Worldradio

Year 23, Issue 9 March 1994 • $1.25

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Near the epicenter

PHINEAS ICENBICE, W6BF
HANK MAGID, K6YMJ

The upward thrust of the earthquake LA '94 tossed most out of bed at 4:31 a.m., just slightly ahead of schedule. My first reaction was to run out the back door and check the pool water and antennas.

The antennas were fine and the pool water had just reached the house from twenty-five feet away. Although still vibrating, the tower was very secure with three sets of guy wires.

The electricity was off and the mechanical clock was stuck at 4:31 a.m. The kitchen floor was bestrewn with a layer of glass about five inches thick and a peculiar mix of aromas filled the air — spilled vinegar, oils and instant coffee. Both refrigerator doors were open, their contents streaming out like a cornucopia.

The ham shack was covered with two feet of books and papers but all electronic equipment appeared to be unbroken. The portable TV was on top of the heap.

Looking out the back sliding door, a few dozen blocks were shaken off the back and side walls of the block wall fence. My location is about 1.7 miles west of the major catastrophe on Reseda Blvd., where 16 residents were killed in collapsed apartments.

Hank Magid, K6YMJ, ARRL Section Emergency Coordinator lives about one mile from the epicenter. He said it was like riding a bucking machine on high for about 45 seconds.

Hank activated the ARES Emergency Communications Van at San Fernando Valley EC for LA City Fire and carried emergency and priority traffic for LA area hospitals. The following day, Hank drove it to an LA city location just south of the Devonshire Police Station in Northridge for recovery efforts. ARES had in excess of 100 amateurs volunteer for communication services during the period between 17-28 January. **WR**

Shaken awake

LEO KELIGIAN, WB6YES

The date: 17 January, 1994

The time: 4:32 a.m. on a blue Monday morning

We were sound asleep in our home in Encino, CA on the southern end of the San Fernando Valley. All of the sudden, it sounded and felt as if there were several men with jackhammers in our bedroom tearing up concrete.

We quickly learned the meaning of Shake, Rattle and Roll. I rolled out of bed and told my wife, "This quake is a bad one, get under the doorway." Ten seconds later it ended, but it felt like ten minutes. In pitch black darkness, we made our way down a long hallway, climbing over pictures that were now on the floor, heading for the nearest flashlight which by then was covered by the emptied out bookshelves in the family room.

Our power had gone out before I rolled out of bed. As I retrieved another flashlight, we realized we had a lot of damage, and naturally, the main quake was followed immediately by many encores (aftershocks).

We looked around the family room and, of course, it was a total mess. Then it happened! I located my handheld dual band radio, and it had survived! No one would dare harm my handheld! Then I peeked into my ham shack room, and guess what? All the radios were on the shelves, and it appears they were held there by the 4000 cables behind them. They were all HF rigs, three of them to be exact. Also 144, 220 and 440 rigs. Now, of course, these were all useless due to the fact that we had no power.

The good news is I have a complete HF system in the car and also 144, 220 and 440, so I was still in business.

Then came another dramatic, tense moment. I peeked gingerly out the back window to see if my HF tower was still standing, and for the first time that morning, I grinned from ear to ear. It was standing at attention, in good shape. I'd had my doubts because I had installed it myself.

Further inspection revealed two inches of broken glass and dishes on the kitchen floor. Our refrigerator had taken an upright trip, our built-in oven had popped out of its cabinet and the whole house was a terrible mess. Now my wife realized that I wasn't such a messy person after all.

I picked up the phone to call our children, and the phone was dead. Then it was Amateur Radio to the rescue. I got on the 440 repeater with my handheld and called my brother-in-law, Levon Manoogian, K6OA, in Long Beach and asked him to make some calls for me, which he did. We then talked on the repeater. It seems that all the repeater systems were working fine and saved the day.

I was born in Southern California 66 years ago, and this was the worst one yet, but it could have been worse. As the man said, I'm used to it. I didn't have quake insurance, but I'm going to get a large tax write-off. **WR**

Driving through the quake zone

BILL PASTERNAK, WA6ITF

Santa Clarita, CA was a little known city until the Northridge quake put it on the map. This community was cut off from the rest of Los Angeles after the collapse of the Highway 14 overpass onto Interstate 5. There was no power for twenty-one hours. Telephone service, especially out-of-state calling, is still sporadic. Except for Amateur Radio, Santa Clarita was a community isolated from the city to the south.

I got a chance to see the devastation of the Northridge quake firsthand as I drove into work on Tuesday afternoon. A trip that normally takes only 40 minutes dragged on for the better part of four and a half hours. As I sat bumper-to-bumper on a single lane road that parallels Interstate 5, the destructive force of this quake was evident. Everywhere you looked. . . highways torn apart, a fallen freeway overpass, twisted rebar, mashed concrete.

But we Angelenos seem to accept this type of natural fury as being a part of the price we have to pay to live here. So, as I inched my way into the city I also scanned the three most heavily used VHF and UHF bands in the area.

Many repeaters normally alive with chatter were silent. They were victims of being on remote mountaintops that had lost power. Other channels were alive — repeaters whose owners had been smart enough to install battery or solar power to take over when city power failed. Each was loaded with some sort of quake-related traffic. 147.705 was dedicated to working with the Red Cross, and still is. 146.79 was holding forth with Santa Clarita Valley Emergency Communications. 224.52 and 224.58 were providing road closure information. 224.52 was also making its autopatch available for health and welfare calls. The number of repeaters taking part is a list far too long to report here. These are just a few that I heard personally.

Later in the afternoon I used the ham station at work to scan the high frequency bands. Emergency communication nets were everywhere on 75,

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Amateur Radio meets the challenge

Hamshake — Los Angeles style

JIM BOGDAN, WB6IMV

Mother Nature's alarm clock went off at 4:31 a.m. on Monday, 17 January in Los Angeles and in seconds the lifestyle of millions of people changed. This was the dreaded event for which the more than 1,700 Amateur Radio operators of the Los Angeles County Disaster Communications Service (DCS) had been preparing over the past 40 years. The earth shook like a wet dog in waves that traveled outward to violently shake all objects attached to the earth.

It was dark at 4:31 and all power instantly disappeared in the areas near the epicenter. Individuals and families found themselves amidst piles of debris that were once their living quarters and furnishings and now formed the barriers to escape in total darkness.

Everyone in the Los Angeles area knew that a major event had taken place; however, no one knew where the areas of greatest damage and greatest need were located. With all phones and other utilities out, residents had no way to call for help and the rescue units had no way of knowing where to respond. Panic reigned in the darkness and debris.

Jim Bogdan, WB6IMV, and XYL Carolyn, N6YKU, were far enough from the epicenter to retain commercial power and suffer little damage. Within two minutes after the shaking stopped, they alternated to start the DCS emergency network to provide help and locate the major areas of damage.

The first report of serious and life threatening damage came within three minutes when an amateur reported his building was so seriously damaged that all the doors were jammed shut and the many elderly people inside were trapped. He needed help and was in the process of breaking down doors to free the residents before the aftershocks arrived. Information on the location was taken and immediately sent via 911 lines to the Los Angeles County Sheriff by Tom Bogdan, N6YKO. This one call instantly located a major damage area as a target for emergency services. The media and many of the emergency services had to wait as long as 30 minutes for a report on the epicenter before they could determine the general area of disaster.

With all power and phone lines out in the major damage areas and the 911 system totally overloaded by calls from residents who still had phones in the surrounding areas, confusion reigned. The net was continued while DCS members rushed to man their assigned posts.

Sgt. Larry Bryant, N6YLA, the member of the Sheriff's Department assigned to coordinate DCS, was operating from his vehicle as he was driving to his post in the Sheriff's Emergency Operations Center. Larry requested that the net be turned over to Larry Kinney, WA6HQB, and other DCS members who had arrived at the Temple Sheriff's Station, and assigned Jim and Carolyn to the EOC. From all parts of the city and surrounding areas, DCS members were rushing to man stations as they had practiced for so many years.

Freeway ramps and overpasses were

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Quick assistance to Blood Bank

JIM RICH, N6SZQ

The deadly earthquake that struck Los Angeles at 0431 on 17 January created an instant jump in the demand for blood supplies. It also knocked out long distance phone service to the Los Angeles Blood Bank. Fortunately, the California Blood Bank System has an Amateur Radio net to help provide communications during such disasters. Unfortunately, at the time the quake struck, the L.A. Blood Bank had neither Amateur Radio equipment nor ham radio volunteers to support it.

Nonetheless, innovative Amateurs representing four different organizations were able to establish communications with the L.A. Blood Bank and pass emergency traffic long before phone service was restored. It began soon after the quake hit, when amateurs with the State Office of Emergency Services established a statewide net on 7.230MHz. Net control was Howard Shepherd, Jr., W6US, in McArthur, CA. By 0630 I had arrived at the Sacramento Blood Center, where HF and packet radios are operated as W6AK by volunteers from the Sacramento Amateur Radio Club. I soon had the station on the air.

The Sacramento Blood Center helps coordinate emergency blood shipments for all the CBBS banks. The Center's Richard Kayser needed a status report from the Los Angeles Blood Bank, but could not reach them by telephone. Our best chance to contact them was to have a local ham try to phone them. I contacted Howard at W6US and gave him the message and phone number. Howard put out a call on the OES net. It was answered by Ron Lantz, K6CJM, at the Southern California Edison station. After several tries he reached the L.A. Blood Bank and relayed the message. He soon came back to W6US with an urgent request from the bank: their inventory was low and they needed every type of blood, particularly O+ and O-. The blood should be flown into the Burbank Airport.

During the next hour and a half W6AK, W6US and K6CJM worked to relay messages between the Sacramento and Los Angeles blood banks, so as to coordinate the shipment of blood. Craig Rutledge, KB6XV, arrived at W6AK around 1030. Richard then asked us to contact the Bakersfield Blood Bank. Craig transmitted the

(please turn to page 7)

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Girl Scouts feature Amateur Radio

ARLINE F. BERRY, N1OMA

The Girl Scouts are beginning to come of age in the world of Amateur Radio. A special events station, using NØYL, was set up at the 46th National Girl Scout Convention in October in the Minneapolis, Minnesota Convention Center. And the ARRL had a booth there, where participants were given a new brochure promoting Amateur Radio as a Girl Scout activity. Twenty-five operators from the 33s, a local YL club, helped operate the special events station during the exhibit hours.

The YL special event station sent many radiograms to friends and relatives. Contacts on HF included Alaska, a Boy Scout special event station in Chicago, as well as stations in the south, midwest and far west. More than 47 stations were contacted on the 2M band.

