machine has the WD8RGT call and is on 52.170/53.170. Both are sponsored by the Northwestern West Virginia Amateur Radio Association (VWWWARA). Another repeater now in operation is the W8PZT machine, on 144.79/145.39 at Weston.

Proposed new repeaters, their cities, calls and frequencies are: Huntington

(for Tri-State area RTTY use) WB8FEQ on 144.61/145.21; and Liberty, K8SLI on 144.81/145.41. The Putnam Amateur Radio Association (PARA) proposes to link the Liberty repeater with the Association's existing K8SLI 147.87/27 machine at Scott Depot.

Terry North, WB8IFS, whose call is now on his 146.22/82 repeater in Charleston, recently moved the transmitter to his South Hills home location. The receiver remains on Coal Branch Heights. Terry plans to add a second receiver at the old transmitter site on Bee Mountain near Marmet. □



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He's a ham, thanks to cochlear implant

Joe Rice, W4RHZ

This is the story of an Amateur Radio operator who persevered in his endeavor to hold onto his Amateur Radio license and continue to communicate with other humans.

His name is Larry Clements, and he presently holds the call sign N4FXU, which he obtained even though he could not hear a sound without a modern operation called a *cochlear implant*. More on this new technique in a moment.

Larry was first licensed during World War II in 1943. This license was then called "Class B" and is now called a General Class license. "However," said Larry, "my license was void at that time because of FCC order #77 which stated that no Amateur Radio operation would be permitted for the duration of the war."

"In 1946, I was issued W8YJF in Wayne, Michigan, and in 1947 I passed the "Class A", which is now the Advanced license. I also passed the FCC exam for 1st telephone license in 1954. That year, I came to Ludlow, Kentucky with a new ticket of K4CDJ. Because of a job offer in Inkster, Michigan, I returned to Michigan and got the call W8GHB. In 1966, I returned to Ludlow, Kentucky, where we now live."

Larry then told me "... in 1975 a broken stick for a garden row marker struck me on the right ear, and that seemed to end all my radio activity and other human communications." He continued with, "After letting my license expire in 1979, I heard of a new operation called the 'cochlear implant' that would restore a measure of hearing."

After applying and several rugged tests, he said, "I was accepted as a candidate for a new series of hearing tests." The date was set for the operation at Los Angeles, California in 1979,

and Larry said, "They sent me round-trip tickets but I got cold feet and did not go for the operation."

"The doctors asked me to reconsider in August of 1980 and in November 1980 I underwent surgery for the new implant," he said.

With the new implant, Larry found he could hear code because it was a single frequency. He still cannot hear the human voice with all its overtones and harmonics, but Larry feels he has helped all of mankind by submitting to the new surgery.

He passed the 13 wpm with the FCC in October 1981 and obtained his present call of N4FXU.



Larry Clements, N4FXU (Photo by Joe Munson, WA4VAG, Kentucky Post staff photographer)

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All of the preceding had transpired before I met Larry, and here are my own personal reactions as I saw them.

Larry has always been one of those public spirited persons, and his greatest delight in the past has been his memories of the phone patches he ran during the Korean crisis to folks back home in the "states." A national magazine had a two-page spread of his activities in their February issue of 1951.

Larry was nearing 70 years of age when I met him. He is a short, outgoing man, with a big grin, a loud voice and an engaging manner. He had been totally deaf for almost seven years.

He showed me some information on a recent surgical operation he had undergone and a picture of a new piece of apparatus called a cochlear implant. He would get all worked up about this, and he talked about it in an ecstatic way. He told me, "I feel like I'm isolated from the world as I cannot even hear the wind blowing, much less speech and other sounds." He also said, "... this gadget has taken me out of the silent world and I feel like I'm being brought back from the dead."

If you look closely at the right-hand frame of his glasses, you will see an object about as large as a nickel. This is not an ordinary hearing aid. It is the primary coil of a special transformer; the secondary is implanted inside his head, and the two wires are attached to the fine hair-nerves which convert acoustical energy into electrical impulses, which our brain converts into the sensation of sound.

When Larry was here, I tried to see if he could hear code — and he could not. I next tried to see if he could read a blinking light, with the same negative results. I then tried to see if a buzzer attached to his arm would register, but he said he could not distinguish a dot from a dash. We left it at that, and he went back to the hospital in Indiana for further checks and to complete one of the first implants in the nation.

In the interim, he registered with a

group of people in Cincinnati who were dedicated to helping people with handicaps. Their name was listed in the phone book as Christian Reading Service. They installed a teletype machine in Larry's home; if he wished to talk to me, he would call them and a girl would answer, and he would tell her what he wished. She would telephone me and I would answer verbally and she, in turn, typed out my words so Larry would understand. This was a limited method of communication, but it did suffice for the moment.

I did not hear from Larry until after the operation. He still could not hear words with all their overtones, but he could tell when a person began or stopped speaking.

I worked in broadcasting and sound work, and I have found that a general knowledge of the human hearing mechanism is essential to a better understanding of radio.

I must say that even with the proliferation of communications media such as the printed page, TV, radio, AM and FM with stereo, and recently with computers, we still suffer from lack of understanding between ourselves. Sometimes I think we should educate the "heart" instead of the "head"!

A wag once said, "We can talk all over the universe in an instant, but we still have trouble making the last two feet!"

We have all heard of artificial hearts and other human organs such as kidneys, but few are aware of the tremendous strides in vital functions such as seeing and hearing. In the not-too-distant future, mankind will be able to have a medical eyesight system, and at the present level of technology, we do have the means to convert sound waves into electrical bits of information and implant these within the human hearing mechanism. The electronic expertise that Larry has is helpful to doctors because he can explain the workings and effects on him in words they can understand.

Basically, the cochlear implant picks up sound waves by a tiny mike inserted

inside the ear lobe, and this is fed into an external amplifier. The output of this amplifier is fed back into the ear by the induction process. A minor operation is done beforehand to install a secondary coil just above the external ear and inside the skull, and then a thin pair of wires is run to the liquid inside the ear to which the hair-like nerves convert acoustic energy into electrical impulses, which are detected in the brain.

There is a sort of technical breakthrough at this point because Larry said the doctors have found that a frequency of about 16 kHz is modulated by the ordinary audio sounds, adding to the intelligence absorbed by the inner ear.

Before the operation, Larry had arranged ordinary light bulbs throughout his home to indicate whether the telephone or doorbell was ringing. He can tell the difference between the phone and doorbell by the duration and pulsing of the light. The telephone has a 40-cycle pulse which he can see, and the doorbell is a steady light. He could also hear the phone ring on the other end after he had dialed, but he could not hear the other person answer. He could talk to you, however, and he phrased his questions in such a way that you can answer either yes or no by tapping a pencil on the phone mouthpiece.

There are many ways of producing, recording, transmitting and reproducing

sound waves, but we have only one means of making them affect us — that is, through the human ear and associated nerve systems. As the ear is the one common element in any sound system, and since much of the design of our radio and audio systems and equipment is influenced greatly by the characteristics of the ear, we should learn some of the elementary things about its action.

When we become familiar with its remarkable construction and action, we cannot help but cease to regard it merely as a decorative flap presented to us by nature. We see it as a highly sensitive mechanism rivaling any man-made piece of delicate machinery for ingenuity of construction.

Larry's hearing was evaluated, and it was found that he was totally deaf in one ear and suffers a loss of 85dB in the remaining ear. This is the threshold loss where the device will presently work. The cochlear implant system is just the beginning, and it is felt that more cooperation between the electronic sciences and the medical profession will enable a better understanding of the human hearing system.

It was quite a thrill for me to have a CW QSO with N4FXU the other day and to realize the determination of the man to advance medical knowledge while helping himself. In reality, Larry is helping all of us. □

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MARITIME

(continued from page 31)

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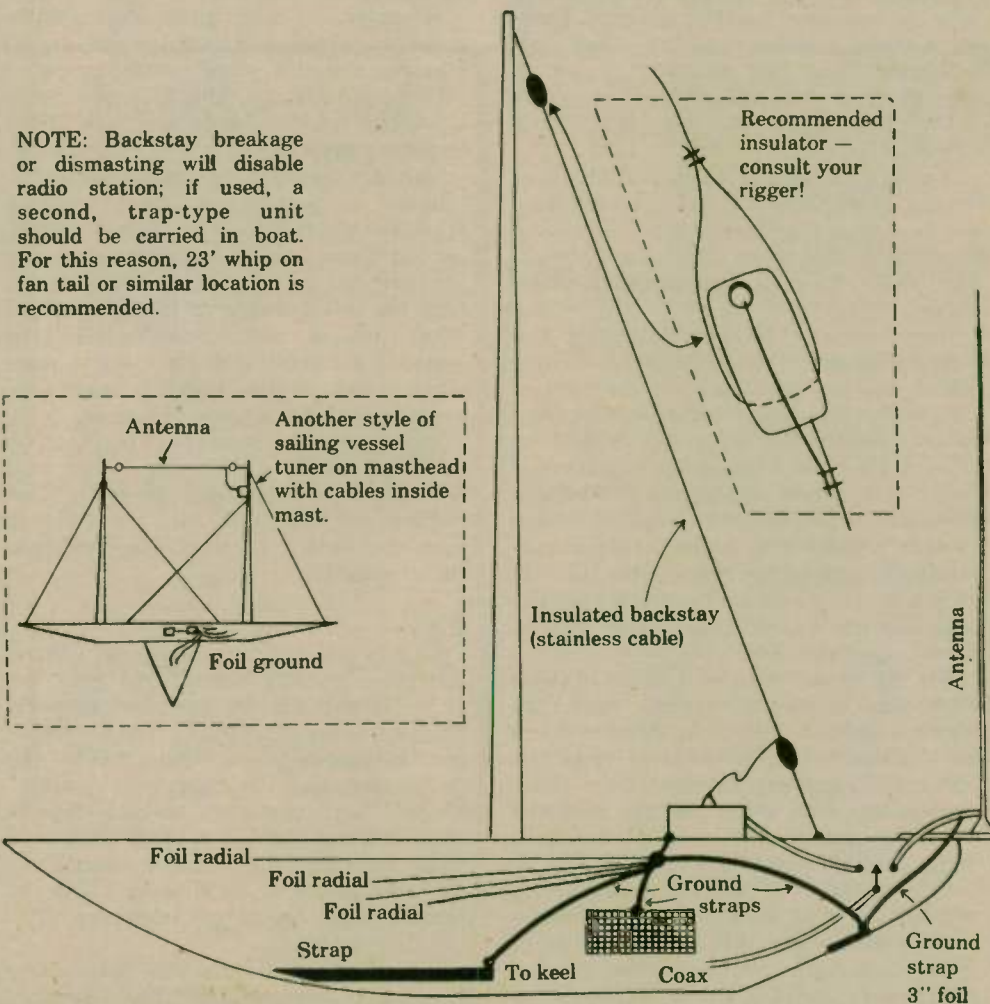
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Poor propagation

High-frequency communication is not like the telephone most of the time. Once in a while you can call up a net and everybody can hear everybody else as though you were all seated in somebody's living room, but most of the time it's not that way.

Radio signals have to surmount many obstacles on their way from transmitter to receiver, so it shouldn't be surprising if we encounter some difficulties most of the time, and real impossibilities sometimes.

Signals have to pass through the various layers of the ionosphere, each of which has its peculiarities, determined by time of day, solar radiation, thunderstorms and the Earth's magnetic field.

In some cases, ionization reflects signals and makes long-distance contacts possible; in other cases, ionized layers absorb signals and make long-distance contacts impossible. Sometimes there is skip when only signals from more distant stations are heard, those from nearby ones being inaudible.

Finally, there are other sources of radio frequency energy competing with the signals we are trying to hear, other users of the spectrum, noise from electrical machinery, and natural noise from thunderstorms. Add them all up, and the result is some trouble most of the time, impossibility some of the time.

Sometimes it's really impossible — nobody can hear anyone else. But usually a little know-how makes it possible to clear most of a net's traffic. Casual ragchewers and DX'ers aren't bothered to the same extent, as they can wait until another day. But traffic nets try to meet every day.

When conditions are bad, often it's the competence of the net control operator that determines success or failure. Ability to recognize conditions and to adapt to them, an understanding of what is happening and what can be expected to happen as things progress, a knowledge of who can hear whom, and the ability to make clear decisions and to see that they are carried out — all these things are needed when conditions are marginal.

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net control operator's job much easier, however. They will understand what is being done and will be able to clear the traffic when others can't.

Here are some tricks of the trade that help you get through when the going is rough:

QSY

Sometimes a change in frequency will do the job. It's hard to move a whole net to another band, but it can be done and sometimes is. Usually, such a move improves propagation for some but worsens it for others, and late arrivals may not be able to find you if you aren't on the regular frequency.

However, it's easier to slide up or down a bit to avoid a particular interfering station, and it's often better to do so rather than ask the other to move. Some of those guys don't seem to have receivers anyway!

The net control operator should be mindful of conditions when sending stations off frequency to clear traffic, should know which frequencies nearby are occupied by other nets, which band is best for the distance to be covered and what license restrictions affect the stations involved. Usually there is more elbow room in the band segments reserved for higher classes of license.

The stations themselves, when sent off to clear traffic, should remember that normally the directions given by net control are only nominal. They should find the best spot available and pass their traffic there.

QNV

This is a signal that many net control operators on CW hesitate to give, because it will not be executed properly anyway. It means, "Make contact on the net frequency first, then go to the designated spot to clear your traffic." Usually both operators will go immediately without making contact first, then come back in two or three minutes to say, "No contact." Or else one will try to make contact on the net frequency while the other goes off.

Finally, when the one who did observe the signal realizes what has happened and goes to the designated frequency, the other returns to the net and reports, "No contact."

QNV is a handy procedure when conditions are bad; it enables both stations to be sure they can hear each other, and if not, allows net control either to assign a relay station to go with them, or to send them to a band more likely to allow them

to make contact. And sometimes a net control operator will use QNV to tell an operator he can hear to call another who does not read net control, and move the latter to another frequency to clear traffic. Properly used, it can expedite matters, but misapplied it can confound confusion.

Relay stations

Sometimes the best way to clear traffic is to assign a station that the two operators can hear well to act as relay between them. QNB is the signal used on CW nets.

When conditions are marginal, all that the relay station has to do is copy along so as to provide the receiving station with any needed fills. It goes faster when this can be done. But when things are really bad, it will be necessary for the relaying operator to copy the message, give receipt for it, and then send it in its entirety to the receiving station.

This takes time, of course, but not nearly as much time as it would for two weak stations to clear it, if they could do it at all. And more important, good strong signals greatly reduce the chance of error.

Handling on net frequency

Sometimes the best course of action is to handle all the traffic right on the net frequency. When the load is light this is often the best way, as it avoids occupying additional frequencies, leaving them for other amateurs to use. During contests, this could be the only way to get through, perhaps with the help of all the net stations copying along to provide fills if needed.

