Worldradio

Year 12, Issue 5

November 1982 • 80¢

Dr. Robert R. Fossum (left), Dean of Southern Methodist University School of Engineering and Applied Science, accepts two student aid grants from Louis E. Brown, W5NSF, a Fellow of Radio Club of America.

Radio Club of America grants

The Radio Club of America, the nation's pioneer electronics society, recently awarded two $500 student aid grants to the School of Engineering and Applied Science of Southern Methodist University (SMU) in Dallas, Texas. Dr. Robert R. Fossum, Dean of SMU School of Engineering and Applied Science, accepted the grants which were presented by Louis E. Brown, W5NSF, a Fellow of Radio Club and resident of Dallas.

Dr. Fossum, who served as Director of the Defense Department's Advance Research Project Agency (DARPA) prior to his association with SMU, commended the Radio Club for its support of electronics education.

"Through their own experience, members of the Radio Club have seen the key role that electronics plays in strengthening our nation's defense and economy," said Dr. Fossum. "I commend them for taking an active role in furthering electronics educations."

War on ham band bootleggers in Brazil

Robert Wheaton, W5XW

A newspaper item from **O Estado de Sao Paulo**, dated 8 August 1982, forwarded by a Brazilian amateur, brings welcome news of a government crackdown on clandestine operators, particularly those on the high end of 11 meters which make daily incursions into the amateur 10-meter band.

In a press interview, director of Dentel (Brazil's equivalent of FCC), Antonio Fernandes Neiva — noticeably upset about the international interference complaints crossing his desk — specifically cited interference to U.S. and European amateurs, going on to say that, "Last year Brazil was elected "World Interference Champion" by numerous Amateur Radio societies worldwide." He added, "This is a national shame for Brazil." Director Fernandes Neiva complained bitterly that, "We have received numerous international complaints about these transmissions — this has contributed to give Brazil a negative image."

He acknowledges this criticism developed during a period when Dentel had cut back on enforcement activities, due to lack of manpower, limiting it to other radio services. A decrease in violations in those services was offset by an increase in bootleg transmitter alterations and operation. Now, he says, even with manpower restrictions, Dentel is going after ham band bootleggers. While declining to define the punitive measures which are being used, the Dentel director acknowledges they have the full cooperation of the federal police in locating clandestine operators.

The director set the crackdown into operation with a confidential memo to regional delegations of Dentel; the LABRE (Liga de Amadores Brasileiros de Radioemissao — Brazil's version of ARRL) is supportive of the program. LABRE has been vocal about intrusions into the amateur bands and has called for Dentel action.

Realistically, with limited manpower and budget, Dentel cannot hope to apprehend all the bootleggers. However, the Brazilian amateur who supplied the newspaper clipping says that a number of reports have been published since Dentel started the crackdown several months ago, and that confiscation of bootleg equipment and even prison sentences for some "pirates" seem to be making a dent in the problem.

It strikes this writer that the Dentel director might respond to the problem with even more vigor if he gets a pat on the back from foreign amateurs. He has focused on a growing problem: spectrum anarchy. If you'd just like to thank him for helping clean up *your* amateur bands,

(please turn to page 4)

Los Angeles fire

American Red Cross asks, Amateur Radio answers

Lenore Jensen, W6NAZ

Twenty-one persons died in a tragic apartment house fire near downtown Los Angeles on the morning of 3 September. The American Red Cross requested help in communications, and it was readily provided by Amateur Radio.

On that blistering hot morning, a phone call alerted Adrienne WA6YEO and Dan Sherwood, WA6PZK, 20 miles away. They immediately dropped their chore of packing for a move to a new home and rushed to the Red Cross location on Wilshire Boulevard.

They were told that communication was urgently needed with Belmont High's gym, a mile away, which was serving as a shelter for a great many homeless victims of the conflagration. No telephone was available to that spot.

Meanwhile, Frank Iverson, WA7ZCQ had heard and came as soon as he could, telling Bob Rod, K6FZ about the situation on the repeater of the Bel Air Radio Association, W6BRD. Bob offered to come, as well. Cal Smith, the trustee, "opened" the repeater for emergency use.

It was to prove very useful. Simplex operation on 2 meters was not reliable in the area of tall buildings. Worse yet, the radio room of the Red Cross was in a basement and no 2-meter antenna was available above ground. Similarly, the gym turned out to be low level.

The amateurs decided to handle it with their mobiles, driving the cars as close as possible to both the offices and the gym. Sometimes hand-helds at specific spots on the football field served well.

Dr. Gerald Blankfort, WA6GTT was spending the Labor Day weekend at home, as he was "on call" to his patients. He offered to serve as NCS and guard the frequency. A special problem arose with Los Angeles' famous "inversion layer" which plays havoc at such hot, smoggy times. Distant San Diego's repeater was coming in beautifully!

However, a polite request to aid with silence was nicely granted — a fine example of amateur cooperation over the long hours.

All types of Red Cross conversations and messages were handled by the ham troops. A third location, the fire scene itself, was added. The repeater's autopatch was used extensively, delighting the users. Even the police were highly complimentary of the efficient communications provided by the amateurs.

By 10:00 p.m. the telephone company had been able to bring in a special van used for emergencies, eliminating the need for amateurs and their transceivers. They packed up and left, amid heartfelt thanks for a job well done. □

President signs H.R. 3239

President Reagan has signed into law important legislation affecting Amateur Radio. The signing of H.R. 3239, which incorporates the Amateur Radio provisions of the legislation known earlier as S. 929 and H.R. 5008, took place on 13 September. Thus ends a long battle for Congressional support of ARRL legislative proposals in the fields of radio frequency interference, monitoring by volunteers, volunteer examination preparation and administration, and the lengthening of amateur license terms.
(See 'FCC Highlights,' page 10.) □

New third-party agreements

FCC has announced two new third-party traffic agreements. A third-party agreement is now in effect between the United States and St. Lucia, prefix J6. A third-party agreement is now in effect between the United States and Antigua/Barbuda, prefix V2.
— ARRL □

TM Worldradio

is published monthly by
Worldradio, Inc.
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Sacramento, CA 95818 USA
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November 1982 Vol. 12, No. 5

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

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

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

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

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

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

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Second-class postage paid at Sacramento, CA.

Coast Guard aided by hams

Bill Graham, WA6WSI

Looking back on the night of 8 August 1982, all of us had something to be proud of. I'm sure Don Johnson, WD6FWE is happy with his efforts at quickly organizing a net and coordinating with the Coast Guard when the emergency came up. Surely Bob Gonsett, WA6QQQ is pleased with the results of his position plots of our distressed vessel. And those DFing amateurs Guy Rowlett, KB6AI in Oceanside; Jim Haney, KA6DNF at San Onofre; Bill Dealy, KB7TD in Encinitas; Fred Kokaska, N6DG in Del Mar; and Walt Lockhart Jr., W6SCI in Carlsbad should be busting with pride over their long vigil and constant updates that they passed on to WA6QQQ.

Then there was Dennis Shirrel, K7DCG, who welded the final link with the Coast Guard and uncovered the key element — a ham with an HT on board the Coast Guard rescue cutter *Point Camden*. It was clear to all that Bill Smith, WA6YPE on the *Point Camden* was proud to be aboard, providing the key communications link necessary to coordinate the rescue effort. And there was my 7-year-old son, Christopher-Robin, who had never been in open water but kept his cool during that seven-hour wait for help to arrive. But I was proudest of all. I have the distinct pleasure of belonging to the greatest fraternity on earth — Amateur Radio, and the night of 8 August 1982, proved how great it is to be an amateur.

Our plan was simple. Christopher and I were going to spend the weekend anchored off of Catalina Island aboard our 24-foot Searay powerboat. Although I have been sailing for 35 years, I decided to buy a used powerboat this summer and this trip was our first offshore shakedown. The weekend was pleasant and uneventful. However, two problems irked me. My marine VHF-FM transmitter had quit when I tried to call home. I used my FT208-R HT to talk to home via the Newport repeater. Secondly, I was taking on a small amount of water at the transom around the outdrive mounting. Occasional pumping was keeping that problem under control.

Sunday afternoon at 3:30 p.m., Christopher and I left Catalina for Oceanside. The swells were 2 to 4 feet in moderately choppy seas but the Searay, properly trimmed, was doing a beautiful job at 18 mph. All of a sudden, about 18 miles out of Oceanside, with the San Onofre power plant in sight, the engine quit. A quick examination revealed the problem to be other than fuel or ignition. Something seemed to be seizing the engine. And of course, the slow leak in the stern area was still present. As the swells broke against the transom, the leak got worse. With both batteries fully charged, I had plenty of power to run the two bilge pumps, provide lighting, and talk via Amateur Radio.

At 5:30 p.m., I called the Palomar 146.73 MHz machine and got WD6FWE. Don immediately volunteered his services as net control and called the Coast Guard and the Oceanside Harbor Patrol.

Thus began two frustrating hours while government authorities determined jurisdiction. With a lot of help from Dennis K7DCG, a Coast Guard communicator himself, it was finally established that *Point Camden* was on its way from San Diego and would arrive on the scene about midnight. However, those two hours were well filled with activity because WA6QQQ organized a group of amateurs to determine my precise position using FM DF techniques.

Through the courtesy of K7DCG, I soon got that call from WA6YPE. Net Control-WD6FWE turned his duties over to WA6YPE on the cutter. With a firm idea of the cutter's arrival time now established, both Christopher and I breathed easier. In addition, the boat was doing fine in the swells even though we were getting knocked around quite a bit. It was also becoming clear that the pumps were handling the water nicely.

My attention now turned to greater assistance of the shore-based amateurs who were doing the plotting of both my vessel and the Coast Guard cutter. Using satellite navigation, WA6YPE decided to test the accuracy of ham DF bearings on the *Point Camden*. WA6QQQ had pinpointed the *Point Camden* within two nautical miles as shown on the attached DFing map. At first, the Coast Guard misinterpreted their own navigation data and thought the amateurs had made a big mistake, but soon discovered that the error was theirs! No one dared to question the accuracy of ham-generated data again that night.

Shortly after midnight, I sighted the *Point Camden* about three nautical miles to the south. I shined my searchlight, they immediately sighted me, and shortly thereafter came alongside. We switched to 52 simplex, and Christopher was transferred to the cutter. My engine was inspected by the cutter's engineer, Jim, after which we were taken into tow, and — with Jim and I on board the Searay — we started the long tow to Oceanside. With the boat underway, very little leakage occurred. We entered Oceanside Harbor at about 4:30 a.m.

The story of the breakdown and the tow is interesting to some. However, the real story is Amateur Radio. Not only did Amateur Radio provide the only means of communication, but the precise positioning of the subject craft allowed a quicker rescue. The value of the exercise is obvious. WA6YPE tells me that there are hams aboard about one out of every five rescued vessels. This means there are a lot of amateurs out at sea.

To all of you who helped and gave moral support, Christopher and I extend our deepest thanks and best wishes. □

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FEATURES

COLUMNS

1983 YLRL election results

Rose Ellen Bills, N2RE

The following YLRL (Young Ladies' Radio League) members will take office on January 1983. Current membership in YLRL is 1,343.

President:	Sandra Mae Heyn, WA6WZN 962 Cheyenne Street Costa Mesa, CA 92626
Vice President:	Rose Ellen Bills, N2RE 17 Craig Place Pennsville, NJ 08070
Secretary:	Marilyn Backys, WB9TDR 3930 N. Firestone Drive Hoffman Estates, IL 60195
Disbursing Treasurer:	Jackie van de Kamp, W6YKU 1934 Honey Run Road Chico, CA 95926
Receiving Treasurer 1 (Districts 1, 2, 3 & 4):	Barbara Robinson, WB1ACA 28 Upland Road Marlboro, MA 01752
Receiving Treasurer 2 (Districts 5, 6 & 7):	Violet Barrett, W6CBA 10530 Grovedale Drive Whittier, CA 90603
Receiving Treasurer 3 (Districts 8, 9, 10, KH6, KL7 & VE):	Becky Skinner, KA9GWE 9720 Pinto Lane Fort Wayne, IN 46804

District Chairman:

1st District:	Diane Haigh, N1YL 85 Scott Road East Lynne, CT 06333
2nd District:	Cecilia Zwack, WA2NFY 138 Flower City Park Rochester, NY 14615
3rd District:	Jeanne Doncaster, KA3CEO 904 Kunkle Avenue Greensburg, PA 15601
4th District:	Jeannette Ellis, KB4XO 15 Whispering Way Atlanta, GA 30328
5th District:	Esther Smith, WD5EMZ Rt. 1, Box 266 Many, LA 71449
6th District:	Jo Anne Dowe, WA6ZGM 631 Brookwood Way Chico, CA 95926
7th District:	Phyllis Douglas, K7SEC Rt. 8, Box 82 Tucson, AZ 85710
8th District:	Doris Smith, WD8IKC 6201 Fairacres Street S.W. Canton, OH 44706
9th District:	Adah Elliott, W9RTH 721 Centennial Street Seymour, IN 47274
10th District:	Marjorie Tiritilli, KB0ZC 2719 Glager Road St. Louis, MO 63125
KL7 District:	Cynthia Henry, AL7BO Box 451 Tok, AK 99780
KH6 District:	Val Alvarez, KH6QI 1635 Dole, #502 Honolulu, HI 96822
VE District:	Elizabeth Anderson, VE7BIP 3993 Parkway Drive Arbutus Village, Vancouver British Columbia, CANADA V6L 3C9

YLRL president

WA6WZN keeps busy

Sandra Mae Heyn, WA6WZN has been elected president of the Young Ladies Radio League (YLRL) for 1983. She is currently the vice president and has held YLRL positions of secretary, disbursing treasurer, and District 6 Chairman. First licensed in 1973 as WN6WZN, she now holds an Extra Class license, WA6WZN. She is married to Fried WA6WZO, with one caughter — Margret KA6DGA, currently in college.

She has held various volunteer ARRL appointments and is currently the Assistant Section Communications Manager of the Orange Section (with OM as SCM). They have a fine station that covers most bands and modes from 220 MHz to 160 meters plus an Apple II computer interfaced.

She is active on the air and has been net control of various nets, as well as active in DXing and contesting (including first place YL/OM team 1976 YLISSB QSO party and first place YLRL "Howdy Days").

In addition to being a life member of ARRL, she is active in many other ham organizations. Following are past offices she has held: secretary of the Orange County Amateur Radio Club; editor of the Southern California Amateur Radio Computer Club (founded by OM); treasurer of the Los Angeles Area Council of Amateur Radio Clubs; president of the Young Ladies Radio Club of Los Angeles; YL committee chairman of 1979 Southwest Division ARRL Convention; and member of the YLISSB executive council. Finally, she manages to find time to work as a Senior Electronics Technician for Rockwell, as well as enjoy time in her other hobbies which include skiing, sailing, golf and computers. □

Sandra Mae Heyn, WA6WZN

Mission Impossible

"Good morning, Lloyd Colvin, W6KG and Iris Colvin, W6QL!

"Your mission, Lloyd and Iris, should you desire to accept it, is to travel to the Middle East on 1 October 1982, enter all countries there, set up your Amateur Radic station in each country, and work all the DX amateurs of the world during the ensuing six months.

"As usual, all QSLs for your QSOs will go to: The Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546, USA.

"If you run into trouble, or in any way fail in your mission, the Secretary will disavow any knowledge of your activities.

"Good luck, Iris and Lloyd!"

BOB VALLIO, W6RGG
Secretary
Yasme Foundation □

Canadian Divison Director resigns

Canadian Division Director Mitch Powell, VE3OT has resigned. Mitch began the school year with an unexpectedly heavy schedule of teaching assignments, and felt he would be unable to do justice to both his job and his League responsibilities.

Mitch served as Director for slightly less than three years. In that time, he assembled an outstanding team of volunteers to carry on the CRRL's work in Canada.

Succeeding Mitch is Thomas B.J. Atkins, VE3CDM. Tom has served as Vice Director since the first of the year, and was the Canadian representative at the IARU Region 2 Conference in Lima, Peru in 1980. He has served as an Assistant Director since 1978 and was a member of the ARRL Public Relations Advisory Committee.

ARRL President Vic Clark has appointed Harry MacLean, VE3GRO as Vice Director. Harry is the conductor of the QST 'Canadian Newsfronts' column, and has been active in both ARRL and CRRL affairs. He has also been appointed to the Ad Hoc Committee on the Strengthening of the CRRL.

President Clark has decided not to fill the vacant seat on the Executive Committee until after the next meeting of the Committee. □

California amateurs fight city ordinance

Submitted by Tad Kleindienst, KA6IYM

Buena Park (California) Amateur Radio operators — who spend a lot of time helping others — are asking for a helping hand from city fathers on provisions in the newly approved zoning ordinance.

The new regulations restrict antenna tower heights to a maximum of 30 feet, according to Tad Kleindienst, KA6IYM and George Gonski, KA6IFE — leaders in an effort to have the Amateur Radio facilities removed from the city law.

On 20 September 1982, the city's amateurs presented city council with over 220 signatures on letters and petitions to totally remove the new regulation from the city zoning ordinance.

After lengthy discussion at that meeting, the council passed a resolution, creating a committee to study the problem that the new ordinance created for the local amateurs.

Assigned to the new committee are two councilmen, two staff members from the planning department, and four local radio amateurs. The committee is to submit their report within 30 to 45 days.

Kleindienst said he learned the height restriction applied to the radio antenna towers when a ham operator inquired at the planning department about a proposed project.

The new zoning ordinance sets a height restriction of two stories or 30 feet for buildings or structures.

He noted that while all present existing radio towers are protected under a "grandfather" clause, a person who wants a higher tower or other improvements will have to apply for a conditional use permit and pay a non-refundable fee of $475.

"And there's no guarantee you will get permission for the improvements; it will depend on the mood of the commission and neighbors," he added.

The two leaders in the effort said the average height of current towers was 50 feet. Prior to the new ordinance, which went into law in August, radio antenna towers were excluded from city height restrictions.

"It may have been an oversight by applying the law to us," Kleindienst said.

He said the council is being asked to amend the new zoning ordinance to exclude antenna towers from a height restriction.

Letters have been sent to all the radio amateurs in the city listed in the 1982 Callbook. Also, the two operators said they will be on 2 meters simplex on 147.495 every night from 7:00 p.m., talking to local operators about the issue and enlisting help.

— *Buena Park News, CA* □

Pitcairn fuel fund donors

Charles Moser, W6HS
Warren Gilleran, KD6UD, Santa Clara, CA (Warren, your donation is good for half a barrel of fuel. Tnx)
Wade Moore, KE6XF, San Diego, CA
Dale Diehl, K5WUF, Oklahoma City, OK
Harrison Church, W0KXP/9, Lebanon, IL
Jim Foster, K7ZFG, Klamath Falls, OR
Jim KB7UG & Pat Chaddock, KB7TW, Custer, WA
John Gray, W6UZ, Delano, CA
Leon Brammer, W6BYH, Delano, CA
Steve Tobe, VE3CYX, Toronto, Ontario, CANADA
Ned Jacoby, NG6W, Balboa, CA
Joan N6DJX & Wade Faircloth, N6DJW, Anaheim, CA
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Dave Weaver, WA6IVO, West Covina, CA
Jim Coggins, WA8ZDN, Pinckney, MI
Cliff Hudson, KA6DFI, West Covina, CA
Milt Carshon, WB7NER, Casper, WY
Joel Miller, WA7JWC, Portland, OR
Reagan Rowe, W4FHI, Charlotte, NC
Bob Hicks, KC8CR, Wheeling, WV
Bob McNair, W6XS, Torrance, CA
Maryrose McNair, WD6AXA, Torrance, CA
John Syewart, W5LLU, Houston, TX
Pete Hawkins, N5DMP, Hattiesburg, MS
Frank Kiefer, K2PWG, Port Jefferson, NY
Henry Feltman Jr., WB2MSH, Woodbury, NJ
Nita Pepper, N5ACX, Bellefontaine, MS
Bob Lyon, WA6DTG, Altadena, CA
Erich Grassner, DL7FP, Berlin, WEST GERMANY
Russ Burss, W9RKP, New Berlin, WI
Denis Laliberty, VE3MFP, St. Catherines, Ontario, CANADA
Henry Adelson, K2BAH, Ventura, CA

Total $209.00

Tall Ships sail to Lisbon

Philip WH6AMZ/CT1BDT and Linda Balink-White, KH6KZ/CT1YDN

"CE2CHI — this is CT1YDN. We're ready to receive your position report. Over." Nightly, for about two weeks in the middle of July, these words were heard on the 15-meter band, as the Tall Ships made their way to Lisbon, Portugal from Newport, Rhode Island in the New World Tall Ships Race. Once in Lisbon, these magnificent sailing vessels joined the Tall Ships which had raced to Lisbon from Falmouth, England in the Cutty Sark Race for a combined race to Southampton, England via Vigo, Spain.

These International Sail Training Races are held every even-numbered year and bring together the last great squareriggers and the young people who crew them. Lisbon was one of the focal points of the 1982 races; in fact, it was the Jubilee Visit to Lisbon. As there were scheduled to be over 100 sailing vessels converging on Lisbon and spending a week to 10 days there, an enormous amount of interest had been generated.

The ships ranged from the 113-meter *Esmeralda*, the Chilean Navy Sail Training Ship, to the smaller sloops of 13 meters.

One of the organizers of the New World Race, a retired U.S. Navy Admiral, got in touch with Linda Balink-White, KH6KZ/CT1YDN — an active-duty U.S. Navy commander stationed with NATO in the Lisbon area — and arranged for Linda to contact George Brown and Antonio — Chilean Navy Midshipmen onboard *Esmeralda*, CE2CHI once the Tall Ships were about halfway across the Atlantic. Positions of the five major Tall Ships crossing from Newport were received and immediately passed by landline to the Portuguese Sail Training Association — Aporvela — Race Committee in Lisbon, which was then able to plot the ships' positions and keep all interested people informed of their progress. Linda's OM, Phillip WH6AMZ/CT1BDT was constantly by her side providing words of encouragement, their ears straining to correctly hear the positions.

The press of NATO social activities occasionally kept Linda away from her ICOM 701, and Bill Brown, CT1ATR (no relation to George on the *Esmeralda*), the U.S. Embassy doctor, took over the appointed schedule. (He also provided invaluable moral support to Philip and Linda when they were setting up their antenna.) Two or three times conditions were poor and *Esmeralda* could not be raised. W1SYE in Newport could be heard talking to *Esmeralda* and positions were passed by him. The UK Maritime Mobile Net, Rudi Weber, G4FTO and Ernie Ayre, G8OS also assisted one night.

The races and the great Parade of Sail down the river Tagus (over 100 vessels) past the president of Portugal, as the ships left Lisbon, was a great international event which furthered understanding among many of the world's nations. Ships were from Great Britain, South America, Poland, The Netherlands, USSR, West Germany, Sweden, Canada, Portugal, Denmark and even Switzerland. The list goes on and on, and Amateur Radio was there again to lend a helping hand. Both Linda and Philip were introduced to and personally thanked by Sr. Francisco Balsemao, Prime Minister of Portugal, for their joint efforts.

Philip Balink-White, WH6AMZ/CT1BDT (left) and wife Linda KH6MZ/CT1YDN stand next to Jack Lord of "Hawaii Five-O" fame.

They met George Brown in person (he had a British grandfather) on board *Esmeralda* in Lisbon. It was as if they had known each other well for years, as they greeted with friendly embraces in true Chilean and Portuguese fashion. George has only a few months training to go before he is a fully commissioned Chilean Naval Officer and ready for the challenge of a naval career.

Linda and Philip, a 32-year British Royal Navy man, met when Linda was stationed in London, England in the '60s. They agreed to further international understanding and married nearly 10 years ago. Since then, they have been stationed in Newport, Rhode Island; Monterey, California, where Linda received her degree in Oceanography from the Navy's Post Graduate School; and Pearl Harbor, Hawaii, before Linda's current tour in Portugal. One of Philip's most exciting jobs since arriving in the New World was acting in about 18 "Hawaii Five-O" shows; Linda did two.

Linda first got her ham license at age 15 (KN9CJS), but let it lapse after the first year (the rules at the time, unless the license was upgraded). Then in Hawaii her interest in Amateur Radio was revitalized and she started from scratch again with a Novice license (everything had changed so much since 1955!) WH6AEI, and finally upgraded to General.

Philip remembered a great deal of his code from early Royal Navy days and also received his license. Philip left the Royal Navy 12 years ago, having made Commander, and in 1981 was fortunate enough to join the faculty of the Portuguese Naval Academy as Professor of English. Many of his cadets took part in this year's Tall Ships Race from Newport aboard the Portuguese Navy sail training ship *Sagres*.

And so the loop was closed, and everyone is looking forward to the next gathering of the Tall Ships in Quebec, Canada, and possible assistance of Amateur Radio enthusiasts once again. □

Bootleggers

(continued from page 1)

put 28 cents postage on your QSL card and mail it to him at: Sr. Antonio Fernandes Neiva; Diretor-Geral do DENTEL; Ministerio das Comunicacoes, 4° Andar; 70066 Brasilia, D.F. BRAZIL.

An appropriate "Thank You" in Portuguese is: Sr. Diretor: Lei em Worldradio da sua guerra contra os intrusos nas Faixas dos Radioamadores. Obrigado! 73. (Mr. Director: I read in Worldradio of your war on ham band intruders. Thank you. 73.) □

Joey O'Neill (center) operates aboard the *USS Croaker*. On the left is Pete Sawitsky, N1ANY; to the right is Rick Davenport Jr., AI1G. *(N1BYH photo)*

Submarine station invites blind boy to operate

Rick Booth, N1BYH

If Amateur Radio and physical handicaps are a marriage made in Heaven, then Joey O'Neill has been there.

Thanks to the kindness of a few alert amateur operators in southeastern Connecticut, a 12-year-old Joey was able to enjoy a weekend of operating the airwaves on 22 and 23 May, and had an experience he isn't likely to forget.

Joey was the Chief Guest Operator and star attraction aboard the *USS Croaker*, a World War II fleet-type submarine now living out her retirement at the Submarine Memorial in Groton, Connecticut, right next door to the General Dynamics-Electric Boat shipyard where she was born 39 years ago that May weekend.

The boy could hardly contain his excitement as he keyed the mike and made his voice travel the reaches of the Northeast on 40-meter phone. He filled his ears with the glorious sound of greetings and best wishes from every amateur who worked the station, and Joey's ears are sharp.

That's because Joey O'Neill has been blind nearly since birth, the victim of tumors discovered behind his eyes.

No one could have guessed he was handicapped in any way, from seeing him in that tiny wardroom aboard the *Croaker*. He sometimes forgot to un-key the mike, but Pete Sawitsky, N1ANY and a host of other members of the area's three clubs, Tri City Amateur Radio Club, the Radio Society of Norwich (RASON), and the Southeastern Connecticut Radio Amateur Mobil System (SCRAMS) were constantly on hand as control operators.

Sunday morning was a highlight for Joey. Friends brought 'round a copy of the local newspaper, the New London Day, and there boldly displayed above the fold on page 1 was Joey and the N1ANY station. The Local amateurs had alerted The Day, thinking it was a natural feature story, and their correct assumption led to the exposure of Amateur Radio not only to Joey, but to the entire Groton-New London area as well.

Not only did the newspaper visit Joey the day before, but Sunday morning was when Joey received a call from Red KB3DE, whose call is familiar to many amateurs, especially around his native Maryland.

Red is even more well known to World War II submarine sailors, and he didn't want to miss a chance to work the *Croaker*.

That's because Lawson P. "Red" Ramage was a submariner himself and won the Congressional Medal of Honor in the Pacific commanding a fleetboat very much like the one Joey sat aboard while the two passed greetings. Ramage retired from the Navy as an admiral.

Such was the enthusiasm with which Amateur Radio greeted Joey, that he had his first experience with pileups, and N1ANY and others had to help him sort out the crowd. Joey worked as many as he could, and soon he will be getting countless cards and letters in his Chelmsford, Massachusetts postal box, Box 199.

Joey's invitation to N1ANY began weeks before the station went on the air aboard *Croaker*, and it started with a trip planned by his mother, Joanne, and his aunt, Rita Kretzman.

With his dad busy at work, Joey spends a lot of time with his mom and Aunty Rita, and one of the places they took him was Mystic, where the Mystic Seaport Museum and Mystic Marinelife Aquarium are Connecticut's top tourist attractions. While in Mystic, the family decided to visit the Submarine Memorial, and it was a fateful choice.

At the *Croaker* gangway, they met Charlie Smith. Charlie, a submarine veteran and guide on the *Croaker*, gave Joey the grand treatment, and while they were aboard, Charlie had a brainstorm. Why not, he reasoned, introduce the boy to Amateur Radio through his friend, Pete?

Why not, indeed? N1ANY warmed to the idea, and thought not only to get in touch with the Tri City, RASON, and SCRAMS club members and the ARRL, but to invite the boy to the *Croaker* event.

League headquarters responded by getting Joey in touch with a willing amateur in his home town to teach him the Morse code, and Joey spared no effort in his QSOs in thanking Mary Smith, K1ABO for her tireless efforts on his behalf. Soon Joey will be passing the Novice code test, and you'll hear him on the air on his own.

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

ICOM welcomes new amateurs

The free-of-charge Amateur Radio classes offered by Orange Coast College and Coastline Community College in Southern California have been sellouts. Both colleges offer the class free and have allocated their largest teaching facilities for the popular 18-week course.

Meeting once a week for four hours, students are familiarized with electronics, rules and regulations, and Amateur Radio operating procedures, and are prepared to take their General Class exam during the 18th week graduation period. Novice exams are administered in bulk, allowing the examiner to give both the code and written tests on the same night.

The Technical class test is taken, by most students, during the 17th week. Most students will go on and take the General Class code test the following week.

Instructors Gordon West, WB6NOA, Worldradio Maritime Mobile columnist, and Extra Class licensee Loraine McArthy, N6CIO teach the theory and code classes through the college district. An-

nually, 800 students graduate from these classes in addition to overflow classes offered by Gordon West.

ICOM sees opportunity

"The first question most students ask after they pass their tests is which radio to buy," comments West. "That's an easy question with a rather complex answer. There is no one radio that is best for everyone. Choosing a radio is an individual thing, and I review with students the merits of each type of set," adds West.

Evelyn at ICOM in Washington also has the same question posed to her during ICOM days at participating Amateur Radio stores — "Which radio is best for the beginner?"

As an encouragement for students to make their first radio an ICOM, Evelyn at ICOM presented each graduating student an ICOM gift certificate worth $25 redeemable on the purchase of ICOM equipment of equal or greater value. This certificate congratulated each student for the completion of their Amateur Radio course.

The plan evidently worked well. Recent graduates were seen at local Amateur Radio stores with their ICOM gift certificate in hand. Local Amateur Radio stores also saw these certificates as perfect opportunities to increase their business.

"We have no trouble at all filling up our lecture hall with 250 prospective Amateur Radio students. Although our classes are free through the local college district, we give them plenty of homework on both code and theory to keep them busy during the rest of the week. Our classes aren't easy, nor do we simply memorize questions and answers. We go far enough into the theory so that every student has a firm background in electronics before they attempt to take their Amateur Radio license," comments Gordon West.

"There is always plenty of live equipment on hand for students to turn on and listen to. We always use films, radio gear and actual components to illustrate each class session," adds West.

"It always amazes me when someone tells me there are not enough students wishing to take an Amateur Radio class. I'm also amazed when people tell me that the Amateur Radio market is a declining one because no one is interested in getting a new or higher license. Baloney — the problem is with the instructors not offering timely material in an informative manner," comments West.

"The Bash Books? Sure, our students will go out and buy them, but that's not a problem in our classes. Each exciting lecture keeps them coming back for more, and rarely do we have anyone bail out and study only the Bash Book. They use the Bash Book to doublecheck the exact questions and answers that might be on the exam. This reinforces the learning process from what they take out of each one of our class sessions," says West.

Instructors wishing to pattern 18-week courses after the very popular classes offered by West should write Gordo at the West/Coast Amateur Radio School, 2414 College Drive, Costa Mesa, CA 92626. A complete catalog indicating topics covered each evening will be sent out. An SASE would be appreciated. □

An FCC representative (right) congratulates a new ham graduate. Instructor Gordon West, WB6NOA stands in the background.

Ten years with MARCO

This is the third in a series of five articles on the history of MARCO (Medical Amateur Radio Council, Ltd.), as written by Joseph J. Boris, honorary member of the organization.

Year 1969

C.L. Samuelson, K8WYP, president, called a special meeting of the Board of Directors. The meeting was held at the Dorset Hotel in New York City. I was authorized to make arrangements for the third annual meeting, which was held at the Holiday Inn, New York City on 17 July. Quoting from the minutes of the meeting:

"The Directors, in session, confirmed a previous approval of the Executive and Publication Committees that six bimonthly issues of the MARCO *Bulletin* be published (funds being available) and that J.J. Boris continue the compilation and distribution of the *Bulletin*."

Year 1970

Anson R. Hyde, M.D., K4EK was president. The fourth annual meeting was held at the Sheraton-Blackstone Hotel in Chicago, Illinois on 24 June. At this meeting, honorary membership was conferred on John E. Gayer, Ex-HB9. Mr. Gayer was instrumental in the organization of AMSAT and at that time was president of the International Amateur Radio Club, Geneva, Switzerland.

Certificates of Merit were awarded to: Sam Rosen, M.D., WA2RAU; Christine E. Haycock, M.D., WB2YBA; George E. Beckerman, M.D., W6ORK; Thomas R. Shoupe, M.D., W8QP; and C.G. Sulu, India.

Year 1971

J. Stanley Carp, M.D., K1EEG, was president. The fifth annual meeting was held at the Traymore Hotel in Atlantic City, New Jersey, 22 June. At this meeting, the Rev. Daniel Linehan, S.J., W1HWE, General Secretary of the International Missionary Radio Association (IMRA) and Bro. Bernard Frey, OFM Cap. WA2IPM, Chairman of the IMRA Membership Committee — both members of MARCO — were our guests.

Year 1972

Earl E. Weston, M.D., W8BXO was president. The sixth annual meeting was held at the St. Francis Hotel in San Francisco, California on 22 June. This year we concentrated on a campaign to increase membership on the European continent, Central and South America, Canada and Japan. Copies of the MARCO *Bulletin* and membership applications were mailed to amateurs in medicine, surgery, and the mission field.

As a result, many Amateur Radio operators in the mission field, medicine, surgery and allied professions requested information or sent in applications for membership. We also received articles from field missionaries on their activities, which were published in the MARCO *Journal*.

T.M. Newland, M.D., G3TMN and Jim Hendry, M.D., VE4DG, established the "Canada Calling MARCO" net. Etsua Takada, M.D., JA0EXP established the "Japan Calling MARCO" net. Robert G. Callender, M.D., VK3AJ introduced a number of his colleagues who became members. Interest in medical traffic increased. Of special interest, reported the *Bulletin*, were "MARCO to the rescue in the Bahamas" and "Emergency at Guantanamo."

It was at this meeting that I first met Armond Noble, N6WR, publisher of **Worldradio**. He was our guest and presented a paper entitled, "Amateur Radio's Progress," Armond is a member of MARCO, and I take this opportunity to thank him for publishing these memoirs.

(Continued next month) □

Reflectorized plates

Information submitted by John Forchtner, W6MUL

Californians can now not only advertise their call signs with personalized license plates, they can do so with reflectorized plates.

The cost of these reflectorized ham license plates, when new, is $20 — $5 more than regular ham license plates. The fee for switching regular ham license plates to the reflectorized versions is $12 ($7 duplicate plus $5 reflectorized). □

Love at first listen

Ron WB1GGQ and Pauline Ramsey, G4NQE are a family — thanks to Amateur Radio and a "cupid" named Charlie Morgan, K1GZL. Pauline lived in England. Ron, who has been disabled since birth, lived in New Hampshire.

Pauline (Adderly) Ramsey says, "I used to listen to my receiver and then write letters to the people I heard broadcasting, so they would know how far they were reaching and how loud they were." At the time, she had only a receiver, but was studying for an operator's license.

Charlie Morgan was one of the people she wrote to. After they exchanged a few letters, Charlie gave Pauline's address to Ron, who was also studying for a license and often used Charlie's equipment. He could only broadcast in the presence of a licensed operator.