A packet station, as well as an HF and 2M rigs were included as part of the overall special events equipment. Ann Foster, NØLLC, was in charge of setting up the station, recruiting operators and arranging the loan of equipment.

A large poster of the world with call prefixes highlighted was on display with a listing of the many activities available in Amateur Radio and some sample QSL cards. The display was made by Fran Warzeha, NØOKY, Terri Jacobson, NØOEK, and Audrey Zellman, NØOKX.

The new flyer was given out to more than 500 Girl Scout adults from around the United States. Questionnaires requesting information on Amateur Radio were returned from 23 states.

Arline Berry, N1OMA, is from Medfield, MA, near Boston. She was in charge of the 46th National Girl Scout Convention, and she has taken on the challenge of promoting Amateur Radio for Girl Scouts. She is developing printed materials. She thanks the ARRL for sponsoring a booth and supplying printed materials for the Girl Scout event. **WR**

Food drive for earthquake victims

On 20 January, 1994 the Sacramento YL net hosted a food drive for the Los Angeles earthquake victims. Even though it was a last minute operation, they had a very nice turnout of Amateur Radio operators.

Participating in the event are the following: Jon Allman, KD6MDP; Troy Baker, KD6HOJ; Arthur Clark, KD6GBY; Steve Douglas, III, N6TLD; Anthony Hernandez, KN6NG; Lee La Clair, KD6WCZ; Mildred Martin, KD6QED; Carlos Perez, KD6EFN; Roy Rudebaugh, KD6LLE; Norm Smith, WB6PLP; R. Michael Stickney, KM6PX; Richard Wilkins, WB6EDR.

Control opeators of the net were Beth Murphy, KD6CDR and Julie Porten, KN6UV. — *Submitted by Patrick Schamun, KC6ZEA* **WR**

Call for papers

The technical committee of PACIFICON '94 is calling for technical papers for presentation at the Pacific Division Convention. Any topic of interest to the Amateur Radio community will be considered. The committee is particularly interested in experimental areas in Amateur Radio, but special attention will also be given to emergency preparedness topics. Everyone is encouraged to submit topics for presentation. PACIFCON '94 will be held in Concord, California, 21-23 October 1994.

Submit a summary description to Technical Committee, PACIFICON '94, P.O. Box 272613, Concord, CA 94520. Selected topics will be presented at PACIFICON '94. For more information call the PACIFICON hotline at 510/932-6125. **WR**

West coast military radio collectors net

A new net meets on 3.905+/- QRM Sundays at 0000Z. As the name suggests, it is presently on the AM mode. Listen for net controls WA6OPE or N6FEG. **WR**

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•

An Amateur Radio magazine was writing about when "Sig, 9Q5EE" was forced to leave Kinshasa, Zaire. Due to fighting in the city the U.S. Embassy sent its people out of the country.

The question is: Who is "Sig"? Is that Sigfried? Sigmund? Sigafoos?

No it was my old pal, Charles Signer, WA9INK.

The night of the fighting I was watching the TV news reports in my hotel room in Dakar, Senegal. The Belgian paratroopers were rescuing people and putting them on boats.

I was watching all this and wondering if any of those figures being evacuated was Signer.

Signer, quite a good CW operator, has given out contacts from many of the more obscure corners of the earth.

But the point of all this is: Let's use amateur's first and last names in magazines and newsletters. Yes, Charles Signer is rather well known to some (but not all) as the ramrod (due to his language and diplomatic skills) of that Clipperton DXpedition nearly 20 years ago, but I feel that many of the interested had no way of connecting the past and present.

Signer would try to schedule his home leaves (from some country that not only counted as a "hardship post" for extra pay but was also a rare DX spot) to coincide with the DX Convention at Visalia and Dayton. We'd grab a sandwich and some coffee and he'd spin his tales and show me the latest GMT watch he had bought.

So if you see the smiling WA9INK somewhere stop and chat with him. That's Charles Signer, the globe-trotting "Sig."

•

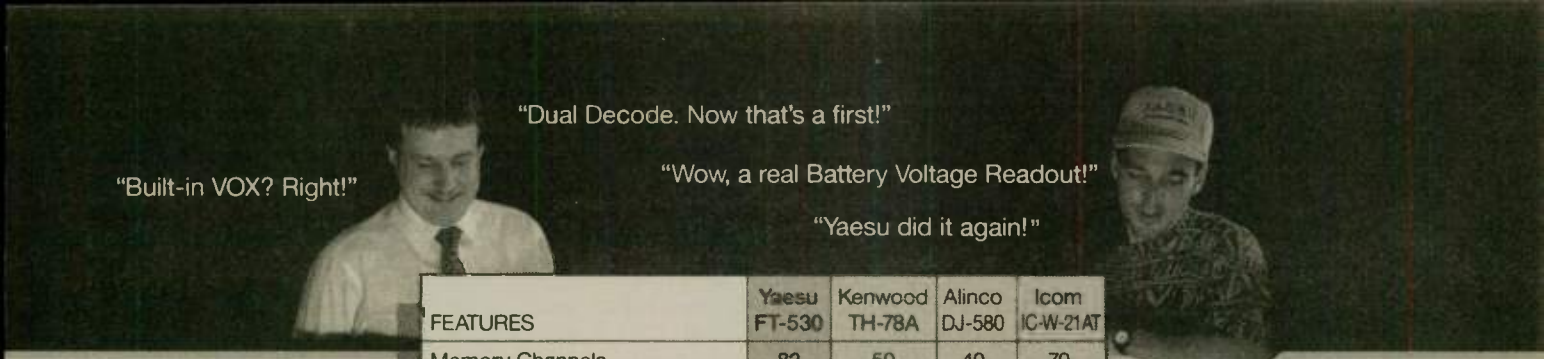
One of the greatest dreams of DXers is to be on the other end of the pileup. Preferably in some nice country where the above where bullets are whizzing about downtown, fired by the army that is supposed to be protecting its country.

For $28 Craig Maxey, KH8AL, 9820 S.W. Dapplegrey Loop, Beaverton, OR 97005, will send you his book which (over 300 countries) has all the application forms, vaccination requirements, where you can operate, and a lot more. For those who prefer to soak up the sun in the Caribbean only, that book is $18.

•

I first met that master DXpeditioner Lloyd Colvin, W6KG, in 1969. At the Pacific Division Convention (which was held in Sacramento that year). I put on a slide presentation about my operation as VK9AM on New Britain. He was gracious enough to come up afterwards to say how much he had enjoyed it. For the past 22 years ***Worldradio*** has reported on their many travels.

I used to say that in what he and Iris, W6QL did, they were in first place and there wasn't anybody in second or third place. Stop for a moment and really look at the magnitude of their accomplishments. —*Armond, N6WR*



FEATURES	Yaesu FT-530	Kenwood TH-78A	Alinco DJ-580	Icom IC-W-21AT
Memory Channels	82	50	40	70
Slide-out Lithium Battery	YES	NO	NO	NO
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Battery Voltage Readout	YES	NO	NO	NO
Automatic CTCSS Tone Search	YES	NO	NO	NO
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One Touch Reverse Button	YES	NO	NO	NO
Dual In-Band Receive (V+V, U+U)	YES	YES	NO	YES
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FNB-27	600 mAh Battery (5 watt)
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CSC-56	Vinyl Case w/ FNB-25
CSC-58	Vinyl Case w/ FNB-26/27
E-DC-5B	12 VDC Adaptor
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Hamshake

(continued from page 1)

down, roads were cracked, gas and water lines were broken, power lines were down and fires raged out of control in the damaged areas. Travel was dangerous in many areas and many buildings were unsafe. Aftershocks numbering in the hundreds continued to destroy the weakened structures.

Dan Kirby, WA3OUD, a DCS Staff Officer, headed for the nearest DCS station in Santa Clarita. Dan reported driving over six-inch gaps in the roads.

Conditions in Santa Clarita were bad with buildings destroyed and all roads to the south cut off due to the collapse of the major freeway overpasses.

At Santa Clarita, Jim Molenda, AB6EX, the City Radio Officer, and James MacLean, KA6VJF, soon had the DCS network activated with the help of local DCS members. The entire area was cut off from the help it needed and traffic of lifesaving importance was relayed to the Emergency Operations Center through the DCS system.

Help in the form of a caravan of DCS operators and a mobile command post was sent from the Walnut Sheriff's Station under the direction of Steve Leichter, KB6YYW. The only access to this area was a roundabout route that bypassed the damaged roads to the south and entered from the north four hours later.

Within a short period of time, the DCS network was fully operational and the amateur in charge of DCS, Bill Marple, AA6ZW, had arrived after his frantic drive from San Diego, where he had spent the weekend. Bill relieved Mike Hasenfratz, WA6FXT, who had been supervising the DCS Net Control Station located in the Sheriff's Communications Center, and then continued to work for the entire week on just a few hours' sleep here and there when possible.

Several members were staffing this station at all times and the volume of traffic was beyond belief. With the experienced help from Bob Zeiter, W6NAA, Nick Nicholson, W6HRD, and others, the 24-hour schedule was maintained.

Hospitals in the quake area were either extensively damaged or without phones, water, power, supplies and personnel. As the hundreds of injured arrived for emergency treatment, hospital staffs were overwhelmed and without any means of asking for aid.

The RediNet radio system that was professionally designed to link all Southern California hospitals for mutual aid purposes in just such an emergency was based on a microwave system that failed immediately when the shaking shook the dishes out of alignment in the stricken areas.

The Kaiser chain of hospitals in Southern California was prepared and immediately bypassed the non-working RediNet system by using the DCS 2M repeater. Kaiser had been practicing for years for such an emergency and had installed Amateur Radio equipment in all their facilities. Kaiser had been running bi-weekly drills involving all hospitals over the DCS repeater for years and practicing for just such an event.

Due to the foresight of the Kaiser administration, they were able to establish immediate contact with their hospitals in the quake area, and had the necessary personnel, water, supplies, emergency generators, and requested assistance on the way before the other hospitals could establish contact with the world outside the devastated area.

Paul Seltzer, W6BDH, a DCS member and an employee of the Kaiser hospital in Bellflower, arrived at work shortly after the quake to find that B.J. Nordquist, N6WQE, was in contact with the damaged facilities and had started the process of mutual aid.

Granada Hills Hospital was in the quake area and was cut off from the world due to lack of communications when a DCS operator arrived with his HT. The hospital was immediately placed in contact with the EOC and needs were relayed. More DCS members were requested at this site to provide internal communications as internal phones and paging systems were not operational.

Amateur Radio was used not only to communicate with the EOC but to provide the necessary communications between floors, and from operating rooms to triage units, that were needed to keep this vital facility operational. This scene was repeated over and over again all throughout the damaged areas in widely scattered parts of the County of Los Angeles.