Deputy net control

Some nets — notably those on 20 and 15 meters, and many MARS nets — use deputy net control stations as a matter of course. At the beginning of the net, the regular net control designates a station to act as deputy, a station which the net control operator can copy reliably, and which is located so as to be able to hear areas which are out of reach from the net control station. At suitable

times, the net control will ask the deputy to make net calls to pick up stations who otherwise would be unable to check in. The deputy will relay whenever net control needs the help.

On MARS nets, the deputy is expected to keep as complete a log as net control, so as to be able to take complete control in case the regular net control should go off the air, and the regular net control checks with the deputy to see whether the latter needs any fills, particularly after the initial check-ins have been taken.

Perhaps more use could be made of this system on the lower-frequency bands when conditions warrant. Or it could be done on a less formal basis, with net control asking a strategically located station to relay when it appears necessary.

QPC


Kurt Meyers, W8IQ, introduced a new Q signal on the Hit and Bounce Net some years ago, whose use has spread to other nets in the Eastern United States.

QPC means "Please put out a few net calls for me." It's handy when you have skip or noise problems, and sometimes it can come in handy when you want to go get a refill of your coffee cup too. Of course, you don't have to use Q signals on voice nets, you can say it with words.

CW

And on voice nets, when conditions get rough, there's always the possibility to bear in mind that switching to CW can make the task easier, as you can often get good copy on a CW signal where a voice signal from the same station would be inaudible. Of course, you have to be a bit circumspect in making the suggestion; you don't want to embarrass anyone by extracting a confession that "My code is so rusty, I wouldn't dare try it."

However you manage it, it's a good idea to know how to operate under difficult conditions, because the time may come when it would be a matter of life and death. Emergencies don't always happen on good days. □



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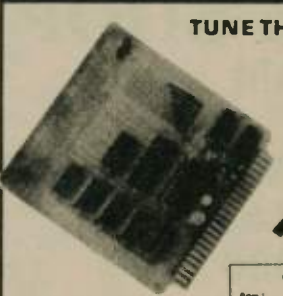
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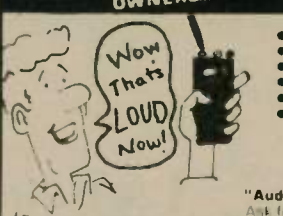


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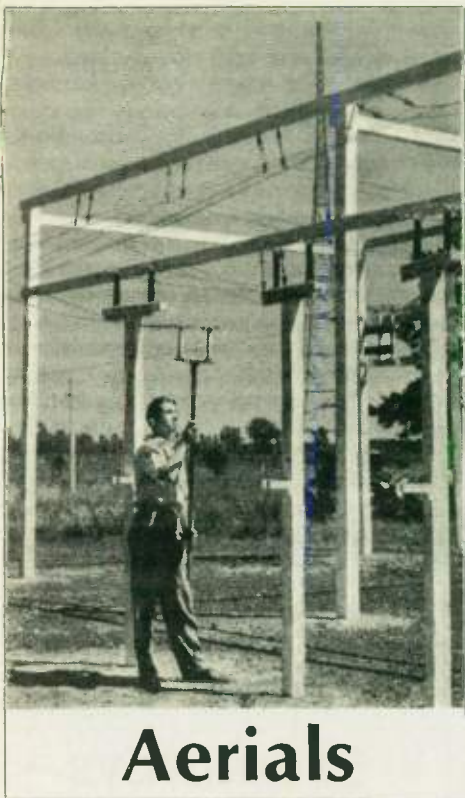
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Aerials

Kurt N. Sterba

Never give up. Fight on, fight on. Rod Elliot, VE3IRF, of Mississauga, Ontario, lives at a QTH where "no antennas are permitted." In the past 13 months with a barefoot FT-102, he has worked 130 countries (89 confirmed) using only indoor dipoles! That shows what can be done.

Last month we promised you something special and so, true to our word, here it is.

Quite often when a master of ceremonies is presenting a speaker, he uses the phrase, "A man who needs no introduction." Then the MC goes on for 10 minutes or so giving an introduction. So, we'll try to keep ours short.

Walt Maxwell, W2DU, has a B.S. degree and for 20 years was in charge of the RCA Space Center Antenna Laboratory. More than 50 of the Earth-orbiting spacecraft have antennas designed solely by Walt Maxwell. We could go on at great length about his accomplishments, but this is not "Who's Who".

At the Dayton Hamvention, Maxwell handed out a sheet titled "Dispelling Misconceptions Concerning Reflected Power and SWR." In slightly shortened version, here it is:

For the radio amateur, there is probably no topic more fraught with misconceptions than that of feedline mismatch at the antenna. The most serious misconception is that all power reflected at the mismatch is lost, and therefore a 1:1 SWR is essential to prevent a substantial loss of radiated power. Those who hold this erroneous view are unaware that, except for that lost due to feedline attenuation, all power entering the feedline is eventually absorbed by the antenna and radiated, regardless of the SWR.

They are also unaware that when feedline attenuation is low (as it usually is in typical amateur installations), the amount of power lost in feedline attenuation is so small, even with moderate to high SWR, that the difference in the power radiated compared to that with 1:1 SWR is too small to be discerned by the receiving station.

As will be explained, the only exception to these statements involves rigs having solid-state output connected directly to the feedline.

Thus the question arises: How does the power reflected by the feedline-antenna

mismatch ultimately become absorbed by the antenna? With most solid-state rigs it doesn't, unless an antenna tuner is used. With tube rigs, the reflected power is conserved by re-reflection at the source... at the input of the final tank circuit; or at the input of the antenna tuner, if one is used; or at the stub, if stub-matching is used. By re-reflection when reaching the source (or the antenna tuner, or stub), the power reflected at the antenna mismatch adds to the source power, which explains why forward power on a mismatched line exceeds the source power by the amount of the reflected power.

If we consider an ideal, lossless line when the enlarged forward power reaches the antenna mismatch, and the reflected power is subtracted from the forward power, the remainder (which is absorbed in the load) equals the source power exactly. In real life, the line does have attenuation, so in addition to the attenuation of the forward power, the reflected power is also attenuated in the same proportion during its return. The result is an increase in power loss as the reflected power increases.

As an example, assume an 80-meter antenna fed by 100 feet of RG/8-U with a 5:1 SWR. At 4.0 MHz, the line has a matched attenuation of 0.32dB. Follow the SWR=5 line upward to where it intersects the $a=.32dB$ curve. Now go horizontally to the right-hand scale and read .77dB for the total attenuation. Subtracting .32dB, we find the increase in loss caused by the 5:1 SWR to be only 0.45dB — too small to be discerned by the receiving station. If an open-wire line were used instead of RG/8-U, the total loss would be only 0.07dB.

Now for a few words concerning the function of the antenna tuner and the final pi-network tank circuit. Both are matching units that provide a conjugate match for the entire feedline-antenna system. With the tube rigs, the pi-network tank alone can provide the match up to whatever SWR level the same plate-current dip level can be obtained with a 50-ohm dummy load. If a proper plate current dip cannot be obtained, an antenna tuner or external matching network is needed.

In this case, the tube rig is adjusted for optimum output into a 50-ohm dummy load, and the antenna tuner is then adjusted to present 50 ohms of resistance at its input (by tuning for zero reflected power at the input). In the first case, the tube tank circuit alone provides the conjugate match between the input impedance of the feedline and the optimum load resistance desired by the tubes. When the antenna tuner is used, the tuner provides the conjugate match between the input impedance of the feedline and the desired 50-ohm resistive load impedance at the tuner input.

How does the antenna tuner achieve the conjugate match? First, the 50-ohm matching point is at the input terminals of the tuner. Adjusted to provide this 50-ohm input impedance, the tuner-circuit elements produce a cancelling reflection at the matching point which has the same magnitude (*but opposite phase*) as the reflection arriving from the antenna mismatch. The wave action that results from combining these two equal and opposite reflected waves causes total re-reflection of the voltage and current of both reflected waves, and brings them into 0 degrees phase relation with the source voltage and current. Result: total addition of all reflected power to the source power at the matching point.

Identical action also occurs in the pi-network tank when tuned for proper plate current dip. Here too, the matching point occurs at the input terminals of the

network, and identical reflections and wave actions occur in stub matching.

An important point to remember concerning conjugate matching is that once the match is achieved by correct adjustments of the tuner, pi-network or stub, *the entire system is made resonant... all reactances in the system are cancelled... the net reactance is ZERO!* By conjugate matching, the reactance of an antenna operating off resonance is cancelled at the feedpoint, and the antenna draws current as if it were resonant, because *now it is resonant!*

So when someone tells you an antenna tuner cannot tune your off-resonant antenna to resonance, you can explain to him how it *does!* In addition, by obtaining a conjugate match at the antenna tuner, a conjugate match is inherently obtained at any other junction in the system where a mismatch existed prior to obtaining the match with the tuner (see footnotes 1 and 2).

The complex impedance appearing at any point on the line can be determined by applying Ohm's law to the resultants of voltage and current appearing at that point.

Note that the reactive components of the line-input impedance disappear only when the phase relationship between the resultant voltage and current is 0 or 180 degrees, which occurs at quarter-wave-length intervals along the line.

Although it is not true, some amateurs believe there are two sides to the reflected power "problem", and that the controversy will never be satisfactorily resolved.

Ironically, there is no such controversy among authors of graduate-level engineering textbooks on electromagnetic theory, or among professional specialists working with propagation of fields and waves on lines and in space. Unfortunately, the wrong side is often fueled by erroneous statements published by inadequately informed writers, with the result that a wide range of misconceptions concerning transmission line techniques and antenna theory prevail among many amateurs.

The QST articles listed here were written to identify the fallacious reasoning behind these misconceptions and to clarify them by quoting pertinent facts directly from engineering textbooks. The credibility of the statements in these articles is ensured by numerous bibliographical references to the professional literature on nearly every topic clouded with confusion. The seven-part series "Another Look At Reflections" alone has 64 references, most of them to engineering texts. It is my hope that these references and my lectures will shed some light on the subject I believe is in need of much enlightenment. And by the way, the ARRL Antenna Book is a superb "lighthouse".

1. Everitt, "Communication Engineer", 2nd Ed. McGraw-Hill, pp. 132-139
2. Everitt & Anner, "Communication Engineer", 3rd Ed. McG/Hill, pp. 330-339

Did we present Maxwell's paper because it agrees with what we have been preaching for lo, these many months (in

the face of much argument)? No. We printed it because it is what a highly qualified and eminent authority knows to be true. To argue against the facts is futile.

Next month we'll have a few pithy comments from our new associate, Bruce A. Ray. You'll find them of interest.

(This intrepid triumvirate seeks in the manner of Diogenes. Not even the hallowed journals of New England will be spared the lance, as you will see in the upcoming episode.) □

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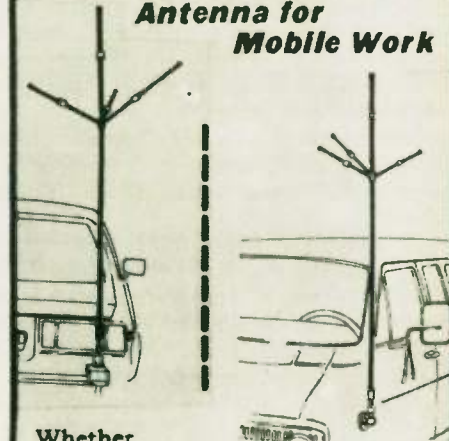
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The following article appeared in the March 1984 edition of the 7th Signal Command Western Area MARS Bulletin. The article was prepared by Ben Scammell, AA9EB/KB7HW.

Getting to know you

An Arizona MARS member we all know affectionately as "Bun", is really Leavenworth Wheeler Jr., AAR9EV. The "Jr." is not normally used but has significance due to the existence of Leavenworth III (son) and Leavenworth IV (grandson). Relative to the name, Bun says, "Don't associate me with the pen; rather the fort, for the general was a great-great-uncle."

Bun was first licensed as a ham in 1927 and has been a continuous member of ARRL since that time. He has served as Section Communications Manager, and as an Official Relay Station. Amateur awards include the A-1 Operator Club, Brass Pounders League, 35 wpm ARRL code certificate and the ARRL 50-year plaque.

In his early years, Bun entered Pomona College as a pre-engineering student. His college career ended when he found he had contracted the then dread disease tuberculosis. After a 10-year battle, four of which were spent in a TB sanitarium, in 1940 the tuberculosis was finally arrested.

Bun's service in Arizona and to the Army began in 1931 when he moved to the Yuma area. He joined the old Army Amateur Radio System (AARS). Yuma was assigned to the 9th Corps Area because the Signal Corps maintained a low-frequency CW station at old Fly Field to communicate with Fort Rosecrans in San Diego. He was assigned the call sign WL7VH for use on AARS special frequencies.

As ANCS of the Southern California net and then 1st Alternate NCS of the 9th Corps Area net, Bun compiled a Net Operations Manual to comply with Signal Corps procedures.

A significant message from Washington soon brought an end to these activities. A part of that message follows:

49 WLM 230 AARS WASHINGTON DC 600P DEC 8 1941

ALL CA SIGNALS AND ALL RADIO AMATEURS

ALL AMATEUR RADIO OPERATIONS INCLUDING THE ARMY AMATEUR RADIO SYSTEM ARE SUSPENDED FOR THE PRESENT STOP CIVILIAN DEFENSE AGENCIES REQUIRING USE OF AMATEUR RADIO FACILITIES SHOULD MAKE SUCH REQUESTS TO DEFENSE COMMUNICATIONS BOARD FOR CONSIDERATION STOP THE WAR DEPARTMENT TODAY ISSUED AN APPEAL FOR RADIO OPERATORS STOP MEMBERS OF



An amateur for over 50 years.

THE ARMY AMATEUR RADIO SYSTEM AND OTHER AMATEUR RADIO OPERATORS WHO ARE ELIGIBLE FOR MILITARY SERVICE ARE NEEDED AT ONCE FOR THE SIGNAL CORPS STOP AMATEUR RADIO OPERATORS WHO ARE BETWEEN THE AGES OF 18 AND 35 UNMARRIED AND IN GOOD PHYSICAL CONDITION ARE URGED TO VOLUNTEER THEIR SERVICES AT ONCE DURING THIS NATIONAL EMERGENCY STOP

During the war years, Bun's interest in radio did not diminish. Because of the recent illness, he was not qualified for military service, so he turned his attention to broadcast station operation and engineering. He possessed the old ama-

teur Extra 1st Class ticket, and soon gained Radiotelegraph 2nd ticket and Radiotelephone 1st, which latter he held until 1973.

Bun began his broadcast career as a "scared" announcer/engineer at KYUM and saw that station upgrade from 250 watts to 1kW. In 1958, the station became KIVA (TV) Channel 11. Bun served as Operations Manager, Chief Engineer, and as General Manager, he retired in 1970.

Bun came back to Army MARS early in 1972 and immediately became a big traffic handler in state and area nets. He has been NCS of the AAR9EV/A net since 1972. He also became a member of the AAA9USA/Q Western Area CW traffic net, which meets daily, and has been NCS of that net since February 1981. Bun is a Supply Representative on the SD's staff. He was named "Operator of the Month" for July 1973.