Beginning in March 1979, the two exchanged letters and photographs. In late October, Ron went to England. He says of his trip, "Not only was it my first time meeting her, it was also my first time on a plane, my first time out of the country, etc., etc." He says the trip was an important step for him. "Until that time, I had led a sheltered life. My parents were very protective, so the trip was more than just going to see Pauline. It was striking out on my own. It was a good feeling. When I got back, I knew I could do more than I had ever done before. I knew there was something else out there for me. I had found a sense of independence beyond what I had with my parents."

Ron also knew he and Pauline were now more than pen pals, though they continued to write and to communicate over the radio. Other listeners soon knew that a special relationship had developed. The story of the romance was soon reported by newspapers and radio stations all over England.

In May 1980, Pauline and her parents visted Ron in New Hampshire and the pair decided to marry. They were married in England one year later.

Ron's parents did not attend the wedding. They saved the money the trip would have cost so they could help the couple furnish their apartment. The newlyweds spent three weeks in England before returning to New Hampshire. Ron's parents gave them a lovely welcome-home party.

Pauline and Ron in Pauline's room/ shack on 7 November 1979

Both Pauline and Ron are Amateur Radio licensees now — and there's a third license on the way. Pauline's mother has passed part of her radio exam and will soon take the final part and the code test.

Every Friday night, Pauline and Ron use Charlie Morgan's equipment to talk to friends around the world and to give Pauline's parents the week's news. Pauline says, "Now that we are so far away, radio is becoming more a way of life than a hobby. We really don't know how we would manage without it." □

W6EJJ names new calling frequencies

Shirley Wolter, WB6QFU

Jim Varner, AE6N of Wrightwood, California has recently been appointed Assistant Director for Emergency Communications of the Southwestern Division of the ARRL. His first official assignment was to work with the Division Emergency Communications staff and decide which frequencies should be selected for the establishment of a common frequency to enable immediate contact with the outside world in the event of a disaster.

On the recommendation of the Division Emergency Communications staff, Jay Holladay, W6EJJ, Director of the Southwestern Division of the ARRL, has designated 3952 (80 meters) and 7275 (40 meters) as Southwestern Division calling frequencies. This will permit coordination of all the agencies that would be involved in any given type of disaster, including the Red Cross, Office of Emergency Services and Salvation Army.

The two frequencies were selected because of the high activity of public service-oriented operators who use these frequencies. 3952 kHz is the Western Public Service Net frequency, and 7275 kHz is the Daytime Region Six DRN6 net frequency. The members of these nets are highly disciplined operators.

In the event that heavy traffic loads (health and welfare) are handled, one of the net operators can be pressed into service to act as a net control station. The station in the emergency area should not be burdened with those things which can be done by other stations. □

OFF THE AIR

Info needed on Wake Atoll history

I've been working on an expanded history of Wake Atoll (composed of Wake, Wilkes and Peale Islands) for the past couple of years, and thanks to Al Gray, W1KA and others, have some fine information on the first "ham" operations there by him and Bill Brewer in 1935 (as well as their work for Pan Am).

A number of people have operated from Wake as radio amateurs and as commercial/government/military (including MARS) operators. I'd like to hear from them with dates, equipment, photos and related information. While I was stationed at Hickam Air Force Base, Hawaii, I visited Wake, but didn't meet any of the resident operators, so would like to hear from them (if any). Due credit for information will be given in the ultimate history (from 1539 to present) of Wake, plus in a series of articles on Amateur Radio in the Pacific. Would likewise like to hear from anyone who has information on commercial operations by the Japanese during their operations between 1942-1945. (Perhaps some of your JA readers were there?)

I'll be stationed here (HQ, Air Force Communications Command) for a while, and can be contacted at PSC Box #1111, Scott AFB, IL 62225, or on the air as KH6TX/9 (once the rig is replaced), or as AF MARS AFA3SV.

FRANK P. NOLLETTE, SMSGT, USAF, KH6TX/9
PSC Box #1111
Scott AFB, IL 62225 □

Intrepid *station? Ask the Navy*

In your latest issue — October, page 18 — is a letter from Ian MacDonald, W1GMC. It triggered a comment from me.

His letter points out that the *USS Intrepid* is permanently berthed at the foot of 46th Street, New York City. He also wonders how one would get "the key to the radio room" to set up a station.

I have no idea, but I have a thought!

The Royal Naval Amateur Radio Society has a fully operational station aboard *HMS Belfast* permanently berthed in the Thames across from the Tower of London. I've been aboard her and it is a thrill!

Why could not a group in New York contact the Navy and see what would be involved in setting up a station on the *Intrepid*? What about a Naval Reserve unit doing that?

I have the address of one of the wheels in London if anyone is interested in pursuing this thought.

CHARLES J. ELLIS
Megahertz Manor
Rural Box 8873
Cambridge, IA 50046 □

Letter 'fires up' reader

Retort to: Edouard Cournoyer, W4UMO (Extra Class)
September Worldradio, page 18

Congratulations on your 66 years and quarter century as an amateur and Extra Class license holder. Now tell me, how many hams have you taught code to? How many training classes have you conducted in code and theory? How many hams can you point to and say "I helped him or her"? Are you like my late uncle — you got yours and the heck with the rest? Maybe you don't want anyone else to make Extra Class.

As far as I am concerned, you only helped me get fired up to go on and get my Extra Class license.

ROBERT L. BEST, KC0LB
Newton, Iowa □

No need for allocations

In view of today's crowded bands and the technological advancements by the electronics industy, I feel there is no longer the room or reason for exclusive frequency allocations to a relative few.

When it is realized Amateur Radio exists and is primarily utilized as a relaxation hobby by all, involving justifiable public service in times of need, it becomes more obvious that this is true.

RAYMOND P. GASCON, W7SJS
Salem, Oregon □

W6HS and wife shorten cruise

Am sorry to report that Dr. Charles M. Moser, W6HS and his wife, Ruth had to abort their two-month cruise aboard the *Pacific Princess* when the ship docked at Honolulu Monday, 20 September. They left Los Angeles, California on Tuesday, 14 September. The ship is proceeding to Sydney, Australia and returning, making stops at various islands.

On 17 September, Ruth was sitting in a chair in her cabin reading a book. When she got up to leave the chair, her right leg gave way, and she fell to the deck, resulting in her breaking her hip.

Ruth has been hospitalized in Honolulu, and it is hoped she can return to California via ambulance plane when her condition improves. In the meantime, Dr. Moser is staying at the Island Colony Hotel, 445 Seaside Ave., Rm. 2111, Honolulu, HI 96815.

Mert left his radio installation aboard the ship for a passenger to use. Said passenger, a ham, will be boarding the ship at Sydney and will operate the equipment on the return voyage to Los Angeles; however, I do not know his call letters.

I made initial contact with W6HS /mm2 when he first got on the air, the morning of 17 September. However, he failed to keep a schedule that evening. Later, on the evening of the 18th, I was monitoring the 20-meter frequency when Mert came on to inform of the accident — the reason for his not keeping the schedule with Tom Christian, VR6TC and myself, as well as Mert's QSL manager, George Stevens, WD6GUD.

We will keep in touch with Mert most likely via Bill Brown, AH6H, in Honolulu.

RALPH CABANILLAS JR., W6IL
Hollywood, California □

(*please turn to page 17*)

Special Events...

Liars Club turns 53

Irma Welker, KA9ADJ will operate from 1400Z-2400Z on 6-7 November 1982. The station is commemorating the 53rd anniversary of the Burlington (Wisconsin) Liars Club. Frequencies will be: 3.984, 7.245 and 14.285 ± QRM.

For certificate, send SASE and contact number to Irma Welker, KA9ADJ, 35000 Oak Knoll Rd., Burlington, WI 53105. □

Halloween Jersey Devil Station

The West Jersey Radio Amateurs (WJRA) will mount a second operation from the South Jersey Pine Barrens, the haunt of the feared Jersey Devil. Beginning and ending at midnight, the courageous WJRA group will attempt again this year to operate the entire 24 hours of Halloween, 31 October. A unique, handsome certificate engraved with a countenance of the Jersey Devil will be sent to all stations worked who send SASEs, to WJRA, P.O. Box 62, Burlington, NJ 08016.

Frequencies to be used are 15 kHz from the bottom of each General phone band, 80 through 2 meters, plus 146.55 FM. Novice operation will also be 15 kHz up.

The Jersey Devil was born in 1735, a 13th child, in the Pine Barrens of Burlington County at a place called Leeds Point. Not long after its birth, on a foggy and dreary night so usual in the Pine Barrens, the child assumed a serpent-like body, cloven hoofs, the head of a horse, wings of a bat, and the forked tail of a dragon. With loud, raucous cries, it flew up the chimney and into the heart of the pinelands. Appearances and sightings occur even until today. On Halloween, the WJRA will maintain a radio vigil, trying once again to capture a glimpse of the Devil. Will they see him? Give them a call — W2JUG — and get a firsthand report.

Glades County

The Fort Myers Amateur Radio Club will be conducting a "Gladespedition" to Glades County, Florida. Operations will begin on 13 November 1982. W4LX will be operating in the General bands, both CW and SSB. Some Novice contacts will also be made.

If you need Glades County, be sure to look for us. QSL to: David Fox, KA8CXQ, P.O. Box 051131, Tice, FL 33905. SASE please. □

Halfway house?

The Tri-County Wireless Group will operate N8COY from Gaylord, Michigan, halfway between the North Pole and the equator from 1400Z, 13 November to 1600Z, 14 November. Phone only: 3925, 7250, 14300, 21375, 28550.

For certificate for QSL card, send SASE to Ed Roney Jr., N8COY. □

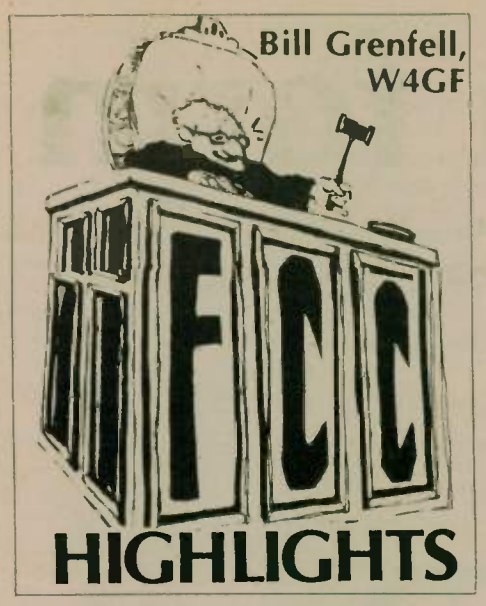
Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.

Sea DXpedition

The Penn Wireless Association, Inc. announced today that it will sponsor a ham DXpedition at sea aboard the Royal Caribbean Line's m/s *Sun Viking* from 31 October to 10 November 1982. All amateurs are invited to participate in this exciting venture. The Association has received permission to operate a floating ham shack aboard the cruise ship, and a series of seminars on various Amateur Radio topics have been scheduled while the ship is at sea. Bill Orr, W6SAI has been invited to lead the seminars.

The 10-day fly-cruise will feature free air fare from most major cities in the United States and will visit five Caribbean ports. Departing from Miami, the ship will visit St. Thomas, Antigua, Barbados, Martinique and St. Croix. A special call sign for the DXpedition will be requested from both the FCC and the Norwegian government; every effort will be made to get operating permission for all participants on each of the islands visited. The Association has a limited number of cabins and will fill them on a first-come basis.

For more information concerning the ham DXpedition at sea, contact Bill Buckley, W2ALG, 1158 Oxford Valley Road. Levittown, PA 19057. □



The "Communications Amendments Act of 1982" was signed by the President on 13 September. This amends the Communications Act of 1934 to *permit* the FCC to: (A) Use amateur volunteers to 1) prepare amateur operator license examinations; 2) supervise the examinations; (B) Use amateur volunteers 1) for monitoring violations of the Act and FCC regulations relating to the Amateur Radio Service; 2) to issue notices, under FCC supervision, to apparent violators; (C) Establish "minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy" for equipment and systems manufactured after the date of enactment of this Act; (D) Grant licenses to operate stations (other than broadcasting) for a term no longer than 10 years (instead of five); (E) Authorize the operation without licenses of stations in the radio control and citizens band services; and (F) Use volunteer citizens band radio operators 1) for monitoring violations of the Act and FCC regulations relating to the citizens band radio service; 2) to issue notices, under FCC supervision, to apparent violators.

Also provided for in new Section 510: equipment manufactured, sold or used "... with willful and knowing intent to violate Section 301 or 302, or rules prescribed by the Commission under such sections, may be seized and forfeited to the United States." Sections 301 and 302 have to do with the controlled use of radio frequencies and prohibit manufacture, sale, transport or use of devices which cause harmful interference to radio communications.

Another product of this legislation is a long-needed clarification of the last sentence of Section 605 of the Act, which has to do with providing for secrecy of most radio communications. The new sentence reads: "This section shall not apply to the receiving, divulging, publishing or utilizing the contents of any radio communication which is transmitted by any station for the use of the general public, which relates to ships, aircraft, vehicles or persons in distress, or which is transmitted by an Amateur Radio station operator or a citizens band radio operator."

The foregoing is my condensation of the U.S. House conference report (19 August 1982) reconciling the differences between Senate bill S. 929 and House bill H.R. 5008 (and accompanying H.R. 3239). It contains 15 pages of actual additions to and modifications of the text of the Communications Act of 1934, followed by 46 pages of the reasoning behind these recommended changes. For those who want more details on this action by the Congress, I suggest referring to the monthly Amateur Radio magazines, or asking your Congressman for a copy of Report No. 97-765, 19 August 1982.

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On 1 September, FCC's Office of Science and Technology Chief, Stephen J. Lukasik announced his resignation, effective 2 October.

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1500 watts peak envelope power output is the new amateur station power ceiling proposed by FCC. This would apply for any type of emission used by amateurs, except A3 double sideband emission, for which the current 1kW final stage power input limit would continue to apply. The method, equipment or degree of accuracy for the PEP measurement would not be specified. Those wishing to comment should refer to P.R. Docket No. 82-624. Comment deadlines were not available as this was written.

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Conflict over whether the United States should ratify the WARC (World Administrative Radio Conference) '79 treaty may cause extraordinary delay in the use of the 30-meter band by U.S. amateurs. Senators Barry Goldwater, K7UGA and Harrison Schmitt have written FCC, asking Chairman Mark Fowler to authorize U.S. amateur operation in the band soon. I understand that some Congressmen and communications specialists in and outside of the government believe that, considering the good of all the radio services, WARC '79 is a worse deal than continuing under the present World Communications Treaty. Some believe that permitting U.S. amateurs to operate in the new WARC '79 bands would weaken a U.S. position against ratification.

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Michael Kennedy is the official who spoke for the Office of Science and Technology at the AFCEA Amateur Radio luncheon on 16 June ('Highlights', **Worldradio**, September, and *Auto-Call*, August). I mistakenly credited his remarks to Michael Marcus.

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

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

*Recent additions

The United States also has an agreement permitting third-party communications with station 4U1ITU in Geneva, Switzerland.

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Reciprocal operating arrangements: The United States has arrangements with the following countries to grant reciprocal operating permits to visiting aliens and to U.S. amateurs:

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

*Recent addition

Book Review

Beginners RTTY Handbook

Norm Brooks, K6FO

For some years, I have been using a Model 28 Teletype machine. I was fortunate enough to find a factory-published service manual for it, but every time I used the manual I came away realizing how little I knew about that marvelous mechanical device.

The "Stunt Box," which is a feature of the Model 28, has always intrigued me. It can be set to recognize a series of characters, and light a light or ring a bell, etc., if those characters are received. For example, you could set up your call sign (or part of it) in the stunt box and be alerted if someone included your call sign in their typing. The official service manual does not tell you how to remove this gadget from the machine. I suppose they figured anyone who would dare tackle the disassembly of one of their machines would have had a factory training course or something. Anyhow, I never did figure out how to do it until I read how in the *Beginners RTTY Handbook*.

This handbook is terrific. It starts out assuming you know *nothing* about teletype and gives you the fundamentals step by step. It is written in a style that is easy to read and understand. There is information on terminal units (TU's), otherwise known as demodulators.

The book covers machine Models 15, 19 and 28, as well as the newest in microcomputer operation. The contents alone cover four pages, listing such interesting subjects as limiters, filters, keyers, equipment interconnection, operating arrangements, loop power supplies, frequency shift keying, audio FSK, autostart, automatic carriage return and line feed, plus modification of some popular transceivers for RTTY operation.

If there is a negative statement to make about the book, it is the pictures. They appear to be photos that have lost a lot of detail. However, even the editor acknowledges this in the text.

This book is for you if you have a mechanical RTTY machine to hook up, or if you just want to learn more about how it works and how to get more fun out of operating it.

Beginners RTTY Handbook, published by RTTY Journal, P.O. Box RY, Cardiff by the Sea, CA 92007. $8 postpaid U.S.; $10 postpaid foreign. □

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each radio district, as of 1 August 1982.

Radio District	Group A	Group B	Group C	Group D
0	KU0G	KC0VK	N0EAE	KA0OSY
1	KK1S	KB1CQ	N1CHB	KA1JFU
2	KW2O	KC2RT	N2DSQ	KA2QEM
3	KJ3Z	KC3CK	N3CZE	KA3JUH
4	WD4D	KE4ZD	N4HMQ	KB4BUC
5	NA5O	KD5QF	N5FBY	KA5OVW
6	NM6U	KF6AZ	N6HDR	KA6VRJ
7	KV7G	KC7YF	N7EIG	KA7ODO
8	KX8C	KC8YF	N8EFU	KA8QKQ
9	KQ9C	KC9SY	N9DKJ	KA9OCG
N. Mariana Islands	AH0A	AH0AA	KH0AD	WH0AAF
Canton Island	AH1A			
Guam	AH2P	AH2AS	KH2AW	WH2ADL
Johnston Island	AH3A	AH3AC	KH3AB	WH3AAC
Midway Island		AH4AA	KH4AD	WH4AAF
Hawaii	NH6X	AH6EL	KH6TN	WH6AUH
American Samoa	AH8B	AH8AB	KH8AC	WH8AAN
Wake Wilkes Peale			KH9AA	WH9AAA
Alaska	WL7Q	AL7EE	KL7WP	WL7AWX
Virgin Islands	KP2H	KP2AO	NP2AR	WP2ADD
Puerto Rico	NP4P	KP4FO	NP4FT	WP4CKP

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

RTTY — try it out

Dick Leffler, WB8MCX

One of the newest and fastest growing modes of Amateur Radio is using computers and radioteletype (RTTY). Joining these two different, yet similar, units together is most interesting and logical. Where the computer is used for RTTY, you can eliminate the normal Teletype unit completely, if so desired. You can also use the computer for other duties, such as games, balancing your checkbook, storing recipes, etc. The computers are very quiet and keep many XYLs happy because of the lack of noise and space.

First we should briefly explain what is needed to go computer RTTY. As you may remember, the audio from your transceiver is fed into a modulator/demodulator unit that decodes the audio into electrical impulses that the unit understands. Until recently, most amateur Teletype was sent using Baudot, or 5-level electrical code. Computers and commercial equipment generally use ASCII or 8-level.

In order for most computers to work on RTTY, the code from the demodulator must be converted from Baudot to ASCII. This can be done easily by building a unit yourself or buying one commercially made. Once the computer is ready to accept the ASCII code, you must have a program to run it. Talk to the local computer club for more information on programs.

You can also buy a complete RTTY Video Terminal Unit from major manufacturers such as HAL Communications. These are basically plug-in units and do not require a lot of knowledge to get on the air.

A small magazine called **RTTY Journal** is a real bargain. It is devoted to RTTY and is available for only $7 per year. Write: RTTY Journal, P.O. Box RY, Cardiff by the Sea, CA 92007.

— Committee for Amateur Radio, Cincinnati, OH

RTTY news/bulletin service available

The International Amateur Radio Society, thanks to the courtesy of HAL Communications, now makes available to all interested amateurs a West Coast RTTY news and bulletin service. The unit — a HAL DS 3100/MSO 3100 — will be on the air during most hours of the day to provide upon request propagation information, DX happenings on the bands, repeated ARRL bulletins, and IARS/CHC club news and information.

The frequency of operation is 14.095 MHz using 60 wpm RTTY. A regular schedule of bulletins is maintained along with on-demand transmissions of available interest items via the use of an access code IARS-CHC.

If you have this capability, keep abreast of the latest goings on and access the IARS MSO. For a complete instruction card, just send your SASE to: International Amateur Radio Society, P.O. Box IARS, V.V. Station, Glendale, CA 91206-7609.

USQS — KM7Z

Do you recognize any of the following calls? If your call or a friend's call is listed below, please send a self-addressed stamped envelope to U.S. QSL Service, Inc. The following calls are a few of the 13,000 amateurs who have QSLs waiting for them at the USQS bureau. For cards and/or information on the *FREE* service run by Laryl Berry, KM7Z, contact (SASE to claim your cards): USQS/KM7Z, P.O. Box 814, Mulino, OR 97042.

AC1B	K1BCI	K2BA	WA2BDW
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KA1B	N1BDY	KC2BB	AB3B
N1BA	KA1BEE	KA2BBH	KA3BAL
KA1BAX	N1BEJ	W2BBK	KA3BAO
KA1BBM	KJ2B	N2BBL	W3BAX
KA1BBR	KR2B	KA2BBZ	N3BAY
KA1BBY	N2BA	KC2BD	N3BB
WB3BBC	NU4B	N5BA	W6BB
W3BBS	NM4B	WB5BAH	K6BCE
W3BC	NB4B	N5BBB	K6BCO
WB3BCJ	NF4B	WA5BBR	W6BCQ
W3BCN	NR4B	W5BCB	W6BCY
WB3BDV	NX4B	N5BCE	N6BCZ
N3BE	N4BAA	WA5BDU	WB6BDY
WB3BEL	W4BAA	WA5BDV	KD6BF
N3BFP	K4BAD	W5BE	W6BFO
K14B	AE5B	KB6B	AU7B
KC4B	AF5B	KE6B	KB7B
KQ4B	KE5B	KO6B	KM7B
KS4B	KO5B	KV6B	N7BAH
KU4B	KU5B	W6BAB	KA7BAK
KV4B	KV5B	KE6BB	N7BAL
W7BB	N8BC	WB9BBC	KA9BAW
N7BBA	KA8BCL	W9BCC	KC9BB
N7BBC	KB8BCL	N9BCO	N9EB
N7BBD	N8BCO	N9BCP	WA9HBA
W7BBG	N8BCQ	W9BCV	KA9BBW
WB7BBG	N8BEA	W9BCY	N9BBX
WB7BBH	K8BEG	KA9BDK	WD9BCE
KA7BBN	N8BEK	N9BDM	WD9BDA
N7BCG	W8BFD	KA9BDW	N9BDS
KD8B	AA9B	AA9B	
KG8B	KF9B	KC9B	
KR8B	KB9BA	KI9B	
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N8BBR	N9BAT	KN9B	
WA8BBR	N9BB	KR9B	

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AMATEUR RADIO IN PUBLIC SERVICE

Auburn amateur to the rescue

Margaret A. Miille
Submitted by John Tiernan, KA6LNC

Mary Ann Simmons, KA6CTL of Auburn, California was talking on Amateur Radio when an injured hiker in Devils Peak interrupted with a "triple break" emergency call.

That message led to the rescue of Carl William Martin, W6RGH (44, of Livermore), who broke his ankle in a 20-foot fall Sunday, 22 August while descending the peak, about four miles south of Cascades Lake.

Carl said, "It was a comfort to know" Simmons was there talking to him and encouraging him throughout the entire ordeal.

Mary Ann Simmons, KA6CTL of Auburn, California aided an injured ham hiker via Amateur Radio.

W6RGH, who is legally blind, said he stepped on a log and pitched downhill, landing in soft earth. He was with five other hikers, who had separated in the downhill trek to prevent being hit by falling rocks.

Although the victim had already begun transmitting on his (ICOM) hand radio, he thought he had better make sure help was on the way.

Mary Ann, 48 — a long-time resident of the Auburn area — received the victim's call at 11:55 a.m. She notified the Placer County sheriff's office, all the while keeping in touch with Martin. (She was using an Azden 2000 with an isopole antenna.)

She was worried that Martin's battery, which by then was running low, would give out.

"I told him not to transmit, just to listen," she said.

Carl shared her concern. "I had been using (the radio) all week" and hesitated using it more than necessary during the rescue.

"I almost always try to take it with me" on hikes, he added.

Steep, rocky terrain forced a California Highway Patrol helicopter to land about one-quarter mile below the victim, who was at the 7,500-foot elevation. Workers were at his side by 1:40 p.m.

This was one of many emergencies during the last several years in which Mary has helped as a volunteer for the California Department of Forestry and the sheriff's office.

After the hiker was saved, Deputy Paul Martin reportedly called her and credited her with the success. "Couldn't have done it so quickly without your help," he said.

December will mark the 29th year KA6CTL has been confined to a wheelchair due to polio.

— Auburn Journal, CA □

●●●

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

'Pepsi Challenge'

Reynolds Davis, KØGND

The annual "Pepsi Challenge" is one of several events sponsored by the Lincoln Nebraska Track Club for which communications is provided by members of the Lincoln Amateur Radio Club. (LARC). This 6.2-mile race, held on 10 July, drew over 1,100 entries this year.

Members of the LARC were stationed around the race course in such a way that all runners were in sight of a member at all times. Course observation and crowd control is an integral part of the race. Information from the net was fed to the Lincoln Police Department for health and safety as well as crowd control.

The amateurs who helped out with communications were: Ken Watkins, WDØCKL; John Edson, NØCOO; Mike Drabant, NØDMX; Jerry Kohn, WDØEGK; Clarke Butcher, WBØGAK; Reynolds Davis, KØGND; Doyle Kernes, WBØIUT; Paul Ellis, KAØJQF; Larry Wheeler, WAØKFP; and John Hauner, WAØYPY. □

Town saved by fast action

Cornell ("Corky") Etoll, W8VCJ

On 7 July 1982, around 4:20 p.m., my XYL Ruth brought to my attention a report on our scanner. A police dispatcher from our neighboring county (Defiance) was relaying information to other officials of a bad train derailment just a few hundred yards east of the heart of the small town of Sherwood, Ohio. He mentioned that at least one car contained a hazardous material, but that it was unknown at the time what it was or how dangerous.

Later that evening, I was awakened by Ruth to listen again on 146.82 on our scanner. Ed Ballard Jr., WD8JVV was urgently calling to any Amateur Radio operators in Williams County (my county) to assist in Sherwood in evacuating the people. No one answered Ed, so I ran out to my car and called back. Ed said that one of the 20 derailed cars contained 30,000 gallons of butadiene — a highly flammable explosive gas.

So I set out with my XYL for Sherwood. Upon arriving at the fire station (headquarters for this emergency situation), I talked to the Chief Deputy Sheriff of Defiance County and was informed that if this railroad car sprung a leak and exploded, it would take the whole town with it. And I had my wife with me; even breathing the fumes could cause fatalities!

By this time, other Williams County amateurs were arriving with enough equipment to set up two base stations — one three miles north of Sherwood at a high school (where evacuees were to be sheltered) and another station practically on top of the derailment by the local elevator. Brave bunch of amateurs, eh?

Several Defiance County and Williams County amateurs were there with handi-talkies. Some people refused to leave their homes, but at least 75 percent complied. The duty of hams then became one of pairing up with the many lawmen there and policing the town, as there were not enough police 2-way radios to handle the situation. Some looting did occur, but as soon as everything fell into place with the excellent leadership of sheriff, city police and fire chief and the cooperation of many amateurs, everything was under control.

By 4:00 a.m., 8 July, the dangerous car had been dug out from the pile of derailed cars and removed to Indiana for further inspection.

A good job was done by all, including many civilians who rode the school buses and went door to door telling of the mandatory evacuation. No injuries! A nice citation was sent to the Williams County Amateur Radio Club and other amateurs who helped. □

Tornado danger passes

Reynolds Davis, KØGND

A tornado watch was issued in Lancaster County, Nebraska on 14 June 1982, 7:00 p.m., and was followed by citizen sightings of funnel formations in the Lancaster County area, resulting in the sounding of the Civil Defense sirens for the first time this year.

As soon as the watch was issued, Steve May, WAØASM began notifying area Amateur Radio Emergency Service (ARES) members. Spotter points were assigned and ARES members were moving to their posts when citizen reports caused the siren to be sounded. (No sightings were confirmed by trained observers; however, the storm intensified with such speed that ARES spotters were not on their assigned posts at the time.)

Although there were no confirmed funnels, golf ball-sized hail was reported in a housing area west of Lincoln, and the storm which dumped the hail caused torrential rains amounting to over 3 inches in two hours at the weather bureau, and more in other parts of the county.

Once the tornado warnings had expired, ARES members were reassigned to watch for flash flooding at preassigned points in the county. The danger had passed, although some after-damage occurred in low-lying areas, and the ARES net was secured at 11:30 p.m.

A total of 34 amateurs participated in this emergency. □

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Call or Write!

Amateurs assist in search for boy

Submitted by Terry Callahan, N8CDN

On 31 July 1982, Amateur Radio operators were called upon by the Ohio State Highway Patrol to help locate a missing 5-year-old who had wandered away from his parents' campsite at a rest area on Ohio State Route 2 in Vermilion.

A call for help was put out on the Lake Erie Amateur Radio Association (LEARA) 224.9 MHz repeater by Steve Garwood, N0CZV of the Ohio State Highway Patrol Turnpike District in Berea.

George Hinds, N8CIX was monitoring the LEARA 220 MHz repeater and relayed the call to Jim Barbour, WD8CHL on the Lorain County Amateur Repeater Association 147.15 MHz repeater. Jim switched to the Vermilion 145.47 repeater and called Terry Callahan, N8CDN on the repeater's autopatch and told him of the developing situation. Terry put out a general call for help on the 147.15 repeater and several amateurs were immediately on their way to the scene.

Operations were switched to the Vermilion 145.47 repeater where Marc Jacoby, WA8YWN assumed net control. Intercommunications were handled on the Northern Ohio Amateur Radio Society's 444.8 MHz repeater by Earl N8DBM and WA8YWN.

Twelve amateurs from Lorain, Erie and Huron Counties were involved in the search, while several others remained on standby in case more help was needed.

The amateurs formed a line search along with the Ohio State Highway Patrol, Erie and Lorain County Sheriffs deputies and Vermilion police and went along the Vermilion River bank in search of the lost boy.

After searching the area on the ground and in the air (thanks to Marv Ellsworth, W8FCJ), the Lorain County Sheriff's diving team was called in to search the river. Unfortunately, this story did not have a happy ending as the boy's body was found in the river by the diving team at about 1:30 p.m. The Highway Patrol greatly appreciated the help of the various Amateur Radio operators involved in the search and mention was made in their official reports.

I would like to thank the following amateurs who unselfishly gave of their time to help in the search: Jim Payne, W8AJI and son Scott; Roy Holmes, KA8BYU; Jim WD8CHL; Ned Jones, WD8CSP; Earl N8DBM; Marv W8FCJ; Bill Easterday, KB8FU; George Harizal, K8HLJ; Dave Barbour, K8MBV and wife, Virginia and son, Mike; Chris Mize, WD8OCS; Don Zickefoose, WB8SIQ and son, Jeff; The Rev. Charles Smith; and Marc WA8YWN, net control. Also, I would like to thank the following amateurs who were on standby in case more help was needed: Fred Spoerr, KA8N; Dave Ernest, WD8OYO; Dan Kayser, WB8VZ; Chuck Reynolds, WA8WUU; Harry Bowmar Jr., KA8HCT; Frank KA8LKW, and Charles "Mac" McCracken, WB8FJG.

Special thanks go to the Vermilion Amateur Radio Repeater Association for the use of the 145.47 repeater during the operation. Also, thanks to the Northern Ohio Radio Society for use of the 444.8 UHF repeater, and thanks to the Firelands Area Repeater Association, Lorain County Amateur Repeater Association, Lorain County ARES, Lake Erie Amateur Repeater Association, and the Sandusky Radio Experimental League.

Members of all the above organizations were on standby in case more help was needed. □

U.S. Navy man aided via Amateur Radio

Arthur R. Lee, N6FAD
Reported by Mike Simpson, W6CRD

At about 2300Z on 6 July 1982, just prior to shutting down the Pacific Maritime Mobile Net (21.404 MHz, 2230Z), a priority medical call was picked up by Mike Simpson, W6CRD in Long Beach, California. The call was from Commander John De Shazo, U.S. Navy, WD4ONR/R2, skipper of a Naval Academy sailboat 100 miles off Cape Hatteras in the Atlantic.

John's boat was one of eight Naval Academy yawls manned by a total of 72 men on a cruise from Annapolis to Bermuda. The yawls had encountered difficult conditions with headwinds and severe thunderstorms. Aboard one of the yawls, *Vigilant*, Midshipman Lewis was struck on the head by a swinging boom. He was believed to have received a concussion.

John WD4ONR/R2 requested that the Maritime Net contact the Naval Academy duty officer with an emergency message. The message contained the position, course and ETA of the convoy plus storm conditions. It also contained a description of the injuries received by the midshipman.

Mike W6CRD passed the emergency message to the Naval Academy duty officer by telephone and was asked to stand by on the net frequency for a reply to Commander De Shazo. Odia Howe, KH6CO and Mike W6CRD kept the frequency busy for one hour after the net closed until the duty officer called back.

During that time, Dr. Bob Boyd, WA5VSK of San Antonio, Texas monitored the frequency and offered diagnostic help. Bob WA5VSK asked questions about the age and condition of the injured crewmember for a medical evaluation. John WD4ONR requested that the results of the evaluation and the prognosis be radioed or phoned to the academy duty officer.

This information was passed by Mike W6CRD. The return message to John WD4ONR was made and a sked was set up on 21.404 (alternate 7.215) for the following day at 0600Q. The medical condition of the midshipman was deemed as satisfactory and improving, so no further emergency action was taken.

During the operation of emergency medical traffic, Markle Smith, N7BHT in Mesa, Arizona stood by to help if signals to W6CRD or KH6CO failed. □

Flash flood!

Reynolds Davis, K0GND

Four inches of rain in a two-hour period in already saturated portions of Lancaster County, Nebraska caused flash flooding and evacuation of low-lying areas on 28 May.

Five teams of weather spotters, combined with three disaster action teams from Red Cross (which included two Amateur Radio operators on each team), were dispatched into the area. In addition, stations were set up at the U.S. Weather Bureau, Red Cross Chapter House, the Emergency Operating Center for Lancaster County Civil Defense (CD EOC) and the radar observation areas at two local radio stations which monitored incoming additional rain.

Four operators coordinated activities at Red Cross while two worked at the CD EOC. The net was started by Emergency Coordinator Reynolds Davis, K0GND at 8:18 p.m. and secured four hours later after flood waters had subsided and the threat of additional evacuations decreased.

Twenty-seven amateurs participated in the emergency operation. □

Amateurs keep in touch with runners

Submitted by John Tiernan, KA6LNC

The 6th Annual 100-Mile Western States Endurance Run was held 26-27 June 1982, from Squaw Valley to Auburn, California. There were 17 Amateur Radio stations along the mountain route, manned by amateurs from the Placer County Sheriff's Communications Reserves. The stations were operated from 5:00 a.m., Saturday through noon Sunday.

All traffic was routed to a mobile command unit located in Auburn at the finish line. The locations of the runners were called in from the various checkpoints; radio communications was provided for search and rescue teams who were looking for a "lost" runner (who was found later in his motel); and calls were routed through the stations for crews to pick up exhausted runners who were withdrawing from the run.

Two meters was used throughout the run via repeater station WA6ZNM. The sheriff's units provided this service as a part of their training exercises. □

Rain causes a change in plans

Ted Wolfe, WD4KHL

Amateur Radio Emergency Service (ARES) operators in portions of Kanawha and Fayette Counties in West Virginia got a workout on Sunday, 30 May. A number of mountain hollows experienced some flooding that morning following a heavy overnight rain. Seventeen amateurs were logged by Net Control Ken Rupe, WD8AEW as having participated by manning radios at the Red Cross headquarters and a shelter and other posts around the area.

Most of the coordination took place on the wide-area Lick Knob (144.87/145.47) repeater. Fortunately, damage was not great and there were no reports of death or injuries during the flooding. □

St. Louis hams aid in celebration

Lloyd Schwartz, KA0HZV

About 35 St. Louis area amateurs participated in providing communications at the largest 4th of July celebration in the nation, the three-day "VP Fair" held on the St. Louis Riverfront at the Gateway Arch. The **St. Louis Globe Democrat** estimated the attendance at 3,750,000.