Early in the evening on the first day of the quake, Jim Bogdan, WB6IMV, and JaMi Smith, KK6CU, were on duty at the Sheriff's Communications Center when a sergeant assigned to keep the SCC running approached and asked who was the DCS member who could do direction finding. JaMi is the expert D.F. man in the group and volunteered his services. The problem involved an unmodulated signal that was blocking the main access channel to SCC. JaMi was given the commercial D.F. equipment used by the Sheriff's department, a vehicle to mount the equipment in true ham fashion with JaMi building the necessary connection cord out of a headphone cord while Jim located the needed power cord in his truck. Within an hour JaMi had located the interfering signal coming from the vacant Van Nuys County courthouse. When the small group entered the building, they discovered file cabinets and furniture thrown all over and water running from the ceilings. The interfering trans-

mitter was found to be one of the Sheriff's transmitters with the control head and microphone off the desk and in a pool of water. This unit was turned off and the SSC access channel was cleared again for use. Everyone was elated as this transmitter could have been keyed for days until the cleanup crews entered.

The DCS repeater system that was invaluable to the communications in this operation consists of a Los Angeles County owned and maintained repeater on 145.30. This was recently rebuilt and backed up with a complete second system by Jack King, KJ6HA, who is a county technician full time and a DCS member on his off time. The remainder of the DCS system consists of repeaters on 147.27, 224.3 and 1285.3. These machines are designed, constructed, maintained and fully paid for by the volunteers of DCS. A packet radio system consisting of four linked 1200MHz packet repeaters at four sites were designed by DCS members and installed by the county to link all sites in the system.

Wayne Maynard, WB6BFN, is the staff member of DCS assigned to design, construct, install and maintain these repeaters with the help of Jack King, KJ6HA, Jim Bogdan, WB6IMV, Dennis Soja, KB6NJF, Mike Hasenfratz, WA6FXT and other assorted members who show up for work parties on the mountain. Dennis, KB6NJF, designed and supervised many work parties to earthquake-proof the system just two years ago. This included an elaborate 1300 amp-hour battery backup system, two 150 amp chargers, new racks and full earthquake bracing for all parts of the system. The several weeks of work involved in this project paid off when the system survived the quake and the repeaters never missed a beat. The scientists estimate that the mountains moved as much as 12 feet vertically during the quake and settled to an average of four feet higher after the quake.

When Wayne, WB6BFN, JaMi, KK6CU, and Jim, WB6IMV, drove to the repeater site two days after the quake to check for damage and battery condition, everything looked exactly as it was before the shake. During this trip, two new antennas were installed. Working on a tower with the possibility of a strong aftershocks is thrilling to say the least. The possibility of a strong aftershock creating a rock slide that would block the only exit from the mountain made work proceed at a record pace.

Disaster is not selective and some DCS members who lived near the epicenter of the quake had damage within their homes that ranged from tipped furniture and cupboards emptied to total destruction of all interior furnishings and structural damage. Dean Coulter, NØCGW, had severe structural damage but was on the air volunteering to take a DCS shift at the Granada Hills Hospital. Bill Johnston, WA6RPV, had the entire interior of his home smashed and lost everything that was breakable and even some things that were not breakable. Everyone involved is still acutely aware of the fact that this was not the BIG ONE.

Many DCS members worked long hours for many days on this operation and could not be individually recognized for their efforts due to the large list that is far from complete. More stories of the efforts of this group will be collected and submitted to give the recognition and provide the learning experiences that will help others involved in disaster aid to become aware of the unique situations that must be planned for and dealt with in any large-scale event. **WR**

Blood Bank

(continued from page 1)

request to W6US, who put out a call for someone who could make a local phone call into Bakersfield. The request was answered by Don Fullington, AB6AE, at the PacTel Amateur Radio station in Modesto. He used a special telephone line to reach the Bakersfield Bank and relayed the message.

The first cellular phone call from Los Angeles was received at 1130, and by 1230 Craig and I were given permission to close down W6AK. We agreed to redouble our efforts to help recruit amateur volunteers to support each of the CBBS blood banks, so that the next time disaster struck we could quickly establish direct radio links between all the blood banks.

Contact the author at 916/361-7684 if you would like more information about the CBBS net. **WR**

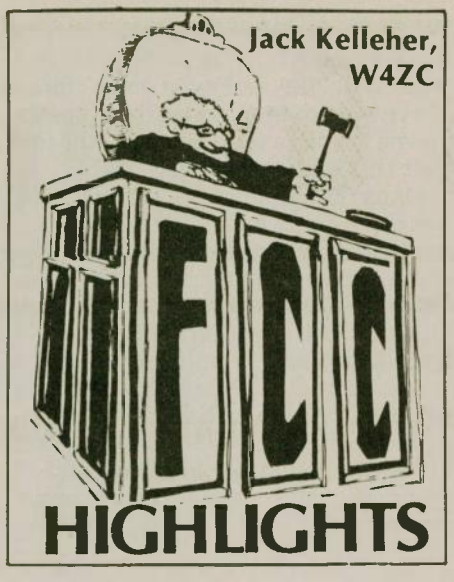
Driving through

(continued from inside front cover)

40 and 20 meters. Most were associated with the ARRL's Amateur Radio Emergency Service. Each was handling a myriad of health and welfare messages into and out of the Los Angeles Metro Area.

As we went to air, many of these nets were still on the air. Telephone service was returning to normal and many Amateur Radio assistance operations would soon be winding down, but the ongoing aftershocks of the Northridge quake are a constant reminder of what it costs to live here in the southland, and it's why being a ham can be vital to your very survival.

—from Newsline Report #858, Courtesy of Amateur Radio Newsline **WR**



A vanity call sign system

On 29 December, 1993 the FCC released a Notice of Proposed Rule Making (NPRM; PR Docket 93-305) on amendment of the amateur service Rules to implement a vanity call sign system. This NPRM marks the beginning of action on the long-awaited general solution to the matter of requests for "special" call signs.

The Notice says, in part: "Information age technology is providing the capability to administer a vanity call sign system and provide better and more friendly service to our customers. The Private Radio Bureau's Licensing Division will soon be installing a new automated licensing process that will provide greater flexibility in licensing. With the added capability, we can now propose to amend the rules to implement a system whereby amateur station licensees could select call signs of their choice, provided they are not already assigned. This vanity call sign system would be in addition to the current sequential call sign system that we would continue to use for those applicants who do not want a vanity call sign."

Applicants for a vanity call sign would list a maximum of ten call signs in order of preference. The automated process would compare the applicant's list with the assigned call signs in the groups designated in the sequential call sign system for the applicant's class of operator license. The first available call sign from the applicant's list would then be assigned. If none of the call signs listed are available, the automated process would reassign the call sign that the applicant had vacated. The vanity call sign(s) listed by the applicant must be within the framework of the sequential call sign assignment system, wherein certain groups of call signs are designated for each class of operator license. Applicants, therefore, could choose call signs from the groups corresponding to there license classes or lower license classes.

The Appendix to the NPRM includes proposed new text for Section 97.19, to be titled "Application for a vanity call sign (existing Sections 97.19 et seq would be renumbered).

The deadline for comments is 7 March, 1994, and for reply comments, 7 April, 1994.

The proposed action overtakes and supersedes an earlier Order (11 May, 1993) amending the amateur service rules to establish call sign administrators for club and military recreation stations. Consequently, the earlier Order was rescinded by Memorandum Opinion and Order also dated 29 December, 1993.

FCC warns uncoordinated repeater

According to Westlink Report dated 15 December, the Los Angeles FCC office has sided with a group of simplex operators who claim that they are suffering interference from an uncoordinated repeater. In a warning letter dated 10 September to Miguel A. Ramirez, who the FCC views as the legal license holder of the NH2R repeater, Engineer-in-Charge, James R. Zoulek noted that his office continues to receive complaints regarding Ramirez' "non-coordinated operation on several amateur frequencies."

Code-free ham survey in UK

The paucity of FCC news this month allows us to use the remainder of this space for an article concerning the reaction of some UK amateurs to an RSGB (Radio Society of Great Britain) survey on whether Morse code should be a requirement for access to HF. The full text of the item appears in the W5YI Report for 15 December; which is in turn based on an article in the December 1993 issue of Radio Communications, the official journal of the RSGB.

The RSGB survey resulted from a request by the UK Radiocommunications Agency (RA) to conduct a "Consultation exercise" (The RA is the UK government telecommunications

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of the first of January 1994.

For more information about the call sign assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325-7245.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0PX	KG0KT	N0ZVT	KB0LNT
1	AA1IF	KD1TF	N1RBP	KB1BEY
2	AA2QX	KF2TH	N2XPB	KB2QVK
3	AA3GT	KE3LP	N3RFS	KB3BAB
4	AD4OO	KR4KT		KE4IUQ
5	AB5SB	KJ5UA		KC5EUX
6	AB6ZM	KN6XD		KE6EJD
7	AB7AT	KI7UQ		KC7AEN
8	AA8NR	KG8GG		KB8RAN
9	AA9JX	KF9TH	N9VWX	KB9IWO
North Mariana Is.	AH0W	AH0AQ	KH0CK	WH0AAY
Guam	NH2Z	AH2CU	KH2IM	WH2ANI
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6NE	WH6QU	WH6CRB
Kure Is.			KH7AA	
American Samoa	AH8H	AH8AG	KH8BB	WH8ABB
Wake Wilkes Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska		AL7PM	WL7PP	WL7CHL
Virgin Is.	WP2D	KP2CC	NP2GY	WP2AHU
Puerto Rico		KP4WC		WP4MMN

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Department similar to our FCC).

The RSGB sent a press release to UK amateur radio magazines with a deadline for response. 1,413 replies were received — about 2.4% of Britain's 60,000 licensed amateurs. A two to one majority of replies favored retaining the code test as a means of access to the amateur bands below 30 MHz. It is noted that the majority of those favoring retention of the Morse code were Class A (telegraphy-proficient) licensees, whereas the majority favoring doing away with the test were Class B (predominately no-code) amateurs.

Those favoring retention argued that:

• Abolishing code would reduce the status of the amateur service;

• Standards have already dropped and they do not wish to see a further erosion;

• Abandoning the code would lead to a reduction in the challenge of amateur radio and a lowering of standards. The training process requires a degree of struggle which is a measure of commitment, and more commitment leads to better on-the-air behavior.

• Morse is an important part of ham radio's tradition;

• Morse is an inexpensive way to communicate, especially for beginners and those in developing countries'

• Morse provides the only true common language between radio amateurs;

• Congestion. . . . the bands above 30 MHz are more adaptable to code-free hamming due to frequency reuse. . . because of the scarce and therefore rather precious nature of the HF bands, it is necessary to have some restraint on their use.