Bun and his wife Ellen have a daughter living in Illinois, and a son who resides in Mesa, Arizona. When questioned relative to other hobbies and interests, Bun answered with his usual quick wit: "Crossword puzzles!!! (and a bit of CC on rocks!)" The query, "Anything else?" produced this: "Never been in jail, and only fined once (last year) for making an illegal left-hand turn out of a parking lot ... so anything else you hear is a damn lie — HI."

Goldwater visits Hickam AFB

Senator Barry Goldwater, K4UGA, visited the Hickam Air Force Base MARS station before meeting with President Reagan in Honolulu, Hawaii recently.

Goldwater congratulated Clarence Mohica, AGA8HI (ex-KH6HAT), on receiving the first Congressional Award ever won by an Air Force civilian. The award was for exemplary service to the public beyond regular duty requirements. (See "Hickam MARS Director honored", page 36, May Worldradio.)

Local amateurs meeting with Goldwater were Paul Nowakowski, WD8ELB; State MARS Bill Staniff; and Rufus McCracken, KH6QL, who sent in this item. McCracken is an old-time friend of the Goldwaters. — *Katashi Nose, KH6IJ, Honolulu Star-Bulletin, HI*

• Silent Keys •

Merrill Swan

A pioneer in RTTY has passed away. We learned this sad news from Westlink Report. Merrill Swan, W6AEE, was introduced into what was to become Amateur Radio at the age of 10 and held the call W5AEE. Later, he was licensed as W6OGM and then W6AEE.

A native of Oklahoma, Swan was not only a RTTY pioneer but was also very active in MARS and received official recognition for his 14 years of service in pioneering overseas teletype transmissions for the U.S. Army.

I first "met" him about 30 years ago when I went on RTTY. He sent me a tuning fork which enabled me to tune to the right frequency to get on teletype. Back then, I was using a model 26 teletype. — *Katashi Nose, KH6IJ, Honolulu Star-Bulletin, HI*

Walter McMenamy

Walter B. McMenamy, WD6EBW, died 18 April 1984 at his home in West Los Angeles.

Born 08 August 1905 in St. Louis, Missouri, his parents moved the family to Los Angeles in 1912 upon doctor's advice it would help Walter's health.

His early career involved speedometer repair and other automotive instruments with his father, a Model "T" car dealer.

During World War II, Walter and his partner were involved with radio repair and did some work for the military. After the war, Walter and his partner started a factory service for Stromberg Carlson Television. His various partners had amateur tickets, and he would often operate the station under their control.

Finally in 1976, he received his own ticket and the call WD6EBW (Extra Big Walter, which he was — 6'11").

He became involved with Westlink as a bulletin station. In fact, he was so thought of, *Repeater Directory for the Southwest United States*, printed by Henry Radio, lists the following: 145.02 MHz simplex, WD6EBW, Los Angeles, Westlink, Monday 2100 hours.

He also played the QST on other frequencies as often as 40-50 times a week, often saying "he was performing a service to his fellow ham."

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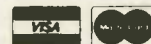
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TEACHER

Alan Kline, KB1DJ

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(Part IV)

This concludes the four-part series on our Fall 1983 Educational Program.

This year posed an interesting problem. The VEC (Volunteer Examiner Coordinator) program was passed and it was rumored that the FCC would not be giving exams much longer. I wrote the Boston FCC office and volunteered to be the first Volunteer Examiner in New England. They said they were waiting for the Washington Office to rule on my request. The end result was that they not only said I couldn't give my own students the higher level exams, but that they were going to cut back in the time they would be giving exams.

In late October/early November, the FCC announced that all Field Offices would give any exams only four times a year. I made an appointment for the last week in December of 1983, the last of their regularly scheduled Wednesday morning sessions for the 25 students in our Tech/General class.

On the first night of class, the Tech/General class attendance did not surprise me. There were 20 candidates who needed both theory and 13 wpm practice, plus another five who needed only code work to upgrade. This class went as planned, and 80 percent did pass and upgrade.

I was not prepared for the turnout in the Novice class though; 34 people showed. I was expecting, at best, 20. We hadn't printed enough handouts for them and the classroom was too small for such a group to be comfortably seated. I also would have split up the class into two smaller groups, but not enough teachers showed up. Actually, only four hams showed up. Two took the Tech/General class and the other two took the Novice.

One Novice instructor lasted only two weeks. Luckily, our youngest new General — Larry Wright, KA1JSJ — came forward and volunteered to teach the code. At only 13 years old, he is an inspiration to the rest of us hams. Luckily for me, he bailed us out of a tight teaching situation.

Other activities

Our educational activities did not end here, with the successful running of these two classes. During the month of September, we were forced to start other educational activities.

It seems that while we were in possession of the STS-9 space shuttle video-

tape, my friend, Jon Hannaford, K1SPI — the high school's AV director — made more copies of the tape than he had told me about. As I mentioned earlier, he had shown it to about 2,000 elementary school kids. By the time he had shown the tape, we were requested by many parents to start a code and theory class after school.

Our showings to the scout group led us to the possibility of the local WEBELOS

“Arrow of Light” weekend. This is when all WEBELOS Cub Scouts get together for a weekend campout.

This concludes how our educational program was planned and developed for the first half of this year. In writing these last four columns, it doesn't seem as bad as it appeared to be during the eight-week period. More than 10 amateurs helped out, and successfully got many new hams on the air.

During the winter months of December and January, we will be planning our springtime programs. I am going to start off in March by offering two upgrading classes; one would be for Advanced Classes and one for promising Extras. We'll also be watching the FCC very closely to see how they change their testing procedures.

In next month's column, I am going to talk about how to say thank you. □



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Arizona

(continued from page 15)

ments and the Arizona National Guard. It is from this past experience that we had a 2-meter rig set in the closet in the administrator's office and a Ringo Ranger on the roof of the hospital.

Bill WB7QZB manned the Hammarlund, providing an outside link to Mesa General Hospital and the Mesa police headquarters, as well as to other amateurs who could man telephones that were not stricken.

Jackie Johnson, KA7PFD, a medical transcriber for Valley Lutheran Hospital on the east edge of Mesa, stayed home to serve as a telephone link to Valley Lutheran, whose phones were not affected. Bernie Hubert, W9YCH, set up a portable station at the police headquarters.

Jane Allen, WB7FDF, was headed for Desert Samaritan Hospital, whose phones were affected, but Jack Mees, KA7AKJ — who lives near the hospital — drove over and offered our services. Desert Sam decided to rely on the police for communications, however. Jack remained nearby, just the same. Jane was diverted over to Mesa General Hospital, where she set up a station in the emergency department.

At Mesa Lutheran Hospital, the command post was in communication via simplex with the main telephone switchboard on the second floor. Don French, NC8P, was stationed by the telephone operators and relayed outgoing calls to patients' doctors and paging systems

downstairs to the command post, where Harold Murray, W7HEJ, intercepted it and passed it on to be relayed outside.

At about 8:00 p.m., Larry Kuck, WB7CRK, assumed Net Control, in order to give KIYCZ a breather. Twenty-seven pieces of traffic were handled until 2:00 a.m., when the phone service was restored.

As our stations took their positions at the various locations, the police officers who were manning those posts to provide radio communications departed for reassignment elsewhere. Several other amateurs stood by to offer their services.

In one point of self-analysis, we should have set up a schedule of volunteers — at least for the 2:00 and 6:00 a.m. shifts, in the event the phone outage should last that long, while there was a large list of volunteers in the early evening. Those whose schedules were for the early hours would have been able to try to catch 25 winks, or whatever, to prepare.

We might have benefitted in relieving congestion on the repeater by using another repeater and assigning a net control to that repeater for the purpose of coordinating volunteers' work shifts, while leaving the first repeater more open for emergency traffic.

In closing, we received praise from police personnel for our efforts, as well as the two hospitals we served. We want to thank all of those amateurs who volunteered their services, including those who drove out for the 2:00 a.m. shift, just as the emergency was beginning to come to a close, and all of the amateurs who stood by to help if needed. □

Hams become heroines

C. L. Engleman, W7QQ

At about 5:00 p.m. on Monday, 09 April, during a brief trip to California to analyze a budding computer manufacturing company, I was enjoying the California sun in the beautiful backyard of the home of the friends with whom I was staying. Stripped to my shorts, I was stretched out listening to the chatter of happy people on my 2-meter hand-held when I was brought upright, hearing, "Mayday! Mayday! This is KE6HI. Mayday! I need a local contact fast!"

My first reaction was to answer the distress call, but, being pretty unfamiliar with the area, I waited an instant to see if a local would answer. My hunch was right, for only a few seconds later I heard, "KE6HI, this is KF6TF. You are loud and clear. State your emergency. This is KF6TF. The handle is Dora. Go ahead."

From my notes taken at the time, here is what apparently happened. Alma Bourhenne, KE6HI, driving on I-5 in heavy traffic during rush hour, was following at a fair speed behind a motorcyclist when the cyclist crashed and was thrown onto the pavement and appeared to have a broken leg. The cyclist was at the mercy of the speeding traffic and KE6HI, instead of swerving to pass the cyclist, chose to slam on her brakes and park in the middle of the

freeway in a way to protect the downed cyclist from the certain dangers of the oncoming traffic.

After positioning her car in a protective position, turning on her flasher warning lights, and assuring herself the injured cyclist would not be further injured, KE6HI sent out her "Mayday" call.

After passing the pertinent information to Dora Tuttle, KF6TF, Dora contacted the authorities and within 10 minutes had the police, the fire and rescue team, and an ambulance at the site of the accident.

Two fine California ladies doing a splendid job, excellently executed in a professional way. Alma Bourhenne, KE6HI, from Cardiff by the Sea, and Neldora Tuttle, KF6TF, from Escondido. I was most impressed with how well they did a volunteer job. I think they probably saved the life of the cyclist. Wouldn't it be nice for some of you to send each of them a QSL card, saying "Well done!"

Yes, a commendable job done by two fine ladies who know how to handle themselves with courage, efficiency and dispatch under extreme emergency conditions. I was so proud of their performance that I could hardly wait to get home here in Washington state so I could tell my lovely wife all about it. My wife? Yes, she just got her Novice call, KA7RXM, and I'm mighty proud of her!

Armed Forces Day a big success

Katashi Nose, KH6IJ

Clarence Mohica, AGA8HI, Hickam Base MARS director, reports a very successful Armed Forces Day on 19 May. As a public service, MARS-GRAMS and phone patches were offered to the many MARS display visitors.

More free phone patches throughout the continental United States were made via Rockwell International AFC6RI in California than in 1983, although the crowd was smaller at Hickam this year.

Radio operator Paul Nowakowski, WD8ELB, and other base operators were helped by Air Force State MARS Director Bill Santiff, KB4P; Peter Demmer, KH6CTQ; Ed Dryer, KH6OF; and Rufus McCracken, KH6QL, who sent in this report.

— Honolulu Star-Bulletin, HI

Oneida County's 50th

The week of 27 January to 03 February was Amateur Radio Week in Oneida County in New York, according to a proclamation made by Oneida County Executive John D. Plumley. The proclamation was presented to representatives from the Utica ARC, Inc., which is celebrating its 50th anniversary.

"Amateur Radio enthusiasts as a whole, and the Utica ARC in particular, are well deserving of this public recognition," Plumley said, "and I urge all Oneida County residents to be aware of the fine community service being performed in our area by Amateur Radio operators." □

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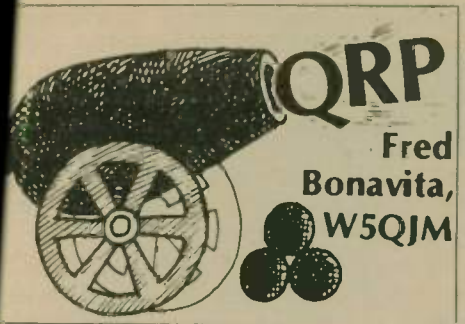
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Front-panel controls include a drive to reduce power output to 5 watts or less for true QRP work. The 22 also appears to have borrowed the effective and efficient SWR/wattmeter circuitry from the Argosy, which is a vast improvement

over the one offered in the 21.

On something of a negative side, the 22 comes with a direct-conversion receiver, and filtering is an adjustable six-pole, low-pass active audio filter.

All things considered, however, the Century/22 promises to be a marked improvement over the previous generation.

If nothing else, Ten-Tec has abandoned the Century/21's super-sensitive, built-in power supply and circuit-breaker system. The one point about the 21 which haunts me to this day was the fact that if I had an SWR approaching 2-to-1 and if I

sneezed real hard while tuning the rig to an antenna, the circuit breaker would pop, and I would be off the air.

While this amply protected the 21's finals, it proved to be more than a chore on occasion when moving frequency in search of new game and straying from the resonant point of the antenna.

Ten-Tec should do well with this new transceiver. As the advertising blurb says, it combines performance, reliability, simplicity of operation and low cost. In this day and age of super-complicated gear, that's a welcome change. □

Ten-Tec, Inc. — one of the early and still meaningful forces in the QRP movement — has bounded back in the field with the introduction of its Century/22 transceiver, and the new rig should attract some fresh interest.

Many operators cut their teeth on the company's well-known Century/21 transceiver, which Ten-Tec marketed from 1977 to 1981, selling some 4,000 analog versions and about 500 digital units before it was dropped.

Many others found the "21" to be a fine main rig or a reliable back-up transceiver. For almost a year, my 21 was the only rig, and I parted with it somewhat reluctantly when I decided to move into QRP completely and sold it to buy an Argonaut 509.

I mean, what QRP'er could have a rig around that could crank out more than 5 watts? Right? Pure is pure. (Let the record reflect I have changed my thinking since then, however, and am a little more tolerant. There's nothing as rabid, sometimes, as a recent convert.)



The new Century/22 transceiver by Ten-Tec

Many enjoyable hours were spent on the air with my 21, and it was with more than passing interest that I learned about the emergence of the Century/22. After discontinuing the Century/21 and the popular Argonaut series, Ten-Tec left the QRP field with only the Argosy transceiver from its drawing boards to compete with Heath's HW-8 (now replaced by the HW-9 — see Worldradio, May 1984, page 37) and Kenwood's now-discontinued TS-130V. The price differential left Ten-Tec at a disadvantage.

All that's been changed, however, with the Century/22. Its introductory price tag (\$390 range, ready to operate) makes it competitive with the new HW-9 (in the \$300 range, for a complete kit covering all bands plus WARC bands).