A net was set up by St. Louis Repeater Inc. and the Red Cross between Red Cross Headquarters, the Riverfront Command Post, five first-aid stations, an Army MASH tent and several "VP Fair" information booths. Most of the amateurs worked all three days, 16 hours per day in 90 degree-plus heat. □

Weather emergency

Reynolds Davis, K0GND

With the posting of a severe thunderstorm warning for Lancaster County, Nebraska, County Civil Defense activated the Amateur Radio Emergency Service (ARES) Spotters Net on 11 May. Members were assigned to 16 predetermined storm watch locations throughout the county. In addition, ARES members were assigned to the following predetermined locations: U.S. Weather Bureau; Emergency Operating Center/City-County Civil Defense; KFOR radio radar; KLIN radio radar; liaison to area WR0ACD (146.16/76) net; liaison to Omaha W0EQU/R (146.34/94) net; and the EOCs of two local hospitals, which is a part of our emergency plan.

Everybody loves a parade

Tania Miller, WB9TKC

The Shriners had several parades in the greater St. Louis metropolitan area during the month of June. On 6 June, 150,000 people gathered in St. Louis to see the traditional parade that announced the Shriners' Circus. The proceeds go to the Shriners Hospital for Crippled Children, 59 years old this year. They have helped more than 250,000 children and in 1966 finally opened their first burn unit, expanding the facilities year by year.

An estimated 40,000 people watched the Shriners Parade in Belleville, Illinois on 4 June.

Barney Gola, KA9DUL — voted "Man of the Year" locally — suggested that the Marissa Amateur Radio Club enter a float in the competition for this parade so that these thousands of people would see a nice demonstration of Amateur Radio. Jim Nebgen, KA9FRN organized it and found a float already built that the club members could work with. Bob Heil, K9EID, 1982 Ham of the Year and MARC President, operated a huge "key" aboard the float. It flashed many lights as CW was heard by the thick crowd. Comments were heard that this was not CB but Amateur Radio and "hams."

The flashing lights, turning world, pretty children and a ham operator sending code won the MARC fifth place out of 130 units on their first try in the competition.

Rusty Beard, KA9LMM played the trumpet in Belleville West's marching band, which won first place in their competition during this parade. Shortly afterward, the band went on tour through Canada. Rusty is president of Belleville West's Amateur Radio Club.

Still another MARC member, Bruce Shurtz, KA9GXT — one of the Shriners' young Krazy-Clowns — rode his unicycle along the parade route. He inflated over 200 balloons and passed them out to children along the way, and as he rode his 6-foot-high wheel, operated a hand-held 2-meter rig calling out, "This is KA9GXT, UNICYCLE-MOBILE!" Bruce has special photo-QSL cards of him on his unicycle. □

Amateur risks life to save two boys

Don Schneider, WD0AMA
Dave Schneider, WD0ENR

Heroics were nothing new to Ron Millhollin, WB0HMZ when he was called to a flood-swollen Duck Creek in Bettendorf, Iowa on Tuesday, 15 June.

Ron is often called upon at all hours to assist at fires, drownings and the like through this position with the Scott County Rescue Unit and as the local communications chairman for the Red Cross.

In fact, he and many others had been out much of that night assisting in the evacuation of people due to flash flooding from some 5½ inches of rain that was suddenly dumped on the Quad-Cities.

The following morning, six Bettendorf boys thought it would be neat to ride the swift current of the creek on inner-tubes. When currents got too tricky to navigate, the half-dozen youths realized they were in danger. Four of them managed to struggle to safety but the remaining two were left stranded in a tree while life-threatening waters rushed around and below them.

As a group of TV cameramen, newspaper photographers and onlookers viewed the action, the Rescue Unit made an attempt to reach the boys by boat. As they neared their goal, the raging waters flipped the boat and tossed the rescuers into the waters. Buoyed by a life vest, Millhollin was able to pull himself from the treacherous creek. He then helped rig some ropes and an inner tube and again made his way to the trapped youths — this time successfully.

For his efforts, WB0HMZ was nominated for a Medal of Valor, the highest honor bestowed upon an individual by the Quad-City Council of Police Chiefs. □

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Off the Air

(continued from page 8)

'Pro' arguments not good enough

Many have commented pro and con on a "no-code" Amateur Radio license. Those for this license class argue that there are many who could do Amateur Radio much good by contributing their technical knowledge, but just because of their inability or lack of desire to learn and use CW, they are unable to enter our fraternity and contribute. This might sound like a good argument, but I believe not good enough.

The first thing I learned, and we all should have, when studying to be a ham is that one of the purposes of Amateur Radio was to acquire a surplus of radio operators in case of emergency, in addition to technically-minded people. Yes, it's great to know how and why our radio equipment works, but we should be able to operate them also. The choice we make as to what mode we use when satisfying our operating fantasy is our privilege. Still, one should *know how* to and be able to operate other basic modes if it were necessary to do so.

This fellow who takes his rig aboard ship, gets into trouble, and finds his microphone cartridge not working would sure wish he knew CW if his life depended on it. At least he could click his microphone on and off or touch two wires together to the tune of an SOS plea. All that expertise in electronics would go down with him and the ship.

This example might seem a bit farfetched, but perhaps not too far. I think it gets my point across.

Let's face it. Who's kidding who? If one can learn what it takes to learn radio electronics, one can surely learn CW at 5 wpm. People of many different languages, backgrounds, education levels, vocations (other than electronics) and ages have attained the knowledge and privilege to be Amateur Radio operators. We all had to learn *something* new to be an amateur. We aren't all electronics engineers and professional telegraph operators. We all had to learn something that was strange to us.

Most of the time, it is a fun hobby, giving us the opportunity to communicate with others in various modes that we get to enjoy. It is a method of "talking" with those in far-away places, collecting postcards and awards, and even satisfying our ego. It is a method of keeping in touch with others nearby and meeting new friends on the air. Yet, if an emergency arose, we should all be able to communicate, even if in a mode we do not normally favor, enjoy and use.

If I had to send my SOS plea and my life depended upon it, I hope to God that "no-code" licensee wasn't the only one receiving *my* signals.

If one is an electronics expert but too lazy to at least learn CW at 5 wpm, give him a job making or designing the equipment we use, but for all our sakes, keep him off the air.

There are those who see $$$. A no-code class of license would certainly have more people buying radio equipment and magazines. A lot of additional money would be made by those who depend on selling their products to amateurs. I hope the almighty $$$ does not cause the standards and the original purpose of Amateur Radio to be degraded.

THOMAS HICKEY, WA2FYW
Sewaren, New Jersey □

A 'yes' vote for no-code license

Bring up the subject of the "no-code" license proposal to almost any Amateur Radio operator and the instant, emotional reaction is "No way!". Somehow, Amateur Radio equates to Morse code — always has, always will. Well, stand by, brass-pounders, for I plan to play the "devil's advocate" and look at this thing in the bright, cold light of logic and reason.

First, let's put things in their proper perspective, so we all know what it is we're voting on. The most likely change to the present license structure would be to simply eliminate any code proficiency test from the requirements for a Technician Class license. That's all. No change to any other license class, including Novice. All operating privileges would stay the same, including Techs operating CW on the Novice bands. The new licensee would still have to pass a 13 wpm test for General Class. Advanced and Extra wouldn't change, including the 20 wpm test for Extra. It turns out that this simple change is the one way the FCC could afford to implement it with present staff and budget reductions. A new Technician would get a 1 × 3, just like now, and life goes on.

Actually, the only change we'll notice is a whole lot more Technician Class operators because the major barrier will have been suddenly dropped. As some of these people get acquainted with all of the facets of Amateur Radio, they will gain an interest in learning Morse code so they can operate on the low bands. Most, however, will be content with Technician Class privileges and stay right there. The direct benefits of increased numbers of amateurs, primarily on the VHF and UHF bands, are many. To name a few:

- Increased demand for radio equipment will accelerate development and design improvements and reduce cost.
- Larger club memberships will result in more and better repeaters, expanded club activities.
- Better response to calls for assistance such as emergencies, skywarn nets, public service activities.
- More traffic advisories and a broader listener base to utilize them.

Some of the indirect benefits resulting from increased numbers may have an even greater impact than the direct benefits, although most would be longer range. Some of these indirect benefits would be:

- An increase in the number of people becoming interested in scientific and electronic pursuits. This should give us a broader base of technicians and engineers to better compete with foreign penetration of our markets for all types of electronic products.
- Significantly greater clout in influencing the types of legislation that directly influence our hobby. This would be evident on the national or federal level in retaining the bands we now have and expanding into new band segments as well as on the local level regarding such things as antenna ordinances and RFI.
- More opportunities for friendships and socializing, as well as a broader base

of skills and information in any field of interest.

I'll list some of the disadvantages I've heard, followed by my comments on them:

More poor operators on the bands. Sure. The code barrier is universal — it affects all kinds of people, the bad right along with the good. We already know that anyone who wants an amateur ticket bad enough can learn the code. That's why we have some lousy operators on the bands right now. I think the percentage won't change — for every lousy operator the code keeps out, there are a whole bunch of good people stopped by the same barrier. Maybe if the bands were more fully utilized, the predominance of good operators would have more influence on the poor ones. It's a lot more difficult for weeds to grow in a healthy, well-tended lawn.

The amateur bands are already overcrowded. Yes, we have saturation on some of the low bands (particularly 20 meters) some of the time. In some large cities such as New York and Los Angeles, 2-meter FM is very crowded. However, these are the exceptions. There is certainly a lot of the VHF and UHF bands (such as 220 and 440 MHz) that is hardly used at all. Even the 2-meter repeaters in medium-sized cities (such as Cleveland) are used only 10-20 percent of the total time. Even during these high usage periods, the proper operating protocol allows priority communications to go through easily and reliably. There would be no immediate effect on the HF bands, of course, but eventually some increase would occur. There are already plans to restructure some of the low bands to favor the increasing phone usage. A clear need for more space will result in the necessary adjustments.

Without the code requirement, the amateur bands would sound just like CB. I really don't think so. A tough written test on theory and rules will still require a great deal of drive and ambition to get a license. The very nature of VHF and UHF communications — the short range, the capture effect on FM and most of all, the prevailing operating protocol, will all work to prevent the CB-type mess. Probably the biggest mistake of the CB service was the operating frequency — 27 MHz. At this frequency, propagation characteristics and high-powered amplifiers can carry the mess for thousands of miles — literally around the world.

The Japanese have had a no-code license, for operation above 50 MHz, for some time. As a result, there are four to five times as many Japanese operators on VHF and UHF as there are in the states, despite a lower population base and a higher population density. And they get along just fine. A secondary result of this is a much higher interest in the technical side of radio and electronics in general, creating a larger base of technicians and engineers. Thus, the Japanese predominance in the international electronics market. Ask any American amateur who made the neat little handi-talkie he's using. Chances are it's stamped "Made in Japan."

Ratification of the new WARC agreements by the United States seems imminent. Among these agreements are allocations of several new HF bands and the elimination of the code requirement for operation above 30 MHz. Some countries are already using the new bands, while some, such as Japan, saw the wisdom of a no-code VHF/UHF license some time ago. I say it's high time the United States did likewise.

DAVE ERNEST, WD8OYO
North Ridgeville, Ohio □

A different view of no-code license

Here are my thoughts on the no-code license. Amateurs don't have trouble with code, only prospective amateurs. Let's have a sixth class of license with Novice theory and *NO* code, but first form a new subband at, say, 28400 to 28500 for all six classes to use on CW. *Then the new codeless license will only have CW privileges.* Novices will get extra space; Techs will get extra space; and the new class can benefit by getting CW experience toward the higher license. Low power can be encouraged on the new subband and converted CB equipment could be provided by clubs. Ten meters would get more use. Clubs could issue licenses immediately to those who pass.

LARRY GARENS, KC5OQ
Brady, Texas □

NO on no-code!

It is time for all of us who do not want to see a no-code license in the USA to pull together. My OM and I are going to drop our subscription to any magazine that supports the no-code license. We also are not going to buy from any of the advertisers who run ads in these magazines. If they feel a no-code license would be good for business, let them sell 11-meter radios. We already have a code-free radio service here called CB.

Before all you open-minded folks support this code-free joke, just turn on 11 meters and tune around, but don't do it when any young children can hear what is coming out of your radio. If we let this happen to us without putting up a fight, we will never able to undo it once it has started. Think about it!!

SHARON M. ROSS, KA9LYI
Elgin, Illinois □

Ex-CB'er is against no-code license

In re: Notice of Proposed Rulemaking to remove the code requirement for Technician Class license.

Yes, I am for keeping the code, and I think the FCC should keep it as a requirement toward obtaining an Amateur Radio license. It must not be made easy to pass the FCC exam. Once a license is obtained, the government allows one to have legal access to some very sophisticated communications equipment, which should not be taken for granted.

It's too bad the FCC has had significant budget cuts. It seems to me that this has weakened the Commission, and by removing the code requirement I feel it will weaken our Amateur Radio Service.

CW is Amateur Radio tradition, and tradition is something this country is losing a lot of. You might say I sound old-fashioned, but at age 30? CW is a valuable means of communication; it's a tool not outdated, as (opposed) to what some people say.

Too many people today want a lot but don't want to work for it, and code is working for it. Sure it's tough, but so is boot camp. People need to be weeded out, although a few seem to sneak by — but only a few, not an influx. The current 5 wpm is not asking that much to learn. It takes patience and self discipline, and if one doesn't have it, well, the FCC has given these people a band to operate on. It's called 11 meters. Being an ex-CB'er myself, I heard it getting worse and out of control. Maybe the cause was the CB boom a few years ago; too many people at once plus no exam needed for the license.

Many CB'ers lost respect for the FCC. But don't get me wrong, there are some good CB'ers. Citizens band can be enjoyable and valuable, but one must not abuse the privilege.

Amateur Radio is a hobby to be proud of. It takes some time to acquire the license. Having gone up the exam ladder, I have gained respect toward other amateurs, the Amateur Radio Service and the FCC.

DAVID KRUZEK, N6AZA
Santa Monica, California □

Editorial was 'right on point'

The editorial on page 5 of the September **Worldradio** concerning Morse code in Amateur Radio is right on point. It is refreshing to read in an Amateur Radio publication a straightforward positive statement for the code requirement in licensing Amateur Radio operators.

All other periodicals aimed at Amateur Radio are out for a no-code license, or they pussyfoot around the issue with no firm commitment for or against.

I am all for the lazy "whiners" who oppose a code test to stay out of Amateur Radio. There is a place for them — the CB bands.

Worldradio appeals to me for several reasons, of which the most important is the lack of circuits, diagrams and badly written (enough abbreviations and acronyms to start another language) articles on microelectronic gadgets, that fill other "ham" magazines. Most of those gadgets are difficult to build and more or less useless after building them. CW forever!

EARL LINDER, W9DZG
Lombard, Illinois □

Who's behind it all?

Who keeps relighting the fire for a no-code license? A never-ending stream of would-be amateurs who want to rewrite the rules of the game before they come on to the field? Equipment manufacturers who figure that more hams mean more sales? An FCC staffer who figures that more hams mean more jobs in the FCC?

If a no-code license cannot be avoided, let's start by granting privileges to our commercial brothers.

ED JONES JR., WB2DVL
Somerset, New Hampshire □

KL7DG still runs

20 August 1982

Here is a recent photo (spring of 1982) of me standing by our homestead near Anchorage, Alaska. On my 60th birthday, 5 February 1978, I retired from the FCC monitoring station in Anchorage, where I had been employed for 13½ years. If I should work anywhere else after my 65th year, I would like to devote my communication skills toward world peace with ITU of United Nations.

My wife, Marcie and I plan to compete in a marathon — the 15th International Runners Meet — at Lake Kawaguchi, Japan on 13-15 September 1982. (42.195 km for Marcie, 10 km for me)

JOHN TRENT, KL7DG
Anchorage, Alaska □

John P. Trent, KL7DG (Digging Gold) — founder of the QCWA Northern Lights chapter and sponsor of the QRP Gold Pan Award — is shown outside his Anchorage QTH. Aged 64, at 6'3" and 250 lbs., John has completed 30 marathons since 1967 — a total of 16,500 miles. He was W6MMZ from 1935 to 1946.

• *Pass it on . . . WORLDRADIO* •

American Radio Relay League

J.A. "Doc" Gmelin, W6ZRJ
Past Director, Pacific Division
ARRL Honorary Vice-President

In January, many of the sections of the ARRL will put into effect the new plan for section organization adopted in principle by the League's Board of Directors last year.

The organizational structure comes about because of the actions and recommendations of the ARRL Long Range Planning Committee. The actual structure was established by Headquarters, following the guidelines of the recommendations.

For details of the plan, League members and interested radio amateurs can read "New Life for ARRL Sections" by General Manager Dave Sumner, K1ZZ on page 53 of June 1982 **QST**. For historical background information, interested individuals may read articles on the subject from 1981 issues of **QST**. These articles trace the history of the ARRL Communications Department and the evolution of the section structure. I will not go into detail regarding history in this issue, but will comment on some specifics.

The ARRL section structure and the office of Section Communications Manager (SCM) evolved from the original purpose and structure of the League, which was to relay messages and establish a traffic system.

In effect, SCMs were originally in charge of the activities of the Official Relay Stations, which included managing of traffic nets and routes.

With the advances in radio communications techniques and the resulting complexities of amateur communications, the office of SCM and the ARRL Communications Department took on many new areas of operation.

We find that over the years, an organizational structure for emergency communications became a necessary structure separate from the traffic organization, resulting in a need for the appointment of Emergency Coordinators (ECs) and eventually, Section Emergency Coordinators (SECs).

The advent of voice operation via AM phone and later, single-sideband, brought about a need for coordination in traffic via this mode, which was separate from the traffic operations on CW. The result was the establishment of the appointment of Official Phone Station and the office of Phone Activities Manager.

Later, increased use of the VHF/UHF bands — first on AM and then via FM and repeaters — brought about the appointment of Official VHF Station.

An increasing need to try to "police" our own bands for less than desirable signals, off frequency operation and poor operating practices brought about the need for an Official Observer appointment.

With an increase in activity in the area of DX operation and DXCC, the Communications Department found itself heavily involved in work in this popular operational activity. And in more recent years, contests have become an increasingly popular type of Amateur Radio activity; thus, the Communications Department has become heavily involved with this area of amateur operation.

Meanwhile, the Board added to the work of SCMs such duties as visiting clubs and other organizational activities in their Sections, so that active SCMs are always busy in one area or another.

The new section structure, which is scheduled to be established in all 73 ARRL sections by 1 January 1985, attempts to broaden the base of leadership by including many areas of Amateur Radio, some that were previously not a part of the section organization. In fact, the new structure puts the SCM — now called SM (Section Manager) — under the Division Director. In other words, the SM reports to the Director.

In addition, the SM sits on a council, called the Division Cabinet, of SMs in the division led by the Director. This council will establish ARRL policy through the Director to the Board of Directors.

Hopefully, each SM will hold section meetings, to learn the feelings of members and section leaders on Amateur Radio and ARRL matters.

The new structure will also set up seven section leadership appointments to be made by the SM to handle seven major areas of amateur activity. These include SEC, Section Traffic Manager, Official Observer and RFI Coordinator, State Government Liaison, Technical Coordinator, Affiliated Club Coordinator and Bulletin Manager.

For details on these offices, see the article in **QST**. The title pretty much says what the particular office is about.

The new structure is pretty far-reaching and is certainly more complex than the previous organization. If it is effective, it will certainly involve many more amateurs than are now involved at the section level.

How well will this new structure work? Will it actually bring more people into section activity? Of course, as with anything else, only time will tell. But in talking with many amateurs experienced in ARRL section activity and from my own experience as an SEC, an SCM and a Director, I find that I have some reservations about the new plan. In fact, I wonder if the members of the Long Range Planning Committee actually know very much about the realities of ARRL section operation and the interests of radio amateurs.

I do know that DXers and contest operators often expressed to me an interest in being able to take part in section activities as DXers and contest operators. Maybe this is one reason for change in the section organizational structure.

My question on this was, and is, how can DX and contests be part of a section level organizational structure? Both of these activities involve operations by individuals — unlike those of traffic nets or ARES organizations, which are "group" in nature.

Are we proposing that whole sections compete in contests or for DXCC? Is it proposed that sections set up their own DX nets to make DX contacts? No, this probably is not what this is really about.

The matter of League policy-making mentioned in the June article is another matter.

No matter how you change the section structure, the 16 ARRL Directors still establish policy. Putting the SM between the Director and the members is not a good idea.

Perhaps this is what some Directors want, to "put someone between them and the problem," as is often done by managers in industry and government. From what I have heard from members in my section and division, *they* don't want to communicate to the Director through a second party; they want direct access, and I don't blame them.

Also, the fact that the SM will be elected by the members in his section and not appointed by the Director will create some real organizational and policy-making problems. If the SM does not agree with the Director, can the Director remove the SM from office? This allows Directors to "veto" the wishes of the members of that section.

I know of one Director who *wants* to make the SM an officer appointed by the Director, but I don't want to take away the democratic rights of members. In fact, I think we need *MORE* elected offices in the League, not less.

Some directors have complained that they cannot be in contact with all of their members, and this is a way around the inability to communicate with members. One solution might be to make more Divisions — say, 73 — each with a Director who attends the Board meetings. Of course, this would be overly expensive and would make a very unwieldy body; little may be accomplished at Board meetings.

Many of my friends in Amateur Radio who are involved with traffic and emergency operation wonder if the change in structure to include other areas will not be bad for the League's most important activity — public service.

This is a pretty weak area now; more of our members are involved in DXCC and related activities than in direct service to the public. At least, this is what surveys in the past have shown.

It certainly sounds like a good idea to expand the section to include liaison with state government. Of course, this is fine for Connecticut, Virginia or Ohio. But what about California with eight sections in two divisions? Do they all coordinate with the state? What if they all have different plans and ideas? Will one section be the "key" section for state liaison?

Will the plan really have any chance of success after increasing the number of section leaders under the SM from two to seven?

In many sections, it is now impossible to find someone to take the leadership appointments, and in many of these, appointments are in name only. Many who are appointed fail to function. In fact, it is often nearly impossible to find someone to take the job of SCM in some sections.

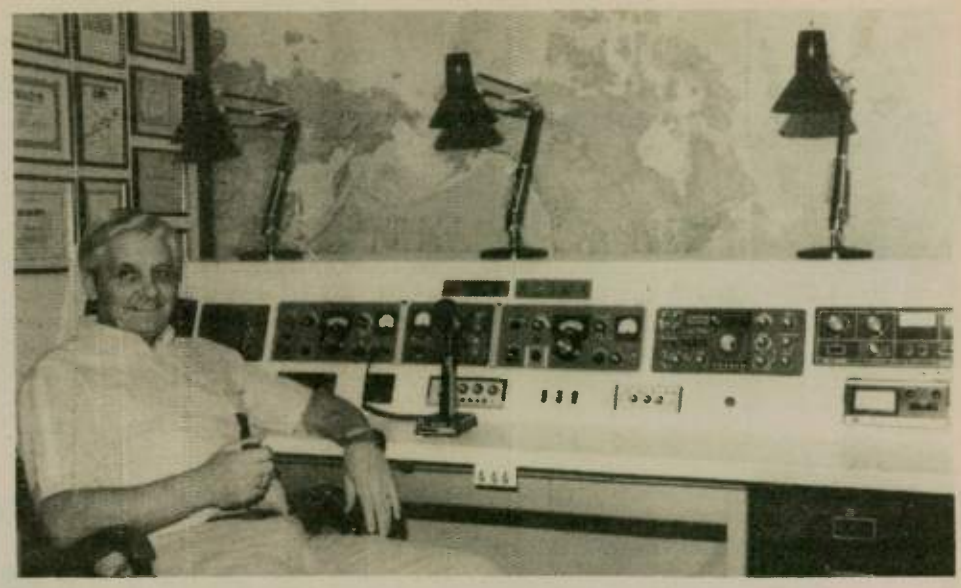
Will the new structure suddenly mean that members will now step forward to become SMs and section leaders? I wonder. □

STATION APPEARANCE

Ralph C. Schram, KL7NX of Fairbanks, Alaska wins our Station Appearance award this month. Read on for a description of the equipment he uses.

"Equipment shown in the station console is as follows: MT-3000A antenna tuner; HD73 rotor; SP901 speaker phone patch; TR-7850 2-meter with mobile speaker; Collins 32S3 transmitter; 312B station control; 75S3A receiver; FT-101ZD transceiver; MLA-2500B amplifier; Ham IV rotor. Not shown is a 30L1 amplifier.

"All power supplies are located in back of the console and operated from the front panel by three lighted rocker switches. The entire wall behind the console is wallpapered with a map of the world.



Ralph Schram, KL7NX spends most of his time on 20-meter SSB.

"Construction of the console was by a friend and fellow amateur — "Mel" Lofthus, KL7HT.

"Station antennas supported on a 72-foot tower are 4-element monobander for 20 meters and 5-element monobander for 15 meters. Also in use on a separate tower is a TH6DXX tri-bander.

"Most station activities these days are confined to 20-meter SSB. However, I still try to find operating time for the 15-meter Novice band. Always a pleasure to work a Novice station for his/her first Alaskan contact. Best 73's, Ralph."

Ralph wins a free year's extension of his subscription to **Worldradio**. □

More action taken on WARC 79 measure

The Senate Committee on Foreign Relations has approved Senate Treaty Document 97-21, recommending that the Senate advise and consent to ratification of the Radio Regulations and Final Protocol stemming from the World Administrative Radio Conference, WARC 79.
—*ARRL* □

W7OCX resigns from two positions

Col. John B. Sampson Jr., W7OCX isn't giving up Amateur Radio but is resigning from Utah State Director of Army MARS and ARRL Net Manager of the Utah Beehive Net. He held each of these positions for over 25 years.

Col. Sampson started the Beehive Net on 7272 kHz as a result of having a 3636 kHz crystal that he bought for a CW net in New Mexico. The net meets daily at 1230 local Utah time and is open to all radio amateurs. □

DX WORLD

John F.W. Minke III, N6JM

6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

30-31 October	Rio CW QSO Party (Brazil)
30-31 October	CQ Worldwide DX Contest (SSB)
13-14 November	DARC European DX Contest (RTTY)
27-28 November	CQ Worldwide DX Contest (CW)

Heard Island

Planning for the Heard Island DXpedition is progressing on schedule. The Northern California DX Foundation has agreed to match the $10,000 pledge of the International DX Foundation. This total of $20,000 will be from the existing funds of the two foundations' treasuries, and it is hoped that the DX fraternity will consider supporting one or both of these two tax-deductible groups.

The $20,000 is still far short of the actual amount of money needed to make the Heard Island Expedition a success. It is estimated that it will take $150,000 (Australian funds) to get the team there and back. Incidentally, this is an expedition, not a DXpedition, as Amateur Radio is only part of the operation. But before we go on further, perhaps it would be best to describe exactly where and what Heard Island is.

Ken McLachlan, VK3AH — in the June 1982 issue of *Amateur Radio* — writes of Heard Island as "Probably one of the loneliest and inhospitable places in the world, most of it permanently covered by ice and inhabitated only by fauna, but visited regularly by gusting and freezing winds. This island is located in about latitude 53°01'S, longitude 73°23'E and lies some 4000 kilometres southwest of Perth.

"Documentation of who was the first to discover Heard Island seems to be a bit sketchy, but it appears that in late 1853 a vessel en route from Boston to Melbourne by chance sighted land and its skipper, Captain Heard, logged it but did not land.

"Two years passed before a landing by another vessel was made, and then there was a long succession of whalers seeking the riches from the slaughter of abundant numbers of sea elephants which, because of uncontrolled slaughter, became extinct. Little more was heard until 1910. Whilst investigating the potential of establishing a whaling industry at Heard, the British flag was raised and the island claimed.

"Early in 1947, Sir Douglas Mawson, who had visited Heard some 18 years before while en route to Antarctica, prompted the authorities to appoint an Authority, which is known today as the Australian National Antarctic Research Expeditions (ANARE).

"The Heard Island ANARE group arrived on the 11th of December, 1947; 15 days later the Australian flag was raised and the island was claimed for the Commonwealth, although the sovereignty changeover from Great Britain to Australia did not actually take place until 1951, and since that date the laws in force in the Australian Capital Territory also apply to Heard Island where these laws are appropriate."

The call VK0HI has been reserved for the group of three DXers who will be operating from Heard Island. The trio is endeavoring to make at least 50,000 contacts during the four-week stay on the island. In addition to the three DXers, there will be members experienced in mountaineering, which will include photographers and scientists. This is why we call this operation an expedition rather than a DXpedition. The purpose of this trip is not to give the deserving DXer another new one for his DXCC.

William Blunt, Expedition Covenor of the Heard Island Expedition, has written directly to Worldradio requesting help in publicity. To become an Associate Member of this adventure, the donation is $30 (Australian funds) for overseas members. This includes an Associate Membership Certificate, six newsletters and a philatelic envelope which could become valuable as a collector's item. Method of payment may be check, money order, bank draft or credit card. Mail your request to Heard Island Expedition, The Residence Spectacle Island, Sydney 2000, AUSTRALIA. Also, in support of the expedition, they are offering T-shirts at $9.50 each, which includes overseas airmailing. Be sure to include your chest size. They also have Sloppy Joes for $22

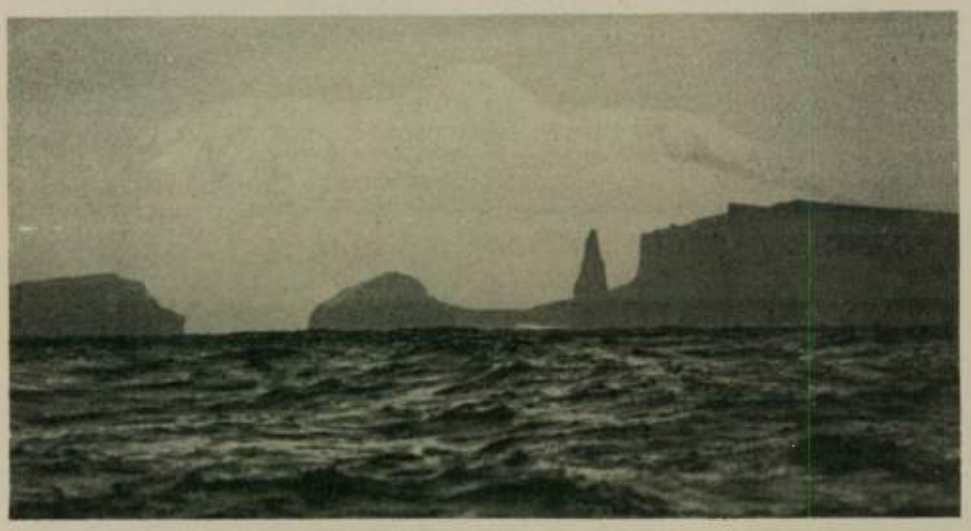
for overseas airmailing. We are not sure what they mean by Sloppy Joes, but it is something you wear as they request chest measurement. Here in California, a Sloppy Joe is something you eat.

As we said earlier, this is more than an Amateur Radio DXpedition. And many of you may not care about anything else. If you are only interested in the operation from the Amateur Radio involvement, you may send your donations to the Wireless Institute of Australia, P.O. Box 10, West Perth 6005, Western Australia, AUSTRALIA. Correspondence should be sent to the VK6 DX Chasers Club, 6 Briar Place, Ferndale 6155, Western Australia, AUSTRALIA.

A Heard Island DXpedition has been talked about for the last few years now. Jim Smith, VK9NS (ex-P29JS) has been planning this for a couple of years now but hasn't gone yet. In fact, Jim is president of the Heard Island DX Association and has produced a 100-page booklet describing the island. It is available for $20 (U.S. funds), which includes airmail postage. Mail your order to HIDXA, P.O. Box 90, Norfolk Island, AUSTRALIA, 2899. Donations go to the same address and will be refunded if the expedition does not take place. Obviously, the way we read it, the Heard Island DX Association is in no way connected with Heard Island Expedition that is being supported by the International DX Foundation, the Northern California DX Foundation and others.

Associate Membership Certificate and philatelic envelope

It would seem to us that perhaps HIDXA join forces rather than compete.



McDonald Islands with Big Ben rising in the background. This is what the mountaineers will attempt to climb. Heard Island and the McDonald Island are part of the same island group in this remote part of the world. ***(SIOEHI photo by P. Temple in 1964)***

Africa Tour

Karl Renz, K4YT has been back on another one of his African tours. Karl left the East Coast on 6 July and flew to Africa. Karl reports that he helped Jim Bullington close down his station in Dahomey. "Bull" was assigned the unique call of TYA11, and during the last few weeks he had no time to operate. Karl arrived just before "Bull" took down his antennas. In the short time of operating, Karl made 5,000 contacts from TYA11. Then on Sunday, 18 July, they cut down the Quad, followed with the 20-meter rotatable dipole and the 80 and 40-meter V's on Monday.

Karl then traveled to Lagos where he met Udo 5N0UDB, who is in charge of licensing for the radio club in Nigeria. Karl paid his Naira, became a club member and immediately was able to operate as K4YT/5N0. It takes three to six months to get a regular call in Nigeria.

In the early part of August, Karl went to Yaounde, the capital of Cameroon. There he met TJ1BB, and due to heavy work restrictions he was able to make only about 100 CW contacts. Karl is with the United States International Communications Agency (USICA).

Karl was scheduled to leave 13 August for Bangui in the Central African Republic. Karl's letter was dated 11 August and included a tentative schedule for the remainder of his tour in Africa. As for interest, the schedule is as follows:

Bangui	(TL8)	13-19 August
Brazzaville	(TN8)	19-24 August
Libreville	(TR8)	24-30 August
Kinshasee	(9Q5)	30-14 September
Bujumbura	(9U5)	14-16 September
Nairobi	(5Z4)	16-23 September
Kampala	(5X5)	24-30 September
Addis	(ET3)	30-07 October

Karl reports that there may be a possibility of operating from Victoria (S79) and Maseru (7P8).

All QSL requests are to go to his brother, Bob W2TK, 366 Rutherford Ave., Lyndhurst, NJ 07071. They will be answered after Karl returns home. His QSL cards are being donated by IDXF. His next trip will be in January, but he does not know where, as of yet.

SM0AGD Pacific DXpeditions

The Northern California DX Foundation has been aiding Eric Sjolund, SM0AGD from the beginning of his Pacific tour in early May. He has been sailing about the Pacific, landing at the various spots in need by the DXer.

So far, Eric has operated from Western Samoa as 5W1DQ (a guest operator), the Cook Islands as ZK1AF, the Fiji Islands as 3D2DX, the Republic of Nauru as C21NI, Western Kiribati as T30CB, Tuvalu as T2AGD, American Samoa as SM0AGD/KH8, and Tokelau Island as ZM7AG.

During the month of October, operations are planned from Central Kiribati (T31), American Phoenix Islands (KH1), and Eastern Kiribati (T32). The T31 and KH1 most likely will be from the same location, as it was often done in the pre-Kiribati days. Central Kiribati is the former British Phoenix Islands, and operators there often used their KB6 and VR1 calls simultaneously.

All QSL cards for Eric's operations should be sent to SM3CXS, with just one card per envelope (your return envelope). Eric should be arriving in Honolulu in late November.

Brunei (VS5)

Tunku Mahmood Shah (Moody) is again active operating as VS5MS after being off the air with rig problems for about a year. Look for him between 14.205 and 14.250 MHz after 1000 UTC.

Moody, who is a Life Member of IDXF, advises that Brunei will soon have a new prefix as the country will soon be gaining independence. QSL cards for VS5MS may be sent via Bob Schenck, N2OO.

Another station from Brunei is VS5TT, who has been found on 40 meters from 1300 UTC most days. Look for this one between 7.001 and 7.003 MHz, CW of course.

And if you miss these two, you may find VS5HG near 14.206 MHz from 1200 UTC, VS5DD up near 14.320 MHz from 1200 UTC, VS5GA on 21.315 MHz at 1700 UTC, and VS5LH on 14.286 MHz from 2130 UTC. Another active station, VS5TX, operated by Alan Kan, will soon be off the air as he will be returning to Hong Kong.

Hong Kong (VS6)

If you haven't already worked this one, try listening for VS6CT. Phil has been reported on 14.210 MHz from 1400 UTC. To keep Phil company is VS6IC handing out contacts on 14.200 MHz from 1100 UTC and 21.290 MHz from 2300 UTC. There are others, but they have not been reported.