• Overcrowding tends to leads to bad behavior because of frustration. Currently the world amateur population is some 2.4 million with a growth rate of 7% per annum. Given that the amount of spectrum available to the amateur service below 30 MHz is unlikely to increase at the rate of growth of amateur radio operators, it seems that some limit must be placed on access to the HF bands.

• Morse code is an enjoyable art form. Morse may not be the fastest means of communication but to use it skillfully is very worthwhile to the individual;

• Many SSB operators believe that if the Morse code test were abandoned, overcrowding of the SSB bands would lead to a loss of usable CW spectrum which is presently maintained through voluntary band plans;

• Abandoning the Morse test would lead to cancellation of reciprocal operating agreements with other nations;

• In general — Morse is more efficient (less bandwidth) — easier to copy at low signal strength — simple (non-complex) — effective with low power — understood internationally due to Q-codes — lowest common denominator for emergency communications.

Those wishing to see a code-free license said:

• The Morse test is seen as a barrier to those who would take up amateur radio. Eliminating the test would open up the hobby to far more people who in turn would insure its future growth;

• The Morse test discourages many young people who would bring their computer and associated interest to the hobby;

• The demise of Morse code in the commercial world of radio indicates that Morse is no longer relevant to the amateur environment;

• Crowded bands would necessarily lead to advances in technology;

• There is no need to qualify in something which an individual never expects to make use of. . . Morse code, like any other mode, should attract people by its merits

• There should not be a practical test for one mode and not others. Dropping Morse code does not prevent those so inclined from learning it.

• Some people simply can not learn the code or have no aptitude for it. . . it is a problem for disabled persons. . . the code requirement discriminates unfairly.

• Some countries (such as Japan) operate HF with reduced privileges. . . this has given rise to a very large amateur population in Japan;

• The code is being retained because those who have already passed the code do not want to feel that something can be had for nothing;

• It should be possible to obtain a license for certain modes only.

The UK has two grades of license (Novice, both code and no-code, and Full) and many British amateurs would welcome additional grades with various sets of qualifications so that each individual could decided which privileges they want. The RSGB is in the process of considering a system of incentive licensing.

Author's note: Beauty is in the eye of the beholder. WR

OES Earthquake response

JIM FELTS, W6RQO

On the morning of the 17th of January at about 0515, my telephone woke me. I was informed by Stan Harter, KH6GBX, California RACES/ACS Program Coordinator, that Los Angeles had just been struck by an earthquake of 6.6 magnitude. I was instructed to report to him at the Telecommunications Branch of the Governor's Office of Emergency Services, just as soon as possible.

Upon arrival we began to call in our radio operators. While waiting for the "call in" operators to arrive, I activated the California Emergency Communications net. Most of our people were already on frequency, awaiting instructions from our NCS, Sacramento Army Depot, W6SIG. The call-up was on 17 January and these operators are still standing by, if and when needed. The Communications Center of Office of Emergency Services operated flawlessly. We were informed later that first day, that the epicenter of the earthquake was in Northridge in Los Angeles County.

Emergency response and recovery operations continue on this earthquake. To give you a perspective on the scope of the event, here are some figures extracted from the Governor's most recent Situation Report.

1. Confirmed casualties for Los Angeles, Ventura, and San Bernardino counties: 9,000+ (1,500+ admitted to hospitals) and 57 deaths.

2. Among mobile homes: 5,600+ damaged, 950+ shifted on foundations, and 180+ destroyed.

3. People in shelters: in official shelters 5,700+; in tents near official shelters1,000+; in National Guard tents 1,800+.

4. "Boil water" orders remain in effect throughout much of Los Angeles County as a precautionary measure. Testing of water systems continues.

5. CalTrans has cleared many downed freeways, although full restoration remains many months away. Repairs continue around the clock. For updated information, call 800/427-7623.

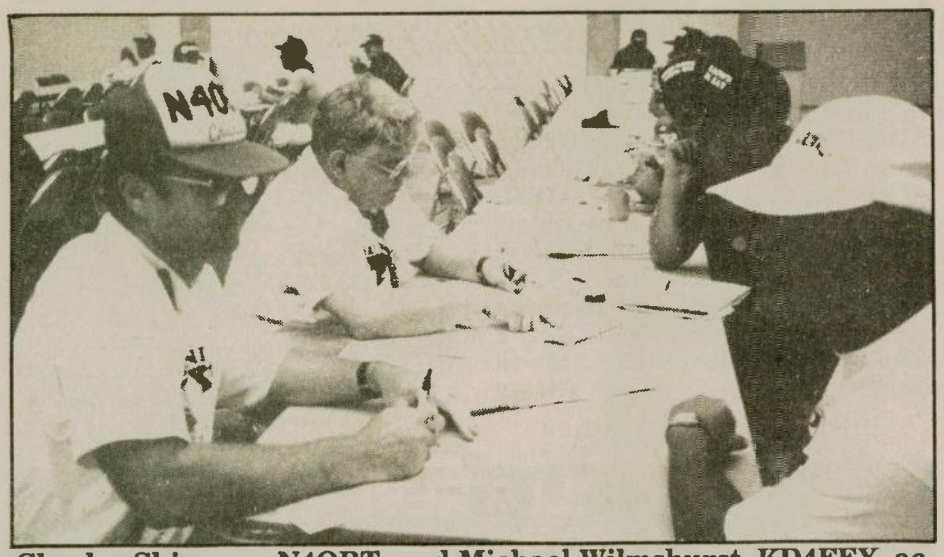
6. Over 2,500 aftershocks have followed the earthquake, further damaging buildings weakened by the main shock.

Below is a list of just a few radio amateurs who assisted in the first 48 hours, (three shifts a day):

Stan Harter, KH6GBX; Jimmie Felts, W6RQO; Noel Bartelson, KA7EZO; James Crawford, EAGLE 165; Keith Crandall, K6QIF; Cary Mangum, W6WWW; Leslie Ballinger, WA6EQQ; Mike Allen, W6UIC; Rogers Peeples, KD6FBF; David Seiler, KD6PSD; Phil Knokel, KD6THN; Steve Cates, KC6TEV; Glenn Fleming, KC6WQD; Paul Hawkins, WB6OAT; Bob Meyer, K6RTV; Carol Dulay, N6WCV; Lindsey Mathison, N6RMV; and John Hansen, KC6CEP.

These are but a few who assisted in the beginning of operations. To each of them my personal thanks for a "Job well done!" **WR**

IT SAYS HERE THAT "MOONBOUNCE" RETURN SIGNALS HAVE BEEN GETTING MUCH STRONGER.



Charles Shipman, N4OBT, and Michael Wilmshurst, KD4FEY, accept traffic from homeless veterans. — ***photos submitted by AH6KY***

Florida hams help hard-luck vets

ANN SHAVER, AH6KY

"We owe our veterans recognition and appreciation for our way of life today. I'm glad we amateurs could contribute something toward helping those who are down on their luck," remarked Michael Wilmshurst, KD4FEY, who was born in England during the latter part of World War II. "Stand Down Tampa Bay lets them know we care."

Organized to provide an array of social and medical services as well as food and shelter for a full weekend, Stand Down Tampa Bay reached hundreds of homeless or needy veterans in a four-county area in Florida. Representatives from numerous state, federal and private agencies set up temporary offices in St. Petersburg's Thunderdome, bringing a variety of services to men and women who have served their country in the armed services. Local restaurants provided three hot meals daily, barbers helped with grooming needs, clothiers donated new and used clothing and tailors made alterations as necessary. Amateur Radio operators helped coordinate activities among the providers and also solicited meetings for families and friends, forwarding them via the National Traffic System (NTS).

"It was a lot of work, and it was worth it!" Bob Davis, N4ZML, summarized.

"Imagine a disheveled, homeless fellow, walking in with blurry vision and leaving clean with a haircut and new, prescription glasses. That's pretty dramatic!" observed Al Shaver, AH6KX.

"Tampa Bay Stand Down is one of five or six similar events held around the country," Davis explained. I'm active in veterans activities here and when they decided to put on Stand Down, I knew Amateur Radio operators should be involved."

"Stand Down," incidentally, is a military expression for a period of relaxation during a time of tense, often dangerous activity. Tampa Bay Stand Down, then, aimed at providing needy ex-service persons respite, relaxation and companionship as well as assistance with specific problems such as housing, income and medical care.

Minimizing hassles

"These people get hassled enough every day as it is," continued Davis. "Let's say a person has a problem with his service records or needs to have an eye exam or should talk with an employment counselor. Before we send him clear across the Dome to resolve his problem, the ham can make a quick call and determine if the appropriate individual is available right now.

"Many of these vets are not in good health. At the medical tent, hams may also have to call for an ambulance or communicate other messages."

Although dental services were provided, there was not a dental clinic at the Thunderdome. Vets were transported by bus to cooperating clinics and amateurs assisted with scheduling passengers and departure times for the buses.

All in all, Stand Down was quite successful in resolving many lingering problems for several individuals. One veteran of both World War II and the Korean War remarked that he had been able to iron out a problem he had been working on for seven years with the Veterans Administration. Another mentioned that he had been able to secure permanent housing to follow his impending release from a halfway house. Just as important, many said that for the first time they felt that people cared.

Reinventing the wheel

Stand Down organizers expected at least twice as many veterans to attend the three-day event. Working through St. Petersburg Amateur Radio Club (SPARC), Clearwater Amateur Radio Society (CARS) and the Metropolitan Repeater Association, Davis interested more than 30 hams in helping. When it turned out there appeared to be more helpers than jobs for them to do, Davis remembered a traditional function of Amateur Radio.

"I guess you might say I reinvented the wheel," he laughed. "Every night on the SPARC net we take traffic for the NTS. It dawned on me that some of the vets might want to send greetings to their loved ones."