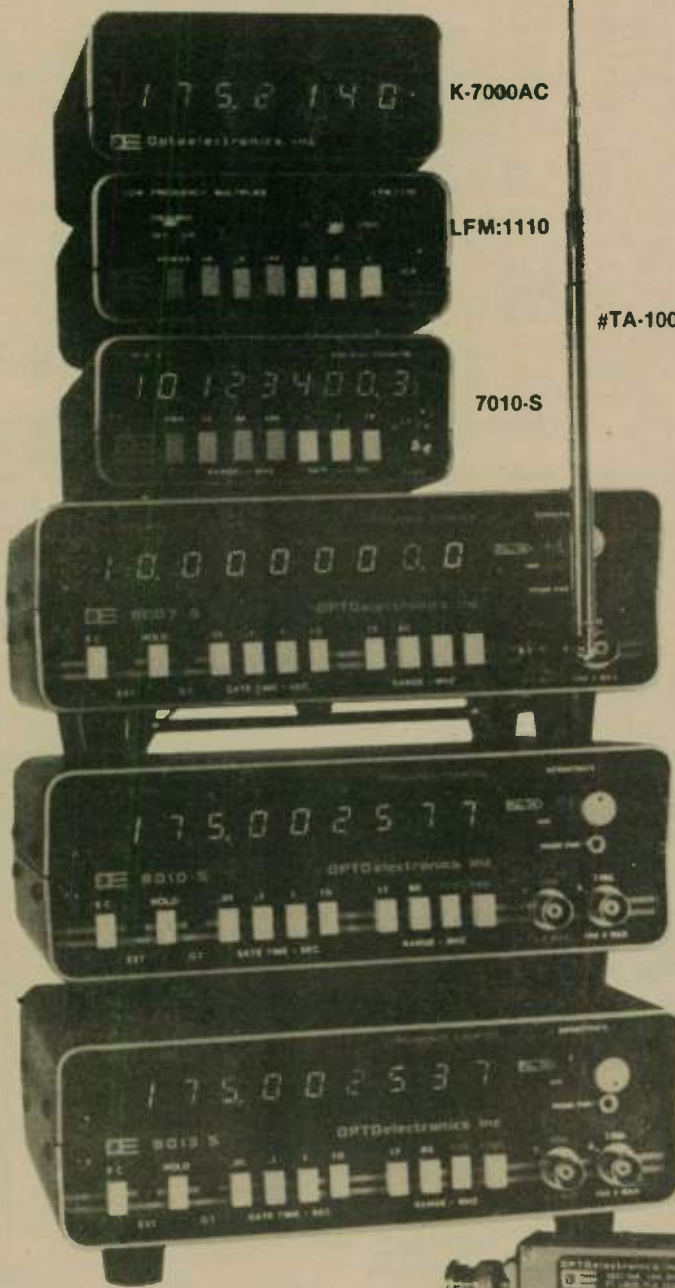
Based on preliminary specifications from the plant, the 22 is a much-improved rig when compared with the 21. In addition to being smaller (it's packaged in the same case as the Argosy) and lighter (6 lbs.), the 22 offers some features Ten-Tec did not have on the 21 — and some it doesn't even offer on the higher-priced Argosy. Not the least of these is separate AF and RF gain controls, which the 22 has but the Argosy lacks and sorely needs.

The 22 is still a CW-only transceiver and for the moment comes only in an analog readout. Since Ten-Tec offers an accessory crystal calibrator (\$29), this is not a major problem.

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#TA-100 Ant.

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- #TCXO-80 ±0.1 PPM TCXO time base 75.
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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	10.0 MHz	±1 PPM-TCXO *±0.1 PPM-TCXO *±0.05 PPM-OCXO	10 mV -27 DBM	20 mV -21 DBM	(4) .01, .1, 1, 10 SEC	.1 Hz	1 Hz	10 Hz		Yes	Yes	Yes	Yes		
8010-S	1 GHz								10 Hz							
8013-S	1.3 GHz								10 Hz							

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Ron Flynn, KB8LU

There are three things I wish to cover in this month's column. First, something has come to my attention as a result of this past Dayton Hamvention, which may affect some of you for next year's Hamvention.

As a convenience to SSTV'ers, I have secured a block of rooms at the Holiday Inn North of Dayton for the past two Hamventions. At the end of May, about three weeks after this year's Hamvention, I received a call from the Holiday Inn North. They told me that a very large number of people had already made their own individual reservations for the 1985 Dayton Hamvention. They wanted to know if I still wanted a block of rooms for next year. I hadn't given it much thought. It was nearly a year away. Nevertheless, I did verbally agree to take a block of 30 rooms — all they had! By the time you read this, that hotel will be

fully booked for the 1985 Dayton Hamvention!

What we suspect has happened is that people who booked rooms through my block last year are making their own separate individual reservations for next year. It is crazy to have to deal with this so far in advance. We don't even know what or where SSTV activities will take place next year.

I have a contract for 30 rooms for the 1985 Hamvention at the Holiday Inn North. The rest of the hotel is already sold out. I have until 31 August 1984 to sign and return this contract. For the first time, they want me to send in a large deposit with the contract. I have until 31 August to decide what to do.

Please help me. If you booked a room through me last year and have now made your own reservation there, send me a postcard stating so. If you haven't made your reservation for 1985 and are sure you want one, send me a card saying so and what type of room you need. I'll make a decision based on your cards.

If I decide not to do the block of rooms for next year, I'll do my best to see that you get a shot at the 30 rooms I release. First-come, first-served, of course.

TRS-80 Color Computer

In my April 1984 column, I discussed the fact that many SSTV'ers were having various problems in getting the TRS-80C up and running successfully on SSTV. There are at least five individuals operating as companies which make boards and kits to interface the TRS-80C with Clay Abrams, K6AEP's SSTV software. Their products are available in a variety of forms for people to assemble, align and install.

I invited people who completed their installations with little or no difficulty to write and tell me. As of 01 June, I had not heard from one person with favorable comments. Seven people have written me, since that column, and told of their problems with various hardware and documentation. A word of caution: if you are going to go the homebrew computer

route to get into SSTV, you should be a really skilled builder and have the equipment and knowledge to troubleshoot along the way.

Ralph Taggart, WB8DQT, at his recent Dayton presentation, emphasized that these systems are beginning SSTV systems.

For B&W SSTV, the quality of picture display on the computer system now is approaching or equal to many popular scan converters. For getting into SSTV, however, the costs of these hardware/software systems, plus computer, at least equals and often far exceeds the cost of a used B&W scan converter.

For color SSTV, there is no comparison. The best of the computer homebrew systems can display 256 different colors. Scan converters modified for color SSTV have displayed 4,096 different colors for three years. New HI-RES color scan converters now display over 260,000 different colors!

If you want to see what SSTV is like on your computer, get one of the inexpensive receive-only SSTV programs that are advertised, which require no hardware. You can upgrade from there either with computer hardware or a scan converter.

SSTV on the space shuttle

It was made public at the recent Dayton Hamvention that there is the possibility of one-way live SSTV transmissions from an upcoming space shuttle mission. The mission, designated 51F, is scheduled for a March 1985 launch. Aboard that mission will be amateur astronaut Tony England, W0ORE.

The prospect of SSTV from the shuttle is very exciting, but now it is only a proposal. If accepted, it must next be determined if it can be incorporated into the shuttle with no problems or interference to normal shuttle operation. Two-meter operation like that of W5LFL's shuttle mission will undoubtedly occur. The SSTV, plus other experiments, would come from a proposed 10-meter transmitter.

I must emphasize that NASA is well aware of SSTV and its potential uses. The Johnson Space Center ARC, W5RRR, is made up of NASA employees, and they have run SSTV from their club station for years. NASA, in fact, already uses a type of SSTV to transmit some forms of data from the shuttle to Earth stations.

In my October 1983 column, I refuted published claims made by another individual and organization, of originating the idea of SSTV on the shuttle. The original idea came from NASA people. NASA people have proposed SSTV for this upcoming shuttle mission. ARRL and AMSAT will include SSTV in their joint proposals, and see what happens.

If SSTV is accepted by NASA, the ARRL, AMSAT, W5RRR and SSTV companies will all work together to develop a system package compatible with the shuttle. The ARRL will ultimately coordinate and be the primary source of information for all Amateur Radio aspects of this mission. They have the knowledge, manpower and wherewithal to do a super job, just as they did with the W5LFL mission.

We'll keep our fingers crossed and hope. If it does come off, any credit due will be shared by the above groups. One other point: if NASA can also make use of the SSTV picture transmissions, they may be more likely to accept the SSTV proposal.

I am told that when the shuttle turns on their cameras and transmits 525-line live video, they must shut down other equipment transmissions. The shuttle has only a limited number of frequencies and bandwidth. Live TV transmissions take up a lot of bandwidth. They could transmit nearly continuous high-resolution SSTV pictures and only take up 3 kHz of their radio frequencies.

I have a new mailing address. I have NOT moved, however. Our county here in Michigan has been renumbered (for simplicity??). Please make note of this new address. It should be in the 1985 Callbook. It must be used after 01 September 1984. Ron Flynn, KB8LU, 28770-67th St., Bangor, MI 49013. □

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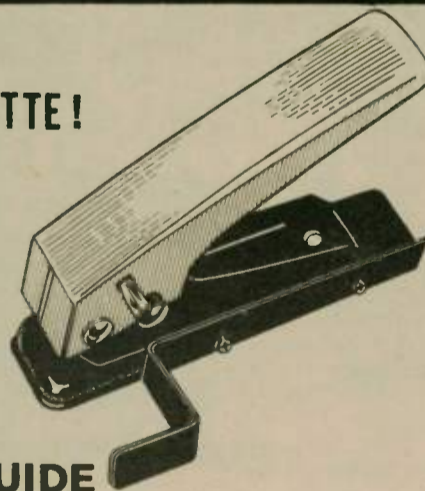
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(continued from page 27)

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We are learning every day that more and more amateurs do not want to receive QSL's, be it through the bureaus or direct. CCRL can be served by those who leave their QSL's unclaimed in the bureaus, by sending CCRL authorization, in writing, to claim such QSL's to use for call sign cross-reference information, as many amateurs show their past call signs on their QSL's. — W.C. Wellborn, K4CLA, CCRL Founder □

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NEW! % Repositioned controls for more convenient operation.

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- Change channels, skip-scan or step up and down the band from TM-2 microphone.
- Audible beep for end-of-band or last memory location for better "eye's off" operation.

The KDK FM-2033 represents a significant advance in user convenience and simplicity of operation for the radio user. The KDK '33' series of transceivers provides excellent readability in any lighting condition for either the operating frequency or the memory channel number in use. The use of a warm orange background for the LCD displays improves the readability by providing an easy on the eyes contrast improvement.

Simplicity of operation has always been the mark of the KDK design team and the FM-2033 is no exception. From the single knob frequency and memory selection to the automatic recall of the desired repeater offset from memo-

ry, the FM-2033 continues to provide relaxed, comfortable mobile operation.

Once the 10 memory frequencies have been selected, a single knob is all that is required for operation on the standard simplex or repeater channels. Using the audible beep as the end of memory marker allows setting to a particular channel without even looking at the radio.

In the scan mode, scanning for a busy memory or pre-programmed band scan keeps you up to date on the happenings in the area. Very busy frequencies can be skipped by using the up key on the TM-2 microphone. If a full 10 memories are not used, the unused ones can be marked for scan skip so that no time is wasted checking them.

The FM-2033 provides a clean 25 watt output signal across 142 - 149.995 MHz to operate in balance with most repeater signals and provide quieting on the simplex operations. M.A.R.S. (NAVY too!) and C.A.P. frequencies are also accommodated.

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Specifications are nominal and are subject to change. All KDK transceivers meet or exceed FCC regulations regarding spurious emissions.



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His invention a first in Amateur Radio

Willard "Gus" Guthoerl, W6GIH

This Mill-Keyer was built using vacuum tubes because at the time it was built, transistors were just coming into their own and not affordable by the average amateur. I recall at that time (four years before the date of the publication by the *Examiner*) LN36 diodes sold for just under \$2. Well, the keyboard used approximately 125 diodes!! That was a lot of money for me at that time. Used 6H6 diodes instead which were cheeaaaaaap!

In early 1960, I started using transistors and magnetic cores for the diode matrix, which brought the side and power consumption down considerably.

I have built over 50 of these machines — each an improvement over the last one, and am now using my last design which I have had for about 15 years and is still working fine.

To my knowledge, my Mill-Keyer was the first such sending device on the Amateur Radio airwaves. Now there are hundreds of them in use and as many individual designs, some with memory buffers and some without. I tried the memory bit and found it really not necessary. My present keyboard uses just a one-letter memory which I find works very nicely. The article (printed below) pretty much tells the story of the original Mill-Keyer. That \$7 cost bit was slightly in error. HI HI.

Now you can buy commercial keyboards real cheap, but I had to use old typewriter keyboards and put home-brew switches on each key, as you can see in the picture! Man, do the builders have it easy now. We didn't have chips with NOR and AND gates and FF two to a package like they do now; we had to build them all with discrete components!

Following is a slightly edited version of the article referred to by Willard Guthoerl, which was printed in the San Francisco Examiner on 29 December 1958.

Willard B. Guthoerl (W6GIH)'s professional pride was hurt when other Amateur Radio operators complained about his poor sending "fist."

So for about \$7 he built an electronic machine that does away entirely with the single sending key and may very well revolutionize radio code transmission.

Now he simply hits the keys of a converter typewriter and the right dot-dash code is transmitted automatically.

"Anybody who can use a typewriter can send Morse code with this," Guthoerl explained.

The 43-year-old inventor, a pleasant, outgoing chap, is employed as a senior electronics technician at the Stanford Research Institute (SRI) in Menlo Park, California.

He went to work with expendable ("I took them off the junk heap") parts donated by SRI, which is proud of his achievement.

Guthoerl, "Gus" to his co-workers, calls his invention a Mill-Keyer — mill being the amateur's nickname for a typewriter.

The machine is designed on the computer principle. The typewriter keys actuate an electric impulse, which produces the sound.

The Mill-Keyer is wired into Guthoerl's standard 500-watt transmitter. The computer part of the machine, an intricate system of tubes and wires, has been wired or programmed into the typewriter so that when the operator hits the "A" key, for example, the machine responds with the right dot-dash combination.

The programming also includes one key set for BT, the word space signal; the question mark and the AS "wait" signal.

Guthoerl said the Mill-Keyer can be set to transmit as rapidly as 75 wpm or as slow as 5 wpm. Average speed for the one key operation is from 35 to 40 wpm.



If it hadn't been for the complaints Willard Guthoerl, W6GIH, once received about his heavy-fisted signals, this radio-typewriter would never have been created. This photo shows W6GIH as he demonstrates his invention, which he constructed out of vacuum tubes and a typewriter keyboard in 1954. (Stanford Research Institute Photo)

Old-old-timer's vision

Newton Wimer, W6ABC
*My hamming days are fading
 and my time to pass is nigh.
 My eyes are looking upward
 to a vision in the sky.*

*I'm looking for a good spot
 with lots and lots of room
 for my triband Yagi antenna
 and my quad up on a boom.*

*The years are so much shorter now
 and time just seems to fly
 as I think of my next station
 up yonder in the sky.*

*Old pals at a hamfest
 and honored guest I'll be,
 eyeballing departed ham friends
 I'll be very glad to see.*

*Where QRN is just a term
 and interference is nil,
 but to provide an earthly flavor
 you can add some at your will.*

*Where power is no great factor
 and a few watts do just fine,
 with signal reports all pleasing —
 mostly twenty over nine.*

*If you wish to see your older rigs,
 they'll be waiting at your whim;
 you'll find them just behind a door
 on a table as you walk in.*

*They're all tuned up and ready to go
 and warmed up just for you,
 so sit right down and tune around
 remembering what they can do.*

*You'll hear signals out of the past
 from days of long ago,
 when you were just a youngster
 and time moved oh, so slow.*

*A CQD from the high seas
 sent by spark so long ago,
 still floating in the great beyond
 makes my answer start to flow.*

*My own signals may be bouncing about
 loud and strong for me to hear;
 they may be from the spark gap
 I used when 1911 was the year.*

*When I operated in the old days,
 every ham's name was just OM.
 It seemed enough to bridge the gap
 and kept each one a friend.*

*There's no promise of these things, of
 course,
 but if you've kept your signals clean,
 you may get to share it all with me
 and that's this old ham's dream.*

Boy Scouts thank hams

Lynnfield Troop 49, Boy Scouts of America, wishes to extend its gratitude to the Amateur Radio operators who donated their time on Sunday, 09 April.