Macao (CR9)

Across the bay from Hong Kong — and much rarer — is Macao. Gleaned from the various DX newsletters we have, CR9IN reported on 14.018 MHz around 0800 UTC, CR9UT on 14.019 MHz at 2300 UTC, CR9BK on 21.029 MHz from 1200 UTC and CR9M on 14.044 MHz from 1100 UTC. Brush up on your CW if you want to work these fellows.

Peter and Paul Rocks (PY0)

This DXpedition was being kept quiet until the last minute, and as a result you will probably have missed it if you were not looking for it. The DXpedition, sponsored by both the International DX Foundation and the Northern California DX Foundation, was set for the end of September. The group was to consist of five operators using the expected call of PY0SP. If you did happen to work the DXpedition, send your QSL cards to Terry Baxter, N6CW, 4639 Katherine Pl., La Mesa, CA 92041.

Bill Main, VK6ZX and his XYL, Diane VK6KYL relax for their photo with their two children, Riukah and Alizah. They are fairly new to Amateur Radio and have recently returned from a trip to Lord Howe Island. Bill is a railway guard with the Australian National Rail, who works between Kalgoorlie, where they live, and Cook, South Australia. Diane is a Registered General Nurse and a Registered Midwife. The Mains have just joined the YL International SSBer's (ISSB), and Diane is presently working at upgrading her license. ***(Photo courtesy of VK6KYL)***

Rwanda (9X5)

Check 14.300 MHz from 1800 UTC for 9X5PP, who is there regularly. Also, look for this station near 21.220 MHz at 1800 UTC. The 15-meter frequency is a European report, but there is a good chance he may be found higher in frequency.

Also active is 9X5WP working near 14.340 MHz from 0400 UTC, and 21.400 MHz from 1900 UTC. Reports of other Rwanda stations include 9X5SL on 14.195 MHz at 1830 UTC, 9X5WB on 21.343 MHz at 1820 UTC, and 9X5KE near 21.365 MHz from 1900 UTC.

Kenya (5Z4)

During the month of October, a new prefix will surface. To honor Kenya's Independence Day celebration, amateur stations will replace the 5Z4 prefix with 5Y4.

It is hoped that there will be an increase of activity from that one during October. Look for these stations, using either prefix, who have been reported active recently. Fifteen meters seems to be a popular band as 5Z4CX has been reported on 21.321 MHz around 2100 UTC, with 5Z4DA near 21.290 MHz from 1800 UTC. Also on this band look for 5Z4CV on 21.275 MHz at 2000 UTC and 5Z4CZ on 21.277 MHz from 1800 UTC.

Turkey (TA)

When working Turkey, keep in mind that Amateur Radio has been officially illegal there for over 40 years. When sending your QSL to that country, never put any call letters on the envelope, and that includes your own.

One active station from Turkey is TA2BK, who operates both CW and SSB. Look for him near 14.030, 14.275, 21.030 and 21.285 MHz. He has been reported on from 1000 to 1200 UTC, and again 1800 to 2000 UTC. No need to worry about your QSL card being sent through the Turkish mails; TA2BK requests that QSL cards be sent via Bahri Kacan, DJ0UJ.

India (VU)

Indian stations have been authorized to use the VU9 prefix in place of their normal VU2 call to commemorate the 9th All Asian Games that are underway in New Delhi. They will be using this special prefix until the middle of November.

Stations using the special prefix include VU9GI, who has been reported on 14.013 MHz from 0100 UTC, VU9RQ on 14.014 MHz from 2400 UTC, and VU9TS, who has been worked on 7.001 MHz around 1300 UTC.

Stations reported using their standard prefix include VU2HI, found on 21.313 MHz from 1700 UTC, VU2UGI on 14.201 MHz from 1300 UTC, VU2RAK on 7.072 MHz at 1730 UTC, and VU2ARZ on 7.003 MHz at 2130 UTC. Some of the times given here are from European reports.

Guyana (8R1)

IDXF member KA3BUJ/8R1 should have finished his summer operations from Guyana, and QSL cards for his operations should have been in the mail at the end of September. All QSL cards should be sent via Janice Weaver, N7YL, 1501 N. 22nd St., Las Vegas, NV 89101.

If you missed this station, take a listen for 8R1J who has been reported on 21.026 MHz around 0100 UTC. This station has been worked later in the day at 1300 UTC near the same frequency.

Crozet Island (FB8W)

Many of the deserving DXers still need this one. Georges FB8WG has been quite active recently and has been found on both CW and SSB. On CW look for him between 14.011 and 14.017 MHz from 1000 UTC. If he isn't with the YL ISSB System on 14.332 MHz, you might find him around 14.242 MHz. If you don't hear him at the time given, keep your receiver tuned as he may show several hours later. He has been reported coming into Europe on 14.011 MHz at 1730 UTC. The times he's been reported to have been with the YL ISSB System have been around 1300 UTC.

Nepal (9N1)

At the end of the year, John Ackley, KP2A; Bob Sparks, WB4NFA; and Ron Payne, WA6YOU will be operating from Katmandu in Nepal using the 9N1 prefix followed by their own suffixes. On 28-30 December, the group will be using the call 9N38 in celebration of the birthday of the King of Nepal. This will be an International DX Foundation operation, and all QSL cards are to be sent via Duncan Kreamer, W1GAY.

If you worked 9N1CGO during the summer, that was EA1CGO visiting Father Moran, 9N1MM, who is still active and has been reported on 14.235 MHz from 0100 UTC.

160 meters

It's 160-meter time. Look for some interesting stations on this band with the winter months approaching. Active stations on this band include 6Y5IC (1822), 5B4PW (1853), DK9CG/IS0 (1826) and others. The frequencies shown here, of course, are in kilohertz. The times are not given, as these stations were reported in a European publication and the times would be of little use over here.

DXCC

Turnaround time for DXCC applications and endorsements has been reported to be down to four weeks now. If you check any QST for the list of new applications and endorsements each month, you will see why it takes time to process your submission, especially when each individual card is inspected. As for my own recent submission (endorsements for my mixed and CW DXCC), my submission was dated 30 June and processed 18 August, (with an endorsement date of 9 July 82). That's not bad.

On other DXCC matters, there is little chance that QSL cards from those recent Mozambique operations will not be accepted for DXCC credit. Likewise, cards from JA1DNG/YI are not being accepted.

An unfortunate incident with a Central American amateur has created a problem. This station has been returning QSL

cards that were submitted to him with IRCs. With the returned QSL card was a note asking for $1 for a QSL card. Not only that, he used the IRCs for the return postage. This, of course, is in violation of Rule 12 of DXCC criteria. This has resulted in these cards not being accepted for DXCC until the matter is settled. The call in question is TI9VVR.

Northern California DX Foundation

The Directors of the Northern California DX Foundation, at the annual meeting last June, unanimously elected Dave Bell, W6AQ to the board.

Dave, prominent business executive and well-known Southern California DXer, is expected to be an active board member and, as such, will lend his expertise to several NCDXF standing committees.

The Northern California DX Foundation (NCDXF) is not to be confused with the Northern California DX Club, as they are two separate bodies. The two groups have often been considered the same, which they are not. Further information on the foundation's activities is available from C.F. "Bud" Bane, W6WB, 391 Monterey Blvd., San Francisco, CA 94131; telephone (415) 586-4386.

The NCDXF has also been honored by the Iberia DX Club of Madrid, Spain, with the award of the PLACA IDXC in recognition of continuous contribution to DX.

Other recipients of this highly regarded award include Geoff Watts for his long-term production of *DX News Sheet*; Guillermo Perea, EA9EO for his outstanding CW work at 3C1AA and 3C0AB; the Mexico DX Club for XF4 expeditions; and ZL1AMO for his well-conducted DXpeditions in the Pacific Area.

Clubs

The Stark DX Association was founded in May in the Canton, Ohio area. The new officers include Sonny KC8PX, president; John Schaffner, KB8LH, vice president; Mickey Koeble, N8BKB, secretary; and Dick Princehorn, N8BBB, treasurer. The group meets the first Tuesday of each month at 8:00 p.m. at the North Canton L-K Restaurant.

A note in a later newsletter of this club had Mickey, their secretary, listed as a Silent Key.

DX clubs are usually formed by amateurs with a common interest. Thus, members make an effort to help each other by informing club members what shows up on the bands. This is usually by means of a 2-meter repeater or spotting net. The Kansas DX Association — and many other DX groups — publishes a "Want List" to help the deserving DXer. This list gives the various countries, followed by the member calls of those who need the country. At the bottom of the sheet are the individual club members' phone numbers, with the note, "Call anytime, day or night." This obviously means collect calls. This goes to show you how dedicated the DXer is with this hobby.

Q signals from the past

Rod Dinkins, AC6V is responsible for these signals. Rod is past editor of the *DXer* — the official newsletter of the Northern California DX Club.

— Friends, Romans, Countrypersons, QSX
— Old DXers never die, they just QSB
— How do I love thee, QTB
— Dr. Livingston, QSL
— Damn the torpedoes (QRM), QRO
— Frankly my dear, I don't QSL
— Remember that fort in Texas QTH?
— Humpty Dumpty went QRT

5B-PPC Award

The Five Bands Carioca Woodpecker's Award, or 5B-PPC, is offered by the PPC Picapau Carioca, (Rio Woodpeckers CW Group), for working at least 10 different Brazilian prefixes on each band, (10, 15, 20, 40 and 80/160), plus one PPC member per band. All contacts from 1 January 1981 count. Only CW contacts count for this award and must have a minimum report of no less than RST 338.

To apply for this award, send a certified list with a fee of 5 IRCs to PPC Bureau, P.O. Box 2673, 20000 Rio de Janeiro, RJ, BRAZIL.

Slim

A copy of Ken J. McLachlan's 'How's DX' column in the September 1982 issue of *Amateur Radio* was sent to us. *Amateur Radio* is the official organ of the Wireless Institute of Australia, and Ken VK3AH is one of their monthly columnists. This month's column featured the expose of Robert Read, KF1O on his supposedly San Felix Island DXpedition. Here are the facts of the situation, which were taken from the article.

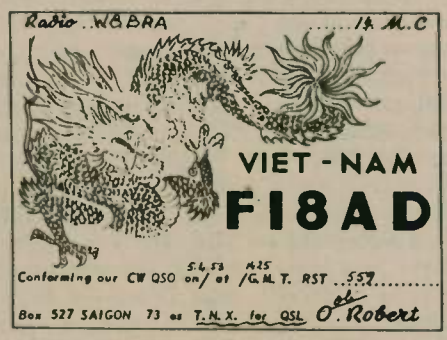
- Robert Marshall Read had been in Chile.
- Robert Read was granted license WB1GDQ/CE3 under a Reciprocal Agreement existing between the USA and Chile.
- He was authorised to operate WB1GDQ/CE3 by the Chilean Authorities from an application submitted in August 1981.
- No contract existed between the Chilean government, navy or anyone else regarding work for his company or himself on San Felix.
- He never put a foot on San Felix Island.
- When confronted by the ARRL as to the validity of his KF1O/CE0X operations, he produced copies of "authentic" documents marked TOP SECRET to validate his claims.
- Patricio CE3GN flew to the States to discuss the matter with the ARRL. Patricio provided that five letters and documents were falsified, which included "phantom" signatures, an altered CE3 license, certificates from non-existent Chilean organisations and altered documents from government sources.
- The WIA and ARRL have both disallowed this operation as a DXCC credit.
- According to copies of correspondence that transpired between the Chilean Society and the ARRL, the same person was sought for alleged fraud involving some non-amateur business transactions.
- The Chilean Society, in a letter to the FCC, has asked for the cancellation of his American licence as, quote, "We think that he quite clearly demonstrated that he has no right to belong any more to the Radio Amateur Fraternity."

The article went on to state that while half of the DXers in Australia and New Zealand were waiting for the "new country" to show on the ANZA Net, Pat CE3GN was explaining to this station claiming to be on San Felix Island, that according to the information that he had, no one could be transmitting from San Felix Island. With that, the station disappeared and was not heard from again.

At least three DXers have done this to us in recent years, two of them well known in DX circles. Why do they do this? You will have to ask them.

Antique QSL Department

The following two oldies were submitted by Dave Kennedy, N4SU, of King, North Carolina. The first is from the country of Viet-Nam when it was still under French control. FI8AD was the call used by Olie Robert when he was operating in Saigon 30 years ago. Dave worked him on 20 meters on 5 April 1953 and received an RST 559 signal. The prefix for this country was later changed to XV8 and was fairly active a few years back.



The call VS5ELA from Brunei is nothing unusual unless you look carefully and note the statement, "First Amateur Radio Station in Brunei." The station was operated by Clyde F. Norton, W0ELA, with the second operator, Joe C. Pehoushek, ex-JA2BQ. Dave worked this station 27 July 1952, on 20-meter CW. This was a DXpedition that was in operation 27-31 July. On the reverse side was the note, "W8BRA, Congratulations on first W8/Brunei QSO in History, Dave. 73, Clyde."

A look at the 1982 Callbook shows that Clyde F. Norton, W0ELA is still licensed. Not only that, he still lives on Westwood Circle, as indicated on this 30-year-old QSL card. How about that?

QSL information

Recently, we received a comment from a reader requesting more complete information on the QSL routes. Unfortunately, this has been misplaced. As to what the reader meant by his comment, we are not sure. The QSL routes listed each month are rather a large collection, probably greater that any other monthly publication. Compiling this listing requires a great deal of time. But then, perhaps he was referring to the fact that only a call was given as the route. To give a complete address for each route would require all our time spent on that and nothing left for the rest of the column.

Frank Capuano, N4FKZ, who also signs TG9NX and N4FKZ/HR5, reports that upon return from his last trip to Central America he found over 1,000 QSL cards waiting to be answered. Frank said about 10 percent of them had money inside, which he did not appreciate. You should have sent only an SASE with your QSL card. Frank is going to donate this money to the Heard Island Expedition.

Leonard Kaufer, KH0AC requests that you check where you are sending your KG6 QSL cards. It seems that the QSL bureau on Saipan is getting all the KG6 QSL cards, including those for Guam. Although Guam is only 120 miles from there, it is another territory. About 95 percent of the cards that arrive at the Saipan bureau are for amateurs operating on Guam and have to be remailed down there.

The QSL Bureau for Saipan is P.O. Box 7388 Capitol Hill, Saipan, C.M. 96950. This bureau handles QSL cards with the prefixes KG6R, KG6S, AH0, KH0 and WH0, for amateurs residing on Saipan Island only.

Cards for Guam (KG6 calls with 3-letter suffixes, AH2, KH2 and WH2) should be sent to P.O. Box 445, Agana, GUAM 96910. Let's hope we have this all straight now. No more Guam cards to Saipan. Now all we have to worry about is some confused soul sending one of those California 2 × 1 KG6 calls to Saipan.

(*please turn to page 45*)

Propagation

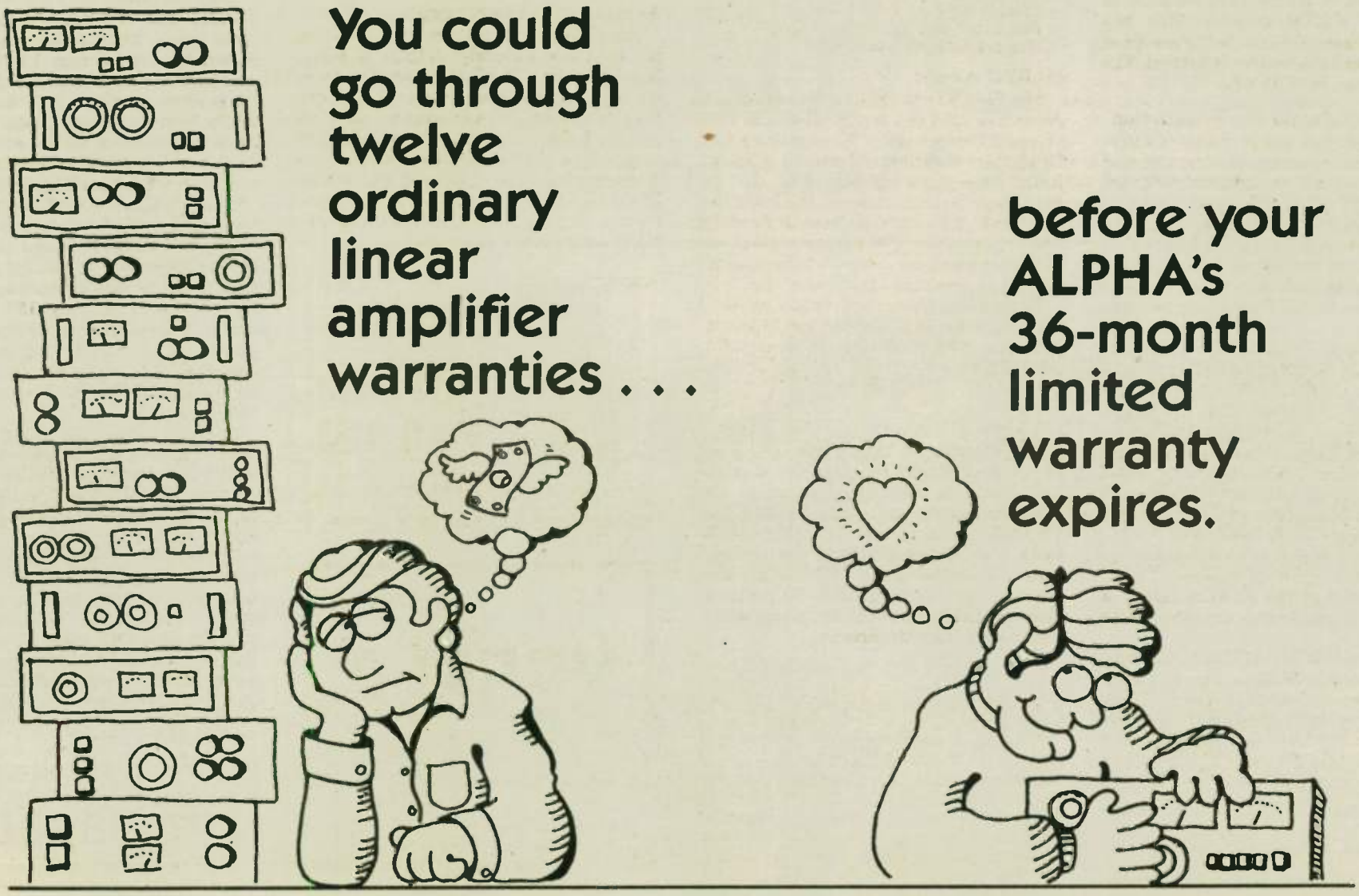
Maximum Usable Frequency from Burbank, CA
(courtesy of W6LS)

The numbers listed in each column are the Maximum Usable Frequency (in MegaHertz) for contacting five major areas of the world (Nairobi, Tokyo, Melbourne, Frankfurt, Rio de Janeiro) for low fire angle antennas.

You can get a free *complete* set of these predictions for both high and low angle antennas, Maximum Usable Freqency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (28¢) envelope at least 9" × 11½".

DECEMBER 1982

UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	20.6	27.4	32.1	10.3	21.9
0200	16.8	22.0	27.5	10.6	18.9
0300	14.2	17.8	23.3	10.5	17.0
0400	12.0	15.1	20.2	9.6	15.8
0500	10.5	14.1	17.8	8.8	14.6
0600	10.5	12.3	16.1	7.9	13.8
0700	11.3	11.1	15.2	9.7	13.8
0800	12.0	10.5	14.3	11.5	14.8
0900	12.1	10.6	13.1	12.5	15.4
1000	11.5	11.4	12.6	12.7	14.2
1100	10.3	11.8	13.2	11.7	11.9
1200	9.4	10.4	13.1	9.9	11.4
1300	10.4	9.9	11.4	9.6	14.7
1400	14.6	9.0	11.1	12.8	21.0
1500	20.6	11.8	15.4	18.8	27.4
1600	26.0	12.4	23.4	22.3	31.1
1700	29.9	11.2	23.4	18.3	32.0
1800	30.6	10.7	23.4	14.4	31.7
1900	30.1	11.9	24.5	11.1	31.7
2000	29.7	15.5	26.5	9.1	32.2
2100	29.0	19.9	28.3	8.6	32.5
2200	27.3	25.5	29.4	8.9	31.6
2300	25.0	29.4	30.4	10.1	29.1
2400	23.0	31.5	32.3	10.6	25.6



Now you can have an ordinary linear and 3 months limited warranty protection . . . or you can have a new ALPHA and 3 years!

ALPHAs keep getting better.

While other manufacturers of maximum-legal-power amplifiers stick to the traditional 90 days, ALPHA's limited warranty has been increased again—to THREE FULL YEARS.

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The truth is, we don't expect this new warranty to cost us much. ALPHA linears live up to their reputation for durability so well that they rarely fail during the second, third—or later—years. The ALPHA warranty simply reflects our experience and expectations.

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Think about this: An ALPHA gives you several times the warranty protection, twice the PEP output and full rated power into 1.5 or 2:1 SWR . . . without an antenna coupler. And, ALPHA resale value is traditionally outstanding.

Nobody's perfect.

We think our reputation proves that we come closer than almost anybody else, but everyone goofs once in a while. That's why superb ETO factory service—and a super-long limited warranty—is so valuable to you . . . even if it doesn't cost us very much extra.

ALPHA: Sure you can buy a cheaper linear . . . but is that what you really want?

Contact your dealer or ETO direct for ALPHA amplifier specifications and full details.

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Phone: (303) 275-1613

The Dynamic D

ICOM's 2 Meter and 440 MHz FM

IC-2AT

IC-25A

IC-45A

IC-4AT

25 watt/5 memories/2 scanning systems in a 2"H x 5½W x 7"D package is what has made the easy-to-use IC-25A the most popular 2 meter FM mobile transceiver ever. Now ICOM presents the second half of its mobile duo...IC-45A. The IC-45A covers 440-449.995 MHz. Both transceivers are supplied with touchtone® microphones standard.

Dual VFO's. Dual VFO's give an extra stored frequency for scanning (memory scan scans 5 memories plus 2 VFO's) and each VFO has a different tuning rate for easy QSY.

	VFO A	VFO B
IC-25A	5 KHz	15 KHz
IC-45A	5 KHz	25 KHz

5 Memories. Instant access to most used frequencies. VFO A information is transferred to the selected memory by pushing the write (IC-25A) or W/CK (IC-45A) button.

IC-BU1

Priority Channel. Any memory channel may be monitored for activity on a sample basis, every 5 seconds, without disruption of a QSO conducted on a VFO frequency.

LED Bar Meter. Shows strength of received signal as well as relative transmitter output from the fully protected final RF amplifier. APC (automatic power control) is used to detect SWR and adjust the power output to a safe level.

Simplex/Duplex Operation. Standard 600 KHz offset initializes into radio at turn on. Offset may be changed by pressing the priority button while in VFO operation. Rotating the main tuning knob will now change the offset up or down and the offset will be displayed on the frequency readout.

Adjustable Power Levels.

	Hi Pwr	Lo Pwr
IC-25A	25 W	1 W
IC-45A	10 W	1 W

Pulling the squelch knob out places the unit into low power. Both the high and low power may be independently set to accomodate your simplex/repeater requirements or amplifier input characteristics.

Nor/Rev Capability. Use of this button on the IC-25A or the W/CK button on the IC-45A, in the duplex mode, allows one touch monitoring of the repeater input frequency. If simplex operation is possible you will know instantly.

Scanning. Pushing the S/S button initiates the scan circuitry. With the mode switch in a memory position the unit will scan all 5 memories plus the 2 VFO frequencies.

With the mode switch in a VFO position, the unit will scan the entire band or the portion of the band defined by memories 1 and 2. Full band scan or program band scan is selected from the front panel in the IC-25A, internally on the IC-45A.

Both units have internally switched scanning choices of adjustable delay period after a carrier is received then resume scan, or resume on carrier drop.

The Most Compact FM Mobiles on the Market. Fits in the smallest of places. Stacking, matching Mobile Mounts for complete mobile communications for your car.

Memory Backup. When the optional IC-BU1 backup power unit is installed on the back of the IC-25A or IC-45A, memory will be maintained while transferring the unit from power source to power source. If the unit is not removed from power, it will maintain memory even when turned off with or without the IC-BU1.

ICOM

The World System

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 **(206)454-8155**/3331 Towerwood Drive, Suite 307, Dallas, TX 75234 **(214)620-2780.**

IC-R70

NEW!

The Commercial Grade Communications Receiver that everyone has been asking for.....at a price you can afford!

GENERAL COVERAGE RECEPTION AT ITS BEST

Listen to the world of HF with the R70, a 100KHz to 30MHz commercial grade receiver designed by ICOM Incorporated, the leader in advanced receiver design. Built from knowledge gained by designing receivers for commercial, marine, and amateur use, the R70 surpasses other receivers on the market...even receivers costing more than twice as much.

Utilizing ICOM's DFM (Direct Feed Mixer), the R70 is a receiver which in normal usage is virtually immune to intermodulation distortion or cross modulation, yet still maintains superior sensitivity. Whether you are a SWL (short wave listener), Ham (amateur radio operator), maritime operator or commercial user, the R70 provides the features you need.

DESIGN

The R70 incorporates an UP conversion system, utilizing a direct feed mixer proven to be the best design for minimizing interference from strong adjacent signals. A preamp is provided for making the weakest of signals readable. High grade filters in conjunction with the built-in PBT (pass band tuning) system and notch filter, provide the ultimate in interference rejection. Selectable AGC (fast/slow/off), noise blanker (wide or narrow), and tone control improve readability under the worst conditions. An AGC derived squelch, operative in all modes, adds to operating ease.

Dual VFO's with three tuning rates provide quick QSY (frequency change), memory for an important station, or by equalizing the VFO's (A=B), a digital RIT. 13.8 VDC operation is provided as an option, 117 VAC is standard.

HAM'ING

The R70 is an ideal general coverage receiver to complement any ham shack. Use it with your existing tramsmitter or transceiver to provide dual receiver capability.

The R70's built-in monitor system lets you listen to your own transmitted audio and a mute input automatically protects the R70's receiver from your signal.

An option for FM allows listening to the 10 meter FM activity.

As an additional plus to ICOM IC-720A owners, the R70 has an optional interface that will allow the R70 to control the transmit frequency of the 720A for the ultimate in hamming versatility.

SWL'ING

For the short wave listener, the readout section of the R70 gives all the information for logging a station to be returned to at a later time. Frequency, mode, VFO, signal strength are all displayed. A dial lock prevents accidental loss of a signal.

A front mounted speaker provides 3 watts of crisp clear audio. A record jack allows easy attachment of a tape recorder.

ICOM SYSTEM

Like all ICOM HF products, the R70 fits into the ICOM system concept of accessories allowing you to use previously purchased accessories such as the HP1 headphone, SP3 external speaker, and AH1 auto bandswitching antenna.

PRICE

Check with your local ICOM dealer for pricing on the R70. You will be amazed.

ICOM

The World System

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 **(206)454-8155**/3331 Towerwood Drive, Suite 307, Dallas, TX 75234 **(214)620-2780.**

The ART of Contesting

There are three ways I know of for making contacts: calling CQ, calling other stations and by other stations calling you without any effort on your part (called a "run"). Calling other stations, in the contester's vernacular, is "search and pounce" (SP).

The fastest way to make the most contacts and maintain a high hourly rate of contacts is to get a run started. Some operators have been known to make over 180 contacts per hour, one every 20 seconds, during some good runs. To get a good run started you've got to be a good operator, first and foremost. Stations waiting to work you don't want to be waiting while you're correcting mistakes every few seconds or taking too long for each contact. Speed is important, but not so fast that stations have to ask you for repeats. I have found that 20 to 30 wpm works very well. It also helps to get a run started if you happen to be rare DX or are located in an ARRL section where participation is small (e.g., VE8, Nevada, Delaware). Another thing that helps to keep a run going is to maintain a particular operating pattern so that the stations waiting know exactly what you are going to do. Don't change your pattern unless you have a very good reason.

Another fast way to make a lot of contacts is by calling "CQ", provided you are getting answers. A big signal helps, regardless of the method used to make contacts. If you're not getting answers, slide up the band, say 10 or 15 kHz at a time, working each dry as you go. Work the strong and fast signals first; the strong ones, to get them off the frequency, and the fast ones because they're not apt to wait in line for the slower stations to finish. Be sure to listen for the weak stations. Many a multiplier will slip by you if you don't.

Once you have taken command of a frequency, use the RIT for tuning back and forth across your frequency to pick up those stations that might be off. In this manner, your transmitting frequency remains constant for those who may be waiting for you.

Also, if you have a separate VFO or a memory VFO you can use this added flexibility for tuning other parts of the band without disturbing your present operating frequency.

When do you switch from CQ to SP? When your rate drops off to a point where you feel you could do better with SP. Tune your way up or down the band, picking out the CQ'ers, and you'll be surprised how many of them you haven't worked. After having combed the band in one direction, go back and comb it again in the same direction.

After you have combed a band dry (i.e., your rate has dropped to what you would consider an unacceptable level), it may be time for you to change bands even though the band you're on is still active. Unless, of course, you have decided to enter a single band category, in which case you just stay there and keep digging!

In trying to keep your rate up, remember that your operating practices contribute to a fair degree. Avoid all nonessential verbiage. Be brief. Use 2 x 2, 1 x 2, 2 x 1, or 1 x 1 CQ's. When calling a station, don't send his call; just send your call once or at the most, twice. If he works you, then you just send his call and the exchange and you will have met FCC requirements that both station call signs be sent during the QSO. I believe this requirement is being changed.

Don't use DE or FROM, K or AR. In acknowledging receipt, there are several responses: for CW — R K6SG, TU K6SG, 73 K6SG; for phone — Roger K6SG, QSL K6SG. Anything more than that is superfluous and takes up valuable operating time for both stations. Remember — even though you may not be in the contest to make a big score, the other station might be, so time is important to him.

Oh yes. One more thing about calling stations. Don't tail-end unless you know the other station is working tail-enders. The timing of your call can make the difference of working or not working a station. In working DX in a pileup, listen for a second or two and when the roar dies down just a bit, make your short call. If you don't work him in one or two calls, move up or down a few hundred cycles or hertz and try again.

Whether you CQ or search and pounce depends upon several factors. Your station, your experience, band conditions and even the nature of the contest. The main objective in trying to make a high score is to "keep the rate UP." If you're still with me, cul. 73, George K6SG. □

Please see page 11.

AWARDS

Scott R. Douglas Jr., KB7SB
P.O. Box IARS
Glendale, CA 91206-7609

Nine Dragons Award

This month we start off by presenting the Nine Dragons Award which is sponsored by HARTS, the Hong Kong Amateur Radio Transmitting Society. The color of the paper is red and the lettering black, but where this award really gets its beauty is the extensive gold hot foil stamping which makes up the border. The contrast is striking and this 9-¾″ × 12½″ certificate is truly among the best offered anywhere today.

The award is issued for confirmed contact with a country in each of the following CQ zones: 18, 19, 24, 25, 26, 27, 28, 29 and 30 and a VS6 station must represent your contact with zone 24. Stations located within zone 24 require two contacts with each of the above-listed nine zones and, of course, zone 24 must be two VS6 contacts.

Only contacts made after 1 January 1979 are considered valid for this award. Send your log extract (GCR), along with $3 or 25 IRCs (IRCs must not be worth much in Hong Kong!) to: HARTS, Attention Awards Manager, GPO 541, HONG KONG.

P-6-K

Since we are looking at those awards where the artwork is above average, let's move west toward the USSR. The P-6-K award — although not one of the most difficult to obtain — deserves high recognition. The certificate measures 9″ × 12″ and makes up for its small size with excellent artwork. The border is an almost Pacific Ocean blue with a design running through it in hot foil stamped gold. The interior of the certificate has a replica of the earth in three shades of blue and the lettering is blue bordered by gold, the title is in red, and issuance data in black.

It is issued for confirmed contact with each of the six continents (Europe, Africa, Asia, Australia, North and South America), three contacts with European USSR, and three contacts with Asiatic USSR, for a total of 12 contacts. It is issued in three classes: Class 3 = Mixed Bands; Class 2 = 7 MHz; and Class 3 = 3.5 MHz. Only contacts made after 7 May 1962 are considered valid.

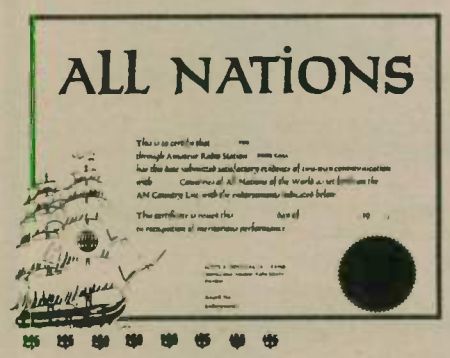
It will take about six months for your award to return to you after your application, but the wait is well worth it. The award fee is $3 or 14 IRCs, and normally it is required that you include the cards with your log extract. However, IARS HQ has certified quite a few applications in the past, and that certification has been accepted without question. So if you are a member, that might be the way to go. If not, send your cards and a log extract showing all the details, in alphabetical order by prefix, to: Central Radio Club, Awards Manager, P.O. Box 88, Moscow, USSR.

United States of America County Award

From the publishers of CQ Magazine comes one of the finest looking awards available anywhere for those interested in county hunting. The award was originally sponsored by the CHC during its early days and is still considered today as the county hunter's DXCC equivalent. The certificate, measuring 13½″ × 20½″, is printed in six different colors with multiple shades of those colors giving an excellent effect. The center of the certificate has the flag of the United States, and the flags of the individual states form the border.

This award is issued for confirmed contact with some of the over 3,000 existing counties. The basic award is issued for 500 confirmed counties and endorsements are available for 1000, 1500, 2000, 2500, 3000+.

Rather than go into an extremely lengthy description of the rules, let me direct you to contact the awards custodian, Ed Hopper, P.O. Box 73, Rochelle Park, NJ 07662, who will return to you the complete rules and information sheet for your SASE.



All Nations

For those of you who enjoy the DXCC type of awards, here is one that we feel is among the best designed and easiest to get. The All Nations Award, like the DXCC, is issued for confirmed contact with at least 100 different countries of the world as per the ARRL country list and the following: H5, S4, S8, IT, T4. The difference is, you are not required to send the QSLs along with your application for the original issue or future level endorsements. Applications are submitted on the GCR system of certification. The award is issued in all of the categories that are offered with DXCC, and it may be earned separately under different call signs should you desire. (DXCC combines all calls you have used and does not provide for repeated applications.)

The award measures 11″ × 14″ and is printed on a fine parchtone bond. The main artwork is a map of the world (not visible here). The map is printed with brown ink, and the lettering is in blue on a light brown background. A gold seal is applied to the lower right-hand corner; the endorsement stickers have premarked spaces at the bottom and are in the form of the organization's globe logo, with the level value printed across them.

All in all, we believe you will find participation in this achievement program easier, and hopefully more enjoyable, while still maintaining almost the same level of integrity.

To apply, send your log extract (GCR), along with the award fee of $4 to: International Amateur Radio Society, P.O. Box IARS, Glendale, CA 91206-7609. Remember, you can apply for the award SSB, Mixed and CW or as stated above. I am sure you will find this an excellent addition to your collection.

Arabian Knights Award

While we are on the subject of awards of superior design, we would be amiss not to bring to your attention this extremely well-designed and beautiful certificate. The award measures a whopping 16″ × 19″ and is printed on a very fine bond in four colors. The border is brown, with a pictorial in blue; the lettering is in white and black, and the coat of arms of the King JY1 appear at the top. The award is signed by the king himself, which alone makes this a must for your collection.

The award is issued for confirmed contact with either JY1 or JY2 of the royal family plus nine of the following: A4, A6, A7, A9, CN, HZ, J2, JY (in addition to JY1 or 2 Royal), OD5, ST, SU, YK, YI, 3V8, 4W, 5A, 5T5, 6O, 7O, 7X and 9K2. Band and mode endorsements should be requested at the time of your original application. Send your log extract (GCR), along with the award fee of 10 IRCs or equivalent, to: JY1 Awards Manager, P.O. Box 1055, Amman, JORDAN.

Well, that's all for this month, as this should help keep you busy in your idle hours while the bands are in poor shape. If your club has an award that you would like to see appear in this column, please send me a sample and the complete award rules and requirements. It will appear here promptly, and if it meets the criteria it will be listed in the Directory of Certificates and Awards published by the International Amateur Radio Society. 73s and good DX, Scott. □

Worked All North Pole Award

The Borealis Amateur Radio Club (formerly Eielson-North Pole Amateur Radio Club) will present, upon receipt of the request with the call signs and dates worked of a minimum of three BARC members and $2, a Worked All North Pole certificate. Operating time will be from approximately 0400-0900Z, 30 kc up from the lower edge of the Novice and General bands, ± QRM.