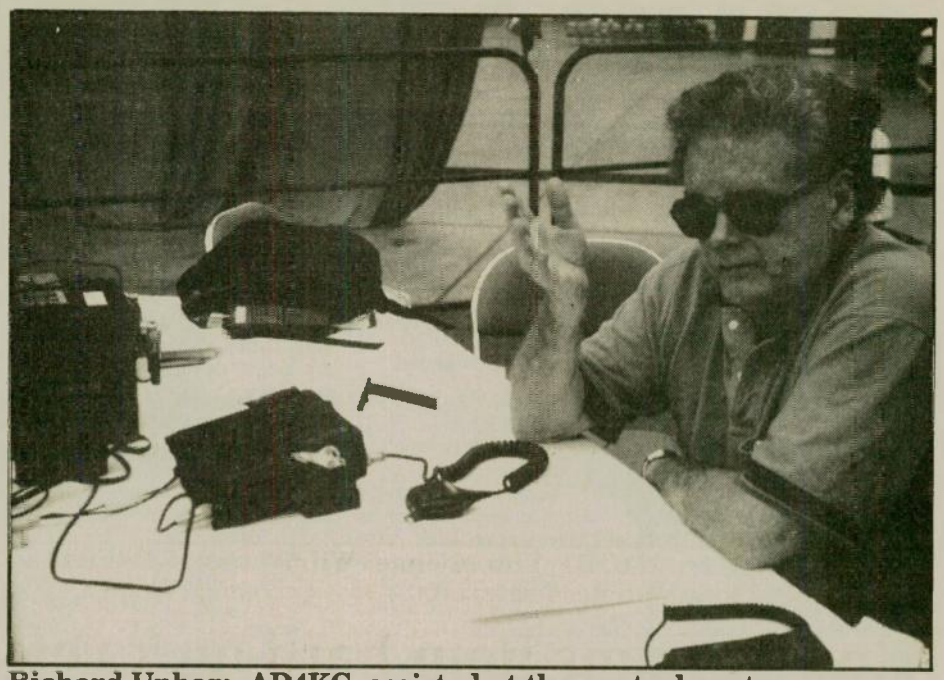
After a short period of brainstorming, Raymond Lee, WB4TEJ, and others developed five basic messages that vets might wish to send, similar to the ARRL numbered messages. Having

ready-made expressions of concern and holiday wishes helped many tongue-tied veterans express themselves.

"We made up several short messages that were sort of like greeting cards. We had a choice of general positive sentiments expressing optimism about their situations improving," Shaver elaborated.

"Having standard messages also made it easier on the amateurs receiving and passing the traffic. Of course vets could word their own or customize one of the pre-phrased greetings if they wished."

Those amateurs who have been involved in the National Traffic System won't be surprised at the positive response to the service or at the efficiency of the NTS. Of the 75 messages generated during the event, only 6 could not be delivered by any means at all. This is particularly remarkable given that most of the vets did not have complete addresses and phone numbers for the intended recipients.



Richard Upham, AD4KC, assisted at the control center.

Pleasant memories

Volunteers soliciting traffic stationed themselves at a table near some coffee urns. As vets walked by, the hams greeted them and asked if anyone wanted to send a message to someone, anywhere in the U.S. "Oh, you mean like a MARSgram?" many vets asked.

Charles Shipman, N4OBT, and Lee were among the volunteers who found soliciting traffic in a warm, dry place something of a novelty. Both have participated in numerous disaster relief efforts—Florida regularly experiences tornadoes, hurricanes, floods and other disruptions. Unlike the typical disaster in which victims are eager to send word of their condition, most of the Stand Down veterans were a little hesitant at first to reach out to folks far away.

At first, the volunteers had to persuade the vets to sit down and think of someone to send a message to. Soon, however, the project took on a life of its own. "I sent a message yesterday," inquired one vet. "Is it OK if I send another one today?" Others decided to send greetings to one or two people and then remembered many others they'd like to contact as well. Just having someone with whom to sit and talk about old friends turned out to be important.

"I didn't expect to find this activity so gratifying," confessed Shaver. "When we worked out the canned messages with Lee, I had no idea some of the sentiments would turn out to be so popular." In fact, Shaver found the project so rewarding that he returned a second day specifically to help just with the collection of messages.

"Sure it was meaningful, but it also was fun. I remember one fellow who told me that we wouldn't send what he wants to say to his ex-wife. And that was seconded by a number of others!"

The experiences at Stand Down Tampa Bay demonstrate the flexibility of Amateur Radio. By facilitating the smooth flow of individuals trough a maze of services and providing a friendly, free way to communicate with loved ones, amateurs took a step toward repaying society's debt of gratitude to all service personnel. WR

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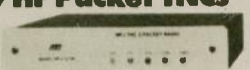

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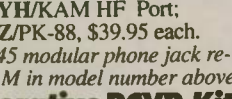

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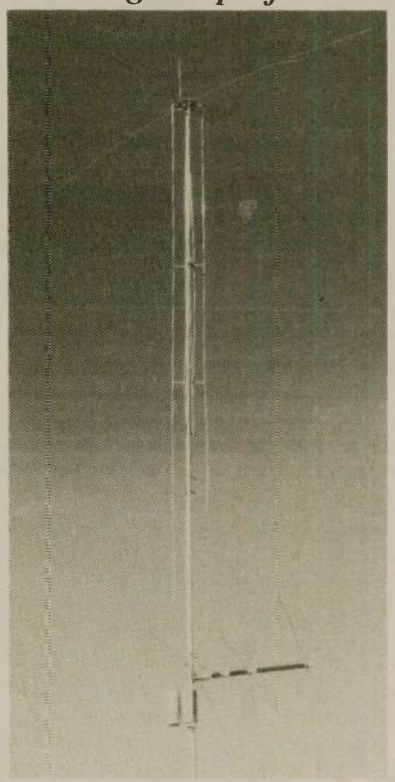

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TUNE IN TO TUVA

GREG POOL, WH6DT/6

A group of radio amateurs from the central coast of California met with "hoomeii" — master Kongar-ool Ondar and his family last October, in an effort to bring Amateur Radio to the land of Tannu-Tuva, near Mongolia in central Asia.

Ondar and his student, Bady-Dorzhu, had been showcasing hoomeii, their unique style of throat-singing, at concerts in New York, San Francisco, and Los Angeles. Their trip included a heartwarming appearance on the Chevy Chase Show, where nine-year-old Bady's performance stole the show.

Ondar's livelihood is the teaching of hoomeii, which dates back thousands of years. The performer accentuates the natural harmonics present in all our voices to sing several different tones all at once. An oddly mesmerizing sound to the listener and equally difficult one for the performer to maintain, it is a national treasure to the Tuvinian people and a heralded craft throughout the world.

Spearheaded by Pat Barthelow, AA6EG, and Ralph Leighton, of Friends of Tuva (FOT), the group presented radio equipment to Ondar for delivery to the Lyceum of Tuva, a high school located in the capital city of Kyzyl. FOT was founded jointly by Leighton and the late physicist, Nobel Laureate Richard Feynman.

The equipment included a Drake 2-NT transmitter and 2-C receiver, donated by Paul Herrschaft, KQ6G, and both the ARRL's *Radio Amateur's Handbook* and *Antenna Book*, donated by Jim Maxwell, W6CF.

"Tannu-Tuva is an extremely remote republic of about 300,000 people," Pat informs. "The winters are very severe; temperatures can reach -60°F. The republic is surrounded by the 10,000-foot high Sayan mountain range to the north and the Tannu-ola mountains to the south.

"Between 1921 and 1944, Tuva was an independent state. They joined the Soviet Union voluntarily in 1944 as an autonomous region, and were constituted as an autonomous republic in October, 1961. Tuva now faces a new future as a member of the Commonwealth of Independent States."

A member of the Naval Postgraduate School ARC in Monterey, CA, Pat is working on furnishing enough ham radio equipment to help activate a radio club at the Lyceum.

"The Lyceum Amateur Radio station," he says, "is likely to become a centerpiece of attention throughout the republic, enabling the school to become connected to the rest of the world, particularly to other schools. They are very interested in communicating with other students."

Although not an amateur himself, Ondar immediately recognized the Morse code key given to him and gladly agreed to bring back the equipment to the Lyceum in Tuva. Quite a celebrity in his own country, Ondar informed the group through Leighton that he would tell his fellow Tuvinians of his visit with the US amateurs.

(Left to right) Kongar-ool Ondar, his wife and child prodigy, Bady-Dorzhu, accept a key from Pat Barthelow, AA6EG and Ralph Leighton. — ***Photo by Rick Lagerstrom, KN6FR.***

Besides FOT, Pat Barthelow is also working with the Foundation for Amateur Radio International Radio Service (FAIRS) and the Northern California DX Association (NCDXA).

On hand to represent the NCDXA was Jim Maxwell, W6CF, who noted that Tuva (UAØY) is on the air but still quite rare. "Tuva is located in Zone 29, which includes Mongolia, but is not that active." Jim informed Leighton that the project would be of interest to a great many amateurs, even to the point of DXpeditions into the area.

Pat adds that the power grid there is 220 volt and 50 Hz. "HF, VHF, UHF, satellite, and packet is needed. If anyone knows how to obtain ham radio equipment through educational grants, I would love to hear about it."

This first delivery will be a test to see how best to transport radio equipment into Tuva. Hand-carrying anything of significant value through customs in Russia can carry a slight risk. A letter from the President of Tuva in support of the project will accompany all donations.

"Any equipment would go to Tuva under the close accounting and supervision of myself and Ralph Leighton," assures Pat. Leighton authored Tuva or Bust!, an account of the FOT's formation in 1977 and their ensuing exploits.

You can contact Pat on packet @ K6LY.#NOCAL.CA.USA.NA or mail at 810-B Airport Rd., Monterey, CA 93940 USA.

Bylirig! (Tuvinian for 73) **WR**

So close, yet so far

Northridge earthquake: A view from Orange County

APRIL MOELL, WA6OPS

I was rudely awakened, but I was soon to find out that some people in neighboring Los Angeles County were thrown from their beds and unfortunately a few were crushed in their beds.

In the first few moments I realized it was strong shaker and if the epicenter was not in Orange County it must be a really big quake somewhere in Southern California. We fortunately had power and quickly turned on our radio equipment, scanners and the TV. My husband immediately went to the garage to move our vehicles out in the open. Should we not be able to stay in the house or should our radio equipment fail, our vehicles were good backups for both shelter and radio station.

As the emergency coordinator for the Orange County Hospital Disaster Support Communications System I knew a "Core Team" response was needed. This is a planned self activation by designated HDSCS hams agreed upon with the hospitals. Over the two-and-a-half hours, Orange County hospitals were checked and fortunately all were functioning adequately despite of some minor water pipe breaks and items off of shelves.