The annual 10km road race, sponsored by the troop, was a safe and enjoyable event with the assistance provided by the ham operators of the Lynnfield Civil Defense. The communication specialists provided an additional measure of safety for the race participants.

Information on the race progress was much appreciated by spectators and race officials. Additional thanks to the supporters and members of the Reading radio repeater and its trustee, John Pineau, WA1RHN.

— Submitted by Fred Lingel, K1CCW

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Now that the big job is out of the way, Guthoerl is working on a few refinements. His next project will be an attempt to transistorize the whole system, thus reducing the size of the machine by 50 percent.

He is also tinkering with a "memory" circuit so that the merest touch of the typewriter key will transmit the desired signal.

The computer system now requires the operator to hold his finger on the key until the signal sound is completed.

Amazing reaction

Guthoerl reported that the reaction of other amateurs to his new signal is "amazing."

"They all want to know what kind of key I'm using," he said. "I was explaining the thing to a guy in Texas and about six other operators cut in with questions."

Guthoerl believes the invention has wide potentialities beyond ham operating, but he has not tried to exploit the Mill-Keyer.

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



Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

You can then type more text on the keyboard and it will be added at the text on the screen. This text will be transmitted, in turn, as the program gets to it.

SOFTTY is available for \$34.95, plus \$2.50 shipping and handling for first program; \$1 for each additional program.

SSTV Decode and Print Program

This program continues the 'NO HARDWARE' line of Woodall & Associates software. It decodes video information from the received audio signal and allows high-resolution hard copy print-out on the Epson RX series printers (or MX's with graphic options). Version 1.0 supports 8-second video (only). Later versions will cover other formats and allow disk storage of picture data.

SOFTSCAN sells for \$19.95, plus \$2.50

shipping and handling for first program; \$1 for each additional program. Check, money order, MasterCard or VISA accepted.

All programs available on diskette for an additional \$4 charge. Be sure to specify computer model when ordering. Woodall & Associates, P.O. Box 284, Plainfield, IN 46168; (317) 271-2565.

Heath keyboard

The radio amateurs at Heath have developed a keyboard that takes the hassle out of sending CW.

The HD-8999 UltraPro CW Keyboard is a third generation of code computers. A customized microprocessor and the latest in "human-



engineered" keyboard design make the UltraPro one of the most versatile and easy-to-use CW keys on the market.

A simplified operating system minimizes keying errors and increases the ease and (please turn to page 49)

RTTY, SSTV programs

AFSK RTTY Send/Receive

Radioteletype has long been a successful mode of communications and is now available to the public in various packages. To my knowledge we are, at the present time, the only source of a hardware-free RTTY program for the Model III and IV Radio Shack computers. RTTY packages from other sources require terminal units or other types of tone decoders in order to be functional. As you have probably already found out, this can get to be very expensive.

Our objective is to provide an effective means of utilizing RTTY without the expense of TU's or interfaces. SOFTTY 1.2 will provide the most commonly used configuration for RTTY on the amateur bands, these being 60 and 100 wpm with a 170 Hz tone shift. Keyboard selection of high or low receive tones, as well as Normal and Inverted code reception, are also provided. Five programmable message buffers are provided. These buffers can be loaded from the keyboard and then saved to cassette tape. The contents of the tape can then be loaded back into the buffers at a later session. Each buffer can hold messages up to 255 characters in length.

Upon entering the main program, you will be asked if you want to fill the program buffers. If you do want to fill the buffers, you may do so from the keyboard or from a previously recorded tape. If you choose to load the buffers from tape, you will be asked to select High or Low cassette baud rate. You can build a buffer library on tape to be used for different contests and nets. If you decide not to load or dump buffers, you should respond with "N" for the questions as they are asked.

After the buffer questions have been answered the program will then go into the RECEIVE mode. When entering the RECEIVE mode at this point the default setting of 60 wpm, normal (lower sideband) reception, and high-frequency tone sensitivity will be activated. This is also the common configuration for 2-meter RBBS repeaters.

Tune your receiver to an incoming RTTY station and hit the "BREAK" key. You will then see four carets () appear at the top of the screen along with some flashing graphic blocks. This is the tuning VERIFY mode of operation. The position and distance of the blocks is proportional to the actual tone frequency being received. You need to adjust the frequency, AF gain, RF gain, bandwidth and other receiver controls to display and position two graphic blocks between the left set of carets. When the display appears this way, the tones being received are 170 Hz apart.

If you select the low tone mode, you will need to adjust the receiver controls to the position of the graphic blocks between the right-hand set of carets. Hitting the "R" key will cause the program to go back into the RECEIVE mode without changing any parameters, and begin displaying the decoded text.

While in the RECEIVE mode, you can type the text you will want to send after going back to the TRANSMIT mode. While in the TRANSMIT mode, pressing the (→) right arrow and a number between 1 and 5 will put the contents of that buffer on the video screen.

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2N1562	25.00	2N5646	20.70	2SC1729	20.00	C458-617	25.00	M9579	7.95	MRF316	POR	MSC1821-10	225.00	PT6720	POR
2N1692	25.00	2N5651	11.05	2SC1760	1.50	C4005	20.00	M9588	7.50	MRF317	63.94	MSC2001	40.00	PT8510	POR
2N2957	1.55	2N5691	18.00	2SC1909	4.00	CD1899	20.00	M9622	7.95	MRF420	20.00	MSC2223-10	200.00	PT8524	POR
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2N3553	1.55	2N5923	25.00	A50-12	25.00	GMO290A	2.50	M9848	37.00	MRF453A	18.40	MSC83001	50.00	PT8727	29.00
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2N3733	11.00	2N5942	40.00	A283	5.00	HEPS3002	11.40	M9851	20.00	MRF455A	16.00	MT4150	14.40	PT8742	19.10
2N3818	5.00	2N5944	10.35	A283B	6.00	HEPS3003	30.00	M9887	5.25	MRF458	20.70	MT5126	POR	PT8787	POR
2N3866	1.30	2N5945	11.50	AF102	2.50	HEPS3005	10.00	MEL80091	25.00	MRF463	25.00	MT5596/2N5596	99.00	PT9783	16.50
2N3866 JAN	2.20	2N5946	14.40	AFY12	2.50	HEPS3006	19.90	MM1550	10.00	MRF472	1.00	MT5768/2N5768	95.00	PT9784	32.70
2N3924	3.35	2N6080	10.35	BF2272A	2.50	HEPS3007	25.00	MM1552	50.00	MRF475	3.10	MT8762	POR	PT9790	56.00
2N3927	17.25	2N6081	12.07	BFR21	2.50	HEPS3010	11.34	MM1553	50.00	MRF476	2.00	NE02136	2.50	PT31962	POR
2N3950	25.00	2N6082	12.65	BFR90	1.00	Hewlett Packard		MM1614	10.00	MRF477	14.95	NE13783	POR	PT31963	POR
2N4012	11.00	2N6083	13.25	BFR91	1.65	HFET2204	112.00	MM1943/2N4072	1.80	MRF492	23.00	NE21889	POR	PT31083	POR
2N4041	14.00	2N6084	15.00	BFR99	2.50	35821E	38.00	MM2608	5.00	MRF502	1.04	NE57835	5.70	PTX6680	POR
2N4072	1.80	2N6094	11.00	BFT12	2.50	35826B	32.00	MM3375A	17.10	MRF503	6.00	NE73436	2.50	RCA	
2N4080	4.53	2N6095	12.00	BFW16A	2.50	35826E	32.00	MM4429	10.00	MRF504	7.00	TRW		40081	5.00
2N4127	21.00	2N6096	16.10	BFW17	2.50	35831E-H31	30.00	MM8000	1.15	MRF509	5.00	PRT8637	POR	40279	10.00
2N4427	1.30	2N6097	20.70	BFW92	1.50	35831E	30.00	MM8006	2.30	MRF511	10.69	PT3190	POR	40280	4.62
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	MMPF102	45	MRF517	2.00	PT3195	POR	40282	20.00
2N4957	3.45	2N6166	40.24	BFX65	2.50	35835E	71.50	MPSU31	1.01	MRF559	2.05	PT3537	7.80	40290	2.80
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SD1012	9.90	SD1135	8.00	SD1300	3.00	SD1484-5	1.50
SD1012-3	9.90	SD1136	15.00	SD1301-7	3.00	SD1484-6	1.50
SD1012-5	9.90	SD1136-2	15.00	SD1305	3.00	SD1484-7	1.50
SD1013-3	13.50	SD1143-1	12.00	SD1307	3.00	SD1488	39.00
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SD1115-3	8.00	SD1272-4	15.00	SD1451-2	18.00	SFR2092 Mot.	18.00
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Continued from page 47)

accuracy of sending high-speed CW. A 64-character "type-ahead" buffer permits typing faster than the keyboard is sending. Ten variable length buffers eliminate waste when storing text. And messages stored in the buffers can be compiled, corrected or transmitted with no more than one-to-three key-strokes.

A large, four-digit LED display indicates many functions: speed, spacing, weighting, serial number, remaining message character space, input error, tune mode, side-tone on/off, keyclick and individual buffer protection. An 8-segment bar graph indicates fullness of the type-ahead buffer.

Ultrapro parameters are easily set from the keyboard, and battery back-up of the CMOS memory retains buffer contents and last-used parameters should power fail or the Keyboard be turned off. Three different four-level code practice modes are built in, as are turn-on circuit diagnostics, a side-tone oscillator and speaker.

For more details on Heath's HD-8999 UltraPro CW Keyboard, plus over 400 other build-it-yourself electronic kits, send for the latest, free 104-page Heathkit Catalog. Write to Heath Company, Dept. 150-355, Benton Harbor, MI 49022. In Canada, write to Heath Company, 1020 Islington Ave., Dept. 3100, Toronto, Ontario, CANADA M8Z 5Z3.

Catalogs are also available at more than 65 Heathkit Electronics Centers in the United States and Canada; see your telephone directory for the nearest store.

Heath Company and Veritechnology Electronics Corporation are wholly-owned subsidiaries of Zenith Radio Corporation. Heathkit Electronic Centers are operated by the Veritechnology Electronics Corporation. Product availability, specifications and prices are subject to change without notice.

Amateur Radio hot line

Telex/Hy-Gain has installed a toll-free customer service hot line for Amateur Radio products. In the continental United States, the number is (1-800) 328-5652. In Minnesota, the number to dial is (612) 887-5528. Calls will be accepted during normal business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m. Central Time.

The company stated that the toll-free number is good only for calls concerning Amateur Radio products. The purpose of the service is to assist amateurs with product selections and to help answer questions about applications or installations. The toll-free service is effective immediately.

For more information, contact Telex Communications, Inc., 9600 Aldrich Ave. So., Minneapolis, MN 55420.



Microphone equalizer

The new EQ 300 from Heil, Ltd. is an improved version of their EQ 200. The EQ 300 has an output level control on the front panel so that one model can be used to drive either mic level inputs (Kenwood, Yaesu, etc.) or line level inputs (used with the new ICOM series transceivers).

The EQ 300 uses an internal mic gain trim pot for initial setting with your mic. The front panel "output" control provides a variable level up to +2.0 volts out — sufficient to drive any transceiver microphone input, including the new ICOM series. Simply adjust to .10 volts out (11:00) for Kenwood, Yaesu, etc. and 1.5 volts (3:00) for ICOM.

Just two models are offered — the EQ 300-4 and the EQ 300-8. Both use two active filters, the low centered at 490 Hz and the high at 2200 Hz. With plus or minus 18dB. of boost and cut. The only difference in the two models is the connectors. Order either 4- or 8-pin to match your rig. A two-tone generator, used for tuning linear amplifiers with an oscilloscope, is also available for either model.

The new EQ 300 has a power adapter circuit built in so it can be operated from a 9-volt battery or from a good 12-volt DC supply, and excellent RFI suppression has been installed for use in heavy RF environments.

The EQ 300, as all of the 1984 Heil Products, will be housed in a beige and chocolate enclosure. All Heil products now feature the same two-color control knobs and switches used on their famous recording studio equipment.

For more information, write to Heil, Ltd., Box 68, Marissa, IL 62257, or phone (618) 295-3000.



Code/theory tapes

Radio School, Inc., founded by well-known writer Gordon West, WB6NOA, is offering the largest selection of code and theory training tapes to the Amateur Radio community. Gordon West has also produced technical tapes dealing with antennas, grounding techniques and maritime mobile installation.

"We mailed out over 700 free volunteer examiner tape sets to instructors throughout the country," comments Gordon West.

"These tapes contained FCC-type volunteer examiner code tests at 5, 10, 13 and 20 wpm levels. We produced 10 different versions of each individual speed tape to prevent students from memorizing them. Needless to say, volunteer examiners throughout the country snapped up the tapes and are using them in their examination process," adds West.

Radio School offers over 30 individual 1½ hour-long code cassette speed-building courses. There are also over 20 individual tapes covering theory examination preparation, and 10 tapes dealing with Amateur Radio equipment installation techniques.

"People laughed when they heard that our tape courses were in stereo. Now they swear by it — listening to both channels in the car, but separating the voice channel out when listening to code practice at home with a pencil.

"Our stereo technique allows students to play our tapes in a variety of ways to satisfy their learning process. Any tape player with a balance control can easily fade out the voice channel. When played on a mono tape recorder, the student will hear both channels just fine," says West.

Radio School is first to offer complete four-cassette theory courses covering the new FCC questions from Novice to Extra. These theory courses also feature "live sounds" of Amateur Radio operating to assist the student in recognizing some of the topics discussed on the tape.

The Gordon West tapes were also in heavy demand by Dick Bash, who contracted privately with West to produce Novice, General and Extra Class code test material.

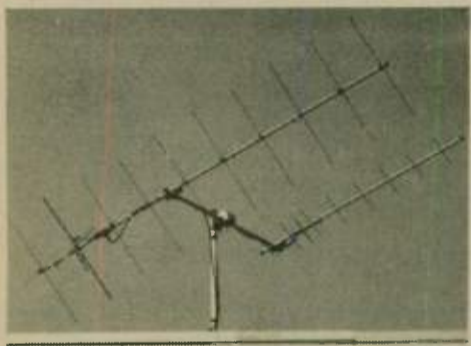
"Although we have been contacted by Dick Bash to put together some additional code practice tapes," says West, "We have chosen to only produce those tapes we will sell through our own distribution."