The club member whose call sign appears on the largest number of certificate requests during the month of December will win a prize.

Certificate requests should be sent to: Borealis ARC, c/o Wendell Keller, KL7OE, SR Box 80343, Fairbanks, AK 99701. □

Moose Jaw Club Award

The Moose Jaw Amateur Radio Club is proud to announce the 60th Anniversary Award, which requires the applicant to work or hear two Moose Jaw Club members after 1 September 1982, on HF only, all mode. Send complete log data and $1 to Award Manager Murray Button, VE5ACM, 1105-14th Ave. S.W., Moose Jaw, Saskatchewan, CANADA S6H 7S4. □

Arizona says 'thanks'

Information sent by Ray Winiecke, W7DCD

Members of the Pima County (Arizona) Amateur Radio Emergency Services each received letters of commendation from Division of Emergency Services Director, Charles A. Ott, Jr. The letter expressed thanks to the operators who supported the statewide emergency management exercise conducted on 19 May 1982. □

AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

15 November is the eighth anniversary of the launch of the AMSAT/OSCAR-7 from Vandenberg Air Force Base in California. Recently there have been reports from Australian and United States amateurs that the beacons of AMSAT/OSCAR-7 have been heard on 10 meters and on 70cm. About four years ago, one of the spacecraft's batteries developed an opening, preventing operation except in the direct sunlight. The reports of these new signals from OSCAR-7 suggests the spacecraft may be regaining some strength and that the battery may heal and lead to a rebirth of the bird.

The preparation for launch of the Phase IIIB spacecraft continues despite the recent failure of the L-5 *Ariane*. Jean Gruau, F8ZS who holds some office in the European Space Agency (ESA), reported to Vern "Rip" Riportella, WA2LQQ that the problem which resulted in the failure was a gear in a pump in the third stage of the booster which had failed to operate properly. The ESA officialdom assured everyone looking for answers that this was the kind of a single-element failure which can easily be rectified. AMSAT has considered its position and has thus far elected to continue its plan to be aboard the L-7 *Ariane* as originally scheduled. Besides, no other launch opportunity presents itself at this time for the Phase IIIB spacecraft.

ARRL has agreed to make available its W1AW bulletins in Baudot, ASCII or RTTY for transmission on the Special Service Channel L-2 on Phase IIIB. An ARRL Code Practice Session is planned on the Special Services Channels. The Radio Society of Great Britain plans to uplink RSGB news and bulletins on the Special Services channels and the Hungarian AMSAT affiliate HG5BME plans to transmit IARU Region I bulletins.

The failure of the L-5 *Ariane* is expected to result in a delay of anywhere from one to six months in the expected launch date of the AMSAT Phase IIIB spacecraft.

The recently reported proposal of Cablesat General of Florida to include an amateur transponder on each of two of its Geosynchronous Communications Satellites to be launched in the future was greeted enthusiastically by the ARRL and by AMSAT, although at this time full details are not available. The president of Cablesat — Ray Kassis, WA4OHK — anticipated that as satellite communications move up to higher frequencies, equipment surplussed from the lower bands into which he proposes to place the amateur transponders will be available to amateurs who want to get into microwave satellite communications. The proposed systems will uplink in the 5 GHz and downlink in the 3 GHz bands.

Other areas of Amateurradiodom have expressed interest in the proposed 3-5 GHz Cablesat General proposal.

Mike Stone, WB0QCD, editor-publisher of A-5 Magazine, has written to Ray Kassis with a comment to the effect that ATV would be one of the modes that ought to be involved in the proposed geosynchronous satellite systems.

Dr. John Champa, K8OCL — an AMSAT Area Coordinator for northern Ohio — has made some recommendations for ATV satellite communications:

1) Some other frequency than the Amateur Satellite Service uplink at 1270 MHz should be used. This frequency will get a real workout with the Phase III and IV AMSAT satellites. Go higher for more room!

2) Establish a regular liaison with AMSAT for the specific purpose of keeping the ATV satellite project alive. You may wish to find a volunteer who is active in both ATV *and* AMSAT/OSCAR affairs, has good technical abilities, and lives in the Washington, D.C. area.

3) Consider use of the AMSAT-World Space Foundation Project (The Solar Sail) as a vehicle. It is scheduled for launch in 1984-85, which is about the right time frame. Most importantly, this spacecraft will be *maneuverable* over different regions of the world having various TV formats; i.e., they can take turns using the bird with the length of time of their turn being based on the amount of activity, of course. I have suggested this in an article I (K8OCL) am writing for AMSAT's Orbit Magazine.

Henry Ruh, KB9FO — in an article in A-5 Magazine entitled "And now, live and direct from satellite" — proposed a marriage of satellite and ATV (fast scan amateur television) technologies using amplitude modulation for the video with 1240 MHz or 2340 MHz uplink frequencies and 3.3 or 5.0 GHz for the downlink. TVRO or "pirate MDS" antenna systems could be used for the satellite ATV activity, as proposed. Henry suggests that three basic steps must be followed:

"1) Form a satellite committee and a fund-raising plan to purchase and build equipment and to work with AMSAT and the amateur TV community.

"2) Build a satellite and find a launch opportunity for it.

"3) Use it."

Says Henry, "I suggest A-5 Magazine set up an Escrow Fund Account and be in charge of promoting it all." Henry would like to hear from anyone who would like to participate in such a project. Contact him at Box 1347, Bloomington, IN 47402.

Those of you who are interested in speaking programs for Amateur Radio clubs or other service organizations may be interested in the historical AMSAT/OSCAR slide set which is available from AMSAT, P.O. Box 27, Washington, D.C. 20044.

This set includes 40 frames which cover all of the amateur communication satellites from OSCAR I, launched by Project OSCAR in December 1961 through UOSAT/OSCAR-9, launched in September 1981. There are frames describing all of the intervening amateur satellites and also included are frames of Phase IIIA and the upcoming Phase IIIB. The set goes for a donation of $10 for the 40 frames plus 88 cents to cover postage and handling.

FLASH

As I was preparing this article I was advised that SRI (Stanford Research Institute) has successfully commanded the UOSAT/OSCAR-9 spacecraft, and it is now operating normally. If you tune to 145.825 with a standard hand-held 2-meter rig, you should be able to pick it up. We have learned from AMSAT that Stanford's big dish activated the spacecraft on the evening of 20 September and fully activated the UHF beacon, then turned it off and fully activated the VHF beacon and turned that off. All proved to be operating nominally. (Dr. Robert Leonard, KD6DG led the team at SRI in overcoming the desensing problem mentioned in this column last month. The power level from the antenna was 12 megawatts ERP.)

The only system exhibiting a problem was the radiation counter EHT voltage,

Norm Chalfin, K6PGX is shown here with models of AMSAT spacecraft.

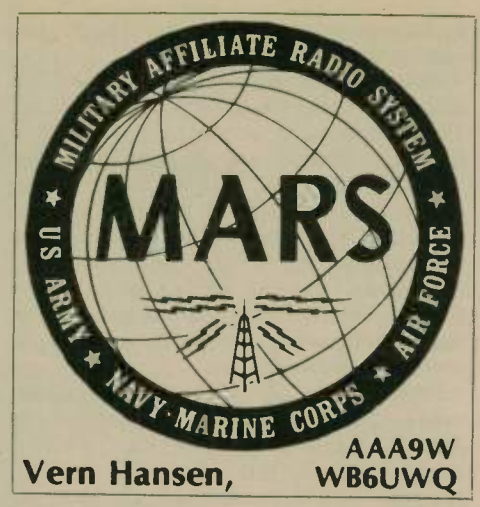
which will be analyzed to see why. Further tests were being run with the telemetry for the high-speed magnetometer data. We were unable to determine whether a supplemental orbital data package was being planned by Project OSCAR.

AMSAT is seeking financial help. A fund-raising program is being organized. There are, as you know, several matching funds still in existence and for every donation by an individual, the matching fund adds an equal amount. One of these is the ARRL matching fund for OSCAR. Another has been set up by Herbert Hoover III, W6ZH. If you want to contribute to AMSAT, designating your contribution for a particular matching fund will increase the value of your contribution.

There are still a number of AMSAT/Project OSCAR Orbital Prediction booklets available. Contact AMSAT, P.O. Box 27, Washington, D.C. 20044. □

Silent Keys

It is with regret that we announce the passing of John (Blackie) Blackburn, AFA6CD and Frank Webster, AFA6ZE. Both gentlemen were dedicated, hard-working MARS members. Blackie was very active in the Los Angeles AFS Base Support Program and Frank, active even at the age of 89 years, could be heard on the MARS HF and VHF circuits to almost the very end. □



Vern Hansen, AAA9W WB6UWQ

Region 6 Conference

Paul Turkheimer, AFF6P

During the weekend of 13-15 August 1982, the Region 6 Conference was held at the Scottsdale Convention Center in Arizona. The Friday night officials meeting was well attended by the staff, and major discussions centered around the need for more planned emergency exercises, current efforts to computerize teletype, electromagnetic pulse protection, and attracting more young people into the USAF MARS program.

The Saturday session had several excellent presentations. After the opening remarks by Tom Moore, the RCM, CMsgt. H. Collins, Director, USAF MARS conveyed greetings from Colonel Bowers, Chief MARS, followed by a very informative overview. In addition to citing Region 6 as having an outstanding record with dedicated people and excellent organizational structure, Chief Collins discussed a current study intended to include MARS as part of a National Communications network for emergencies. He also informed the group that changes in the system such as the new frequencies, mailing procedures, etc. will be announced shortly.

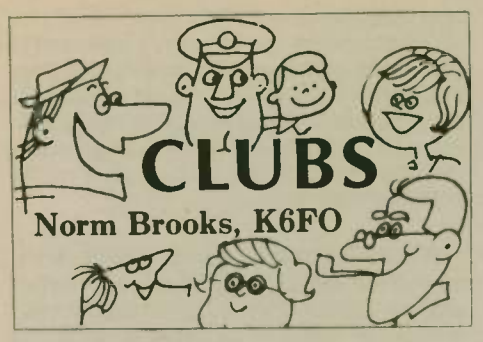
The states' MARS Directors gave their respective reports, highlighting various aspects in their states. It was noteworthy that in the states of Arizona, Nevada and New Mexico, excellent USAF MARS repeaters systems cover, if not all, certainly most of these states. All are very sophisticated with advanced features to serve USAF MARS and official Air Force disaster preparedness groups at the respective bases.

Other presentations were made by Tom Walden, AFF6T on training; S. Peter Barbic, AFF6O on operations; Paul Turkheimer, AFF6P on "Selling MARS to your Command," and Cliff Warrick, AFF6E on emergency preparedness.

The traditional banquet on Saturday evening featured numerous certificates of recognition and prizes and two special plaques for dedicated service to Region 6. The recipients of the plaques were Alan Mills, AFF6D and Tom Walden, AFF6T (CMsgt ret), former USAF MARS Director.

Sunday's activities consisted of a visit to the Goldwater station and informal wrap-up sessions.

In addition to the formal activities, an excellent ladies program was conducted by Lisa Moore. Sightseeing, shopping and just relaxing by poolside provided perfect activities for the ladies. □



During the first weekend in December, you will hear "CQ Telephone Pioneers," in voice and "CQTP" in code on the amateur bands. The participants will exchange reports and chapter numbers. It will be obvious some kind of contest is going on and the participants are "Telephone Pioneers." But who are they? Who are these "Telephone Pioneers?"

Telephone Pioneers of America

It has been truly said the Telephone Pioneers of America is the largest *unknown* service club in the world. They are larger than Kiwanis or Rotary, and most everyone knows who *they* are. The Telephone Pioneers of America is a unique organization — the world's largest voluntary organization of industrial employees. There are over 550,000 members throughout the United States and Canada, and enrollment is growing steadily. Membership is limited to employees in the telephone industry with 18 or more years of service. About half are now retired — they're called Life Members.

The association was founded back in 1911 out of a feeling of pride and achievement by the people who took part in the early development of the industry. They made fellowship, loyalty and service a goal to build on. Today's Pioneers are continually adding new dimensions to the many activities which express this basic purpose.

- A baseball whizzes toward a youngster at bat who "connects" and sends it to left field. The child is blind but can follow the ball by the beeping sound it makes. The beep ball was developed by Telephone Pioneers.
- A retired telephone woman "minds the store" at a school for the mentally retarded. Here students can "buy" various items donated by Pioneers. The project helps students learn how to count and use money.
- Telephone Pioneers collect and deliver television sets, chairs, small tables and pictures to furnish waiting rooms in a hospital.
- Pioneers transform a littered lot into a community park, sow pine seeds on a burned-out hillside and staff a recycling plant.
- The upkeep of a school for mentally retarded children is a project for several Pioneers. Members trim trees, paint, do carpentry work and perform odd jobs around the school.
- An elderly or disadvantaged person gets help with his income tax form from one of many Pioneer volunteers.
- Several Pioneers collect food, clothes and medical supplies, and fly them "south of the border" to needy people in Mexico.
- Telephone Pioneers record and repair "talking books" for the blind, learn to help drug users, make lap rugs and mats for convalescent patients, sponsor and set up immunization clinics, visit the sick and tutor children.
- A newborn baby lies by its mother's side. Will this new baby be able to hear? This has been a question of parents in families where the baby's risk of a hearing loss is high. Now, thanks to the Telephone Pioneer's Infant Hearing Assessment (IHA) Program, this question can be answered. IHA is a method of early detection of hearing loss in the newborn. Thus, they can assure that an infant born with a hearing handicap is identified early and treated promptly.

Phil Poeschel, W6TID and Gay Somerville — members of the radio club of the John I. Sabin Chapter of the Telephone Pioneers — helped get this program started. With their expertise, the huge Infant Hearing Assessment Foundation was created, with Somerville as Chief Engineer.

These are just samples of what Telephone Pioneers are doing throughout the United States and Canada and here in your own community.

Back to Amateur Radio. Needless to say, a large percentage of telephone industry employees are radio amateurs. They have formed radio clubs under sponsorship of the 98 chapters of the Pioneers. You will hear these members participating in the "Pioneer QSO Party" to see who can contact the greatest number of members in the greatest number of chapters.

Telephone Pioneering adds up to tens of thousands of volunteer hours every year. It also adds up to the largest organization of its kind in the world — The Telephone Pioneers of America, dedicated to fellowship, loyalty and service in the community. □

Communication begins with you

Ted Phelps,
Pioneer QSO Party Host

If you are a Telephone Pioneer who holds an Amateur Radio license, you'll be interested in this announcement.

For the fifth straight year, the John D. Burlie Chapter No. 89, Telephone Pioneers of America, will sponsor the Annual Pioneer Amateur Radio QSO Party on 4-5 December 1982.

The 18th running of this popular yearly Amateur Radio activity provides an opportunity for Pioneer amateurs from chapters all over the United States and Canada to make contact with each other in a spirit of fellowship and fun.

When the weekend of radio activity is over, participants will send their log reports to the Burlie Chapter for tabulation and scoring. Certificates will then be awarded to the highest scoring chapter, Pioneer Radio Club station and to top-scoring Life Members and individual Pioneers. (See contest details on page 49.)

Seeing double?

If you should receive duplicate issues some month, and one of them has only your name, call and address, and no computer number, you have been selected to pass the extra copy on to a ham who may be interested in seeing the paper. Pass it on.

YOUR LOCAL RADIO CLUB

ALASKA

Borealis Amateur Radio Club
Eielson AFB, Alaska 99702
North Pole Jr./Sr. High School
3rd Friday/monthly - 7:00 p.m.

ARIZONA

Tuscon Repeater Association
P.O. Box 40371, Tucson, AZ 85719
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

Amador County Amateur Radio Club
PO Box 598, Pioneer, CA 95666
Pioneer Elementary School, Pioneer, CA 95666
1st Thursday/monthly - 7:30 p.m.
Talk-in 146.235/146.835

ARALB (Assoc. Radio Amateurs of Long Beach)
1708 E Hill St. Signal Hill, CA 90806
Meets: Signal Hill Comm. Center
1st Friday/monthly

Contra Costa Communications Club WD6EZC/R
Box 661, San Pablo, CA 94806
Meet 2nd Sun. at 9:00 a.m.
Hickory Post Restaurant/Lucky Lanes
Info call Carl KA6OLK (415) 237-2621

East Bay Amateur Radio Club
P.O. Box 6017, Albany CA 94706
Salvation Army Bldg., 36th & Rheem,
Richmond (415) 525-6200
2nd Friday/monthly — 7:30 p.m.

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

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

Livermore Amateur Radio Klub
2441 Heatherlark Cr., Pleasanton, CA 94566
Meets: Valley Memorial Hospital
Multi-purpose room, Livermore, CA
2nd Friday/monthly - 7:30 p.m.

Mt. Diablo Amateur Radio Club (MDARC)
Grace Presbyterian Church
2100 Tice Valley Road
Walnut Creek, CA 94598
3rd Friday/monthly - 8:00 p.m.

North Hills Radio Club
P.O. Box 41635, Sacramento, CA 95841
Meets: Gethsemane Lutheran Church
4706 Arden Way, Carmichael, CA 95608
3rd Tuesday/monthly

Sacramento Amateur Radio Club, Inc.
Contact: Chet Almond, N6DRU, (916) 967-4295
Meets: MARS Building, Sacramento Army Depot
Troop gate, Florin-Perkins Road
2nd Wednesday/monthly - 7:30 p.m.

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

Santa Cruz County ARC
PO Box 238, Santa Cruz, CA 95061
Last Friday/monthly - 8:00 p.m.
San Fran. Fed. Savings, 1995 41st Ave., Capitola
K6BJ repeater 146.19/146.79

Satellite ARC, Inc.
Bldg. 21160
Vandenberg AFB, CA 93437
1st Thursday/monthly - 8:00 p.m.

S.C.A.T.S./WB6LRU
S. CA Amateur Transmitting Society
PO Box 1770, Covina, CA 91722
Vine School
1st Monday/monthly - 6:30 p.m.

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

Silverado Amateur Radio Society - (SARS)
Silverado Jr. High School
1133 Coombsville Rd., Napa, CA 94558
Bill Williams. N6EIH - (707) 255-7600
1st Tuesday/monthly - 7:30 p.m.

Simi Settlers ARC (SSARC)
PO Box 3035, Simi Valley, CA 93063
3rd Thursday/monthly - 7:30 p.m.
Bank of A. Levy (across Larwin Sq.)
K3HZP/R 147.765/165 Simplex 147.48

Sonoma County Radio Amateurs, Inc.
Box 116, Santa Rosa, CA 95402
Hank Davis, W6DTV (707) 823-7885
County Office of Emergency Service
1st Wednesday/monthly - 8 p.m. rptr 146.13/73

Stockton Amateur Radio Club
U. of Pacific, Rm. 122
Kensington & Mendocino Sts.
2nd Wednesday/monthly - 7:30 p.m.
Rptr. roll call: Wed. 8 p.m. - 147.165/765

Tri-County Amateur Radio Association
Pomona First Federal Savings and Loan
399 N. Garey Ave., Pomona
Talk-in 146.625/025 For info. call (714) 985-8184
2nd Monday/monthly - 7:30 p.m.

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.

Ventura County Amateur Radio Club
Oxnard Community Center
Camarillo Room
900 Hobson Way, Oxnard, CA
2nd Friday - 7:30 p.m.

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

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

Greater Titusville Amateur Radio Club
c/o W.R. Young, N4DQT, 3845 Catalina St.
Titusville, FL 32780 • Repeater 146.31/91
3rd Monday/monthly - 7:30 p.m.
Chamber of Commerce Bldg.

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.

Sarasota Amateur Radio Assoc., Inc.
Sarasota Co. Admin. Ctr.
US301 & Ringling Blvd. - 6th fl. lounge
President: "O.W." Lander N4FCF
3rd Tuesday/monthly - 8:00 p.m.

GEORGIA

Gwinnett Amateur Radio Society
Red Cross Center
Hi Hope Rode, Lawrenceville, GA
147.87/27 for Talkin/Info.
3rd Thursday/monthly - 7:30 p.m.

HAWAII

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

ILLINOIS

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

Fox River Radio League
McCullough Park Dist. Bldg. Rm. 101
Rt. 31 & Illinois Ave., Aurora, IL
(312) 898-2779 for more information
2nd Tuesday/monthly - 7:30 p.m.

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

Tri-Town Radio Amateur Club
PO Box 302, Hazelcrest, IL 60429
Above Hazelcrest Police Station
1st & 3rd Friday/monthly - 8 p.m. (except July & Aug)
Net every Wed. 8 p.m./146.49 MHz

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.

Wheaton Community Radio Amateurs (WCRA)
College of DuPage, Room 2061
Glen Ellyn, IL 60137
1st Friday/monthly - 7:30 p.m.

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
PO Box 10342, Ft. Wayne, IN 46851
Allen-Wells Charter 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.

IOWA

Muscatine Amateur Radio Club
Info: Bruce Dagel, WB0GAG (319) 264-3320
Meets: Basement Meet. Rm., Public Safety Bldg.
Muscatine, IA
1st Monday/monthly - 7:30 p.m.

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

Sooland Repeater Association (SRA)
KD Stockyards Station
2001 Leech, Sioux City, IA
Classes Thursdays 7-9:30 p.m., Sept-May
Club meets 3rd Tue. 7:30 p.m.

MARYLAND

Frederick Amateur Radio Club
Frederick Electronics
Vernon Simmons, KA3CVD
(301) 371-5735 after 1800 except Thur.
2nd Tuesday/monthly - 2000

MASSACHUSETTS

Billerica Amateur Radio Society (BARS)
Honeywell Systems Division
300 Concord Road
Billerica, MA 01821
1st Wednesday/monthly - 7:30 p.m.

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

MICHIGAN

The Eastern Mich. ARC (EMARC)
St. Clair County Comm. College
Student Center Building (Cafeteria)
Port Huron, MI (313) 364-9640
1st Tuesday/monthly - 7:30 p.m.

MISSOURI

Heart of America Radio Club
3521 Broadway
Kansas City, MO
3rd Tuesday/monthly

NEW JERSEY

Gloucester County ARC, W2MMD
PO Box 370, Pitman, NJ 08071
American Legion Post
Delsea Dr., Rt. 47, Clayton, NJ
1st Wednesday/monthly - 8:00 p.m.

Old Bridge Radio Assoc. (OBRA)
Cheesequake Firehouse — Route 34
Old Bridge Township, NJ
Daily 8 p.m. Net on 147.72/.12 MHz
3rd Thursday/alternate (odd) months 8 p.m.

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.

Genesee Radio Amateurs, Inc. (GRAM)
PO Box 572, Batavia, NY 14020
State Civil Defense Center, Batavia
(behind NYS School for the Blind)
3rd Friday/monthly - 7:30 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: Jerry Kamen, K2QXH, 44 Robin Lane,
Levittown, 11756 Net every Mon. 8:30 p.m. 146.25/85
Meets 1st Tues/8 p.m., H.B. Thompson, JHS, Syosset

Suffolk County Radio Club
Meets 1st Tues. monthly, 8 p.m.
Bohemia Recreation Center
Smithtown Ave., Bohemia, Long Island
More info! Jim Heacock, KA2LCC, (516) 473-7529

NEW HAMPSHIRE

Great Bay Amateur Radio Assoc.
Airex — Tel. 742-3703
Route #16, Dover, NH 03820
2nd Sunday/monthly - 7:00 p.m.

NCRTH CAROLINA

Wayne County Amateur Radio Assoc., K4CYP
PO Box 1578
Goldsboro, NC 27530
MGN Regency-Uptown
3rd Saturday/monthly - 8:00 a.m.

OHIO

Ashtabula County ARC
Ken Stenback, A18S (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
Repeaer 144.75/145.35

Champaign-Logan A.R.C., W8EBG/R
Joe Palmer, KS8M, President
2 Meter Net, 147.60/00, Tuesdays, 8:30 p.m.
Dinner Meeting, 1st Thursday/monthly
Dajolees Restaurant, West Liberty, OH, 7 p.m.

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.

OREGON

Oregon Tualatin Valley ARC
Portland General Electric Auditorium
14655 S.W. Old Scholls Ferry Road
Beaverton, OR 97005
3rd Wednesday/monthly - 7:00 p.m.

SOUTH CAROLINA

Keowee-Toxaway A.R.C. (Seneca/Walhalla)
147.87/147.27 WA4JRJ/R
Seneca Police Dept. Bldg.
Call Hum Walker, S/T, KD4WL (803/882-0471)
3rd Tuesday/monthly - 7:30 p.m.

TENNESSEE

Radio Amateur Club of Knoxville (RACK)
PO Box 124, Knoxville, 37901
Fire Training Center
Prosser Road, Talk in 147.90/30
3rd Thursday/monthly - 7:30 p.m.

TEXAS

Garland Amateur Radio Club (GARC)
146.775/146.175 K5QHD/R (info Net Mon. 7:30 p.m.)
Garland Women's Activity Building
713 Austin Street, Garland
4th Monday/monthly - 7:30 p.m.

Houston Amateur Radio Club, W5DPA
7011 Lozier Street
Houstin, TX 77021
(713) 747-5073
Fridays/weekly - 7:30 p.m.

UTAH

Utah Amateur Radio Club (UARC)
Room 161, Murray High Sch., 5300 S. State
Gordon R. Smith, K7HFV
582-2438/talk-in 16/76
1st Thursday/monthly - 7:30 p.m.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK)
Repeater 146.13/146.73 — WR4ALW
VEPCO Bldg. (Penbroke Av. & G St.)
Hampton, VA
1st and 3rd Wednesday/monthly - 7:30 p.m.

WISCONSIN

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

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
First National Bank of Ripley, WV
1st Thursday/monthly - 7:30 p.m.

Wayne Green to speak at meeting

Betty Lou Hollidge, KB6UX

Mt. Diablo Amateur Radio Club announces that their 22 October meeting will have Wayne Green, W2NSD as their guest speaker. Wayne is stopping in the San Francisco Bay area prior to his departure for an Asian trip, which will include Tokyo, Hong Kong, Bangkok and Singapore as some of his stops while visiting the electronic trade shows. He plans to preview what new equipment will be coming to market next year.

Wayne is publisher and editor of 73 Magazine, *Micro-Computer*, and *80-Micro*, and manufactures software for small computers.

The substance of his speech is expected to be an overview of the Japanese electronic equipment being exported, now and in the future.

The meeting will be at the Willow Pass Community Center in Concord, California at Salvio and E. Olivera Rd., 8:00 p.m., 22 October. Tickets are $2 and will not be available at the door. For information, call Betty Lou Hollidge, at 415-376-7476. □

Australian YL group happenings

The Australian Ladies' Amateur Radio Association (ALARA) was founded in 1975, and at the moment our Australian membership is about 100, with another 50 girls being sponsored into ALARA from overseas.

We have one main official net of a Monday night on 80 meters, and others on 40, 20 and 15, also some CW nets.

ALARA is going through an exciting time, writing our first Australia-wide constitution. We have also started meetings on the air (rather than in person, as has been the case up till now) because you will appreciate that Australia is very nearly as big as America — and that's a big area!

We are having our second ALARA contest on 13 November 1982. Our ALARA Award is proving very popular too, nearly 60 being issued so far.

Australia has four classes of license: Novice, Limited, K (a combination Novice/limited license) and Full.

The Novice licensees have to pass 5 wpm Morse, plus a multiple choice question paper in theory, and one in Regulations, and are restricted to 3.525 to 3.625, 21.125 to 21.200, and 28.100 to 28.600 MHz.

Limited have passed the theory at full standard, but no CW, and can only operate 52 MHz and above.

K call means they have passed the theory at full standard and CW at Novice standard, and can get on the Novice frequencies plus all bands above 52 MHz.

Full licensees have passed 10 wpm Morse and a multiple choice theory paper, and can operate on all bands: 3.500 to 3.700, 7.000 to 7.150, 14.000 to 14.350, 21.000 to 21.450, 28.000 to 29.700, plus all bands above 52 MHz. □

Winds help Hawaii gain many contacts

Hawaii Air Force MARS members — headed by Peter Demmer, KH6CTQ — "went over the mountain" for the 13th year to Bellows Air Force Station, Hawaii to catch the trade winds for Field Day at a beautiful beach. And winds they caught, pushing the Wincharger up to 15 amps with a steady 5 amps.

Pete built a "flatter than flat" tuner this year for the 12-year-old rhombic to push his new TEN-TEC Argonaut 515 to the QRP limit. The rhombic was aimed at the United States; the call was KH6BM, that of Thomas Teruya.

The main thrust of contacts were made on 15, 20, 40 and 80 meters, since 10 meters was dead on Field Day this year.

The Honolulu Amateur Radio Club, KH6WO set up two positions — one for CW, the other for phone — at the former parade grounds at Ft. Ruger. Using an amplifier, they could go on the same band simultaneously. James Wakefield, AH6CO, president of the club, was coordinator, with much assistance from Francis Blatt, KH6KH and his reliable assistants.

— Info from Katashi Nose, KH6IJ & Honolulu Star Bulletin

Extra Class couple

All of you who are keeping track of Extra Class couples can add this one to your list.

Brian Rockhold, KS8W (ex-WD8JUB) passed the Extra in November 1981. His wife — JoEllen KU8G (ex-N8DEE) passed the Extra in February 1982. Their QTH is in DeGraff, Ohio — a small community in west-central Ohio.

Checking my logbooks, last September I was aboard 37 different power and sailboats, checking out Amateur Radio installations. Some worked great, and others could barely talk out of the harbor. And you know, those installations that really bombed out were predicted to be losers as soon as we checked out the installation.

What makes up a good or bad installation? Plenty! Here are some hints that should assist you in installing your own Amateur Radio gear aboard, or tearing out what you may already have and putting in a system that will really work.

Since a 2-meter installation is a snap, let's leave that until next month. Let's concern ourselves now with the elusive high-frequency (HF) installation and how to make it talk.

HF hints

Choose a transceiver that likes the ocean. Fully solid-state sets are best suited. Tube outputs sets are OK, but require both tuning and consideration when you change bands.

Incidentally, the new Kenwood 930 — as well, as the ICOM 720A and the Yaesu FT-1 — may transmit on marine channels *in an emergency*. I repeat, only in an emergency would you operate one of these sets on marine ship-to-ship or ship-to-shore channels. Yes, so I have been told, they work quite nicely on marine high-seas telephone channels, too. Again, this is not legal because the set is not Part 83 type accepted. But in an emergency, they may be modified to call out for help on marine channels.

Always hook your HF set directly to the battery. It's not so much the voltage drop that I am concerned about, but the stray RF that sometimes floats through your vessel's electrical system. If you run your leads directly to the battery, the battery will act as a giant capacitor and soak up stray RF as well as reduce your battery charging noises that come up the line.

Keep your equipment away from Loran and SAT NAV receivers. These devices all have microprocessors that emit tiny signals that routinely cruise up and down the band like a swishing VFO. There is little to do in eliminating this common traveling signal.

Donald "Gil" Baughn, KA6IDR, adjusting whip

If you are going to run mobile whips, bring along spare resonators. No matter how careful you are, you are bound to lose one overboard. Or you might be adjusting the stainless steel tip and lose *that* overboard! Bring along a spare.

Fiberglass whips seem to work just as well as the common center-loaded adjustable mobile antennas. The multi-band antenna also works admirably well aboard once you have tuned it up.

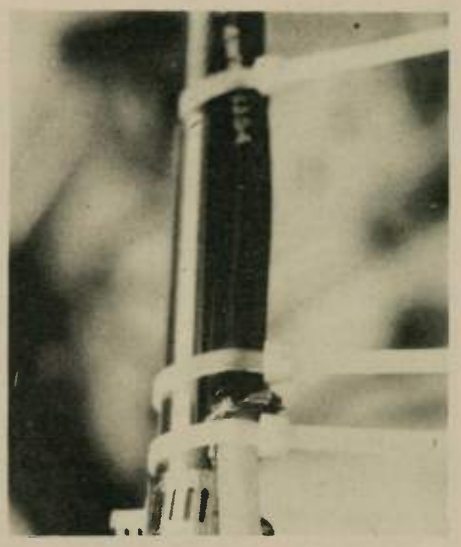
But most important, unless you provide a solid groundplane beneath the mobile antenna assembly, it simply won't load. You will never see the antenna dip at resonance without a groundplane beneath it. No, folks, that small No. 10 ground wire going from the base of the ball mount to your ship's ground won't work. No way.

You need to create a groundplane beneath the ball mount assembly. Try copper screen. Use copper foil. Tie in your standing rigging and lifelines. Use the aluminum rub rail. The more you can tie in beneath the ball mount, the better your signal.

Try this trick: When you have an antenna that won't load, attach some copper aluminum foil to one of the bolts that grounds the ball mount. Drop the foil into the drink and let it unroll to the bottom. Now try and tune up, and you may find that the mobile antenna drops right into resonance. Remove the foil from the ground, and you are back where you started — with no resonance? You need a better ground!

Connections

Connections to your antenna system routinely go sour in about six months. If you mount your mobile antenna ball mount on a wood pad, chances are it's soaked under the mount and your coax is destroyed. Maybe that's why your signal doesn't get out any more than it first did six months ago!



Coax braid secured with hose clamp

Sealing coax connections

Use a form of sealant to keep the water from contacting the open coaxial connection. Coax absorbs water by capillary action. Like a siphon, it will even pull water up and over a loop via the braid. If your braid is tarnished, replace the coax. If your coaxial cable braid is anything but bright and shiny, deep six it.

Sailboats without ground

Since my last column, I have installed three more slopers aboard sailboats that have no grounds. The latest installation was aboard a homebrew 45-foot trimaran, built by Dave and Andi. The mast was aluminum, but there was absolutely no ground source in any of the three hulls.

We ran RG8U coaxial cable from the transceiver/tuner to the tip of the metal mast. The cable is then parted. The shield is attached to a stay that connects to the metal mast. The center conductor is attached to the other side of the insulator on this insulated stay. The "hot" part of the antenna is now fed high atop the mast for minimum losses. The radiating part of the insulated stay starts near the tip of the mast and travels down to deck level. We used clear garden hose to protect the bottom end of the antenna. We don't want someone grabbing the antenna in foul weather while we are transmitting.

With an antenna tuner of the $150 variety, we easily tuned this sloper antenna using the metal mast as the counterpoise.

In all installations, we found no stray RF. Although the Q of the antenna at resonance is quite high, we find that small adjustments of the antenna tuner will allow your SWR to be well below 1:1.5 to 1.

Very small mobile antenna tuners usually don't have enough capacity for this type of antenna. Use a larger antenna tuner with physically larger components on the inside to prevent arc-over.

Compared to mobile whips with a good sea water ground, the backstay antenna and sloper — properly matched — will easily outperform the little whips. *Easily!*

There is no way that a tiny mobile whip is going to do the job of a well-tuned long wire. Just think, if smaller antennas would perform as well as bigger ones, we could do away with the 15-foot boom/three-element beams and switch to tiny 3 inch beam antennas — with plenty of loading — for our home installations. Right? No way! Those who get out best have the biggest antenna.

Dave and Andi beside sloper

Stern-mounted mobile

No, Gordo has not developed a sloper for the automobile as of yet! I'm still working on it, but for now, I'll settle for my trusty Spider antenna.

One final note

This month, my last paragraph is dedicated to those of you who may have HF gear aboard but only a Novice or Technician Class license. It's time that you upgraded and passed the General Class code test.

I don't care how much you may not care for the code, I have developed a marine code course using 90-minute tape cassettes to help you along. Five code tapes — each 90 minutes long — will take you from your Novice code speed all the way up to passing the General Class code test. These tapes that I have produced specifically train you for passing the FCC 13 wpm code test. The sample messages on the tapes are quite similar to what you will receive at the FCC office. *Quite similar!*

This whole course is designed specifically for mariners who have little time to really get into this code business, yet want to pass the code test.

They are available for $35, plus tax in California and $3 postage. Thousands of mariners are swearing by these tapes, and yes, they will get you through your General Class code test. Drop me a line at 2414 College Drive, Costa Mesa, CA 92626. □

See you in *Worldradio*

If you participated in or know of an interesting event involving Amateur Radio, send in the story to Worldradio. Pictures are especially welcome and will be returned. *Worldradio, 2120-28th St., Sacramento, CA 95818.* □

Good and bad

Paul Weisz, K6YQ

I have had a "bad news, good news" experience that's worth relaying to other amateurs. In 1981, I acquired a KLM 2-meter amplifier for my handi-talkie. This little jewel, KLM Model MA-35BL, put out around 15-20 watts when connected to the 1.5 watts from the S-1. I use the amplifier and the HT when traveling, with a cigarette lighter plug and cable for power.