As our group was winding down from our response, the TV and the scanner were revealing a chaotic and devastating picture in the northern areas of Los Angeles County. K6CPT, net control for Los Angeles County Disaster Communications Service, was on the air and their amateurs were reporting to sheriff substations. Kaiser Permanente Hospitals, which have been establishing an Amateur Radio network for emergencies, suddenly were put to the test. Their hospital in Anaheim, checked on by the Orange County HDSCS was fine, but it soon became apparent that their hospital in Panorama City was in trouble. Thanks to the judgment of Kaiser volunteer, Don Calde, WB6CGI, communications normally assigned to a Kaiser mental health facility in another area realized where the main damage seemed to be and quickly determined which of the Kaiser facilities in that area might need help. Knowing that another ham close to that hospital would likely be affected, he made the decision to respond to the Panorama facility. The radio equipment installed there however was not accessible due to physical damage to the building and complete power failure. Being a well prepared emergency responder, Don set his car up as the hospital station. With other Kaiser stations on the air to provide assistance, Panorama City was able to get help when they needed water and portable generators. Thanks to this planned network, B.J. Norquist, N6WQE, at sister hospital, Kaiser Bellflower, was able to respond to the need.

As the day progressed it became evident that numerous problems abounded. During the noon hour hams coordinated under DCS were being asked to go to some hospitals. By 1:00 p.m. QSTs were on the DCS frequency asking for hams with portable and mobile capabilities to respond for assignments, particularly at hospitals. Eventually several hams were heard at a number of Los Angeles area hospitals making requests for water, portapotties, nursing personnel, etc.

Over the next several days the ham role appeared to move into the health

and welfare stage as communications for shelters became important. Mutual aid requests came into Orange County for support at Red Cross shelters and emergency operations centers. The hams have had to be a versatile bunch. Shelters are not always in good radio locations. Some hams have assisted with operating Red Cross radios, cellular phones and fax machines. Hams needed to be well prepared personally as shelters were not always well supplied when they arrived. Often the hams were in support roles as cellular phones were not always reliable or available. The messages were incredibly varied. Everything from blankets, medicine cups, baby powder and instructions on using the new cellular phones were transmitted. Husband and wife team, Gary, KB6TRQ and Lee Panton, KB6ZHX, responded to the mutual aid request and assisted at a shelter at Hollywood High School. At this location they had not only earthquake victims but other displaced persons from the community arriving. Lee had to relay out of the shelter to Gary, who was in his truck, in order to get requests on the net. Lee did everything from helping with registration to communicating requests for help for attempted suicides.

Hams also communicated priority messages for Bergen Brunswig, a major pharmaceutical distributor with a large warehouse in Valencia. With unreliable communications and an important clean-up effort necessary, hams linked the location to administrative offices in Orange. Thanks to Ron Perich, WB6NQW, Bill Betts, KB6WBL, Jim McLaughlin, AB6UF, and Ray Pacitti, KC6SKT, an efficient clean-up response was directed and Bergen was able to continue in their efforts to process drug orders for medical facilities throughout the area.

As I write this, the earthquake is 10 days behind us. The aftershocks continue. And the hams continue. Shelters still need the back up of Amateur Radio. The conservation corps will be using amateur to assist in communications among the teams going out into the community to provide water and do further damage assessment.

This disaster has proven that Amateur Radio is a needed communications resource. It behooves us all to be well prepared on our own and to plan and train with the agencies we can serve. **WR**

Second hamming trip being organized for Pacific Crest Bicycle Trail

After a successful ham bicycle tour along the Pacific Crest Bicycle Trail last July, the organizer is already thinking about summer of '94.

The week-long July trip involved four hams and one non-ham, and covered about 400 miles along mountainous paved and unpaved roads between Mt. St. Helens, WA and Crescent Lake, OR. The four hams, Guy Hamblen, AA7QZ, of Troutdale, OR; Dan Arbogast, NØDA, of Corvallis, OR; John Talstad, KD6UKC, of Montebello, CA and organizer Bil Paul, KD6JUI, of San Mateo, CA operated CW QRP on 40, 20 and 15 meters and used 2 meter HTs. Solar cells were used to charge batteries during each day's ride. All contacts were stateside with the exception of one Finland contact on 20 meters using a tree-hung ground plane.

The upcoming week-long trip will be in July or August '94, beginning at Crescent Lake and will include Crater Lake, Ashland and Siskiyou Pass, OR; Horse Creek and Callahan, CA ending near Mt. Shasta. The tour will primarily camp and cook out.

Again, experienced bicycle touring folks who are hams are invited to join the free trip. For more info write Bil Paul, KD6JUI, P.O. Box 5183, San Jose, CA 95150. **WR**

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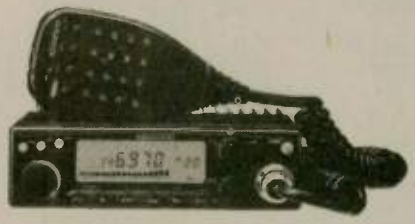

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Fond memories of Lloyd Colvin, W6KG

Silent Key

Lloyd Dayton Colvin, W6KG, who with his wife Iris, W6QL, visited and operated from hundreds of DX locations all over the world, is a Silent Key. He was 78.

After initially rallying, Lloyd succumbed to the effects of a stroke suffered in early December during a visit to Istanbul, Turkey with his wife. His death there was attributed to cardiac arrest.

First licensed in 1929 at age 12, Lloyd earned an electrical engineering degree from U.C. Berkeley. After graduation, he embarked upon a 23-year army career, retiring in 1961 as a lieutenant colonel. His service years had provided the opportunity to operate from many foreign countries, establishing the penchant for DX globetrotting that marked his later years. Issued WPX #1, he was featured on the cover of *CQ* in 1957.

Lloyd and Iris married in 1938, and Iris obtained her license in 1945, as W6DOD. By the mid-sixties, their successful real estate investments and contracting business in Alaska and California had ensured financial independence for the Colvins. DX history was about to be made.

• The YASME Foundation had been established in 1961 to aid the world-wide sailboat DXpeditioning of Danny Weil, VP2VB, a young Englishman. By 1964, Weil had married, lost the last of five boats and abandoned his odyssey. The foundation had also sponsored several other DXpeditioners. Although it now had no funds, YASME could provide licensing and QSL assistance to DXers who could pay their own way — as the Colvins could. Thus YASME and the Colvins began a 30-year association.

• The Colvins' YASME saga began in the fall of 1965 on Saipan; the last completed trip — to Southeast Asia — was in 1992. They traveled to 221 DXCC countries, operating in about two thirds of them and generated over one million QSOs. YASME volunteers answered over 750,000 QSLs, which are cataloged and stored in the Colvin home — the world's largest QSL collection.

Lloyd and Iris frequently operated from countries — such as Abu Ail in 1982 and Burundi in 1991 — which had seen no amateur operation for many years.

In 1989, *glasnost* brought the opportunity to tour all 15 Soviet republics, and to operate in all but Armenia.

Both Colvins were Life Members of the Northern California DX Club, and honorary members of many other DX organizations. On average, they were abroad for six months each year, and were rarely home for Christmas. When at home, they frequently entertained traveling DXers they had met on their sojourns; their annual Fourth of July party was well attended by local and visiting DXers.

Lloyd Colvin, W6KG, banquet speaker at the 1991 ARRL National Convention.

In addition to Iris, Lloyd is survived by a daughter, Joy Gilcrease, formerly W4ZEW, and granddaughters Justine and Vanessa Gilcrease. His ashes have been scattered at sea. — *DXer Northern California DX Club*

Remembering Lloyd

As far as I am concerned, Lloyd and Iris Colvin were the most spectacular and most enduring team of DXers ever to show on the bands. They were the friends of every journeyman DXer and the passing of Lloyd will leave a void that possibly never can be filled. They were a DXing phenomenon which lasted so long that it often was taken for granted, something that would always naturally occur. It wasn't and it won't. Of all the qualities that should be remembered and admired, it was their always-openness with any DXer, and the total countries worked was not their criterion. If you were a DXer, you were a friend and the Colvins had friends. Always.

Members of the club may have their favorite story about the Colvins, some of which have been heard before, and some of which bear repeating. One which I have often retold is how Lloyd fell off the roof of their three-story home over by the edge of the bay in

Richmond. This happened about twenty years ago. Years back, the Colvins had a home up atop the Berkeley Hills on Grizzly Boulevard. They sold that home and traveled the world DXing for some years. Returning to the Bay Area, they purchased property adjacent to present Interstate 580 and built a three story home. Most club members are familiar with the site: the poles for their low band antennas are often noted.

One morning upon arising, and when Iris was fixing breakfast, Lloyd said he was going up to the flat rooftop of the structure to check the antennas. Up there he carefully studied the various arrays, edging backwards to get better angles for viewing or to check certain things. He kept moving back until his heel struck the low parapet around the rooftop, and Lloyd toppled over the side of the building. He hit the ground three stories down, fortunately hitting softened ground.

After a moment or two, maybe even three, of running through the peripheral check-list. Lloyd got to his feet and climbed back up the stairs to the kitchen on the upper floor. There Iris, still busily engaged, was astonished to see Lloyd come up the stairway. "Lloyd! I thought you were up on the roof," Iris said in surprise. "I was," was Lloyd's reply, "I was."

Some may have some reservations about this story. Some years ago, when writing for *CQ*, I wanted to use this item in a DX column and checked with Lloyd and Iris before sending off the copy. They confirmed that this is the way it happened. Absolutely!

It is a sad task to tell such things and to realize that they must be put in the past tense. But there are other factors. One eventually learns that one lives as long as one is remembered, and is dead when forgotten. For DXers, Lloyd Colvin will live a long time — a very long time. — *Submitted by Hugh Cassidy, WA6AUD*

Countless adventures

In their 30 years of DX travel, Lloyd and Iris Colvin had countless adventures, some of which have become folkloric. For the benefit of younger members, here are a few, as told by Rubin Hughes, WA6AHF.

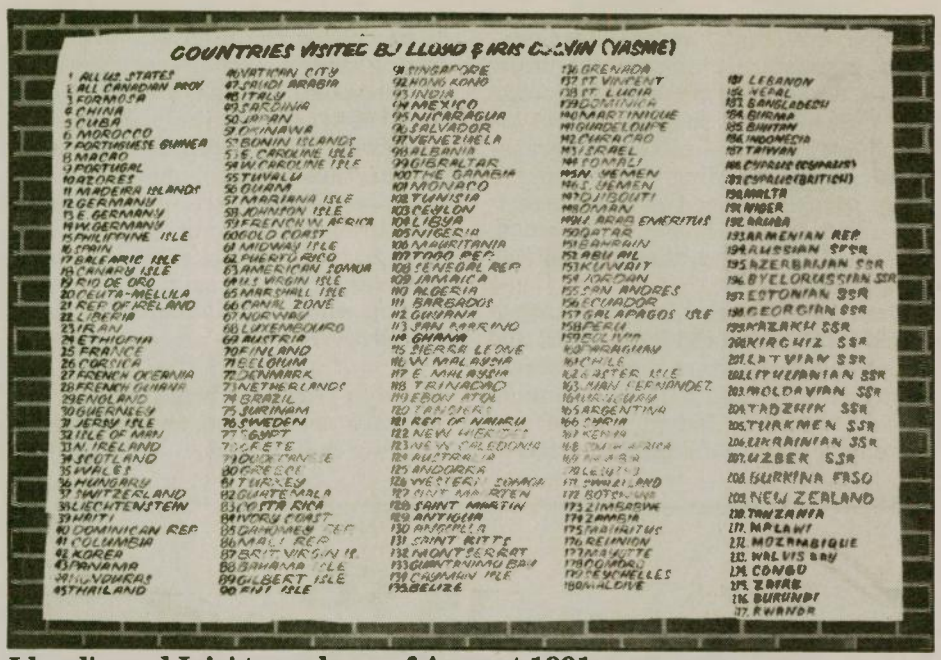
His friends say Lloyd was loathe to spend money on fancy accommodations, and scrupulously avoided hotels. Once, in a nameless South American country, Lloyd and Iris arranged to stay a week at a "private boarding house" with very reasonable rates, where setting up the ham rig would present no problems.