The Gordon West Radio School tapes are available directly from Radio School, 2414 College Dr., Costa Mesa, CA 92626.

"Because of the large number of courses we offer," comments West, "we choose to market the tapes ourselves rather than two-stepping them through a dealership. This lets us correspond directly with the purchaser and lets them communicate directly with us if they should have questions about the topics covered within the tapes.

"I am available personally by phone to answer any questions regarding installations, theory, or to lend a hand in increasing code skills," West adds. "By going direct, we eliminate any barrier between the Amateur Radio operator student and our Radio School."

For a complete catalog on all Radio School code, theory and operating courses, write Gordon West, Radio School, Inc., 2414 College Dr., Costa Mesa, CA 92626.



Amateur satellite antenna system

Cushcraft has introduced a new complete amateur satellite antenna system featuring two high-gain circularly polarized Yagi antennas. The 70cm 16-element uplink and 2-meter 20-element downlink antennas are fixed to a common mounting boom. The entire array is lightweight, with reasonable dimensions for quick installation.

Cushcraft has created a very high-performance, easy-to-use and durable antenna system in one modestly priced package. For more information, contact Cushcraft Corporation, P.O. Box 4680, Manchester, NH 03108; (1-603) 627-7877; Telex 953050 Cushsig Man.

Robot retrofit kit

Robot Research has introduced a retrofit kit for the popular Model 800 that adds the features found in the new production Model 800C. Designated the Model 800C kit, it includes full documentation and easy-to-follow instructions for a simple, single-evening installation.

The new features include a 1,023-character transmit buffer; 10 64-character message printer interface; eight slow-scan color graphic memories (when used with Robot's new color SSTV converters); and lithium battery back-up on all memories. The kit is available in two versions, — the 800C kit for existing Model 800's, and the 800CH kit for converting the high-tone Model 800H.

For additional information, contact Robot Research, Inc., 7591 Convoy Ct., San Diego, CA 92111; (619) 279-9430.

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HAZER your Rohn 20-25G

- H-3 — 8 sq. ft. ant. \$213.00 PPD.
- H-4 — 16 sq. ft. ant. \$278.00 PPD.
- 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 — ¾" x 6 forged steel eye and eye tumbuckle \$10.75
- 6" diam. — 4 ft. long earth screw anchor \$12.75
- ½ 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) 30' galv. steel, totally freestanding in 100 MPH wind with 30 sq. ft. antenna \$2992.00

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816-882-2734



GLEN MARTIN ENGR

NCG tri-bander

The all-new 40-15 plus 6 meters will give all amateurs — from Novice to Extra — a rig that will fill the gap.

The 7-21-6M is all solid-state with built-in AC/DC; no external power supply is needed. Full band coverage on 40 meters and 15 meters with 6 meters coverage from 50.0 to 54.0 MHz. All bands operate in the modes of SSB or CW. Drift-free operation is less than 10 Hz.

Two antenna connectors allow band switching easily; one is for 6 meters and the other is for 15 and 40 meters. Transmitting power stage is 26 watts PEP, and modulation is a balanced type. Carrier suppression is more than 40dB down. Microphone impedance is from 50 to 400 ohms.

With built-in TVI suppression for 6 meters, this tri-bander will be a pleasure to operate. With a low SWR on the 6-meter antenna, no — or very little — TVI will be encountered.

The 7-21-6M is an ideal transceiver for the Technician, phone on 6, and CW on 15 and 40 meters. The tri-bander is small enough to operate mobile and large enough for a base rig. Priced in the low \$400 range, the tri-bander should be in dealers' showrooms in July.



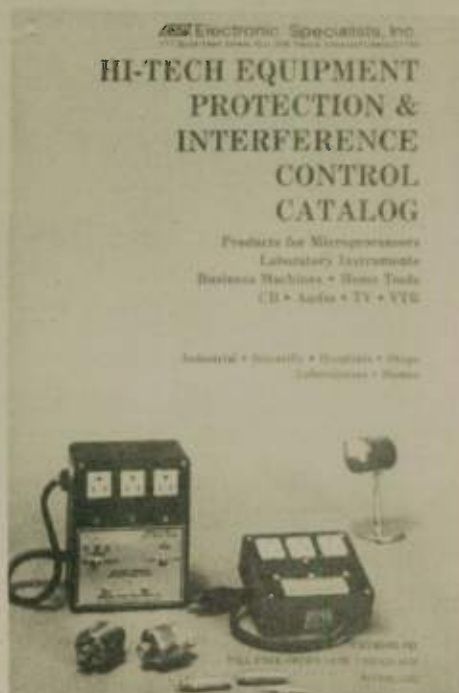
For additional information, contact NCG Co., 1275 N. Grove St., Anaheim, CA 92806; (714) 630-4541.

Ham gear protection

Protection and Interference Control products are presented in a new 40-page catalog from Electronic Specialists. Costly damage from lightning or power line spikes can be prevented, and disruptions or interference from power line-carried EMI and RFI can be controlled.

Protective devices for ham gear include AC line voltage regulators and conditioners, modem and phone line surge suppressors as well as equipment isolators and filter/suppressors.

Typical protection and interference problems are described, together with suggested solutions for various ham and communication



installations. Catalog 841 also describes numerous applications for Hi-Tech Equipment Protection and Interference Control.

For more information, contact: Electronic Specialists, Inc., 171 South Main St., P.O. Box 389, Natick, MA 01760; (800) 225-4876.

Computer programs

BSM

I have written a new program for the VIC-20 and the C-64. I am calling it BSM. It stands for Beam heading, Sunrise/Sunset and MUF calculator.

All you do is enter the month, the day, the solar flux or sunspot number, and the DXCC country prefix of the location you want to work. The computer will automatically look up the latitude and longitude for that location, along with the country's name, and then it will first calculate the beam heading for that location, long-path and short-path, the mile and kilometer distance, the sunrise and sunset time for that location, and then the Maximum Useable Frequency (MUF) for that location

during each hour in a 24-hour period. This information can be displayed on the screen or the printer.

Price will be \$18 plus \$2 shipping and handling. VIC-20's will require a minimum of the 16K memory expander. Please be sure to mention which computer you will be using this on.

Sunrise/Sunset

I have also written a new program (for the VIC-20 and C-64) called Sunrise/Sunset. All you do is enter the month, day, latitude and longitude of the station you want to work, and the computer will give you the exact time of the sunset and sunrise for that location in GMT.

Price is \$5 plus the \$2 shipping and handling charge. No memory expansion required for VIC-20 version. Please be sure to mention which computer you will be using this on.

For more information on these programs, contact Walt Grosch, KA9GLB, 4880 N. 49th St., Milwaukee, WI 53218.

Vertically polarized antennas

Development of a new low-profile, vertically polarized antenna designed to outperform conventional "whip" antennas more than 10 times its height has been announced by Com-Rad Industries, Buffalo, New York.

Height reductions of 80 percent and more alleviate damage caused by garage doors, underground ramps, trees, drive-in or service station canopies, and other clearance problems, the company states.

According to Com-Rad, Untennas will benefit a wide range of mobile, portable and fixed radio users, including: common carriers, public safety, wireless security systems, government, military, forestry, marine, aircraft and business industry.

Com-Rad reports that, because of Untenna's rigid construction, mobile flutter or "picket fencing" is eliminated, resulting in base-station quality transmission.

Quieter reception with less adjacent channel interference (inter-mod) is cited, and gained through Untenna's high "Q" design, according to the manufacturer.

Made of stainless steel, aluminum, phosphor bronze and chrome plate, each antenna is noted to be highly resistant to corrosion. Unlike whip antennas, the Untenna may be enclosed in an optional weather-resistant,



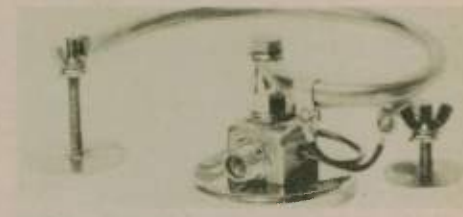
Model CR4A 450-460 MHz



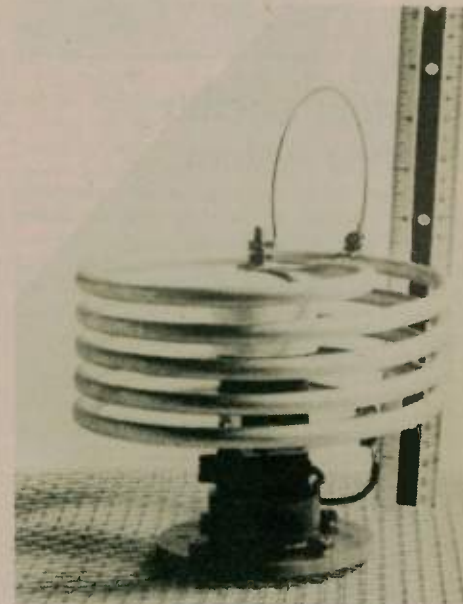
Model CR2A 140-170 MHz



Optional Radome Model CR2RD (fits Antenna Models CR2A, CR3A, CR2/4A)



Model CR2/4A dual-function, multi-frequency Untenna 140-170 MHz plus 440-460 MHz



Model CR109A helical 29-35 MHz

high-impact plastic cover (Radome), which is useful also in disguising the antennas.

Untenna is currently available in five models to serve frequency ranges of 25-40, 45-85, 140-170, 210-240, and 430-470 MHz. Combination, single feedline models to serve multi-frequency requirements are also available.

Complete information is contained in a new, illustrated bulletin, available from Com-Rad Industries, 25 Imson St., Buffalo, NY 14210.

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HAMFESTS



Alabama

The HUNTSVILLE HAMFEST will be held on Saturday and Sunday, 18-19 August, at the Von Braun Civic Center in Huntsville, Alabama. There is no admission charge. There will be prizes, exhibits, forums, an air-conditioned indoor flea market, and non-ham activities. Tours of the Alabama Space & Rocket Center are available for the family. A limited number of camping sites with hookups are available at the VBCC on a first-come first-served basis. Flea market tables are available for \$4/day and should be reserved prior to the hamfest.

Talk-in on 34/94.
For more information, write: Huntsville Hamfest, 2804 S. Memorial Parkway, Huntsville, AL 35801.

California

The ASSOCIATED RADIO CLUBS OF GREATER SAN JOSE invite you to the 1984 Pacific Division Convention, to be held from noon, Friday, 31 August, through the Sunday night banquet, 02 September. The convention will be held at the Santa Clara Marriott, in Santa Clara, California.

Special convention rates: \$65 for single, double or quad — bring the family! Contact the hotel for reservations: Santa Clara Marriott, Great America Parkway, Santa Clara, CA 95054; (408) 988-1500. Also, special discount rates at "Great America Park" — only \$7.25 to enter.

Features at the convention will include traffic and emergency forums, swap tables, technical and non-technical talks, ARRL forum, exhibits, prizes, hospitality room and much more.

The special pre-registration rate, including banquet, is only \$25 if mailed by 20 August. Technical talks, forums, exhibits and swapmeet attendance only \$10 (swapmeet is Saturday only). Swap tables available at \$5 per table.

The convention committee is making the following special offer to all affiliated clubs:

On or before Wednesday, 01 August, send us: 1) a list of the names, addresses, etc. of at least 10 people desiring to attend the conven-

tion with all the privileges of advance full registration, and 2) a check payable in an amount equal to only \$23 times the number of persons named on the list (but not less than \$230). Upon receipt of this, we will immediately and individually register the 10 or more persons and send you the acknowledgement cards for distribution.

Your club may collect the full \$25 normal fee and retain \$2 for the club treasury OR may pass the savings along by collecting only \$23, at your option.

Any person may register — ham, non-ham, adult, child, spouse, etc. Each receives full advance registration, including the banquet.

Make checks payable to Associated Radio Clubs of Greater San Jose and mail check and list to the aforementioned at Box 6, San Jose, CA 95103-0006.

Talk-in on 147.99/39, 146.16/76 and 146.52 simplex.

For more information, call registrars (Mel W6PIH and Cynthia De Launey, W6PHT) at (408) 438-7686.

Colorado

The SKI COUNTRY ARC will hold its 3rd annual swapfest in conjunction with the CCARC (Colorado Council of Amateur Radio Clubs) meeting on 28 July, from 9:00 a.m. to 3:30 p.m., at the CMC building, 1402 Blake, Glenwood Springs, Colorado.

Door prizes, raffle, guest speakers and demonstrations will be featured. Full table — \$5; half table — \$3.

Talk-in on 146.07/67.
For further information, contact Bob Ludtke, K9MWM, 1001 Grand Ave., Glenwood Springs, CO 81601; (303) 945-5966.

Delaware

The Delmarva Hamfest, sponsored by the AMATEUR RADIO ASSOCIATION AT THE UNIVERSITY OF DELAWARE, will be held Sunday, 19 August, at the Newark, Delaware campus of the University of Delaware. Admission will be \$2.50 in advance and \$3 at the gate. Food and drink will be available.

Talk-in on 52 and 13/73.
For more info, send an SASE to the Amateur Radio Association at the University of Delaware, 140 Evans Hall, University of Delaware, Newark, DE 19716.

Florida

The 11th Annual GREATER JACKSONVILLE HAMFEST is 4-5 August, at the

Orange Park Kennel Club on US 17 South near I-295.

Exhibitors such as manufacturers and distributors of new equipment will be featured, along with a large swap table area. A full slate of forums and programs is being scheduled just across the street, at the Best Western First National Inn — headquarters for the hamfest. Several major door prizes will be awarded, and hourly drawings will be held. Plenty of free parking will be available.

Registration is \$4 at the door or in advance. Swap tables are \$9 for one day or \$15 for the weekend. Special discounts and promotions are available to exhibitors contracting for space before 15 July. Hamfest hours are 8:00 a.m. to 5:00 p.m., Saturday, and 9:00 a.m. to 3:00 p.m., Sunday.

The Greater Jacksonville Hamfest is sponsored by the six Amateur Radio clubs of the greater Jacksonville area, with all proceeds going to the promotion of Amateur Radio. Registrations, swap tables and information on exhibitor space available through Mike Parnin, N4EPD, 6716 Diane Rd., Jacksonville, FL 32211. Special hamfest rates of \$32 single and \$38 double may also be arranged for hotel accommodations through the same address.

Iowa

The IOWA 75-METER NET will sponsor a hamfest and picnic on Sunday, 26 August, at the W.K.W. Park, north of Hampton, Iowa. A potluck meal will be held at noon, with a short program and prizes to follow.

Talk-in on Mason City repeater, 146.15-65.
For more information, contact Philip Brown, WD0FWB, 1459-3rd St. SE, Mason City, IA 50401; or Lovelle Pedersen, WB0JFF, 2327 W. Reinbeck Rd., Hudson, IA 50643.