Last year, I hastily assembled my "fly-away kit" and took off on yet another trip. At Tucson International Airport, I pulled the gear from my suitcase, placed the mag-mount antenna on my rental car, and plugged into the cigarette lighter receptacle. I got instant barbecued amplifier! Seems I had reverse-wired the power cable.

After returning home, sadder but wiser, I sent the amplifier back to KLM for diagnosis and sympathy. Since I had created the problem and felt pretty foolish about the whole thing, I was pleased and surprised when KLM shouldered the burden, repaired the damage, and installed a reverse current protective diode. All this at no charge and with great courtesy.

Most ham gear manufacturers build good equipment, since amateurs are technical critics of a high order. Not all manufacturers stand behind their gear with the kind of service I got from KLM. I won't hesitate to deal with them in the future, and recommend them to you.

— TRW Systems Group ARC, Redondo Beach, CA □

WD-40 warning

Submitted by Bob Miller, KA3HSB to Indiana Co. ARC's newsletter

The application of WD-40, a penetrating lubricant with a petroleum base, to the controls, switches, etc. of White's metal detectors (and probably other circuit boards as well, suggests Bob) will be detrimental. The use of this or a similar product . . . renders the board inoperative, totally, and means it must be scrapped. The lubricating film can *NEVER* be fully removed . . . . Although their label states "can be used to drive out moisture from electronic circuitry and for cleaning and lubricating potentiometers and switches," we emphatically advise against its use (for this purpose) . . . .

— Discover Magazine, White's Electronics, Inc. □

Happy Flyers
HAMS & PILOTS

"THERE IS NO LIMIT TO WHAT YOU CAN DO – IF YOU DON'T CARE WHO GETS THE CREDIT"

INTERNATIONAL COMMANDER, **Hart Postlethwaite, WB6CQW**
1811 Hillman Ave., Belmont, California 94002 (415) 341-4000
International Vice Commander, Paul Hower, WA6GDC
Box 2323, La Mesa, California 92041 - (714) 465-5288

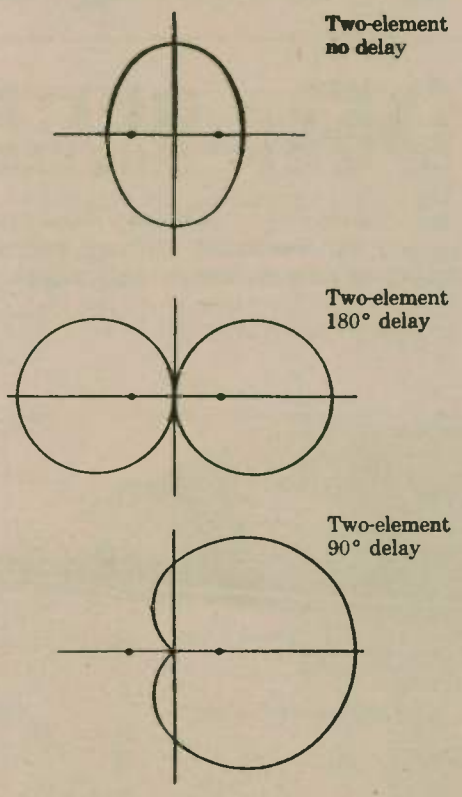
Direction-finder problems

We continually receive phone calls and letters concerning DF equipment and techniques. My involvement in my regular gainful employment has made it harder and harder to personally answer letters quickly. We have tried to compensate for this by sharing more detailed information with you in our column. Some of the material in our column is a result of your requests for information. If we do not cover what you need to know, feel free to drop us a line or phone me in the evening or on weekends. Please understand that we are all volunteers, and it may take weeks to answer letters.

Last month we promised to cover some of the technical problems that we have uncovered in the last seven years of DF work. We have avoided this type of article because it is possible to have misunderstandings. None of us are perfect; thus, we can make mistakes. Problems can arise when these mistakes are pointed out — unless each party is interested in finding the truth and moving ahead. We trust that those reading the following observations will accept them in the spirit in which they are offered. We have nothing to sell, and in fact, our Vice Commander Paul Hower is still very busy with our free lending library of Search and Rescue and Radio Direction-Finding films. We will not be identifying the brand name of DF units being discussed. We just seek to share the facts and/or observations.

The RF environment

No discussions of DF problems should be conducted unless we first remind all parties that no direction-finder known can change the realities of the RF arriving at the DF. We have written numerous articles on this subject, but it is still one of the most important facts to remember. This column relates to VHF and UHF DF. It is a fact of life that at these frequencies, if the RF can bounce (or reflect), it will. If a direct path and two reflected paths actually exist, the DF cannot change that fact. If it has the capability to give only a single answer, then that answer logically must be either the average of all three, or just one of the paths. In this case, it may not be the actual direction of the VHF signal source. If only one path of RF exists, then almost any method of DF should work.



Antenna patterns of two-element arrays from the HAPPY FLYERS DF book. The dots represent the position of the antennas in relationship to the resultant pattern. Note that only the 90 degree cardioid array will change position with the base line when reversed electronically. (See text.)

What is DF?

We could put it in an overly simplified way by stating that, in essence, direction-finding is the act of controlling incoming RF in a manner that supplies information which allows us to deduce the source direction of that RF. Few seem to remember that this can have many complications at VHF and above due to the extra signals that most often exist.

One of the more important parts of successful DF work at these frequencies is a good understanding of whatever means we are using to control the incoming RF. Strengths and weaknesses must be understood for an individual to consistently succeed. Even the worst unit on the market can produce excellent results if you fully utilize whatever parts of the design *do* work.

Commercial DF errors

Electronic antenna turn-off. This myth is the root of many problem DF designs. While it is true there are diodes on the market capable of "switching" RF at very high frequencies, there are a number of other steps that must be taken in order to assure that VHF/UHF RF does not radiate around the diode(s). This can mean exotic shielding!

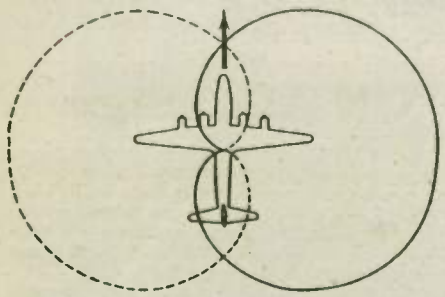
Even if one were to properly design this electronic switching to properly exclude unwanted RF, one must still face the issue of the existence of the actual antenna that has been switched off. It does not "disappear" just because it has been switched off! If you are switching between two antennas, you have a two-element array. If you are rotating around four antennas, you have a four-element array. Even though only one antenna is in the "ON" condition, the placement (and existence) of the others will affect the resultant pattern. Spacing, position, delay lines, etc. will all have an effect on the final pattern.

Before continuing on the antenna patterns, we must point out that not all diodes will switch RF at certain frequencies. Many of the DF units available today are using switching diodes in the antenna system that will not operate at 150 MGc. If you use a diode that will not block beyond 100 MGc and you wish to find downed aircraft or 2-meter jammers, you will not be "stopping the RF" during the switching. You will cause noise pulses in the DF, but many other factors will

come into play that we will not address in this article.

Field strength information on switched antennas. One major DF company who sold many DF units to the Coast Guard was responsible for much of the work later done by the HAPPY FLYERS. In their manual, they spoke of "turning off each antenna, alternately," thereby allowing them to compare the signal strength difference at each antenna. Thus, they explained, if one antenna was one inch closer to the sought-after transmitter, the meter would tell them which way to turn to be pointed directly at the target.

Let us take an example. Say we have a downed aircraft with an active ELT (emergency locater transmitter), and it is 50 miles from us somewhere in the hills. There are 12 inches in a foot and 5,280 feet in a mile. This equals 63,360 inches in a mile. At 50 miles distance, you would be about 3,168,000 inches from the plane's transmitter. Therefore, the manual was trying to say that their device could recognize the difference in signal strength that would result by having one antenna an inch closer than the other. This would mean an accuracy of one part in 3,168,000! The schematic revealed no circuitry that had any chance of comparing RF strength to that type of laboratory accuracy. This led to the joint efforts of the HAPPY FLYERS who did so much to find the true answers. We knew the DF units worked, but we knew they did not work the way the manual said they did. Knowing how they work allows one to gain more effective use of the device.



Cardioid pattern superimposed over outline of airplane. Note relative position change as a result of electronic switching. Most DF units look only at the information available at the crossover point, as indicated by the arrow.

Cardioid vs. oval patterns. This area has resulted in many discussions. As we have pointed out in the foregoing, the DF units presently marketed with switched antennas do not produce their answers as a result of relative RF at an individual antenna. At this point, we cannot explain in detail due to space limitations, but the shape of the pattern of the two- or four-element array does affect how the average DF works.

In the case of a two-element array, if you use quarter-wave antennas spaced a quarter-wave apart, use no delay line, and electronically switch between the two, you will produce an egg-shaped pattern with the lobe, as shown. If you add a 90 degree delay line, you will have a cardioid pattern, as shown. As noted, this pattern will be mostly on one side of the centerline and will move completely to the opposite side when switched. As seen on the illustration with the airplane, the null at the crossover point will be very deep.

There are advantages to both types of antenna systems. It depends on how the DF is designed, which one should be used. Some systems appear to work the same with either type. However, due to the many comments on the advantages of the deep null of the cardioid system, one DF manufacturer now shows a cardioid pattern with his unit. I was surprised at the change and looked up his schematic. I note that no delay line has been added to his antenna system; in actuality, he still has the oval-shaped pattern.

Interestingly, another CAP pilot sent a schematic for another unit in his plane. A careful examination of the antenna schematic revealed the designer put in a delay line, but terminated both sides with resistors. He also used 1N914 diodes rather than PIN diodes. By redrawing the schematic functionally, one can easily see that it cannot work in the configuration shown.

Next month we will continue examining some of the conceptual errors in available DF units. Most of the problems can be overcome, and the DF units do function. Remember, one of the best ways to test a DF is to find a number of *known* transmitters. Do this on close and far targets, as well as strong and weak. Do not attempt to do any real DF work until you can consistently understand the information provided by your DF unit. Nothing is more foolish in my opinion than to take an unknown quality DF, give it to a person who does not completely understand it, and then send them out to find a hidden transmitter. Pass up the next transmitter hunt and do some DF on known targets.

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

WITH THE HANDI-HAMS

Bruce L. Humphrys, KØHR

Radiant Radio Camp

I wish I could say that I'm writing this in the serenity of the northern Minnesota woods. A couple of weeks ago I could have said that . . . and, in fact, I wanted to write this column from Courage North, site of this year's Radio Camp. Fact is, though, we were all too doggone busy to do anything but study radio and have fun. So . . . I'm writing this back in my office. Actually, that's not so bad 'cause I can remember with great fondness all the terrific things that happened during that magical week.

For those of you who don't know what a Radio Camp is, Radio Camp is a very special and personal service of the HANDI-HAM System where HANDI-HAM students and handicapped members get together at a camp to put in some intensive study on Amateur Radio stuff.

Instructors Ted Geyler (left) of Tucson, Arizona, and Dr. Clark Eid of Fertile, Minnesota show camper Dave Chilson of Brooklyn Center, Minnesota the workings of a 2-meter beam used to access OSCAR at Radio Camp.

We conduct classes in all levels of Amateur licensing, with lots of general information sessions and recreation to break up the classroom study. Radio Camp lasts a week, usually from a Saturday evening through the following Saturday afternoon.

The Courage HANDI-HAM System has been conducting Radio Camp sessions for about 10 years (this past January we conducted our first session outside of Minnesota — at a camp in Malibu, California). Participation in the Radio Camp sessions is open to HANDI-HAM members only, and the instructors are well-trained educators who are members of the System.

There are several things which have made this past Radio Camp something special!

- The biggest ever! We had 38 campers from all over the country (and . . . see below!). HANDI-HAM members going for all classes of Ham licensing went all-out in their studies, requiring . . .
- The best faculty ever! Ten "professional amateurs" to teach the theory, code, regulations, and everything else that goes into Amateur Radio practice.
- International participation! We even had a camper (Dan Tavares) from Lisbon, Portugal.
- Fantastic cooperation! The Engineer in Charge of the St. Paul Field Office (FCC) kindly consented to come out to Courage North while on an inspection tour to bring us up to date on Commission activities and to personally administer the exams.

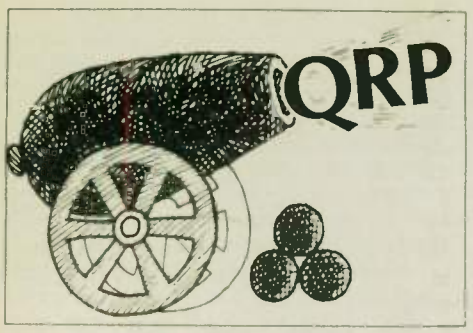
The story of a HANDI-HAM Radio Camp is best told in pictures — so, take a look at the great time we had. Then, think ahead to next March when we'll be holding another Radio Camp in California. If you're handicapped and are either already an amateur or want to be — or if you know someone like that — let's hear from you! Amateur Radio should be shared. And one of the greatest sharing adventures of all-time is a Radio Camp! □

Amy Vogel (Vermillion, South Dakota) passes up waterfront recreation at beautiful Lake George for studying during Radio Camp.

Dan Tavares (Lisbon, Portugal) proudly displays his "I'm RadioACTIVE" button at Radio Camp. He was able to take an examination at the camp to qualify for a Portuguese amateur license.

Bill Eimer (Independence, Missouri) gets a kick out of operating the specially adapted equipment at Radio Camp. Shown are a much-modified Century-21 transceiver and a model of the Beam Direction Indicator for the blind.

SUBSCRIBE TO WORLDRADIO; see page 11



Solar power works great for QRP

Art Evans, K5SOR

I've been running a KW for years. My main activity has been contesting for years and still is. But about three or four years ago, I gradually began using QRP (still contesting). About a year and a half ago I saw two articles in QST by a couple of New Mexico amateurs who were running their gear from solar power. The idea intrigued me and started me into researching availability of panels.

The surplus market eluded me, and I ended up paying over $300 for a 1.2A 18V panel from Solec International in September 1979. I built up an interface box which regulated and metered the output of the panel and allowed me to run my Ten-Tec Argonaut directly from the panel. I stuck with this operation about a year and earned the first WAC and WAS QRP direct from solar energy and got a good start toward DXCC.

In August 1981, I gave up the Argonaut and picked up a TS-130V. Since the rig draws ¾A key down, I'm not able to power it directly from the panel, but do run it exclusively from solar energy; I have 180AH worth of batteries. I've not yet been able to get in enough operating time to deplete the batteries. Between operation direct from the panel and with the Kenwood on stored solar power, I now have 105 countries confirmed and am ready to apply for DXCC/QRP solar.

I've been having more fun with QRP than I ever did running a KW and running the gear on photovoltaics has been an added kick. I'm looking forward to the day when it will be practical to draw considerable power from photovoltaics.

Acurex Corp.
Alternative Energy Div.
485 Clyde Ave.
Mountain View, CA 94042

Solar Power Corp.
30 Cabot Rd.
Woburn, MA 01801

Motorola Semiconductors
Photovoltaic Products
200 E. McDowell Rd.
Phoenix, AZ 85719

ARCO Solar
9536 Plummer St.
Chatsworth, CA 91311

Solenergy Corp.
2 North Ave.
Wakefield, MA 01880

Iota Engineer
1735 E. Ft. Lowell Rd. #12
Tucson, AZ 85719

Applied Solar Energy Corp.
15251 E.
Don Julian Rd.
City of Industry, CA 91746

Solarwest Electric
232 Anacapa
Santa Barbara, CA 93101

Photon Power
1787 Gateway West
El Paso, TX 79935

Columbia Chase Solar Division
55 High St.
Holbrook, MA 02343

Silican Sensors, Inc.
Hiway 18 East
Dodgeville, WI 53533

Edmund Scientific Co.
555 Edscorp Bldg.
101 E Gloucester Pike
Barrington, NJ 08007

Spire Corp.
Patriots Park
Bedford, MA 01730

Sollas, Inc.
2231 Carmelina
Los Angeles, CA 90064

Solarex Corp.
1335 Piccard Dr.
Rockville, MD 20850

Many amateurs around the world are using solar energy! *You* can *too!*

— Communications Hobby AR Relay Org., Brownsville, TX

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

Chris Wilson

QRPer shares his 'techniques'

Realizing QRPers are an independent lot, I would still throw out a few opinions garnered from my experience and hope others will communicate with me about theirs.

The well-meaning advice given to beginning QRP ops is not very fruitful. I have found that operating as if one has 100 watts out rather than 2 returns consistent results. I answer all calls I hear, S9 to S1; as often as not I get the S1 station. Also, I am not bashful about jumping into QRM pileups (DX or domestic) — with some luck. And I'm persistent: if I don't get an answer the first time, I try again. I'm very reluctant to let my QSO partner off the hook when he claims poor copy propagation changes by the second!

I use Ten-Tec 509 with Hustle resonators in my work truck. Bragging rights are: *first* All Mobile WAS/QRP-(ARCI), 3841 Miles/Watt (ARCI).

Fraternally,
JOHN MAC KENZIE, KA7FEE/QRP-M
6125 SE 86th
Portland, OR 97266

TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Whimsical messages

Dan Schechter, AK0S writes to take issue with comments here in September that whimsical messages should be discouraged in amateur traffic nets. Dan says, "A radiogram to your sister that says, 'ARL fifty seven' is no more substantial than one addressed to your sister's cat saying, 'Meow.' The real message is that you were thinking of your sister, and the second example uses two fewer words and brings a smile to the face of every ham along the relay route and a few others besides who just happen to be listening for practice.

"I make a point of originating whimsical messages and they always bring positive comments. Often the recipients tell me later that the delivering station was delighted to be able to deliver a message other than the run-of-the-mill greeting card type of message. I am active in NTS (National Traffic System) all the way from the Novice net up to the Central Area Net. It is fun and a good way to improve my CW. But it is a heck of a lot more fun when an interesting message comes through: one which is clearly intended for the eyes of all who handle it, and which contains wit and humor."

Dan, if the September column seemed to discourage that sort of thing, I came on too strong. I do a bit of it myself. My remarks were in connection with the standards set for MARS traffic, where MARS stations are directed not to accept "nonsensical, whimsical messages."

First, the standards for a substantial message are different on MARS and on Amateur Radio circuits. MARS is a military operation, usually carrying a full load of communications for service personnel, and has no room for unsubstantial messages. Amateur Radio generally is looking for more traffic — nets below the region level, and frequently those above as well — and usually need more traffic to keep things interesting, so such messages are welcome.

Some prudence must be exercised, however. If the message is such that it will add a note of interest to the activity, fine. But in some instances, such messages can have the opposite effect. Here are a few things to watch:

Such messages are often prone to garbles. This is especially true when an unusual spelling or unusual phrasing is involved. It can easily happen that the punch line is lost in transit and the message ends as a dud. Thus, if a message wishing "great expectorations" were received by a contestant in the Skunk Hollow Spitting Contest as "great expectations," the meaning would be lost.

Some amateurs may not appreciate the humor; some may take themselves and Amateur Radio too seriously, and refuse to handle the traffic. If they simply refuse it, it can be sent to another station. But some appoint themselves censors, receive it, give receipt for it, and then refuse to relay it or deliver it, causing it to die on the way — and perhaps not even give the originator the courtesy of a service message ("It doesn't deserve it!").

It's best not to put the whimsical stuff in the preamble or address in most cases, as such actions can cause trouble. These parts of the message should be strictly business, intended to see that the message gets to its destination intact. Possibly some exception can be made when the message will follow a known route via stations known to the originator and addressee, but stick to the standard form if the message is to go via regular NTS channels where the identity of stations handling it is unknown.

Some amateurs are embarrassed when they are called upon to deliver a whimsical message to an addressee unknown to them. I believe the best cure for such embarrassment is to deliver a few such messages. The usual reaction is something like, "Sounds just like him!" And often you make a personal friend as well as a friend of Amateur Radio: and Amateur Radio needs all the friends it can get.

So I fully agree with Dan's conclusion of his letter:

"Let's not be stuffy. It may not be in Section 97.1, but one of the purposes of ham radio is to have fun. And as long as it does not hamper net operation or intrude itself into a real emergency situation, a bit of nonsense and whimsy can do wonders to make the net operation more fun and liven the spirits of all involved.

"Far from discouraging such messages, I think they should be vigorously encouraged. I think the ARRL booklet *Operating an Amateur Radio Station* should contain as one of its fundamental principles: 'Originate a whimsical radiogram at least once a month. Ham radio should be fun, and a bit of nonsense now and then helps to keep it that way.' " Just be prudent.

Acting as net control station

Sometimes it seems that amateurs think net managers get their liaison stations and net control stations from some bureau in Washington, D.C., or Newington, Connecticut. No, it's up to us to supply them. If we can be reasonably sure that we will be able to meet a session of the net regularly once a week, we should let the net manager know we are available. Never did it before? There has to be a first time for everybody. Let's not be like the over-protective mother who wouldn't let her children near the water until they could swim. Go ahead and take the plunge.

There's nothing special about being a liaison station. You merely have to check into two nets instead of one, and maybe pass a little more traffic. Net control operation is different, however. Here are a few pointers, but it's really something you have to learn by doing.

Opening the net

Be ready a few minutes before net time, tuned up, log sheets ready, your own traffic, if any — all set to go. Once you call the net, you won't have time for anything besides being net control. Often, net members have informal ragchewing sessions on the net frequency before the net begins, in order to hold the frequency for the net. Join in, if you wish. But be ready to start when net time arrives.

The generally-accepted rule among traffic handlers is to wait three minutes after net time before someone else acts as net control, if the regularly assigned one fails to show, but in many cases members' patience runs out in 45 seconds or less and someone else takes over. CW operators seem to jump in sooner than voice operators, for some reason.

Some nets have detailed directions for opening and closing nets, and of course you should follow those directions if your net has them. The net manager will have given them to you when you received your appointment as net control station. Otherwise, it's up to you. Actually, not much is needed. Regular net members already know all about the net, when it meets, what area it covers, and that the odds that an interested outsider who doesn't know these facts will be listening at the opening of the net are small.

The main purpose of the opening speech is to indicate that the net is open for business, and to give members a chance to tune their rigs to the net frequency. The net control station sets the frequency and should not retune during the net. Rather, ask other stations who are off frequency to tune to yours.

Again, conform to the accepted procedure on your net to invite stations to check in. Some nets have calling lists, and net control calls each in turn. On many nets, only the liaison stations are called individually. Others call for stations in groups: "All stations Alpha through Delta please check in." To be more equitable, some of these nets change the order of calling each day of the week. Thus Sunday may be Alpha through Delta, Monday Echo through Hotel, etc. Other nets simply take check-ins as they come. Do whatever is customary on your net. Often on voice nets the net control station will stand by first for any emergency or priority traffic so that it can be handled immediately.

Also on section nets, stations holding traffic going out of the section are cleared before others are asked to check in, to make sure the liaison station is able to meet the other net at the proper time. Voice nets generally have more complicated procedures than CW nets, simply because more amateurs check into phone nets.

Moving the traffic

CW nets generally use the net frequency primarily as a calling frequency and send pairs of stations off to side frequencies to pass traffic, while voice nets more frequently pass traffic right on the net frequency. The two principal reasons for this seem to be: CW nets usually have a larger volume of traffic, and the phone bands are generally much more crowded than the CW bands, making it harder to find an unoccupied frequency off the net. However, this is a decision that is left up to the net control station, to be decided on the basis of the quantity of traffic to be handled, the number of stations participating and propagation conditions.

If you handle traffic on the net frequency, you will have to wait until all have checked in. If you move stations off frequency, you can and should ordinarily begin to send them off as soon as you have a pair you can match up.

You have to keep a detailed log as net control so that you know who is in the net, who has traffic for where, who is off frequency and where. I use a full sheet of paper for each session, listing calls and traffic, and checking off each piece of traffic as it is cleared, marking an X before the call when the station leaves the net.

It's best to send stations with short lists off first; that way, you can clear more stations sooner, then turn the net over to the one with the big pile after you close the net.

OK. You have everything humming smoothly, stations moved off frequency and all lined up so that all are busy, and you will clear it all in another five minutes. Prepare for a surprise! Somebody comes back to say UP 5 is crowded but UP 7 is OK. You think, "Why did you come back instead of just going up 7 and calling?" You send him up 7. Just about that time the other station comes back to tell you the same thing in great detail. So you send him up 7 just in time for the first station to come back to tell you no luck up 7, and before you can tell him to try again, someone else comes in to say no luck somewhere else.

Oh the joys of being net control! It's even more fun when skip comes in and half the stations can't hear the other half, and so you keep getting doubles as two transmit at once. Don't let it get to you. Straighten out one mess at a time and make the others wait. To try anything else will only make matters worse and maybe drive you batty too.

While the net control station is the boss and should exercise full control, there is no need to be bossy. As ours is a volunteer operation, net control operators should always act in such a way as to encourage participation. People will endure a bawling out if it's part of their job, but it can drive away both active volunteers and possible recruits. Sometimes it is necessary to insist on adherence to rules, but do it without making reflections on the competence of the offenders.

A most important part of the net control operator's job is to listen. Allow generous amounts of time during the net for additional stations (that sounds better than "late" stations, which in some cases implies a rebuke) to check in. Take your finger off the mike button when you're not talking, even if it's only a two-second pause. Pause a moment after sending stations off before you begin another net call.

Net calls take time, and that time can be saved if there is already someone there waiting. If you take too much time gabbing, you can have the problem of people coming back before you can clear others or send others off to meet stations already off frequency.

No station is supposed to transmit except to the net control station or at the latter's direction, so listen for people calling you.

Closing the net

Release stations (QNX) as they finish what they have to do. When all the traffic has been passed, or at least assigned to the stations that are to receive it, it's time to close the net. Some nets have a prescribed closing time. And some nets go into an informal ragchew session after clearing the traffic. Again, adapt yourself to what the net does. If the manager has a set form to be used in closing the net, use it. Otherwise, you merely have to announce that the net is closed. No need to give a long speech here. If anybody wants information about the net, a question to anybody on the frequency should bring the answer.

But you're not finished yet. You still have to make a report to the manager, usually by formal radiogram. Requirements differ on different nets, but usually include the date and time of the session, the calls of the participants, traffic handled and length of time net was in session. Some managers want to also have liaison stations identified as such, and number of messages listed but not handled.

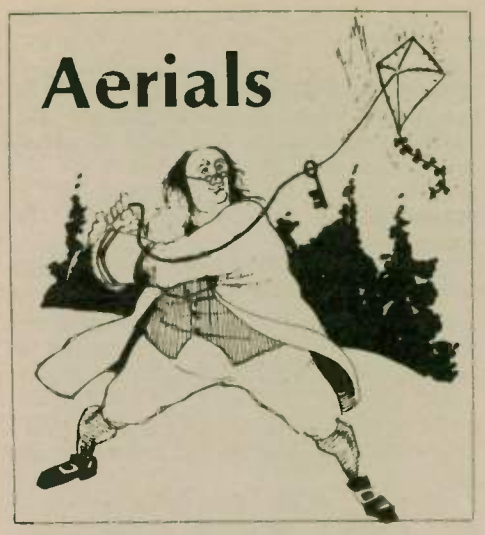
Find out from the manager what is needed on your net. It's best to prepare the report immediately; otherwise the manager may be asking for it at the end of the month.

Is a net control needed?

Amateur traffic nets developed along the line of MARS nets, which in turn reflect procedures used by the military. Control is the primary function of the military, and so operating a net without a clear chain of command would be unthinkable. On amateur nets, generally a net control station is desirable — particularly on voice nets that often have 20 or 30 or more check-ins. But some CW nets function just as well with no net control station. In particular, the Amateur Radio Telegraph Society (ARTS) has for some years operated a net in the morning hours on 7060 kHz with no net control. Stations simply call on that frequency to list their traffic, and anyone who happens to be able to handle anything listed moves the calling station to a nearby frequency and receives it. A respectable volume of traffic is handled, too. Look at the totals in the Independent Nets listing in any issue of QST, and you will see that ARTS handles as much traffic as the busier NTS nets.

(*please turn to page 44*)

Aerials



Kurt N. Sterba

Many thanks to all who were so nice in writing to welcome me back. Hearing from you was touching.

I shall not respond to the impertinent remarks of the alternate columnist. You, however, should know, dear lady, that your true personality comes through. Because as the astute and perceptive Mickey McDaniel, W6FGE said in a letter forwarded to me, "That broad sounds like a real crocodile to me — and anyone knows English crocodiles are the worst!"

Well, take it from me (and who is in a better position to know?), truer words were never spoken.

However, on to transducers. Responding to a letter from Sharon Ross, KA9LYI, who asked about full-wave loops for 40 and 80 as well as a problem with a sloper which doesn't work very well but has good SWR.

An answer in three parts: First, low SWR has nothing to do with how well the antenna radiates or receives. Proof of that statement is your dummy load. Perfect match, lousy radiator. Next, the sloper. I don't know who it was that first sold that pot of cabbage to the hams. Crazy! Just think about it. One takes the coax up the tower, attaches the center conductor to a quarter-wave wire, and then fastens the shield side to the tower. Look carefully at what we have.

It is a dipole with the tower making up half of the dipole. In practically every case, the tower is *grounded*. Now, if someone came up to you and suggested that you attach the end of the dipole (which is the high-voltage part) to ground, you'd think you were being addressed by a real loon.

One would be far better off to run another quarter-wave *wire*, putting an insulator in the appropriate spot and tying the end off to a handy tree, garage, eaves of the house, fence or whatever. Also, try to build an extension of some sort that gets the feedpoint as far away from the tower as is practical.

Here's something that most people don't know — the inverted V doesn't have to be run in an exact 180-degree configuration. Or put in another way (for those who got their licenses memorizing 47 ohms, 18 inches, etc.), 180 degrees is one wire going north and the other south, or one wire east and the other west.

You can decrease the angle (looking at it from the top) to about 90 degrees before you start to get cancelling. Ninety degrees is a right angle, or the way the two sides of a table meet.

You may find that the lowest angle of radiation from such an antenna is in the direction the two wires point and away from the direction where they are tied down. (Yes, opposite of the way that a V-beam does best.)

What all this means is that if your tower is nearer one corner of your lot, you can still get up an inverted V. Actually, any size lot can accommodate an 80-meter inverted V. Get at least half the antenna (an ⅛-wave on each side) as high as you can, and then you can let what's left dangle, run along a fence, etc.

As for the full-wave loop — yes, super. Gain over a dipole, more capture area on receive. If one has the room, tall trees or whatever, something to consider is the full-wave loop in the triangle configuration. You can put the point at the top and feed it in the middle of the wire parallel to the ground. Feeding it at the corner, near the ground, will give you the lowest angle of radiation if your bent is to be heard on Heard Island.

Next, a big long and loud "Bronx Cheer" to the recent article in a ham magazine that talked about using a noise bridge to tune up an antenna and neglected to mention that in order for the noise bridge to give you a true indication, the feedline *MUST* be a half-wave length (or multiple) at the frequency measured. The way to cut such a line (which is much shorter than the 468 divided by F MHz formula length) is with the noise bridge itself.

Kudos to an article in another magazine that did make prominent mention of the fact.

Now let's get to a very interesting letter. "I was glad to see your invitation to write in, as I have a problem trying to make an 18 AVQ 10-80 meter antenna work on 160M.

"I have the Palomar R-X Noise Bridge and have used it at the base of the antenna (Smart move-KNS) with a coil and variable capacitor in series in various configurations.

"I have been able to find resonance with the XC-XL control but cannot match the 52-ohm cable to obtain 50 on the R control; consequently, nothing but high SWR.

"The coil is 2 inches in diameter and 50 turns. The capacitor is from a 274-N transmitter, both enclosed in a steel box with an aluminum panel.

"The ground system is four pipes near the base of the antenna, and four radials of various length. There is 53 feet of RG-8/U to the rig.

"Where have I gone wrong? I have tried all the methods described in the magazines of the last few years.

"If you see fit to answer this in your column, I will thank you to keep my identity confidental as you do yours. My reasons are that after being licensed for over 30 years, I still cannot match a piece of coax to an antenna."

Answer/ Dear OT: Don't feel bad. you have a complex problem, and a highly individual one that is not addressed in the texts.

First, get the network out of a steel box. You will have to use all aluminum unless the distance from the coil to the box is at least equal to twice the diameter of the coil.

Next, we assume that your coil is tapped somehow and that you can try different points on the coil.

Now, the wire from the coil should go to the capacitor. (The bottom of the coil is connected to nothing, the top to the antenna.) The capacitor should have a value of about 100 ohms of capacitive reactance at the frequency you wish.

The main work will be with the coil, the capacitor will be to fine-tune.

These next words should relieve your mind and do away with any doubts about your abilities to match an antenna to a feedline. It was not your fault at all!

As far as you got, you were quite right. There was nothing you could have done with what you had to match to cable! You need *another* network to match the resistance.

Assuming that you found about 5 ohms resistance at the base of the antenna, you must now devise a means of stepping that up to 50 ohms.

Here is how you go about that. You need another coil in series with the capacitor, and another capacitor at the output of the second coil. The bottom of the second capacitor will go to ground. Where the second coil and the second capacitor meet goes to the center conductor of the coax. Shield (or braid, if you prefer) goes to ground.

"What values?" you may ask. Here they are. The first column will be the radiation resistance of what you now have at the base of the existing network. The second column will be the capacitive reactance (in ohms) needed. The third column will be the actual value of the capacitance needed in picofarads (what you and I used to call micro-micro farads). The fourth column will be the necessary inductive reactance (in ohms) needed, and the last column will be the actual inductance in millihenrys.

Use at least number 14 wire for the coil. The capacitor can be a three-gang receiving variable with wiring to make it in parallel. Padders can be used to hit the values exactly.

The chart below will raise the output R to the 50-ohm level.

R	XC	C	XL	L
5	16.6	5,326	15.0	1.3
6	18.5	4,780	16.2	1.4
7	20.2	4,380	17.2	1.5
8	21.8	4,055	18.3	1.6
9	23.4	3,870	19.2	1.7
10	25.0	3,537	20.0	1.8
12.5	28.8	3,070	21.6	1.9
15	32.7	2,704	22.9	2.0
17.5	36.7	2,409	23.8	2.1
20.0	40.8	2,167	24.5	2.2
22.5	45.2	1,956	24.9	2.2
25	50.0	1,768	25.0	2.2

So, there you are. Have fun on 160! You should get a perfect match with the above. But even if you can only get down to 2:1, you will lose but 11 percent of your transmitted power. When you realize that you would have to have an SWR of 6:1 to lose 50 percent of your power, and thus drop a whole 3dB (half an S-unit), you can see we spend a lot of time worrying about not much.

My thanks to an associate who did the actual number crunching of the above chart. Those programmable calculators are a great thing. He must be unidentified so I can remain so.

If you have any questions, just send them in to me, not Lil the pill.

For OSCAR buffs, we present this interesting letter from Dr. John Dillon, KH6FMT.

4 September 1982

Dear Kurt,

I have enjoyed your comments and iconoclasm. Please keep up the good work.

My comments are on the "Turnstile" for 10 meters, and specifically on the satellites at 10 meters. I refer you first to the July 1982 QST, page 47. The 10-meter turnstile was first referred to, to my knowlege, in the April issue of 73 in 1973 as a small note. In any event, I built both the 2-meter and 10-meter versions. The 2-meter one works fine, but I use it little. The 10-meter version is very, very good indeed.

I built mine, put it on top of the house (have a flat roof), with the radials at 45 degrees; i.e. as two inverted Vs. It is a superb antenna for 10 meters.

Being, as I am, at the edge of the earth so far as the mainland is concerned vis a vis the satellites, I have some feeling for antennas. It is true that at the horizon, east of 140 degrees or so, a beam is superior most of the time.

I am putting up a tower dedicated to 10 meters and 2 meters just for the RS-8, which I have worked SSB as far east as Detroit, but I am sure that with better effort I can work the East Coast. I can work Japan with no trouble and am after the ZL and VKs, which have been worked on CW by Richard Dittmer WH6AMX, who is in Honolulu. The usual CW operator is usually 20 or better, which is beyond my capability; however, I am thinking of engaging this Apple to CW. I already have the program and do use it on TTY.