Their first night proved sleepless, with a constant clamor, loud male voices, and a lot of coming and going. The next morning, they found that no men were present — all the other residents of the building were women. They quickly arrived at the correct assessment: they had moved into a brothel. Undaunted, they stayed the rest of the week!

On another occasion, in another third world QTH, Lloyd and Iris were in the street. Suddenly, a man tore Iris' watch from her wrist and took off running. Lloyd took off in hot pursuit of the retreating figure, yelling for assistance as he chased the man into ever narrowing streets and alleys. Of course, no one spoke English, and few would have been inclined to help, in any case. Undaunted, Lloyd cornered his man in an apartment house, shook him violently, took the watch, and returned, breathless, to present the regained prize to Iris. Iris looked at the recovered valuable and said, "Lloyd, that isn't my watch!" — *Submitted by Garry Shapiro, NI6T*

Always the gentleman

I have seen Lloyd and Iris's slide shows of their wonderful DXpeditions



Lloyd's and Iris' travels as of August 1991.

at conventions for years. Most of us go someplace and return to our local radio clubs to deliver an evening program on that one trip. Not the Colvins. They would tell us about their latest seven DXpeditions. And they always made it sound so easy. Lloyd would go a couple of rounds with the immigration and customs people, then he would charm the hotel people into declaring it an honor for the Colvins to erect their equipment on the roof. It was almost like a repetitive social event with them.

But do you remember those photographs of Lloyd? No matter who the pictures were taken with, whether it be host amateurs, the head of the local Posts and Telegraph, the busboy who put up the antenna, or all by himself at the rig... Lloyd always had on his coat and tie. It might be the West Coast of Africa, a Pacific Island, South America, wherever, he always sported his ubiquitous coat and tie. Always the gentleman, that's how I'll remember Lloyd. — *Submitted by John G. Troster, W6ISQ*

Unique individual

My memories of Lloyd Colvin, W6KG, are, of course, intertwined with the activities with Iris and go back many years — from meetings at the NCDXC, the DXpeditions before YASME and since, the Fresno/Visalia International DX Convention and, of course, the July 4 parties at the Richmond QTH.

Personally, Lloyd and Iris provided me with a number of new countries throughout the years — so many I cannot now recall. It was always fun to hear their voices and the keying from their travels.

I shared with many others the retelling of the stories of the DXpeditions, with slides and without at the International DX Conventions. It is hard to cite specific examples as there were so many presentations over the years.

Probably the most concrete memories are tied with the more recent July 4 parties at the Richmond QTH. How many of us remember the searching of the QSL card files looking for how many QSLs they had received from us, the circular stairways to Heaven and Hell (with the Devil down below in costume), the refreshments and the food and, above all, the great fellowship with Lloyd and Iris and all those who came by that day?

Lloyd Colvin, W6KG was unique — one of those rear individuals who, all too infrequently, touches our lives with enormous impact. Fortunately for us, we all were here and lived through this time and were all lucky that he appeared in the Amateur Radio world! — *Submitted by Brad Wyatt, K6WR, Pac. Div. director*

Extra Class Couples Co-founder

For those who may have forgotten the past history of ECC, a review would be in order. At a dinner where there were hams gathered, two of the couples held Extra licenses. The conversation got on the subject of Extra Class Couples when one of the Extras, Lloyd Colvin, W6KG said "I wonder how many Extra Class Couples there are." After a few moments another Extra, Betty Baldo, KB6P added "I'll find out." Then the quest began. At last count there were about 100 couples. The proposed future count should have many more.

The two amateurs mentioned rightfully deserve to be considered the Founders of ECC. They were the catalysts for the group's beginning. The sad note is that they both became Silent Keys just recently, W6KG in December and KB6P in July. We as a group and individually extend to their families and friends our deepest sympathy. — *Submitted by Chris Baldo, AI6S* **WR**

Insulate spare

Here is a simple tip for new hams. Use 3x5 index cards, cut to size, to make insulated inserts for spare HT batteries. This will prevent accidental shorting of a charged battery. — *Brian Ceroky, AA2LK*

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New FCC Rules Mean Last Buying Opportunity for Radio Scanners

On April 19, 1993, the FCC amended Parts 2 and 15 of its rules to prohibit the manufacture and importation of scanning radios capable of intercepting the 800 MHz. cellular telephone service. Supplies of full coverage 800 MHz. scanners are in *very* short supply. If you need technical assistance or recommendations to locate a special scanner or solve a communications problem, call the **Communications Electronics Inc. technical support hotline for $2.00 per minute at 1-900-555-SCAN.**

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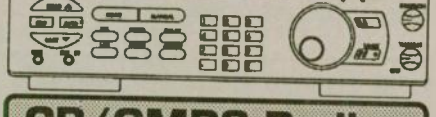

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ARRL Board of Directors meets

The ARRL Board of Directors met in Rocky Hill, CT, 21-22 January 1994. Following is a summary meeting highlights.

The board elected its present slate of officers: President, George Wilson, III, W4OYI; First Vice President, Rod Stafford, KB6ZV; Vice President, Jay Holladay, W6EJJ; Vice President, Tom Frenaye, K1KI, Treasurer, Jim McCobb, K1LLU, Secretary and Executive Vice President, David Sumner, K1ZZ; Chief Financial Officer, Barry Shelley.

Elected to the Executive Committee were Rocky Mountain Division Director Marshall Quiat, AGØX, Hudson Division Director Stephen Mendelsohn, WA2DHF, Delta Division Director Joel Harrison, WB5IGF and Great Lakes Division Director Al Severson, AB8P.

An interim report and band plan recommendation of an ad hoc committee was adopted, looking to early implementation of the expected allocations of 219 to 220 MHz for limited amateur use.

The 1994-95 ARRL budget plan was adopted.

The Volunteer Resources Committee was tasked with studying the feasibility of a system of technical awards to recognize achievement in fields ranging form design and construction to the creation of innovative communications systems, and develop appropriate criteria.

The league will file a petition for rulemaking seeking to remove overly restrictive rule provisions concerning the use of spread spectrum techniques, and an ad hoc committee was created to recommend technical standards.

The Membership Services Committee will study the possibility of relocating the 40 Meter novice subband. The committee will report back to the board in July.

The board approved a revision to the ARRL/Red Cross statement of understanding.

ARRL headquarters will begin to notify members of license expirations, and will include Form 610 to effect license renewals.

The Administration and Finance Committee will study the feasibility of offering group legal defense insurance to ARRL members to cover legal costs in antenna cases and RFI lawsuits.

The ARRL Letter will be offered to affiliated club newsletter editors free of charge on a trial basis.

The Administration and Finance Committee was asked to investigate a multimedia production capability for headquarters, to keep pace with the changing technology in today's personal computing revolution.

Perry Williams, W1UED, was commended for 40 years of dedicated service and congratulated on the occasion of his retirement from the headquarter staff in April 1994.

Details to follow in March *QST*. **WR**

Quick response

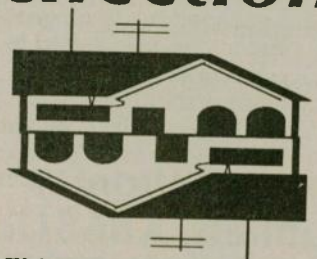
ANDY JAREMA, N6TCQ

The wakeup call came at 4:31 on Monday morning 17 January and within seconds, Los Angeles area hams had already swung into action. The quake was centered in the San Fernando Valley just northwest of Los Angeles. First came the work of the Public Seismic Network, a collection of hams and amateur seismologists who meet weekly on the air to compare data collected against actual seismic events. When an area event occurs, they collect felt reports on the air and can often locate the general area of the quake within minutes by this method.

Handling this flood of calls, some under very difficult conditions, was Dorothy Darby, N6ZNC. Within the first half hour following the quake, the Los Angeles RACES Organization known as the Disaster Communications Service was on the air from many of the sheriffs' stations in the area, providing inter-agency communica

(please turn to page 39)

Reflections



HELEN DOUGLASS, W5LGY

Another hidden antenna hunt

In the early 1950s, there was a very active Longview, Texas, Amateur Radio club with members in the surrounding areas. This group sponsored well-attended hamfests in various towns, such as in Sulphur Springs in 1952, and hams from Dallas and Fort Worth were always there, as well.

Why they chose to hold their 1954 meeting in Commerce, a one-ham town (and he wasn't even a member of the club), has always been a mystery for W5LGY. And of course, my job was to find a meeting location in Commerce and to hide transmitters for 10 and 75 meters.

President Gee of East Texas State University gave permission to have the program in the main auditorium, but this transmitter hiding game was a new one for me. I had never been on a hunt, so I tried to get out of this job, but since none of the Longview club members knew anything about Commerce, I was stuck with the task.

I was lucky to have W5KUP, Jerry Murray, in Dallas who had grown up in Commerce to help with the 75 meter hunt. He had started an Amateur Radio club at Crozier Tech in Dallas where he taught. Four of the boys in the club were anxious to come help, and Jerry was eager to embark on his first hunt, too.

The Saturday morning arrived that this group was to hang the antennas. We took the 10M rig. I had gotten permission to use a big barn on the eastern edge of town near a cemetery. Inside the barn on the west wall there was a nice knothole. We hung two ten-meter dipoles, one running east and west and the other north and south. I had made the dipoles using a bale of hay and a piece of plywood that served as a work table under this knothole. We used a doublepole, double throw ceramic switch that would allow us to switch from one antenna to the other. Sycamore St. runs across the town from east to west, ending at the cemetery gate where the hunters would have to turn right to get to the barn, not too far away. Through our knothole, we could see this crucial point easily.