Missouri

The ST. CHARLES ARC'S Hamfest '84 will be held 26 August at the St. Charles City Hall complex. The Harvester Lions will be providing the barbecue, at Riverfront Park and the historic South Main Street area just a few blocks away. Tickets: \$1 or five for \$4 in advance; \$1.50 at the door for major prize drawings; \$1 general admission.

Talk-in on 146.07/67 and .52 simplex.
For more info, contact: Ron Ochu, KO0Z, 1914 N. 5th St., St. Charles, MO 63301.

New Jersey

The GLOUCESTER COUNTY ARC (GCARC) will hold its annual hamfest and flea market on Sunday, 26 August, at the Gloucester County College in Sewell, New Jersey.

The activities will start at 0800 and finish at 1600 Eastern time.

We will conduct two testing times for FCC examinations, Novice through Extra. The testing times will be 0900-1130 and 1300-1530. The FCC examinations will be conducted by the Metroplex Amateur Communication Association (the 2nd call district VEC), in conjunction with amateur Extra Class members of GCARC.

This year, GCARC is celebrating its 25th anniversary, and the following prizes are to be given away: TS-430S HF transceiver; a Commodore 64 computer; an IC-3AT and IC-4AT, 220 and 440 MHz, hand-held transceivers.

Admission price is \$2 pre-registration, \$2.50 at gate; for the "tail-gaters" \$3 per parking space.

Talk-in on 146.52, 147/78/18 and 223.36/224.96.

For more information, contact John Fisher, K2JF, Gloucester County ARC, P.O. Box 370, Pitman, NJ 08071.

New York

The Fingerlakes Hamfest, sponsored by the TOMPKINS COUNTY ARC, will be held on Saturday, 25 August, at the Trumansburg Fairgrounds, Rt. 96, 12 miles north of Ithaca.

Registration is \$2. No charge for overnight camping. Giant flea market, commercial exhibits, door prizes, CW contests, special events for YL's and refreshments.

Talk-in on .37-97 or 52 simplex.
For more information, contact: Wanda Lovejoy, KO2X, 443 Jerry Smith Rd., Lansing, NY 14882; (607) 533-7585 or (315) 364-7427; or David Flinn, W2CFP, 866 Ridge Rd., Lansing, NY 14882; (607) 533-4297, 24-hour answering.

Ohio

The WARREN AMATEUR RADIO ASSOCIATION (WARA) again invites you to attend the 27th Annual WARA Hamfest, to be held on Sunday, 19 August, at Trumbull Branch Campus, Kent State University on Mahoning Avenue in Warren, State Route 45.

Registration is \$2.50 in advance (before 01 August), and \$3 at the gate. Commercial exhibitor space inside is \$5 per standard 8 ft. table. Flea market space at \$2 per each 10 ft. space. Advance table registration, on a first-come first-serve basis, must be accompanied by payment. To assure your space, please contact WARA by 01 August.

Food and refreshments will be provided by the Howland High School Band Boosters. A special XYL/YL suite will feature programs for the ladies. Set-up on Saturday, 18 August. Hamfest begins at 6:00 a.m. Sunday.

Talk-in on 146.37/97. Call W8VTD.
For more information or for reservations, contact: WARA, P.O. Box 809, Warren, OH 44482.

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"Our Twenty-Fifth Anniversary Year"

Gloucester County Amateur Radio Club presents our
Annual Hamfest Extravaganza to be held at Gloucester
County College, Tanyard Rd., Sewell, NJ, 20 min.
from Phila. — Aug. 26, 1984 — 8 am to 4 pm

FCC Testing — Novice thru Extra. Great Prizes — Kenwood TS430S
Commodore 64 — ICOM IC3AT — ICOM IC4AT
Also Speakers — Seminars — Contests

Talk-in: 223.36-224.96 — 147.78-147.18 — 146.52S

For info call Herb K2HPV (609) 848-2121 — Milt K3WIL (609) 456-0500

Good Luck — Complements of Metro-Comm, Inc. & BF Enterprises

Oklahoma

The 2nd Annual GREAT SALT PLAINS Hamfest (Oklahoma/Kansas state line area) held on 26 August, at the Community Building on the south side of the Great Salt Plains Lake in north central Oklahoma, 9:00 a.m. to 5:00 p.m.

Features will include technical forums, organizational meetings, free swap tables, refreshments, Novice exams and a noon potluck dinner. Overnight camping and RV hookups at the Lakes State Park.

Talk-in on 147.90-30, Salt Plains repeater. For more information, contact Steven Walz, WA5UTO, Box 222, Cherokee, OK 73728; (405) 596-3487. □

Pennsylvania

The MID-ATLANTIC ARC announces its annual hamfest, to be held Sunday, 12 August, from 9:00 a.m. to 4:00 p.m., rain or shine. Tailgate set-up begins at 8:00 a.m., at Bucks County Drive-in, Route 611, Warrington, Pennsylvania (5 miles north of the Willow Grove exit of the Pennsylvania Turnpike).

Admission is \$3, with \$2 additional for each tailgate space. Bring your own table. Ample parking refreshments.

Talk-in on WB3JOE/R, 147.66/06 and 146.52.

For further information write MARC, P.O. Box 352, Villanova, PA 19085 or call Bob Josuweit, WA3PZO, (215) 449-9727. □

The CENTRAL PENNSYLVANIA REPEATER ASSOCIATION, Inc. 11th Annual Hamfest/Computerfest will be held on 26 August, adjacent to "Hersheypark", Chocolate Town, USA in Hershey, Pennsylvania.

Registration \$3; wives and children free! Special reduced admission to "Hersheypark" for families of registrants. Large indoor dealer and flea market area; large outdoor tailgating area; food and refreshments available. 10 ft. indoor spaces \$8 each; 8 ft. tables \$4 each; single electric plugs \$1 each.

Talk-in on 145.47, 146.76 and 146.52 MHz. For further information contact: Timothy Fanus, WB3DNA, 6140 Chambers Hill Rd., Harrisburg, PA 17111; (717) 564-0897 (noon to 8:00 p.m.). □

Texas

The AUSTIN ARC and the Austin Repeater Organization will sponsor Austin Summerfest '84, 10-12 August, at the Austin Marriott Hotel, Interstate 35 at Highway 290.

Summerfest will combine the Texas VHF-FM society summer convention with an ARRL forum, meetings, an indoor swapfest, a dealer's showcase, a transmitter hunt and prizes. Admission is \$5 in advance, \$7 at the door, with an advance registration deadline of 31 July.

Featured speakers at Austin Summerfest will include Dale Martin, KG5U, president of the NASA/Johnson Space Center ARC, discussing Owen Garriot's ham operation from STS-9. Also scheduled are Doug Loughmiller, KO5I, of AMSAT, Joe Jarrett, K5FOG, moderating a forum on the 20 kHz 2-meter band plan, and a packet radio discussion and demonstration by Dave Cheek, WA5MWD.

The prize list includes hourly door prizes, an award to the winner of the transmitter hunt, a pre-registration prize, and a grand prize. Extra tickets for the grand prize drawing will be available for \$1 each.

A full schedule of ladies' programs is planned, including a demonstration of color analysis, coffees from around the world, and more. There will also be prizes for the ladies participating in the program. Admission to the ladies' events is \$4.

Swapfest tables may be reserved in advance for \$1 each (limit two). Reserved tables must be claimed by 10:00 a.m. Saturday. Unreserved tables will be available on a first-come, first-served basis.

Talk-in on 146.34/94. For more information, write Austin Summerfest '84, P.O. Box 13473, Austin, TX 78711. □

The PANHANDLE ARC, Inc. will hold its annual hamfest on Saturday, 11 August, and Sunday, 12 August, in the Student Activities Center, West Texas State University, Canyon, Texas. Doors will open at 8:00 a.m. each day, with plenty of free tables and space for all. Registration is \$6 at the door or \$5 pre-registered, per person.

Features include: swapfest; commercial distributors; meetings of QCWA, MARS, ARRL, ARES, PTEN, etc.; ladies program, and much more. A grand prize, a pre-registration prize, and many door prizes will be awarded.

Talk-in on 146.94 and 3.933 MHz. For more information on pre-registration, motels, and RV camps, contact the PARC, P.O. Box 10221, Amarillo, TX 79116, or Jim Ogle, WB5UDX, at (806) 359-1002. □

Virginia

The SHENANDOAH VALLEY ARC, W4RKC, will hold its 34th Annual Winchester Hamfest on Sunday, 05 August, at the Clarke County Ruritan Fairgrounds, Berryville, Virginia.

Commercial exhibits, tailgating, prize drawings, ladies' bingo, breakfast, snack bar, and a chicken and beef barbecue are among the features. Registration is \$3; XYL's and children are free. Grounds open at 7:00 a.m. Tailgaters or tables in Building B (first-come basis) — \$5.

Talk-in on 146.22/82 and 52 simplex. For more information, contact Godfrey Miller, N8GM, Shenandoah Valley ARC, P.O. Box 139, Winchester, VA 22601. □

Washington

The RADIO CLUB OF TACOMA, W7DK, will present HAMFAIR-1984 at Olsen Auditorium on the campus of Pacific Lutheran University.

Registration is \$5, with trailer space and dormitory space available on campus at reasonable rates. Saturday night banquet, commercial space and flea market tables available by advance reservation.

Talk-in frequency will be W7DK repeater, 147.88/28.

For additional information and advance registrations, please contact Grace Teitzel, AD7S, 701 South 120th, Tacoma, WA 98444. □



Wild Bunch 160-Meter SSB Contest

The 160-Meter Wild Bunch announces the Wild Bunch 160 SSB Contest, to be held 0000 GMT, 04 August to 2359 GMT, 05 August. This is for *single operators only*. Try your skills on 160 in the dead of summer QRN.

Exchange: RST/state, country or Canadian province (charter members must give their number along with exchange).

Scoring: 10 pts. per QSO. Multipliers — total number of states, countries, VE provinces. Special multipliers — 1 pt. each for any charter member of Wild Bunch worked; 20 pts. for working 15 charter members; 10 pts. for working VE7WCB club station SSB/CW.

Charter member stations: VE1LK, WA1YKT, W1EQD, KA1FDS, WA1YKR, KC2RV, KA1SR, N4CQC, W1PJZ, KA1HDV, W1CCX, K1DDY, EA3VY, KA4RRY, KB4LX, VE2BRC, W3HHN, G3SZA, N2BHE, K1ZFE, KA1DIG, K1REX, WB1FLA, K1BXC, W2AHZ, KB2YR, W1WCR, KA1FNP, KA1ACB and WA1YKS.

Work all of the above charter members and receive a special certificate.

Awards: A plaque will go to the winner. Certificates will go to winners in each state, country and VE province.

The deadline for logs is 06 September 1984. Send logs to: R.J. Koziomkowski, KA1SR, 5 Watson Dr., Portsmouth, RI 02871.

To become a member of the 160-Meter Wild Bunch: 01 June - 01 September — U.S. stations work 10 charter members; DX stations work five charter members. 01 September - 01 June — U.S. stations work 20 charter members; DX stations work 10 charter members.

Send log info and \$2 (U.S.) for membership certificate and Wild Bunch number to: Bob LeBlanc, KA1FDS; Unity Rd., Benton; RFD 1, Box 800; Clinton, ME 04927. □

21st RAMS QSO Party

The 21st Annual QSO Party, sponsored by RAMS (Radio Amateur Megacycle Society), will be held from 1700Z, Sunday, 05 August, to 0500Z, Monday, 06 August (noon to midnight CDST Sunday).

Bands/modes: All bands, CW and Phone. Same station may be worked on each band and mode. No repeater QSO's.

Frequencies: Any frequency, but look for most activity about: (CW) 40 kHz from low end; (Phone) about 3890, 7230, 14280, 21375 and 28675.

Exchange: RST and COUNTY by Illinois stations; RST and STATE or Province or country by all others.

Scoring: 1 QSO pt. per contact (2 pts. if other station is Novice or Technician in Novice band). Illinois stations — multiply QSO point total by sum of states (50 max.) Plus Canadian call areas (10 max.) and no more than five non-U.S./Canadian countries worked for a maximum of 65 multipliers. Additional DX contacts count for QSO points but not multipliers.

Illinois portables and mobiles away from normal QTH may add 200 to final score for each county of operation from which 10 or more contacts are made. Non-Illinois stations simply multiply QSO points by number of Illinois counties. Only Illinois QSO's count for points.

All stations may take extra BONUS multipliers, one for each group of eight QSO's with the same county.

Awards: Certificates to the top three Illinois scorers in Single-op, Multi-op, Portable out of home county, Mobile, Novice and CW Technician categories. For non-Illinois stations, awards to top scorers in similar categories in each state, province or geographical division from which two or more valid entries are received.

Please send in even a low scoring log to help another meet the two log rule. Decisions of the Committee are final.

Logs: Must be legible and show complete exchanges sent and received, times, dates, operator name and call, address and operation category. Include a separate sheet listing multipliers and showing calculation of score. Send white business-sized SASE for results.

Filing: Entries must be postmarked no later than 01 September 1984. Send to: RAMS/K9CJU, 3620 N. Oleander Ave., Chicago, IL 60634. □

RADIO EXPO 84

HAMFEST - RADIO EXPO 84 - HAMFEST

RADIO EXPO 84, will be held on SATURDAY and SUNDAY, SEPTEMBER 22ND and 23RD at the Lake County Fairgrounds, Rts. 120 and 45, Grayslake, IL. Flea market opens at 6 AM & Exhibits at 9 AM.

Displays by major manufacturers and largest-ever outdoor flea market area.

Reserved indoor flea market tables available at \$5.00 per day. Limited number available and must be reserved by Sept. 10th. Seminars, technical talks and Ladies' programs. Door prizes every hour - grand prize on Sunday afternoon.

Tickets good for both days, \$3.00 in advance (before Sept 10th) or \$4.00 at gate. Talk-in on 146.16/76 MHz.

Send SASE to RADIO EXPO 84, Box 1532, Evanston, IL 60204 or call (312) 582-6923.

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European DX Contest

The Deutscher ARC (DARC) has the honour to invite amateurs all over the world to participate in the annual European DX Contest.

Contest periods: CW — 11-12 August; Phone — 08-09 September; RTTY — 10-11 November. Operation time is 0000 GMT Saturday to 2400 GMT Sunday.

Bands: 3.5, 7, 14, 21 and 28 MHz
Classifications: Single Operator - all band; Multi-operator - Single transmitter; Multi-operator/Single-transmitter-stations are only allowed to change band one time within a period of 15 minutes. A quick band change and return for working new multipliers is allowed.

Rest period: Only 36 hours of operation out of the 48 hours are permitted for single-operator stations. The 12 hours of non-operation may be taken in one, but no more than three periods at any time during the contest and have to be marked in the log.

Exchange: A contest QSO can only be established between a non-European and a European station. Exchange the usual 5- or 6-digit serial number RST/RS report plus a progressive QSO number starting with 001. W/K-stations in addition give their state (e. g., 599011 MA).