My restriction is my arc of acquisition. At 159 degrees West and 22 degrees North. So I am pretty much restricted to from a 60 to degree azmuth — not very much. With OSCAR 8 I am even more restricted, but enjoy mode J. I did like 7B. May it rest in peace. Await Phase II, particularly 1269 MHz. That will be interesting.

Keep up the good work.

73,

JOHN DILLON, M.D., KH6FMT
Koloa, Hawaii

(Kaptain Kurt goes by his satire name in order to be able to go to Dayton and elsewhere and avoid arguments with people who do silly things like build loop antennas using the ground to take the place of one of the wires.)

Remember to look for the special event station, W5RRR, on the SSTV frequencies in early November. The Johnson Space Center Amateur Radio Club will be providing live B&W and color SSTV coverage of the space shuttle's upcoming mission. The last word I had was that the launch had been pushed back to 11 November because some of the payload experiments would not be ready earlier. Your local radio and TV station will have up-to-the-minute launch information; then look for W5RRR on the SSTV frequencies.

For those of you who have installed the 25.5 second RGB single-frame color mod, watch for Bill Wells, W4CVS, and ask to see his color program on Hawaii. Bill spent quite a bit of time in putting together this color sequence. His color pictures are gorgeous! In the 25.5 second SFC mode, you can sit back and watch the show; the color pictures load automatically.

A look at the future

In taking a realistic look at what one might expect in the near future for SSTV, a few things must be understood.

SSTV as a part of the electronic equipment business, and indeed as a part of Amateur Radio, is very small. The dollar value in potential sales of SSTV equipment that any major company could hope to realize is very small. The dollar value of potential sales of SSTV equipment compared to sales of all Amateur Radio equipment is also very small.

There are several companies here in the United States which manufacture high-quality, high-resolution SSTV scan converters costing thousands of dollars each. Except for Robot Research, however, those companies, when contacted, had no interest in entering the ham SSTV market. Likewise, the manufacturers of Amateur Radios and other gear have no interest in making SSTV equipment. With today's enormous business costs, regulations and other problems, it would take a huge initial investment for anyone to manufacture a new scan converter in any quantity. With the rapid changes in technology today, it would be risky.

In the early days of SSTV, there was no commercially available equipment; you had to build it. Things are different in 1982. Amateurs might build up some simple projects, but today's SSTVer is largely an appliance operator. A few people have recognized this change and trend and have formed successful small businesses selling new technology SSTV equipment and offering it in the form you want to buy it in. Clay Abrams, K6AEP recognized the potential of the TRS-80 Color Computer for SSTV and now sells SSTV software programs. Several small companies are selling simple hardware kits, based on Clay's program, to interface the Color Computer for SSTV. Sam Tormino, WA7WOD realized what amateurs wanted, and now his Interface system's color conversion is today's color SSTV success story.

American ingenuity and enterprise is alive and well. A few of SSTV's innovators of yesteryear still fail to recognize the trend. They make a little news by writing an article and drawing a schematic and maybe offering boards for sale, but nothing much more comes of their ideas.

Unless someone with lots of money comes along to take a chance on marketing a new SSTV scan converter, there is little chance that any of the successful systems will lose popularity.

The people from Robot told me at Dayton that it would be at least a year before they came out with anything new. If and when Robot, the only major company interested in the ham SSTV market, comes out with a new microprossor-controlled state-of-the-art scan converter, it would undoubtedly set the standard for years to come. It also seems logical that whatever Robot might come out with would be mostly compatible with their 400, and therefore compatible with the successful conversions on the market now. They wouldn't leave thousands of 400 owners unable to join in.

Individual systems

Robert Suding, W0LMD has devised a new scan converter and has proposed a 25.5 second SFC scheme. His 25.5 second SFC color scheme would involve changing today's standard RGB format to a GRB format. I will have more to say about single frame color next month.

The proposed scan converter, at last word, will still contain nearly 150 ICs and consist of six separate 5″×8″ PC boards plus a keyboard. Total cost for components alone is still estimated at over $700.

Plans now call for schematics to be made available and boards to be sold, though no date has been announced. Work is underway on the first board, but schematics are still being revised. This scan converter is terribly complex. For the reasons mentioned above, I see little chance it will be successful in the form being offered. There is even less chance of success if it is locked into the non-standard GRB format. I doubt that more than 10 or 20 amateurs will plunk down over $700 for parts and have the time and skill to wire up this project and get it working.

The Robot 400 remains a popular and versatile piece of SSTV equipment. There are many mods that can be installed in the 400 for fun and diversity, plus the 400 is easily upgraded to color. Both the Interface System and Colorscan 403 color conversions are good choices and provide excellent color. The first of the Colorscan 403 kits are now out. The number of amateurs on color SSTV using these conversion systems will grow each week.

I don't see much of a future for the German SC-422A scan converter here in the United States (see my review in August **Worldradio**). It is a very expensive unit, but by no means state of the art. The circuitry is 1970's design with updated RAMs. Its high cost complexity of operation and possible problems far outweigh the few bells and whistles that have been added to a three-memory scan converter.

The first of George Steber, WB9LVI's Microcraft two-memory B&W high-resolution scan converters is on the air. The impact this product will have on the SSTV market is unknown. It sends fine 8.5 second B&W pictures. However, full frames of the 17 second high res pictures cannot be copied by any other system now on the market, including the Robot 400 with the "so-called" 256 mod installed. You'll have to find other Microcraft owners to enjoy the high res pictures. Also, there is apparently no plan or provision to upgrade this unit to color.

High res B&W SSTV is seemingly being pushed as an alternative to color SSTV. Yet, very few I have talked to who are already on SSTV would sell their gear to get into high res B&W when they have the opportunity to upgrade to color SSTV. There is no question that the high res pictures look better, but the average subject SSTV picture looks only slightly better in high res. However, more detailed pictures such as scenery and schematics can be exchanged in the high res mode with much improved results.

As you know from last month's column, the TRS-80 Color Computer is not well thought of by many of you as a quality stand-alone SSTV system because of poor color reproduction, only four grey level shades and low resolution. Clay Abrams, K6AEP and Bob Blackstock, WB5MRG are now jointly working on a new hardware/software package for the Color Computer, featuring higher resolution, more grey level shades and better color. It is not yet known how well this package will operate and perform compared to other SSTV systems. The new software will accommodate current and proposed SSTV standards. A minimum of 32K is recommended.

Critical to the chances of success of this system is the form the hardware is offered in. A board containing 25-30 ICs to be wired and tested from a schematic is beyond what many of today's SSTVers would attempt to complete. Greater success can be assured if someone offers the hardware wired and tested and ready to plug in.

Many of you are waiting to see what Robot comes out with, and to some extent Robot holds the key to the future of SSTV for awhile anyway. Besides the above considerations, you would want to know how many people you can expect to find on the bands using the various systems. There are, of course, thousands of SSTVers equipped to send 8.5 second B&W. As of 1 September, about 200-300 SSTVers worldwide are using RGB color. About 40-50 are sending RGB single-frame color. Less than 10 people can send and receive "true" 17 second high res B&W. Still, only one has GRB single-frame color.

As the cold and snow come to the North, and amateurs migrate to their shacks for the winter, perhaps some of the above thoughts will help you decide to switch or wait for Dayton, 1983. 73s, Ron Flynn, KB8LU □

Not legitimate?!

Sid Ehrlich, W8JL

I thought it would happen. Heck, I am not clairvoyant, but with the FCC assigning all types of funny calls, I should have known that some day an old-timer's call, like W8JL, would seem an aberration from the past to the new breed of amateurs.

This week, while driving through Nashville on our way to Memphis, Tennessee, I called in on the .88 machine. Receiving no reply, I waited about five minutes and tried again. This time I made a contact, and following a short QSO, signed and monitered. Another station called the person with whom I had been speaking and said, "I heard that guy on five minutes ago but didn't answer because that didn't sound like a legitimate call."

— Silvercreek ARA, Barberton, OH □

CONSTRUCTION

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

ID timer

Transmitting unidentified signals is considered a serious offense. Technically, failure to identify every 10 minutes in the Amateur Radio Service is transmitting unidentified signals. Fortunately, the FCC does not press observance of this rule strictly; it does not put its monitoring stations to work to make sure we identify every 10 minutes. In fact, stations are usually cited for transmitting unidentified signals only in connection with other violations, such as obscene language, deliberate interference and out-of-band operation. Just the same, most amateurs want to keep the rules and usually identify much more than is strictly prescribed.

Yet it's possible that when one is involved in an interesting chat with another amateur or has a dozen or so messages to handle, to let more than 10 minutes go by without identifying. This simple timer will remind you that it's time to tell the world who you are.

The layout is shown schematically in *Figure 1*. It can be built on a piece of perfboard, or you can etch a circuit. The exact layout of the board will depend on the components used, and on whether the push buttons and transformers are mounted on the board or elsewhere. The general layout will be similar to *Figure 1*, however.

Most of the circuitry is contained in the CD4060 chip, a combined oscillator and 14-stage binary counter. The chip is drawn in *Figure 1* in the top view, as is customary in semiconductor data sheets. This chip is handy because it contains so much circuitry in a small space, but it has a disadvantage in that only 10 of the outputs are brought to terminals. If you want to use any of the others, you have to use additional flip-flops to provide the additional counts, 1, 2, 3 and 11. In our case, these outputs are not needed, so the one chip does the whole job.

Pins 9, 10 and 11 are for the oscillator, with the outpout appearing at pin 9. Pin 12 allows the counter to run when at negative supply voltage, and resets the counter to zero when it is positive. Note the general rule when using CMOS integrated circuits; all inputs have to go somewhere — you can't leave them floating. Pin 8 is for the negative supply, pin 16 for the positive, and the others are the outputs, in a random order.

A second rule for using CMOS chips is never to connect two outputs directly together, because any output is connected at a given moment either to the positive or to the negative side of the supply, so it's possible for a short circuit to occur if one output is high and the other low, allowing enough current to flow to destroy the chip. In this instance, the 33,000 ohm resistor in series with pin 7, and the diodes in series with pins 2, 6, 14 and 15 prevent excessive current flowing between any outputs.

The transistor, any NPN type suitable for the voltage and current, acts as an audio oscillator to give a tone in the speaker when 10 minutes have passed. Pin 7 alternates between high and low states once per second. If any of the four outputs — 2, 6, 14 or 15 — is low, it will short out the base of the transistor and no oscillation will occur. When all four outputs are high, current from pin 7 will give the transistor a forward bias and oscillations will begin, a tone of about 800 hertz for one second followed by a one-second silent period. When you have identified, push the reset button which gives a positive voltage to pin 12, causing the cycle to begin again and prepare to give you some more beeps in another 10 minutes.

The speaker can be anything at hand that will match the output impedance of the transformer, and the transformer is any center-tapped audio output with impedance somewhere between 500 and 2000 ohms. Radio Shack's 273-1380 transformer and 40-245 speaker would do the job.

Regulating the timer

When construction is finished, insert a battery (anything from 6 to 9 volts will do), turn on the switch and push the "test" button. You should hear tones of about one second duration followed by a one-second silent period. You can set it to exactly one second by using the time ticks of WWV, WWVH or CHU. Adjust the 500,000 ohm control for this purpose. It's possible that in some cases you won't be able to set it to the proper speed, because often parts — capacitors in particular — are quite far removed from the value they are supposed to have. If this happens, simply add resistance or capacitance to the circuit, replace the 390,000 ohm resistor or the 0.1 microfarad capacitor with something larger to lower the frequency, or do the opposite to raise the frequency.

The pulse rate is a function of the product, resistance times capacitance. You could also connect a counter to pin 9 and set the oscillator to give a frequency of 8 hertz. If your counter has a 10-second gate, you can set the frequency closely enough to give a 10-minute interval within a second or so. Your counter should stay on .0080 kHz for several counts. If, say, it jumps to .0079 once every five counts, the frequency is about .00798, and your interval would be only 1.5 seconds too long. Some amateurs, to be on the safe side, set their timers a bit fast so that the beep will come several seconds before the 10 minutes are up.

It's a simple gadget to make and costs little, so if you have trouble remembering to identify, it should solve your problem.

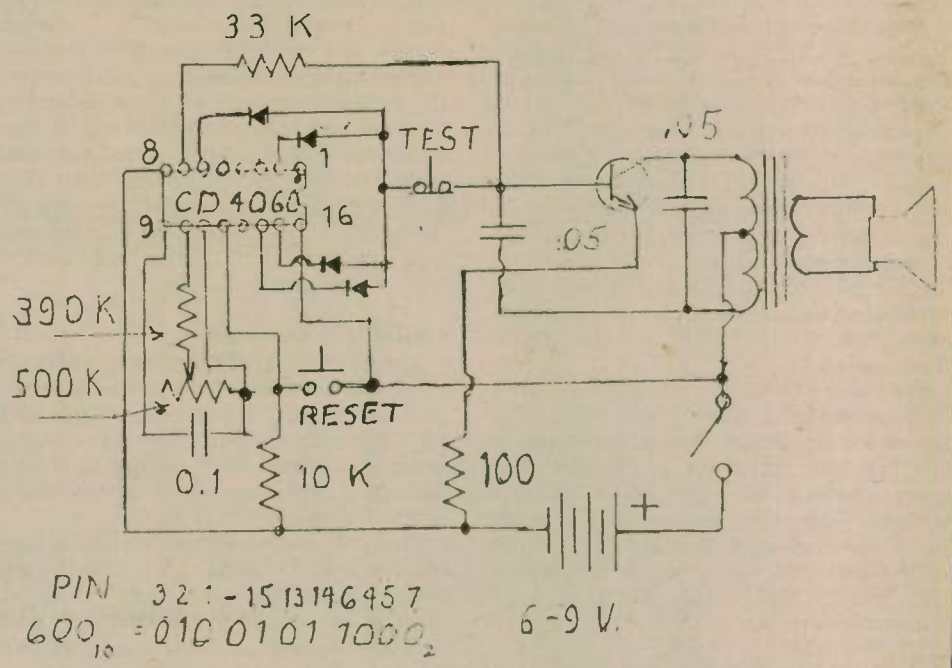


Figure 1

TRAFFIC

(*continued from page 41*)

Doing without a net control station is not new to ARTS, however. The maritime mobile service has been doing it from the beginning. Stations call on 500 kHz to list traffic, then move off to a working frequency to send it.

Dual-frequency operation

Amateur nets could borrow another idea from the maritime mobile service. Coast stations usually monitor and transmit on several frequencies at once, so that ships can pick whichever one is best at any given time. Many amateurs have enough gear and antennas to be able to do the same. Why not use both the primary and the alternate frequencies a once, keying or modulating both rig simultaneously? Only the net control st tion would have to have this capabilit Other stations would use whichever fr quency is best at their location. Yes, ther would probably be more doubling, but t net control operator would be able separate the two stations, in many case if two speakers or split (stereo) hea phones are used. As far as I know hasn't been tried, unless you want to s W1AW's operation is run that way, b that's a one-way transmission. Any co ments would be appreciated.

Please
send **NEWS** and **PICTURES** to
Worldradio

DX World

(continued from page 24)

QSL routes

A35JL	—K9AUB	SM0MLL/C9	—SM0CCM
C31JX	—DK9FE	SO5DW	—CT1DW
C31ZE	—DF9SP	SO5NDW	—CT1DW
C30LM	—EA3BKZ	SV0BM	—*(See Note 2)*
C30MK	—EA3WZ	T2AGD	—SM3CXS
C30ML	—EA3BKZ	T32AF	—WH6AIF
C30ND	—EA3BKZ	T30CB	—SM3CXS
C30UB	—EA3CFQ	TA2BK	—DJ0UJ
CO2HQ	—KB7SB	TJ1CK	—DL1HH
CO2HS	—KB7SB	TL8GE	—F6FYD
CS5SRL	—CT1AHU	UK8JBD/U8R	—UJ8JCQ
CU5ZG	—CT1ZG	V2AAW	—KG6S
DK3GI/HK1	—DL2MY	V2ANH	—KE1A
EA5CGV/HB0	—EA5TX	VE8ML	—VE4TZ
EA5CTX/HB0	—EA5TX	VK6KY	—LA7JO
ED1ISI	—EA1ANC	VK9YA	—KB9UV
EI2VJN	—G4BUO	VQ9GD	—KA6MKY
EK0K	—UA9OBA	VU2YOU	—K4YT
F6FIC/TZ	—F6CRS	VU9GI	—VU2GI
F0FLR/FC	—DF2YJ	W6TEX/CT3	—W6TEX
F0FWW/FC	—OE3IBW	XT2AW	—KN1DPS
FC0FRV	—DJ2AA	YB5AES	—W4BBP
FC0FRZ	—DK9CG	YB9ADM	—DF3KK
FM7CF	—WB3AKI	YB9BV	—W5GZI
FP0GA	—WB2MSH	ZB2EO	—K3MNW
FR7CG/T	—F1DYD	ZK1YL	—ZL2BAO
FY7YE	—W5JLU	ZM7VU	—F6DYG
GU5EHK	—ON7WH	3B8FE	—3B8CF
GU5ELF	—DF8HC	3C1AB	—EA1QF
HL9AZ	—AD8R	4K1A	—UA3AEL
HR1JSH	—WD6WOD	4N9OLY	—YU4EXA
HS1AMB	—LA5NM	4S7AJG	—K9AJG
IU8ITU	—I8MPO	4S7XS	—DL7XS
J6LZA	—K4LTA	5R8AL	—WA4VDF
JW5VAA	—LA4YW	5U7HP	—NL8636
JX5VAA	—LA4YW		*(See Note 3)*
K4LQ/C6A	—WB4OSN	5V3FU	—K3FU
K4YT/5N0	—W2TK	5W1EE	—W6OUL
KA3BUJ/8RI	—N7YL	5W1EF	—W6OUL
KC6SX	—JA8OW	5W1EG	—W6OUL
KC6WS	—AD1S	5W1EH	—W6OUL
KG4GN	—WB1GQQ	5W1EJ	—DJ9KH
KR4C/J6L	—KR4C	5Z4CS	—JI1VLV
OJ0AM	—*(See Note 1)*	6Y5PL	—G3SXE
OX3GH	—WA2TTI	9H1CE	—W2KF
OZ7GI/5N9	—OZ7GI	9M6BE	—VS5TX
PY0SP	—N6CW	9N1CGO	—EA1CGO
SM0GNU/ OH0	—SM0GNU	9Y50NP	—W3HNK

A71AD	—P.O. Box 4747, Doha, QATAR
A92P	—P.O. Box 14, Manama, Bahrein
AH2AN	—NASA Tracking Station, DAN DAN, GUAM 96916
AH2AQ	—1559B Bamboo St., APO San Francisco, CA 96334
AM02AAI/Z	—P.O. Box 171, Zaragoza, SPAIN
AP2P	—P.O. Box 999, Rawalpindi, PAKISTAN
CT2CB	—P.O. Box 44, Santa Marie, AZORES
DU7RLC	—P.O. Box 901, Bacolod City, PHILIPPINE ISLANDS
EA9KS	—P.O. Box 278, Melilla, SPAIN
FK8KAB	—P.O. Box 3956, Noumea, NEW CALEDONIA
GJ3ZAY	—P.O. Box 146, Cambridge, ENGLAND
GJ4LVH	—P.O. Box 146, Cambridge, ENGLAND
HS0HS	—P.O. Box 2008, Bangkok, THAILAND
HT1MAT	—P.O. Box 1474, Managua, NICARAGUA
J6LB	—P.O. Box 732, Castries, ST. LUCIA
OA4ARQ/ HK5	—P.O. Box 66, Buga, COLOMBIA
OD5BP	—P.O. Box 115392, Beirut, LEBANON
PZ5JR	—P.O. Box 566, Paramaribo, SURINAM
SV0CJ/SV5	—P.O. Box 349, Rhodes, GREECE
T30BY	—P.O. Box 34, Tarawa, KIRIBATI
VK9ND	—P.O. Box 279, Norfolk Island, AUSTRALIA
WH2ADG	—1559B Bamboo St., APO San Francisco, CA 96334
5N8KRT	—P.O. Box 2773, Kano, NIGERIA
5T5ZF	—P.O. Box 202, Nouakchott, MAURITANIA

Notes

1. If you worked OJ0AM during 1982 you worked Slim. Sorry!
2. The QSL manager for SV0BM is *not* WB9UGO.
3. Send your QSL card for 5U7HP through the Netherlands QSL Bureau. The call NL8636 is that of a Dutch SWL.

Contributors this month include LA4YW, W9LNQ, N4FKZ, W8GI, PY1CC, K4YT, W6QEU, KH0AC, VK6KYL, N4SU, the Kansas DX Association, the Stark DX Association, the International DX Foundation, the Northern California DX Foundation, Amateur Radio (WIA), *The DXer* (NCDXC), *The DX Bulletin*, *The Long Island DX Bulletin*, *DX News Sheet* and Heard Island Expedition 1983.

For the past several weeks we have not received the newest DX newsletter *DX-peditions International*. This weekly was published by Bill Wiggins, WA4TWS of Waycross, Georgia. This was a quite informative DX newsletter and we wonder if it went under before it had an even chance. The last issue received here was the issue of 21 July.

At this column is being prepared during the first half of September, 10 meters is beginning to open up. Take advantage of this band now as the cycle is changing, and pretty soon it will be closed. Also, 11 meters will close for long-haul communications. That will be the only good thing about it as it will get rid of those "space cadets" in that "no-man's land" between the CB band and 28.0 MHz.

If you noticed that there was an omission of new W-100-N members this month, it is because no applications were received. Maybe we will have some for next month. 73 es GL DX, de John N6JM! □

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION
(Required by 39 U.S.C. 3685)

Date of filing: Sept. 14, 1982
Title of publication: Worldradio
Publication No.: 947000
Frequency of issue: Monthly, 12 issues a year
No. of issues published annually: 12
Annual Subscription Price: $9.00
Location of known office of publication: and
Location of the headquarters or general business offices of the publishers: 2120 28th St., Sacramento, CA 95818
Names and addresses of publisher, editor and managing editor: Publisher, editor, Armond M. Noble, 2120 28th St., Sacramento, CA 95818; Managing Editor, Christine I. Wilson, 2120 28th St., Sacramento, CA 95818
Owner: Worldradio, Inc., 2120 28th St., Sacramento, CA 95818; Armond M. & Helen L. Noble, Sacramento, CA; Jack & Dorothy Schwartz, Sacramento, CA; Norm Brooks, Carmichael, CA; Linda Rutledge, Sacramento, CA
Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities are: None.
Extent and nature of circulation:

	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
Total No. Copies Printed	24,248	24,500
Paid Circulation		
1) Sales through dealers and carriers, street vendors and counter sales	608	696
2) Mail subscriptions	10,261	10,915
Total Paid Circulation	10,869	11,611
Free distribution by mail, carrier or other means — Samples, complimentary, and other free copies	13,137	12,644
Total Distribution	24,006	24,255
Copies not distributed		
Office use, left-over, unaccounted, spoiled after printing	242	245
Returns from news agents	-0-	-0-
Total	24,248	24,500

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AutoConnect proudly introduces Private Patch — a full-featured autopatch product, no options necessary. Since Private Patch does not employ the sampling technique, there are no repetitious squelch tails to annoy you.

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Private Patch requires no modifications to your FM base transceiver. Connects only to microphone and speaker jacks. No timing adjustments due to a fully digital approach of design.

Some additional features are: 115VAC supply; CW identification; six-minute shutdown down-timer, in case you drive out of range — resettable with reset code for additional talk time; CMOS digital integrated circuits; 40 integrated circuits, 16 transistors, etc. on one high-quality glass circuit card; positive control logic; modular phone jack; modular phone cord; touch-tone decoder tolerates wide range of level and twist, decodes up to 10 digits per second, and will not false.

Private Patch factory direct introductory price $489. Send for additional information. AutoConnect, P.O. Box 4155, Torrance, CA 90510.

2M multimode mobile transceiver

ICOM is happy to announce the release of a new 2-meter multimode mobile transceiver — the IC-290H.

The IC-290H features a powerful 25 watt output and a highly sunlight readable green readout, in the same compact package as the IC-290A.

Other features and styling of the IC-290H are the same as the previous model — the IC-290A: five memories — store your most

worked frequencies; call channel — your favorite frequency instantly available; 5kHz FM tuning or 1 kHz/100 Hz tuning on SSB; FM/USB/LSB/CW modes; programmable offsets; priority channel — monitors two frequencies; scanning of memories or band.

For more information on price and/or to order, write to ICOM, 2112-116th Ave. N.E., Bellevue, WA 98004.

General coverage receiver

ICOM is proud and excited to announce its professional general coverage receiver, the IC-R70.

It is a full generation later and features more functions than other less sophisticated general coverage receivers on the market; features that the serious shortwave listener or ham operator would want, such as squelch on sideband, adjustable width noise blanker, adjustable speed AGC, passband tuning as standard, and adjustable notch filter as standard.

Other convenient features are high stability, synthesized tuning and three tuning speeds, optional AM/FM mode, variable CW filter

widths, dial lock, two VFO's with data transfer, plus many others. Also, the IC-R70 will operate transceive with the IC-720A, making an ideal combination for the serious DX'er or CW buff.

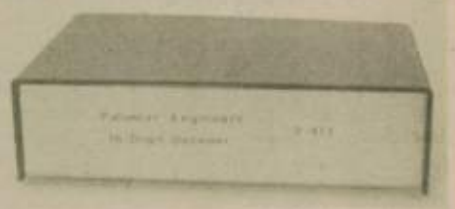
The receiver, retail priced at $749 ham net, can be ordered from ICOM, 2112-116th Ave. N.E., Bellevue, WA 98004.

16-digit DTMF decoder

Palomar Engineers has announced a new low-cost 16-digit decoder, Model P-411.

The decoder features high-input impedance so it does not load the line, crystal control for long-term stability and operation over a wide temperature range, dual bandpass filters ahead of the detector, and digital logic that makes it almost entirely free of false outputs.

The P-411 operates from +12 volts DC and has a 16-line output, as well as BCD code and



strobe on five lines.

For further information, contact Palomar Engineers, 1924F W. Mission Road, Escondido, CA 92025. Or phone (714) 747-3343.

Receive terminal

DGM Electronics has just introduced the RT-1100 Receive Terminal for Baudot, ASCII and Morse. The RT-1100 converts the audio from your receiver, decodes it and displays the words on a video monitor or TV set (using RF modulator).

The RT-1100 incorporates an active filter demodulator with scope tuning outputs. It will copy 170, 425, 850 Hz shift RTTY signals at speeds of 60, 66, 75, and 100 wpm on Baudot and 110 baud on ASCII. The unit will copy 6-60 wpm Morse signals using automatic or manual speed tracking.

The RT-1100 has a parallel ASCII printer output for hard copy. The video output provides 16 lines of 32 characters per line with two

pages. The second page is stored in memory and can be recalled by using the page 1-2 switch on the front panel.

The unit has a built-in 110VAC power supply and is housed in an attractive 3" × 10" × 10" case with brushed, anodized front and rear panels. The cover is a grey wrinkle finish. The unit comes with a one-year warranty on parts and labor.

For more information, contact DGM Electronics, Inc., 787 Briar Lane, Beloit, WI 53511; (608) 362-0410.

Tri-band beam

TET Antenna Systems has announced that their top-of-the-line HB35T tri-band bean is now available. This is a five-element dual drive antenna for 20, 15 and 10 meters.

With the dual drive concept, both the radiator and the reflector are driven with a phase difference that provides extra gain and improved front-to-back ratio.

The beam has only one pair of traps per element for simplicity and reliability. The trap capacitors are coaxial rods mounted inside the elements to give low losses and weatherproof operation.

The HB35T has a 25-foot boom, weighs 50 lbs., and provides excellent gain for DX work. The price is $329.95 plus shipping.

For further information, contact TET Antenna Systems, 1924E W. Mission Road, Escondido, CA 92025.

Filter kit

Fox Tango Corporation announces the availability of a special high-quality matched-filter kit designed to significantly improve the selectivity of the popular Kenwood R820, TS830 and the new TS930 series.

These rigs all use similar dual-conversion IF systems with 8830 kHz first and 455 kHz second intermediate frequencies. IF bandwidth filtering at both frequencies is used to provide VBT (variable bandwidth tuning). However, in the TS830S model, the 2.7 kHz bandwidth of both original filters (resulting in a net bandwidth of 2.4 kHz with VBT Off); the combined filter shape factors (1.34 with VBT Off); and a combined ultimate rejection of about 80dB leaves much to be desired.

Under the same conditions, the Fox Tango Filters (both 8-pole discrete crystal units instead of the original monolithic and ceramic types) each have a bandwidth of 2.1 kHz (net bandwidth of 1.99 kHz); a combined shape factor of 1.19 (the lower the better); and an ultimate rejection greater than 110dB (the higher the better). However, the effects are even more striking when VBT is used to narrow the operating IF bandwidth to reduce QRM. Narrower bandwidths (usually given at -6dB) are helpful in reducing adjacent channel interference, but the steepness of the filter skirts or shape factor (-60dB BW divided by -6dB BW) and their depth (ultimate rejection) are more important. Thus, if VBT is used to reduce the bandwidth to 1.99 kHz (to equal that of the FT filters without VBT), the shape factor of the original filters becomes 1.45 as compared with 1.19; the ultimate rejection is less than 80dB, as compared with more than 110dB — both significant differences.

Regardless of the type of filters, however, the use of VBT in these receivers always reduces the shape factor since with VBT Off, the characteristic curves of the two filters essentially coincide with one another. This is referred to as filter cascading, and the combined shape factor is usually better than that of either of the two filters involved. However, when VBT is used, one filter characteristic is made to slide with respect to the other and only the portion where they overlap represents the bandpass area. Thus, the cascading effect is lost and the resulting characteristic has the skirt of the first filter on one side and that of the second on the other.

In addition the original 455 kHz second IF filter is a modest ceramic unit which tends to degrade the overall shape factor more and more as the bandwidth is narrowed. For example, with VBT set for 500 Hz bandwidth the original filters have a combined shape factor of 2.74 as compared with 2.38 with the FT filters. This may not seem like a great difference until you compare the bandwidth at -80dB (2.82 kHz vs. 1.72 kHz); the lower bandwidth at this level is very important for good CW reception of weak signals in the presence of strong ones in a crowded band.

Also, because of the rounded shoulders of the original filter characteristics, the overlap at narrower bandwidths has the effect of increasing the filter "insertion loss": 5dB vs. 0dB with FT filters at 500 Hz bandwidth; 10dB vs. 1dB with FT filters at 300 Hz. The greater such losses, the lower the receiver sensitivity in the CW mode. Thus, the superior characteristics of the FT filters result in excellent performance in both the SSB and CW modes; in the latter case, practically eliminating the need for the purchase of optional CW filters by all but the most serious CW operators.

Indeed, there are significant advantages in not buying *any* CW filters. In addition to saving the cost of the CW filters, installation is simplified since the FT matched pair can be inserted directly into the holes provided for the CW filters. With this arrangement, the following operating options become possible: 1) FT filters for both RX and TX; 2) FT for RX, original Kenwood for TX; 3) FT for RX, switch-select FT or Kenwood for TX; 4) Switch-select FT or Kenwood for RX/TX. If CW filters have been (or are to be) used, the recommended arrangement is to replace the original SSB filters with the FT 2.1 matched pair. In this case, only option (1) is possible, and since the new filters are larger than the original SSB units, they are patched into the circuit with short lengths of thin coaxial cable. This installation is easy, no drilling or switching is required, and all parts are provided in the kit.

The Matched Pair Filter Kit, complete with detailed instructions, two 2.1 kHz Fox-Tango filters (guaranteed for one year), and all needed cables and parts is being offered at an introductory price of $150 plus $3 for shipping ($5 for air). Send your order, specifying the rig with which the filters are to be used, to Fox Tango Corporation, P.O. Box 15944, W. Palm Beach, FL 33406; or for faster service, order by telephone: 1-(305) 683-9587. □

Antenna coupler

We have just completed our first production run of a new antenna coupler that fills a void in Amateur Radio antenna accessories. The device replaces the center insulator of a balanced HF antenna system. It contains a high-quality air balun, tapped inductor and a variable capacitor. The coupler is housed in a durable ABS plastic box with a removable lid for inspection and servicing. The strain insulator is made of tough Delrin plastic.

With the aid of graphs in the instructions booklet and an SWR meter, the user can easily and quickly design a matching network to match the low impedance of his wire beam or the high impedance of his loop antennas. Using the network as a T or an L, the Wayne B-T-L antenna coupler will match a wide range of impedances from 1.8 to 30 MHz.

The insertion loss is not more than -0.006dB, 1.8 through 25 MHz, and minimal through 30 MHz.

The introductory price is $49.95. For more information, write to Wayne Research & Development, P.O. Box 75144, Houston, TX 77234. □

ADVERTISERS' INDEX

Plug-in DTMF decoder

Palomar Engineers has announced a new single-digit decoder which is available for any of the 16 DTMF digits.

Replacing the firm's older model T-2, the new P-200 features improved temperature stability, high-input impedance (200,000 ohms), and a half-ampere SPDT output relay.

It operates from 12 volts DC, signal levels from −25 to +5dBm, and has a response time of 100 ms. The decoder plugs into a standard octal socket.

For further information, contact Palomar Engineers, 1924F W. Mission Road, Escondido, CA 92025. Or phone (714) 747-3343. □

Computer-assisted Novice program

Education Technology of Mahomet, Illinois has introduced a computer-assisted Novice tutorial program for the Apple II computer.

The series consists of nine separate programs, all capable of list, backup and user modification. The E-T-M series was designed for school, club and individual use with a premium placed on user friendliness and simplicity of operation.

The heart of the E-T-M- Novice instructional series is a five-way Morse code generator and testing module. FCC-type tests are provided, along with a complete study syllabus, flashcard set, and other modules which feature more than 30 detailed, high-resolution graphics. The programs are written for DOS 3.3 systems with 48K or more and Applesoft™ Basic.

The programs are supplied on 5¼-inch discs with documentation for $19.95 ppd. From Education Technology of Mahomet, P.O. Box 111, Mahomet, IL 61853. □

Australian Ladies' ARA Contest

All licensed operators throughout the world are invited to participate in the Australian Ladies' Amateur Radio Association (ALARA) Contest. SWLs are also invited. The contest will be held Saturday, 13 November 1982, 0001 UTC to 2359 UTC.

Object: *PARTICIPATION!* YLs work everyone; OMs work YLs only. One contest (combined phone and CW) run over 24 hours.

Suggested frequencies: All bands may be used. The following are suggested frequencies for easier location of contacts: *CW* — 28.100-28.110, 21.125-21.135, 14.050-14.060, 7.010-7.020, 3.525-3.535; *Phone* — 28.480-28.520, 21.180-21.200, 21.350-21.370, 14.180-14.200, 14.280-14.300, 7.100-7.120 and 3.570-3.590.

Operation: *Phone and CW operation:* Each station may be counted twice on each band for credit — once on phone and once on CW. All contacts must be made in accordance with operator and station license regulations. No net or list operations, no crossmode. No repeater contacts may be claimed.

Procedure: *Phone* — call "CQ ALARA CONTEST". *CW* — call "CQ TEST ALARA"

Exchanges:

ALARA member: RS or RST, serial number starting at 001, ALARA member, name.

YL non-member or OM: RS or RST, serial number starting at 001, name.

Scoring: *Phone* — 10 points for ALARA Club stations contacted (VK2DYL, VK3DYF); 5 points for ALARA member contacted; 3 points for YL non-member contacted; 1 point for OM contacted. *CW* — Double all points for CW contacts. *SWL* — 5 points for ALARA member logged; 3 points for YL non-member logged.

Logs: Single log entry. Logs must show: date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked, and points claimed.

Logs must be signed. Logs also to show full name, call sign and address of operator, and show final score (points claimed). Logs must be legible, either typed or printed. No carbon copies. No logs will be returned. Decision of the contest manager will be final. Logs must be received by the contest manager by 31 December 1982.

Contest manager: Mrs. Margaret Loft, VK3DML, 28 Lawrence St., Castlemaine, Victoria, AUSTRALIA 3450.

Certificates will be awarded to the following: Top score ALARA member in each country and VK call area; Top score YL non-member on each continent; Top score OM on each continent; Top score SWL on each continent; and Top score VK Novice.

The ALARA club stations will not be eligible for certificates. □

Antenna catalog

Spearheaded by some interesting new technology, The Antenna Specialists Co. has announced to Amateur Radio equipment dealers and amateurs a selected line of antennas for radio amateur requirements.

Both mobile and base models are offered for 6, 2, 1½ and ¾-meter bands — a total of 28 antenna models. At 2 meters, 220 MHz and UHF, the line includes the highly innovative half-wave "Avanti" on-glass mobile antennas, the capacitive coupling method that permits mounting on windshield glass or any non-conductive material up to ¾-inch in thickness and requires no groundplane. The antenna utilizes a "DUO-BOND" adhesive which provides a strong, safe and resilient bond for a complete installation in less than 15 minutes.

In addition, the company is offering a complete line of cowl mount disguise antennas for the amateur market in both universal and direct replacement configurations to match Ford, Chrysler, Chevrolet, and other popular makes of automobiles.

These products and more are fully detailed in a new amateur antenna line catalog. To obtain a copy, write to The Antenna Specialists Co., 12435 Euclid Avenue, Cleveland, OH 44106. □

Delaware QSO Party

The Delaware QSO Party, sponsored by the Delaware Amateur Radio Club, will be held 13-14 November 1982. The contest starts at 1700 GMT, 13 November, and ends at 2300 GMT, 14 November.

Stations may be worked once per band and per mode for QSO and multiplier credits.

Exchange: QSO number, RS(T) and QTH. County for Delaware stations; ARRL section or country for others.

Suggested frequencies: *CW* — 1805, 3560, 7060, 14060, 21060, 28160; *SSB* — 1815, 3975, 7275, 14325, 21425, 28650; *Novice* — 3710, 7120, 21120, 28120.

Scoring: Delaware stations score 1 point per QSO. Multiply total by the number of ARRL sections and DX countries worked. Others score 5 points for each Delaware station worked. Multiply total by the number of Delaware counties worked on each band and each mode (maximum of 36 multipliers possible). There are three Delaware counties — Kent, New Castle and Sussex.

Awards: Appropriate awards will be given to top scorers. In addition, a certificate will be awarded to all stations working all three Delaware counties. If you work all three counties and want the "WDEL" award, send two 20-cent stamps and an address label.

Mailing deadline for logs is 17 December 1982. Send to: Charlie Sculley, AE3H, 103 E. Van Buren Ave., New Castle, DE 19720. Send SASE for a copy of the results. □

North Carolina QSO Party

The Alamance Amateur Radio Club, K4EG, will sponsor the North Carolina QSO Party 13-15 November. Operating times will be 1700Z, 13 November to 0200Z, 14 November and from 1200Z, 14 November to 0100Z, 15 November.

Exchange: Exchange signal report and QTH (county for North Carolina stations, ARRL section for others). No crossband or repeater QSO's.

Suggested frequencies: *Phone* — 3.980, 7.280, 14.280, 21.380 and 28.580; *CW* — 60 kHz up from lower band end edge; *Novices* — 20 kHz up from lower band edge.

Scoring: North Carolina stations count 1 point per QSO and multiply by sum of ARRL sections. Others count 2 points per North Carolina QSO and multiply by total of North Carolina counties worked. Bonus of 25 points for working club station K4EG.

Awards: The top scorer in and out of state will receive a 1983 Callbook of their choice. Top scorers in each ARRL section will receive certificates.

Mail logs by 13 December (large SASE for results) to F.R. Ashley, WB4M, 2731 Blanch Dr., Burlington, NC 27215.

W8LBZ QSO Party

The 50th anniversary of the Sandusky (Oh) Radio Experimental League, Inc. will be observed and celebrated with a QSO party Saturday and Sunday, 13-14 November 198

Members of the club will operate on five amateur bands using the club call W8LB. Operating times will be 1800 UTC Saturday, 13 November until 1800 UTC Sunday, 14 November. Frequencies will be: Novice — 28150 and 7125; CW — 3740, 7040, 14040, 21040 and 28040; Phone — 3910, 7265, 14280, 21360 and 28600. All frequencies will be ± 10 kcs.

All amateurs worldwide are invited to participate. A special QSL card/certificate will be sent to all who send their QSL cards to the QSL manager, W8LBZ, 2909 West Perkins Ave., Sandusky, OH 44870.

Telephone Pioneers QSO Party

The John D. Burlie Chapter again cordially invites all Telephone Pioneer Amateur Radio Operators in the United States and Canada to participate in contacting as many individual members as possible and to reach members in as many different chapters as possible.

Rules: The QSO party will start at 1

hours UTC, Saturday, 4 December 1981, and will end at 0500 hours UTC on Monday, 6 December 1982.

Fifteen "bands" are defined for use during the QSO party. These are:

1.8:	1.800-2.000MHZ	14.0:	14.00-14.20MHz	29:	28.5-29.7MHz
3.5:	3.500-3.775	14.3:	14.20-14.35	50:	50.0-54.0
3.9:	3.775-4.000	21.0:	21.00-21.25	144:	144-148
7.0:	7.000-7.150	21.3:	21.25-21.45	220:	220-225
7.2:	7.150-7.300	28.0:	28.00-28.50	UHF:	Above 420

Any station representing a different chapter from the contestant may be contacted on any or all of the 15 bands for a maximum of 15 points per station, with no more than one point per band. Any station in the *same* chapter as the contestant may be contacted *once* for a maximum of one point per staton; this contact may be on any band.

Phone user: Call "CQ Telephone Pioneers." *CW user:* Call "CQTP." Please "spread out" over the frequencies indicated below.

Suggested frequencies (MHz): *Phone* — 3.955-3.975; 7.265-7.285; 14.285-14.305; 21.355-21.375; 28.665-28.885; 50.10-54.00; 144.100-148.000 contacts via repeater or simplex are valid. *CW* — 3.555-3.575; 7.055-7.075, 14.055-14.075; 21.055-21.075; 28,055-28.075, 50.00-54.00 *(Novice/Technician):* 3.725, 7.125, 21.125, 28,125.

Scoring: Total score equals contact points times chapters contacted. Note: Only one multiplier may be taken for each chapter worked. The maximum multiplier is 97 (TPA chapters 1-97) plus no more than 5 ITPA chapters. A score bonus of 10 points will apply to all entrants who contact the host station W8TP *and* send their QSL card *with SASE* when submitting logs.

Exchange: Contact number, chapter name and number. (ITPA chapter name only.)

Reporting: Obtain log sheets from your Amateur Radio Club Coordinator or Pioneer Administrator. Send logs showing date, time station worked, chapter name and number, contact number, and your claimed score postmarked not later than 15 January 1983 to: Ted Phelps, W8TP; John D. Burlie Chapter No. 89; Telephone Pioneers of America; c/o Western Electric, Dept. 45430; 6200 East Broad St., Columbus, OH 43213.

Indiana

The 10th Annual Fort Wayne Hamfest will be held 14 November 1982. Sponsored by the ALLEN COUNTY AMATEUR RADIO TECHNICAL SOCIETY, Inc. (AC-ARTS), it will be held at the Allen County Memorial Coliseum. Admission is $3 at the door; $2.50 advance; children under age 11 free. Regular tables $6; premium tables $20. A $1 parking fee is charged by the Coliseum. Doors open to the general public at 8:00 a.m. Vendor set-up starts at 5:00 a.m.

For further ticket or table information, write to Becky Skinner, KA9GWE, 9720 Pinto Ln., Fort Wayne, IN 46804.

Iowa

The SOOLAND REPEATER ASSOCIATION (WR0AGZ, 146.37/97) will hold its annual auction on 7 November 1982, at the KD Stockyards Station in Sioux City, Iowa. The doors open at 8:00 a.m. and the auction starts at 11:00 a.m. This is a large auction, so get here early.

For information, call Glen Holder, K0TFT at (712) 239-3053.

Michigan

The OAK PARK HIGH SCHOOL ELECTRONICS CLUB presents the 13th Annual Swap N'Shop on Thanksgiving Sunday, 28 November 1982, at Oak Park High School, Oak Park, Michigan.

Donation $2; tables (8-foot) $6. Refreshments will be available, and door prizes will be given out. The event will last from 8:00 a.m. to 4:00 p.m.

For more information, send SASE to Herman Gardner, Oak Park High School, 13701 Oak Park Blvd., Oak Park, MI 48237; or call 313-968-2675.

●

The 17th Annual HAZEL PARK AMATEUR RADIO CLUB Swap and Shop will be held Sunday, 5 December at Hazel Park High School, Hazel Park. Hazel Park High School is located on Hughes Street at 9½ Mile Road, one mile east of I-75. Tickets are $1.50 in advance or $2 at the door. Tables are $1 per foot. Doors open at 8:00 a.m. Plenty of food, parking and prizes.

Talk-in on 146.52.

For tickets, table reservations and information, send SASE to Hazel Park Amateur Radio Club, P.O. Box 368, Hazel Park, MI 48030, or phone 313-398-3189.

Minnesota

The annual HANDI-HAM winter hamfest will be held Saturday, 4 December 1982 at the Eagles Club in Faribault, Minnesota starting with registration at 9:00 a.m. There will be a HANDI-HAM equipment auction, dinner at noon, program and prize drawing.

Talk-in on 19/79.

For more information, contact Don Franz, W0FIT, 1114 Frank Avenue, Albert Lea, MN 56007.

New York

RADIO CENTRAL AMATEUR RADIO CLUB will hold its 4th Annual "Ham-Central" 1982 Edition, on Sunday, 28 November 1982. This all-indoors flea market and hamfest will be held in the giant 12,000 square foot main social hall of Temple Isaiah, 1404 Stony Brook Road, Stony Brook, Long Island, New York, about 50 miles east of New York City.

Featured will be an antenna lecture by Art Greenberg, W2LH and his XYL, Madeline W2EEO. The Greenbergs have updated their live demonstration, and it's fine for both beginner and old-timer. Also featured, for the first time at any hamfest, is a lecture and slide show on the Father of Radio . . . Nikola Tesla. This will be presented by world traveler and scholar Peggy McKinnon Clark, who has spent a good part of her life researching this famous man, who lived on Long Island and developed AC electric.

Doors open at 7:30 a.m. for sellers and dealers, and at 8:30 a.m. for general admission. Tables, which will measure 9 feet long, are available for $5 each, and half tables will be available for $3. General admission is $2, with XYLs and kids under 12, free.

Talk-in on WA2UEC, 144.550/145.150, and on 146.52 simplex. Other features include door prizes, home-cooked hot food and drinks, and shopping and tours for XYLs.

Advanced reservations are urged. Wall space is completely sold out. Contact Scotty Policastro, KA2EQW, 80-7th Street, Bohemia, NY 11716, (516) 589-2557; and Bob Yarmus, K2RGZ, 3 Haven Court, Lake Grove, NY 11755, (516) 981-2709, for full information and maps.

Ohio

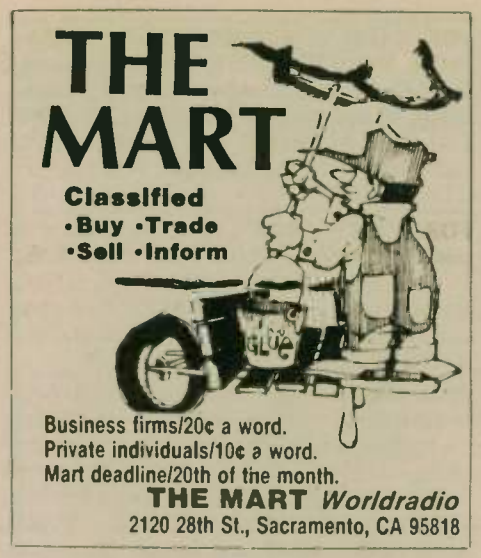
The MASSILLON AMATEUR RADIO CLUB W8NP presents "Auctionfest '82", which will be held on 21 November 1982 at the Nazir Grotto Hall, conveniently located at 6th and Dueber Avenue SW, Canton, Ohio.

Doors open at 7:00 a.m. for set-up; 8:00 a.m. for others. Auction starts at 11:00 a.m. Advance tickets $2.50, $3 at door. First prize is Ten-Tec Argosy; second is Kenwood TR-7730; third is ICOM IC2AT.

Talk-in on 146.52.

For advance tickets or tables, contact Steve Nevel, WD8MIJ, 1864 Massachusetts Ave. SE, Massillon, OH 44646.

● **Pass it on . . . WORLDRADIO** ●



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SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

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WORLDRADIO ON CASSETTES — **Worldradio** for blind amateurs on cassettes. To receive this free service send $3.00 (one-time only contribution for tapes) with your name, address and call to George Hickin, W4GH, Box 7453, Macon, GA 31209.

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WANTED — old radio transcription discs. Any size, speed, subject. Send full details & price. W7FIZ, Box 724, Redmond, WA 98052-0724.

SAFETY BELTS professional lineman (Klein) with adj strap. Forged rings. 4000 lb test. Waist size? $110. Ppd. Free specs. AVATAR CO. (W9JVF), (317) 359-5278, 147 N. Emerson, Indianapolis, IN 46219.

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T-SHIRTS sold to clubs, teams, schools, families and companies at discount prices. Send large SASE for more information to TY TOPS & THINGS, Davis Creek Rt., Box 52, West Plains, MO 65775. We do lettering also.

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INTERESTED IN QRP? Free fact-filled information booklet for large SASE to: QRP/ARCI, Box 12072, Capitol Station, Austin, Texas 78711-2072.

BUTTERNUT ANTENNA/HF6V/TBR160 assembled for local buyer — $90.00. Swan 350B — $320.00. W6XM, 528 Colima, La Jolla, CA 92037. Tel. (714) 459-5527.

HAND-PAINTED COFFEE MUGS with your call and name $10 each (includes postage and handling). Black lettering on white cup. Print callsign and name clearly. Make check payable to SUSIE FOGEL'S CERAMICS, P.O. Box 562, Trona, CA 93562. WD6DVR.

MONROVIA BASIC RADIO. Ham & SWL accessories. Hours: TWThF 1900-2200; Sat. 1000-1700. 620 S Myrtle, Monrovia, CA 91016. (213) 359-2986.

ATTN: BAKERSFIELD, CA. MONROVIA BASIC RADIO local phone: 871-1764, eves.

CW IS EASY — Pass the Extra code exam with SYSTEM EXTRA, a one-hour cassette tape with one side of random code and a second side with six FCC QSO's (20 WPM). Included are FCC type examinations to test your skill. $6.50 post paid. SYSTEM GENERAL, (13 wpm), consists of two cassettes, ten FCC QSO/exams and more text. $12.25 post paid. LANCE JOHNSON ENGINEERING, P.O. Box 7363, Kansas City, MO 64116.

HAMS FOR CHRIST - Reach other hams with a Gospel Tract sure to please. Clyde Stanfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.

SELL COLLECTION OF 2000 NEW RECEIVING TUBES, including hard-to-find, only $1 each. Send list of your needs for availability. W5QJT, P.O. Box 13151, El Paso, TX 79912.

HENRY 2K-4 LINEAR, 80-10m., mint — $895. Hy-Gain 204BA new, in box — $175. Collins F455Y21 filter for KWM2 — $50; F455FAØ5 500 Hz CW filter — $75. Kenwood CW filter (narrow) for TS12Ø, TS13Ø — $50. Used 4BTV — $60. Four-foot copper clad ground rods — $3 each, 5 for $12.50. Hy-Gain 18AW vertical — $75. Derek, KI6O, (916)965-1027 days, (916)965-4904 eves., Sacramento, CA.

FAST, DEPENDABLE MAIL ORDER??? You bet! Semiconductors, parts, ham and computer accessories. Surplus goodies, too! Free 54 page Catalog. THE PARTSTORE, Dept. 140, 999 44th St., Marion, IA 52302.

REPLACE RUSTED ANTENNA BOLTS with stainless steel. Small quantities, FREE catalog. ELWICK, Dept. 459, 230 Woods Lane, Somerdale, NJ 08083.

MULTI-BAND DIPOLE 160M-10M (WARC), single coax feed, Model KT5B $59.95, also KT7B Bal feed line KW Line — Order from KILO-TEC, P.O. Box 1001, OakView, CA 93022. (805)646-9645 Info Available.

AMATEUR RADIO REPAIR calibration — experienced, licensed, reasonable. ROBERT HALL ELECTRONICS, W6BSH, P.O. Box 8363, San Francisco, CA 94128. 408/292-6000.

SAROC SWAP TABLES — $2.50 each. Limit one per registered guest, inside. Send for details. PO Box 945, Boulder City, NV 89005-0945.

YOUR NEW AZDEN PCS-4000 is here! Only $299 brings you this incomparable, compact microprocessor-controlled 2m mobile or base beauty. Check, M.O., VISA/MC. Free shipping U.S.A. AMATEUR ACCESSORIES, 6 Harvest Ct., RD. 7, Flemington, NJ 08822. (201)782-1551.

MODERNIZE YOUR HW-101, SB-102 and etc., with receiver incremental tuning (RIT) shifts receiver frequency to tune in stations that are slightly off frequency without shifting the transmitter frequency. RIT kit comes complete with simple step-by-step instructions for only $15.90 postpaid, or send $3.00 for instructions. VISA/MasterCharge. PROTRONICS, 20 Monte Vista, Buckley, WA 98321. 1-206-829-0056.

HW-101 good condition, with Protronics Digital Readout, RIT Kit, WWV Kit and Bezel Kit, factory installed. $449 plus shipping. VISA/MasterCharge OK — Al Staggs, 20 Monte Vista, Buckley, WA 98321. 1-206-829-0056.

AMATEUR ACCESSORIES: Our name says it all! "FALL"ing prices — new Azden PCS-4000 — $299; Larsen 2m 5/8 wave mobile magnet or trunk lip mount antenna — $36; W2AU Balun — $13; MFJ 989 3KW tuner w/roller indicator — $283; MFJ 816 HF Watt/SWR meter — $27; Mini-quad HQ-1 — $137. Free Shipping. Check, MO, VISA/MC, AMATEUR ACCESSORIES, 6 Harvest Ct., RD 7, Flemington, NJ 08822, (201)782-1551.

KEYER PADDLES, Iambic, hand crafted for the Elite, with more features, and nicer action. A contest winner. Write E. SNYDER, KA5AEQ, 213 W. Davis, Sapulpa, OK 74066.

SOLAR CELL BATTERY CHARGERS, great for 12 Volt Radio Stations! Panels, Inverters, Regulators, SASE Gene Hitney, W7LFC, Campwood Rt., Prescott AZ 86301.

NOTICE NOTICE: To celebrate our ninth year in business we give a FREE Larsen Antenna to our customers send an SASE for full details (Business size). NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

WANTED: Ham-II Antenna Rotor. Control box unimportant. Rotor must be in good condition, and 8 wire cable. State condition and price first letter. K4TIV, 1207 Barton Street, Johnson City, TN 37601.

COAX CONNECTORS: SO-239 and PL-259. Brand new. 10 for $6.50. LC ELECTRONICS, 10338 Sageplum, Houston, TX 77089.

POOR MAN'S VOICE PROCESSOR/ACCENTUATER for MC-50 microphone — $9.95. KD7X, 405 Whittier, Silverton, OR 97381.

FOR SALE — COMPLETE H.F. STATION. Yaesu FT-101E, FV-101B and Landliner phone patch. Also Telytype station model 19 and 14 with Dovetron MPC-1000 T/U. Ham-M rotator. Will sell all or part, and will ship all but Telytype. Vick Martin, (213)881-1058.

FOR SALE — General coverage Drake station, perfect for MARS. Very clean R4B, T4XB, FS4 synthesizer, AC4, MS4, cables, manuals and spare tubes. $850. Call evenings, (208)232-1521. Dick Clothier, WA7GFD, Rt. 4, Pocatello, ID 83201.

ROSS $$$$ new special Kenwood TR-7950 — $359.90 or $???.??; TS-130SE — $589.90; TR-9500 — $549.90. ICOM AH1 — $234.90; 4AT — $233.90, IC490A — $550.00; IC505 — $385.00; IC701 — $795.00. Yaesu FT-102 — $959.90; FT-901DM — $999.90; YR-901 — $550.00; NC 2 — $59.90. Encomm HT-1200 — $299.90; ST-144up — $275.00 + free goodies. Kantronics Mini-reader — $185.00 with $25 factory rebate. Send SASE for more new specials. Closed Monday at 2:00. ROSS DISTRIBUTING CO., Preston, ID 83263. (208)852-0830.

KENWOOD TR7800 2-meter 25w FM transceiver with built-in TT Pad — $270.00, good condition, Bearcat 210 scanner — $150.00, and NEW Wilson Mark II and IV battery charger — $25.00, all with manuals and original cartons. Dr. Larry Oakley, W7AAA, (702)825-2626.

BUILDING A REPEATER? Complete repeater control panel, General Electric model 4KC19A10, complete with Audio coupler, COS, Drop out delay timer, 3-minute timer, channel guard filter, with manual, clean, $220. Ship UPS. Dr. Larry Oakley, W7AAA, (702)825-2626.

NEW ROHN BPH45G, Hinged base plate for Rohn 45G Tower, now discontinued, cost $129.00, sell for $100.00. Will ship. Dr. Larry Oakley, W7AAA, (702)825-2626.

REAL QSL ECONOMY PRINTING: Order 400, get 200 free. 1 & 2 sided, low cost, quality! SASE to Box 9064-WR, Newark, NJ 07104.

WOUFF HONG WANTED! Preferably large size but any offers considered. Please state condition, size, price and telephone number in letter. C.J. Ellis, POB 73, Huxley, IA 50124.

SWAN 100-MX, combination base, mobile and portable outfit. AC regulated PS with speaker/meter, mobile harness plus 12-volt 7AH ni-cad with charger. All cables/connectors. Mint! $450 takes all. KB4AG (713)493-5199.

DENTRON LINEAR, 1200 PEP, GLA-1000B, used less than 10 hours. Mint! $300. KB4AG (713)493-5199.

WANTED: AUTRONICS PADDLES. Good condition. Bill, N6EIH. (707)255-7600.

QSL CARDS $12.50/500. Free 400-illustration catalogue. BOWMAN, 743 Harvard, St. Louis, MO 63130.

WANTED: 160-10 Transmatch M. Boice, 620 11 Street, Spearfish, SD 57783.

SELLING CW NOVICE EQUIPMENT cheap, Lafayette 6 mtr. xceiver and lots of accessories. 2 mtr. FM crystals for HW-202, List free. Lewalski — W6TRQ, 1200 Alpine, #30-A, Walnut Creek, CA 94596.

KAØOIB WANTS TO EXCHANGE QSL cards with you. My QTH is James Monk, 3228 Reynolds, Independence, MO 64055.

NOTICE — You can have that dream ham station and a high monthly income no relocation necessary. Also we have discounts on 1983 Callbooks and give a free quarter-wave whip with the purchase of a Larsen Magnetic, Trunk, or Gutter Mount ⅝ wave antenna for 2,220,432. SASE for full info. NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

TELETYPEWRITER gears, ribbons, manuals, parts, supplies and toroids. SASE list. Buy unused parts. TYPETRONICS, Box 8873, Ft. Lauderdale, FL 33310 N4TT.

SOLID BRASS BELT BUCKLES. Name or call. One line — name or call — $8.00. Two lines, name and call — $9.00. Add $1.00 postage. S. Slonim, 320 Rose St., Massapequa Park, NY 11762.

GOODMAN, 5454 S. Shore, Chicago, IL 60615 has teletype bargains galore. SASE for list.

ELECTRONIC PARTS CATALOG. IC's, transistors. Send first class stamp to ALDELCO, 2789 Milburn Ave., Baldwin, NY 11510.

MIRROR IN-THE-LID, and other pre-1946 television sets, picture tubes, parts, magazines wanted for substantial cash. Especially interested in any RCA "TRK", G.E. "HM", or Westinghouse "WRT" series set. Arnold Chase, 9 Rushleigh Road, West Hartford, CT 06117. (203) 521-5280.

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send $2 (USA) or $3 (DX) to cover certificate cost. W6LS, 2814 Empire Ave., Burbank, CA 91504.

CODE PROFICIENCY DRILLS are transmitted from WB3IVO, BRASS POUNDERS ARC, each Saturday and Tuesday starting 0200Z on 3560 kcs. Each Saturday and Sunday starting 2000Z on 7060 kcs. Monday thru Friday starting 1930Z on 14060 kcs. Speed ranges from 20 to 60 WPM.

FOR SALE: AEA MBA-RO CODE READER, $150.00. Curtis Morse Baudot ASCII keyboard mod KB4900, see Sept. '81 QST review, $250.00 — manuals, cables, original cartons, perfect condition. Bob, K6SWL, Rt. 1, Box 351-G, Corning, CA 96021. (916)824-3944.

COMPUTER PROGRAMS for Sinclair 8K/1K "Workgrams." Master program, many uses shown, plus 5 ham 2 games with motion and others. Only $8.95 book. COMPUTIT, PO Box 753, Hayden, ID 83835.

BUYING OR SELLING? An ad in **Worldradio** makes it happen FASTER.

WORLD TRAVELERS: Send for your free sample copy of "International Travel News." P.O. Box 160568, Sacamento, CA 95816.

BUMPER STICKERS: "dahdidahdit dahdahdidah" or "Hams Do It With Frequency" — $1.00. D. Mollan, WB7FDE, 7805 NE 147th Ave., Vancouver, WA 98662.

NEVADA — "Silver State Callbook" Over 1800 Nevada Amateurs, and repeater listings. If you need Nevada, you need this Callbook. $3.00 ppd. anywhere. WIDE AREA DATA GROUP, P.O. Box 3132, Sparks, NV 89431, (702) 358-6303.

1983 AMATEUR RADIO WALL CALENDARS, 13.5 x 19.5", for sale at $3.50 each, including USA postage. Ample space for date blocks to note events. Mailed in individual wrappers. Send completed mailing label for each calendar ordered; if it is a gift, show on label you sent it. Order from W6LS, 2814 Empire, Burbank, CA 91504.

WOULDN'T IT BE GREAT? Pick a winner for "Amateur of the Year" at the Dayton Hamvention and get free tickets, too! Write for details — HAMVENTION, P.O. Box 44, Dayton, OH 45401, Attn. Awards. *Do it now!*

WANTED! Clubs' newsletters. Samples. K4CLA, 562-S Oak, Lexington, SC 29072.

HILLTOP PROPERTY FOR SALE. 3½ miles from Grass Valley, CA at 2500 ft. overlooking Sacramento Valley. 80-mile view, low angle in all directions, no tower restrictions, no neighbors and no noise — even on 160! 20 acres @ $2950/acre; 10 acres @ $4800/acre. After 5 p.m. (408)554-6225.

HOSS-TRADER ED SAYS, "Shop around for the best price, then telephone the Hoss last, for the best deal." Big Sale: Demonstrator Drake TR-7A, regularly $1699.00, cash — $1195.00. Display Dentron Clipperton-L linear — $549.00. New Astro-Swan 100MXA five-band solid state transceiver, regularly — $699.00, cash — $399.00. ICOM IC-2A Walkie-talkie — $199.00. Azden display PCS-4000 — $279.00. HAM-4 rotor — $169.00. New ICOM-730 transceiver, regularly — $829.00, cash — $639.00. New Drake TR-5 transceiver, regularly — $1095.00, cash — $635.00. ICOM 25-A — $289.00. Used 830-S — $695.00. New Drake L-7 linear — $895.00. New KDK Model 2030 two-meter transceiver — $259.00. HYGAIN ANTENNA SALE: TH5DXS — $209.00; TH3MK3 — $197.00; TH7DXX — $334.00; 204BA — $175.00. MOORY ELECTRONICS COMPANY, P.O. Box 506, DeWitt, AR 72042. (501)946-2820.

SALE — FT ONE W/MD-1 MIKE. Unused. One only. $1965 for both. Don, W6RKT, (415)726-2545.

NEW KDK 2030 — $265.95, Azden PCS-4000 — $279.95. Free catalog on metal detectors. CHUCK'S AMATEUR RADIO SUPPLY, Box 44, Madera, CA 93639. (209)674-1435 daily.

FOR SALE: 1952 HALLICRAFTERS S-76 receiver and Harvey Wells model TBS-50D transmitter 50-watt crystal controlled — Both in working order, good condition — antiques. Contact: Ray Greisinger, 2735 Glendale St., Green Bay, WI 54304. (414)434-2948.

ENHANCE YOUR STATION with Morse display, terminal. "TAIMD" gives ASCII outputs from modulated/unmodulated inputs. Versatile. $169. TELECRAFT LABORATORIES, Box 1185, E. Dennis, MA 02641.

SAROC annual prestige convention, Aladdin Hotel, Las Vegas, Nevada, January 13-14-15-16, 1983. SAROC $17.00 Advance Registration, per person includes, admission to technical sessions and exhibits on Friday and Saturday, Genie Buffet on Saturday and Sunday, cocktail party hosted by Ham Radio Magazine on Friday, ladies to the ladies program on Saturday, Aladdin Hotel room rate of $37.00 plus room tax, single per night, single or double occupancy. Call 1-800-634-3427 for accommodations. QSL to SAROC, PO Box 945, Boulder City, NV 89005-0945 with registration.

SELL: ICOM IC-720A, PS—15, AM filter, BC-10, EX-2, microphone. Excellent; 8 months old; Asking $900.00 KA4SEU. Atlanta. (404)926-7726 days. J. Gilleland.

SELL FRG-7 YAESU HF Communications receiver, like new condition, with manual, in original box. Shipped anywhere continental US by UPS prepaid, after first check for $235. Peter Onnigian, W6QEU, 1236 40th Ave., Sacramento, CA 95822. (916)392-8964.

DRAKE SATELLITE RECEIVER with modulator installed only $969. Satellite and Microwave TV catalog $1.00. TEM Microwave, 22518 97th Ave. No., Corcoran, MN 55374, (612) 498-8014.

GROUND RADIALS WORK — Solve your vertical antenna radial problems with the fantastic ground plane one (GP-1). A 10" diameter, 24-point cast aluminum buss that fits any 2" diameter or smaller mast. Radial problems solved for only $24.95. Send an SASE for photos and brochure. Lance Johnson Engineering, P.O. Box 7363, Kansas City, MO, 64116.

FREE CALLSIGN PIN with each Deluxe Callsign Desk Plate, engraved on 2x8 walnut in elegant gold anodized holder. Second line says "AMATEUR RADIO STATION". $8.20 ppd. Roger Arnold — N5CAO, 214 Hill Lane, Red Oak, TX 75154.

PICTURE QSLs MADE FROM YOUR PHOTO-SLIDES. Get a better return; be distinctive. Price subject to discount. 250 B/W — $23.00. 1,000 full color — $77.00. Write for samples & prices. PICTURE CARDS, Box 5471, Amarillo, TX 79107. 806/383-8347.

IDENTIFY YOURSELF. Personalized license plates, ideal for displaying call, name and city. Discounts for club orders. Send SASE for complete information to Robert Patterson, PO Box 248, Coraopolis, PA 15108.

HANDHELD MOBILE AMPLIFIER PATCH CABLE. 5-ft. RG8U Mini Coax with a BNC one end and a PL259 on the other. $5.75 each (includes shipping). We make RF cables made to order. Write for free catalog. THE CABLE FACTORY, 4313 7th Street N.E., Minneapolis, MN 55421.

ROSS $$$$ USED SPECIALS: Yaesu FT-620 B — $259.00, FT-127RA — $319.00, FV-901D — $259.00; ICOM 255A — $195.90, IC 245 SSB — $259.90, IC701 — $585.00; Kenwood TR9000 — $299.00, TS520 — $419.00, R820 — $580.00. Send SASE for more used specials. Closed Monday at 2:00. ROSS DISTRIBUTING CO., Preston, ID 83263, (208)852-0830.

CASSETTES DUPLICATED: Computer programs, motivational tapes, speeches, any type of non-copyrighted tape duplicated with high-speed machine. One day service using quality tape, custom labels, plastic box, low rates. Send for more details. AUDIO RECALL, WBØOCK, 3501 E. 55th South, Derby, KS 67037.

1983 CALLBOOKS! US — $20. DX — $19. BOTH — $38. Ten or more, any mix, same order, same QTH, $17.00 each. (Postpaid 50 states). Slinky Antennas — $45.00 each (lower 48). Order by November 10th, receive by Christmas. (Check with order.) K4CLA, 562-W Oak, Lexington SC 29072.

FOR SALE — Southeastern Wisconsin, established 2-way radio sales and service business. 160'SS tower, repeaters, test equipment, service vehicle, spare parts, inventory and . . . 3-bedroom Cape Cod home on large country lot. Paul Hansen, agent. (414)692-9297.

FOR SALE: YAESU FT-227R. No mods — $110. Yaesu FT-230R, mint — $225. Both with box and manual. Ship COD. N6BVP, (714)446-2491, eves only.

FOR SALE: MICROLOG RTTY AKB-1, AVR-1 12" monitor xtra Rom mods — Wanted: YO-101 Scope. WA2YXC, 47-39 162 St., Flushing, NY 11358. (212)762-6462.

DELAY BEING A SILENT KEY! Avoid shock! Many uses! The wonderful Wireless Model GFD-1 Ground Fault Detector checks loss of ground at your ham gear and appliances. Meantime enjoy checking; Continuity, Wide range of AC-DC voltage, Audio, Pulse, Static charges, Insulation leakage, Capacitors, most Diodes, Transistors and many other devices. Specs: 20,000 gain AMP operated LED at full glow from 6-220V to probe wtih 2 Megohm isolation. Use two AAA cells. Material: Potted electronics, Threaded chromed brass, Nylon, adjustable pocket clip. Size: ½" x 6" Made in U.S.A. with love and care by Ham and Family since 1976. Shipment or acknowledgment 10 days. Our patent Number 4,006,409. SASE for more info. Check, Moneyorder $12.95 Floridians add 5% Tax. You'll love it or your money back! BERT ADAMS ENTERPRISES, P.O. Box 520143, Miami, FL 33152-0143.

FOREIGN QSL CARD HANGERS, 12-18 pocket plastic holders, card size 4¼ x 6, $10.00 postpaid. RCO PRODUCTS, BOX 7333, Kansas City, MO 64116.

D & V RADIO PARTS — Variable capacitors, miniductors, toroids, etc. Write for flyer, stamp please. 12805 W. Sarle, Freeland, MI 48623.

DRAKE L4B Amp. with Drake improved power supply, $595. Pickup only. Hal, W6LXZ (714) 679-7837.

1982 ARRL HANDBOOK CLOSE-OUT! Only $7.99 while they last (cont'l U.S.A. only). Add $1.00 shipping. Free catalog. THE PARTSTORE, Dept. 140, 999 44th St. Marion, IA 52302.

NEW — KT5B Multi-Band Dipole 80-10 (WARC), Mini-8 Coax $17.25/100'. 450-Ohm Open Wire $14.75/100'. Details — Kilo-Tec, PO Box 1001, Oak View, CA 93022.

EMPLOYMENT

Classified ads for jobs wanted or position offered will be run free of charge in Worldradio's MART.

DELIBERATE & METHODICAL ELECTRONICS TECH. looking for work in the New Brunswick, NJ area. 19 years experience in various aspects of electronics. Have worked for RCA, USAF, Lockheed, Varian & Mattel. First phone with radar. Some college. Ed Jones, Jr. WB2DVL, 26 Phillips Road, Somerset NJ 08873.

OPPORTUNITY WANTED: I am looking for a company with a special need for an industrious, dedicated, tireless worker. 7 years with my previous employer. Interested skills and experience in public relations, public speaking, management, sales, conducting seminars, search and rescue, writing and numerous technical skills. Interested in long term employment. Contact Hart Postlethwaite, WB6CQW, HAPI FLYERS, 1811 Hillman, Belmont, CA 94002. (415) 341-4000.

COMMERCIAL RADIO AND TELEVISION MOBILE UNIT DESIGNER wishes to acquire assignments. Specialize in miniature designs for radio, tv; Live and/or tape, on air or cable, plus have new design for Satellite UPLINK unit featuring a ten-meter dish packaged on a fifteen-foot long trailer. Have assembly facility on-call if requested. Please write; John N. MacInnes, WB1FPD, P.O. Box 4031, Hampton, NH 03842.

SENIOR PROGRAMMER RETIRED FROM UCLA at 62 years young seeks part full or part time opportunity in broadcast data processing in the Los Angeles area to start in Feb. 1983. Have First Class Phone License and 2 years AM and FM broadcast transmitter operator experience in 1949 and 1950, and have been connected with computer programming from 1960 to the present. Bill Ziegler, AE6T, 6934 Enfield Ave., Reseda, CA 91335.