Points: Each QSO counts 1 pt. A station may be worked once per band. Each confirmed QTC, given or received, counts 1 pt. (see below).

Multipliers: The multiplier for non-European stations is determined by the number of European countries worked on each band. Europeans will use the last ARRL countries list. In addition, each call area in the following countries will be considered as a multiplier: JA, PY, VE, VO, VK, ZL, ZS, UA90 (see special regulations for RTTY). Each W/K-state will be considered a multiplier, but not W/K call areas.

The multiplier on 3.5 MHz may be multiplied by 4. The multiplier on 7 MHz may be multiplied by 3. The multiplier on 14/21/28 MHz may be multiplied by 2.

Scoring: The final score is the total QSO points + QTC points × the sum total multipliers from all bands.

QTC traffic: Additional point credit can be realized by making use of the QTC traffic feature. A QTC is a report of a confirmed QSO that has taken place earlier in the contest and later sent back to a European station. It can only be sent from a non-European station to a European station.

The general idea is that after a number of European stations have been worked, a list of these stations can be reported back during a QSO with another station. An additional 1 pt. credit can be claimed for each station reported (note special regulation for RTTY).

a) A QTC contains the time, call and QSO number of the station being reported. (i.e., 1300/DA1AA 134). This means that at 1300 GMT, you worked DA1AA and received number 134.

b) A QSO can be reported only once and not back to the originating station.

c) Only a maximum of 10 QTC's to a station is permitted. You may work the same station several times to complete this quota. Only the original contact, however, has QSO point value.

d) Keep a uniform list of QTC's sent. QTC 3/7 indicates that this is the third series of QTC's sent and that seven QSO's are reported.

Europeans may keep the list of the received QTC's on a separate sheet if they clearly indicate the station who sent the QTC's.

Contest awards: Certificates to the highest scorer in each classification in each country, reasonable score provided. Continental leaders will be honored. Certificates will also be given to stations with at least half the score of the continental leader.

Disqualification: Violation of the rules of this contest, unsportsmanlike conduct, or taking credit for excessive duplicate contacts will be deemed sufficient cause for disqualification. The decisions of the Contest Committee are final.

Logs: It is suggested to use the log sheets of the DARC or equivalent. Send large-size SASE to get the wanted number of log and summary-sheets (40 QSO's or QTC's per sheet). Use a separate sheet for each band. All entrants are required to submit cross-check

(dupe) sheets for each band on which they worked more than 200 QSO's. For each duplicate contact, that is removed from a log by the checker, a penalty of 3 additional contacts will be crossed out.

Special regulations for RTTY: In the RTTY section of the European DX Contest, contacts between all continents and also one's own continent are permitted. Multipliers will be counted according to the European and ARRL countries list. QSO as well as QTC traffic with one's own country (district) is not allowed. SWL's apply to the rules accordingly.

Deadline: CW — 15 September; Phone — 15 October; RTTY — 15 December.

European country list: C31 - CT1 - CT2 - DL - EA - EA6 - EI - F - FC - G - GD - GI - GJ - GM - GM Shetland - GU - GW - HA - HB - HB0 - HV - I - IS - IT - JW Bear - JW Spitsbergen - JX - LA - LX - LZ - OE - OH - OH0 - OJ0 - OK - ON - OY - OZ - PA - SM - SP - SV - SV5 Rhodes - SV9 Crete - SV Athos - T77/M1 - TA European part - TF - UA1346 - UA2 - UA Franz-Josefs-Land - UB - UC - UN/UK1N - UO - UP - UQ - UR - Y22-99/DM - YO - YU - ZA - ZB2 - 1A0 - 3A - 4U1 Geneva - 4U1 Vienna - 9H1

Criteria for the awarding of certificates and trophies in the WAEDC

Minimal requirements for a certificate or a trophy are 100 QSO's or 10,000 pts. In addition, at least one of the following conditions must be fulfilled.

Certificates: a) Top score in a country's respective district. b) In countries or districts with high participation an additional certificate will be given for each full block of 10 participants. c) Members of the Top Ten or Top Six (multi-operator) lists. d) Continental winners. e) Stations with at least half the score of their continental winner. f) Participants with at least 250,000 pts.

Trophies: a) Continental winners in the single operator category are awarded a plaque. b) Continental winners in the multi-operator category will be awarded a plaque if they have at least 100,000 pts. or at least the score of the winner in the single operator category in their continent. c) A station may receive a plaque in the same category only once within a three-year period. d) Special plaques will be presented to all members of the Top Ten/Six if they have been in this list for at least five times. e) The WAEDC Committee reserves the right to honour outstanding achievements in the contest by additional plaques.

Mailing address: WAEDC Committee, Post-box 1328, D-8950 Kaufbeuren, WEST GERMANY.

New Jersey QSO Party

The Englewood Amateur Radio Association, Inc., invites all amateurs the world over to



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take part in the 25th Annual New Jersey QSO Party, the weekend of 11-13 August.

The operating times of the contest are 2000 UTC, Saturday, 11 August to 0700 UTC, Sunday, 12 August and from 1300 UTC, Sunday, 12 August to 0200 UTC Monday, 13 August.

Phone and CW are considered the same contest. A station may be contacted once on each band — Phone and CW are considered separate bands. CW contacts may not be made in phone band segments. New Jersey stations may work other New Jersey stations.

Call: General call is "CQ NEW JERSEY". New Jersey stations are requested to identify themselves by signing "DE NJ" on CW and "New Jersey calling" on phone.

Suggested frequencies: 1810, 3535, 3900, 7035, 7135, 7235, 14035, 14280, 21100, 21355, 28100, 28610, 50-50.5 and 144.146. Suggest Phone activity on the even hours; 15 meters on the odd hours (1500-2100 UTC); 160 meters at 0500 UTC.

Exchange: QSO number, RST and QTH (ARRL Section or country.) New Jersey stations will send county for their QTH.

Scoring: Out-of-state stations — multiply number of complete contacts with New Jersey stations × number of New Jersey counties worked (maximum of 21). New Jersey stations — W-K-VE-VO QSO's count as 1 pt; DX stations count as 3 pts. Multiply total number of points × the number of ARRL sections (including NNJ and SNJ — maximum of 74). KP4, KH6, KL7, etc. count as 3 pt. DX contacts, as well as section multipliers.

Awards: Certificates will be awarded to the first place station in each New Jersey county, ARRL section and country. In addition, a

second place certificate will be awarded when four or more logs are received. Novice, Technician and mobile operator certificates will also be awarded.

Logs: Logs must show UTC date and time, band and emission, and be received no later than 08 September 1984. The first contact for each claimed multiplier must be indicated and numbered, and a checklist of contacts and multipliers should be included. Multi-operator stations should be noted and calls of participating operators listed. Logs and comments should be sent to: Englewood Amateur Radio Association, Inc., P.O. Box 528, Englewood, NJ 07631-0528. Include #10 SASE for results.

Stations planning active participation in New Jersey are requested to advise the EARA by 01 August of their intentions so that EARA can plan for full coverage from all counties. Portable and mobile operation is encouraged.

Alabama QSO Party

The Chattahoochee Valley ARC will be sponsoring the Alabama QSO Party on 25-26 August. Operating times will be 1600Z Saturday to 2300Z Sunday. The same station may be worked once on each band, mode and mobile on each county change. Alabama-to-Alabama contacts permitted.

Exchange: RS(T) and QTH. County for Alabama stations. State, province or country for others.

Scoring: 1 pt. per QSO. Alabama stations multiply by total states, provinces and countries worked. All others multiply by number of Alabama counties worked.

Frequencies: CW — 3565, 7065, 14065, 21065, 28065; Phone — 3965, 7265, 14265, 21365, 28565; Novice — 3725, 7125, 21125, 28125.

Awards: Certificates to top score in Alabama and to top score in each state, VE province and DX country. Plaques will be awarded to top Alabama score and top out-of-state score.

Mailing deadline is 30 September. Include large SASE for copy of results. Mail to: Johnny Royster, WA4VEK, P.O. Box 494, Fairfax, AL 36854.

Occupation Contest

The Radio Association of Erie (Pennsylvania) is sponsoring its annual Occupation Contest, to be held from 1800Z, 25 August until 2400Z, 26 August.

Exchange: Signal report, occupation and state, province or country.

Suggested frequencies: CW — 40 kHz up from lower band edges; Phone — 3.290, 7.250, 14.300, 21.400, 28.600.

Scoring: 3 pts. for each QSO with station giving a new occupation. 1 pt. per QSO with stations sending a similar occupation to one already worked. 2 pts for each retiree worked.

Mail logs by 01 October (with SASE for results) to: Harry Arsenault, K1PLR3, 603 Powell Ave., Erie, PA 16505.

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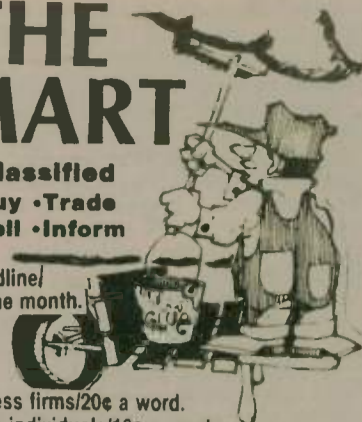
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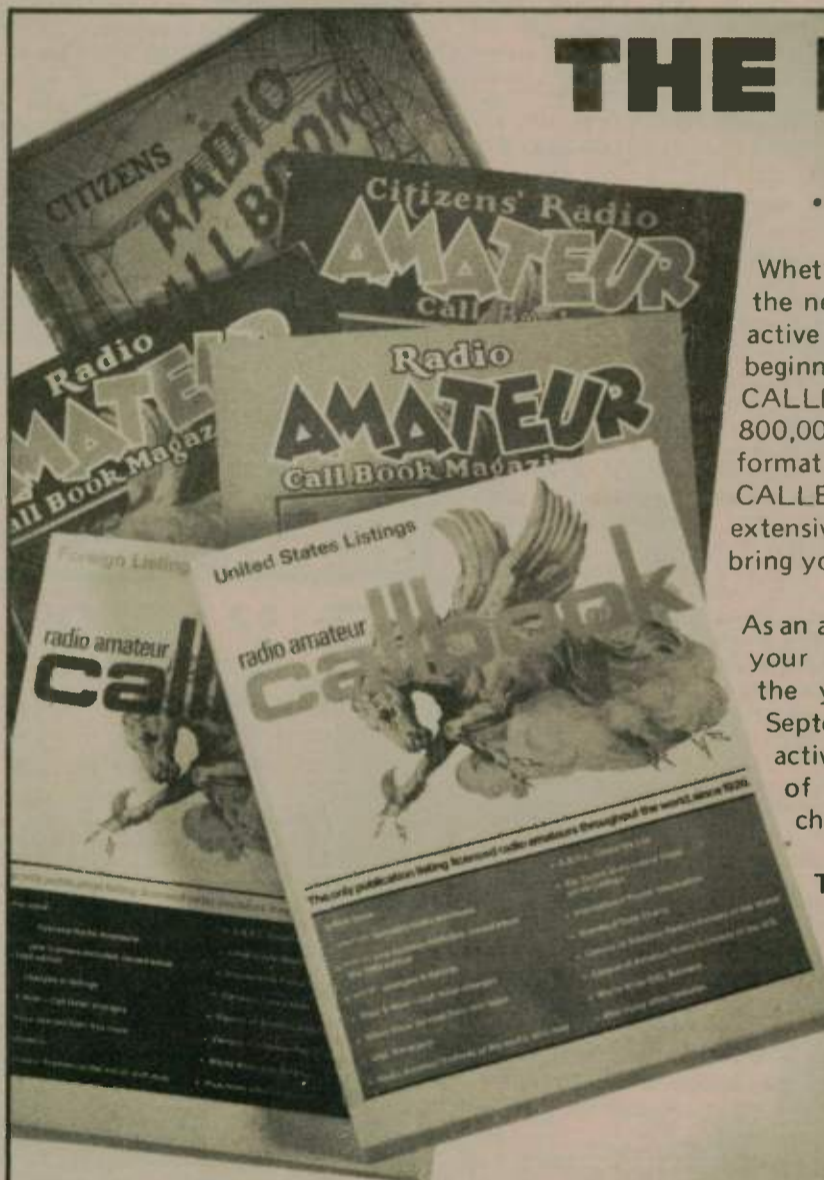
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Alpha Delta Communications — 42
Amateur Accessories — 44
AMSAT — 26
Anteck, Inc. — 37
Antenna Co. of America — 46
Antennas, Rudy Plak — 2
Arpress — 9
Azimuth Clock — 21
BHC, Inc. — 2
Birch Hill Sales — 36
Britt's 2-Way Radio — 5
Butternut Electronics — 6
Caddell Coil — 30
C & A Roberts, Inc. — 17
Callbook — 54
Certified Communications — 34
Coin Int'l — 53
Communication Concepts — 3
Communications Specialists — 11
Courage Center — 18
Dana — 51
Daytapro — 55
Design Electronics Ohio — 12
Display Your License — 33
Doppler Systems — 15
Encomm — 45
Engineering Consulting — 38
Fallert's Engraving — 4
Glen Martin Engr. — 49
Hamfest — Radio Expo 84 — 52
Ham Radio Outlet — 28, 29
Ham Radio World — 24
Ham Shack — 41
Handi-Tek — 12
Henry Radio — 13
IMRA — 38
Jinx Electronics — 8
J.L. Industries — 16
JRW Electronics — 31, 38
Jun's — 20
KC7LU — 10
Kilo-Tec — 4, 39
La Cue Communications — 6
Lionel Industries — 26
Long Island DX Bulletin — 55
L-Tronics — 10
Madison Electronics — 14
McLaran, Robert D. — 16
Metro-Comm, Inc. — 51
MFJ — 19, 23, 25
MHz Electronics — 48
Micro-Com — 26
Micro-80 — 56
Mike Forman — 55
Mini-Products, Inc. — 18
N.P.S. — 4, 31, 44
N6KW QSL cards — 22
Nye Co., Wm. M. — 15
OPTOelectronics — 43
Palomar Engineers — 19, 24
P.C. Electronics — 27
QCWA — 3
QSL by Fred — 34
QSLs by W4MPY — 30
Radio Amateur's Conversation Guide — 22
Radio Clubs — 32, 33
Radiokit — 32
Radio Store — 52
RAK Electronics — 30
RF Enterprises — 40
Rogers Advertising Spec. — 9
Rusprint — 12
Sartori Associates — 46
S-F Amateur Radio Services — 47
Skylane — 52
Spider Antenna — 31, 39
Spirit Publications — 42
Spi-Ro Distributors — 8, 32
Ten-Tec — 5
TimeKit — 15
TNT Radio Sales, Inc. — 50
Trafalgar Star — 36
Tristao Towers — 35
Two Way Talk Shop — 37
Unity Electronics — 9
USQS — 33
Van Gorden Engineering — 2
Wendell Kent, NV6C — 49
W9INN Antennas — 22
Webster Associates — 3
Williams Radio Sales — 53
Woodall & Associates — 42
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