When the hunt began, we had the signal pointed to where the group would be leaving East Texas State University. When we saw that they were headed in our direction, we threw the switch in the opposite direction. After a time, we reversed the throw, making them come toward us again. When we saw that they were nearing the turn at the cemetery, we changed the antenna direction again. We did this several times during the hunt. The knothole was fun because we could see who was trying to turn around the fastest when we switched antennas. During the last five minutes of the hunt we let them find us. You see, we had another obstacle in their way. There was no car parked where it could be seen — we had it locked in the barn with us. The finders said they couldn't believe the rig was in the barn because there was no car in sight.

There was even more fun for me the next day when folks called to ask why there were so many cars running to and from the cemetery the day before when there wasn't even a funeral? And why did every car have an arm sticking out the window holding a little black box? The hunters wondered if I knew there was to be no funeral that day. Truth is, that thought had never entered my brain.

Another experience that was that 30 minutes before the program time, I was told that I had to MC. Oh my! This was another new experiece for me. I lived through that, too! Two days later as Mother and I wended our way through a mob on Main St. in Dallas we heard someone saying: "W5LGY!"

We stepped out of the crowd to face a young man who had been at the hamfest. I asked how he had known it was me ahead of him. He replied, "I looked at your brown hat all day as you helped make that the most interesting hamfest I have ever attended, and I've been to many!"

This was initiation day for me, and it was fun! Try it sometime!

Helen lives in a retirement home in Commerce, Texas. WR

Silent Keys

George F. Mashino, K5GGL

George F. Mashino, K5GGL, passed away 6 January, 1994 Oklahoma City, OK.

Born 22 December, 1933 in Oklahoma to Joseph and Mary Kuester-steffen Mashino, George's family moved to Okarche when he was six years old. George was interested in radios from his first exposure.

He built several crystal radios, tuning some on short wave and others on the broadcast bands. Making tube-type radio receivers (most of them on short wave), George became interested in Amateur Radio and began Morse code study by himself.

While still in high school, George took a correspondence course in radio and TV repair.

He received his diploma for radio and TV repair from the correspondence school two weeks after his high school graduation. He continued his education at Oklahoma A & M college, studying electrical engineering.

Learning about "Bus" Blum's Amateur Radio school, George and Willis Luber went to the Wheat Straw School. Bus sent some code and George copied all of it, then Bus had George send some code. After listening awhile, Bus said, "Send off after your license, man — you are ready." As far as I know, George was the only person that went through the amateur school in one night.

George ultimately attained his Advance license, he later received a second class phone license.

George was past President, Secretary and Treasurer of the Wheat Straw radio club, a member of CORA serving Secretary and Treasurer. He was on the Wheat Straw technical committee until his death.

George is certainly going to be missed by us all. — *Submitted by J. Ralph Wilder, WA5PFK*

Russ Dedrickson, WA3FBU

On 19 December, 1993, Russ Dedrickson, WA3FBU became a Silent Key at the age of 61 as a result of a sudden heart attack. He was a professional communicator for many years, both in private life and as a multi-disciplinary engineer in the U.S. Navy.

First licensed in 1957 as W7BXM, he went on to set up and operate the first Navy MARS station in Japan. He was involved in the design and implementation of radio communication systems for a variety of governmental agencies, including design of area wide 911 public access systems for New Hanover, Cherokee, and Transylvania counties in North Carolina, and greater Bridgeport area of Connecticut. The 911 projects handled by WA3FBU involved discussions with the telephone companies to determine system constraints and development of solutions to constraining problems.

He was closely involved in many vital statewide communication systems now in effect. In addition many clubs benefited from his seminars on emergency communications.

He will be missed by many. One of his proudest accomplishments was meeting his wife, Fairylee, WB7EZI on 3.970MHz. — *Submitted by Fairylee Dedrickson, WB7EZI*

Gordon Thomas Gunnels, KB6BUN

Gordon T. Gunnels, KB6BUN, passed away 20 October, 1993 in Coupeville, WA. He was 42. Born 12 September, 1951 in Seattle to Randall and Helen Gunnels. He was a life member of Demolay. While living in California he was a fireman with the Department of Forestry. One of his loves was his Amateur Radio station, talking to other radio operators every day. On 17 November, 1988, Gordon took an electronic journey into outer space and talked to Vladimir Titov, U1MIR, commander of the Russian Space Station, MIR.

Gordon was a member of the Whidbey Island Amateur Radio Club and the K7IYN Repeater Club. Although confined to a wheel chair and nearly blind, he attended club meetings and participated in 2 meter net activities. Gordon received his advanced class license this year and was studying for the extra class exam at the time of his death.

It was his wish that his radio gear be given to the Whidbey club and that any proceeds resulting from the sale of his equipment be given to the Multiple Sclerosis Society. Amateur Radio was Gordon's window to the outside world. His determination to carry on in spite of his illness set an example for all who knew him. — *Submitted by Byron Wingett, WA7BIY* WR

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April 29, 30 & May 1, 1994

General Chairman, Dave Grubb, KC8CF

Asst. General Chairman, Ken Allen, KB8KE

*** Giant 3 day Flea Market * Exhibits * Activities for the Non-Ham**

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Lodging
Please write to **Lodging, Dayton Hamvention, Chamber Plaza, 5th & Main Streets, Dayton, OH 45402-2400** or refer to our 1993 Hamvention program for a listing of hotel/motels in the Dayton area.

Special Awards
Nominations are requested for Amateur of the Year, Special Achievement and Technical Excellence awards. Refer to the Hamvention Program for nomination form or contact Hamvention Awards Chairman, Box 964
Dayton, OH 45401-0964.

1994 Deadlines
Award Nominations: March 1
Advance Registration and Banquet
USA - April 8 Canada - April 1
Flea Market Space: February 1

Flea Market
Flea Market Tickets (valid all 3 days) will be sold IN ADVANCE ONLY. No spaces sold at gate. A maximum of 3 spaces per person (non-transferable). Electricity is available in a portion of the last Flea Market row for $40 additional per space. Rental tables and chairs are not available in the Flea Market. Vendors ***MUST*** order an admission ticket when ordering Flea Market spaces. Please send a separate check for Flea Market space(s) and admission ticket(s). Spaces will be allocated by the Hamvention committee from all orders received by February 1. Please use 1st class mail *only*.

Notification of Flea Market space assignment will be mailed by March 15, 1994. Checks will not be deposited until after the selection process is complete.

License Exams
Novice thru Extra exams scheduled Saturday and Sunday only. Send FCC form 610 (Aug 1985 or later) - with requested elements shown at top of form, copy of present license and check for prevailing rates (payable to ARRL/VEC) to Exam Registration, 708 Mapleside Dr. Trotwood, OH 45426

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Free bus service will be provided between Hamvention and our satellite parking areas. In addition, some motels may offer transportation to Hamvention.

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	____	$60/2 adjacent	
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Covered tent	____	$215.00 ea.	$____
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Address _____

City _____ State _____ Zip+4 _____ – _____

Daytime Phone # ( ) _____ Evening Phone # ( ) _____

* $14.00 at door
** $24.00 at door, if available
‡ *Admission ticket must be ordered with flea market tickets*

OFF THE AIR

Mobile antenna tuners

I agree with everything Gordon West said about location of mobile antennas in the Mobile section of your December issue. But I disagree with his implication that antenna tuners are not very useful in mobile operations and I think I can prove my point.

I run a Hustler 40M mobile antenna and have adjusted it for a 1:1 SWR on 7.25 MHz just like Gordon wants me to. But the Q is high and at 7.2 and 7.3 MHz the SWR is 3:1, which makes my transceiver unhappy enough to limit its power output. Sometimes I run mobile CW and the SWR is over 10:1 on 7.05 MHz. A mobile antenna tuner allows me to output full power from my transceiver over the entire band. Question is, does that power get radiated? The answer is, most of it does and my transceiver is a lot happier with what it thinks is an SWR of 1:1. With the tuner, I wind up radiating 80 watts instead of a folded-back 40 watts.

So do all the things that Gordon suggests and then do the thing he said not to do. . . push the magic little button called "AT Tune." Your transceiver will thank you for it.

CECIL A. MOORE, KG7BK
Queen Creek, AZ

Dual-band problem — intermod

I am writing in response to an article that was in the November issue of ***Worldradio*** by Gordon West, WB6NOA. I agree with Gordon that the dual-banders have many wonderful features and I am impressed. However, there is a big, big problem especially with dual-band handhelds — the dreadful intermod! It doesn't matter which brand you have, there is no escape. I have interviewed individuals who own all the different brands that exist in Amateur Radio. It seems that the manufacturers were so busy putting this neat little package together that they overlooked this problem.

Imagine being able to hear the shrill sound of the dentist's drill without sitting in the dentist's chair. That is exactly how bad it sounds.

One of my friends won a dual-band handheld. The intermod was so bad that he sold it.

Another friend decided he wanted to join the ranks of the dual-band handheld crowd. He was told that if he bought a certain brand he wouldn't have the intermod problems that the other brands did. It wasn't long before he discovered that he had been led astray. The intermod was so bad that in disgust, he bought a mobile dual-bander which seemed to have fewer such problems.

A gentleman from California was visiting here in Salt Lake City, UT. He was having some problems with his car and needed some help. His intermod problem was so bad that he had to ask several times for the hams who were helping him to repeat the information. He was very frustrated.

When I was in the market for a new handheld, a friend tried desperately to talk me out of getting a dual-band handheld. I wish I would have listened; maybe then I could monitor in peace.

I love the idea of having so much available in one little rig, but something needs to be done about this dreadful intermod.

LINDA REEDER, N7HVF
Salt Lake City, UT

Infomation wanted

I would like any information on how to convert/modify a common 10M Uniden or Radio Shack 10M rig to add on a 2M/440 transverter like Down East Microwave makes.

With all the no-coders who expand their horizons to VHF/UHF SSB, CW DX and satellite up/down links, I think an article or small booklet on this would be popular.

I am interested in 6M and 2M SSB but the cost of a VHF/UHF base is too much. A transverter and 10M unit would be very flexible and cost much less.

JOHN SWAIN, AB6SA
Riverside, CA

SET an example

Here in Nassau County, Long Island RACES and ARES had been separate entities forever. Just recently there seems to be an attempt to meld the two. Most members belong to both groups as I do. RACES seems to be a check-in net only, no training,because they are restricted as to how much time they can be on the air. I went out on the last SET to a position at a hospital, as did many others. The hospitals didn't know we were coming (by design) and they don't like having their boats rocked; especially on the weekend.

It was a learning experience for me, and the XYL was for it too. We have many clubs; one has about 550 members, and there are many others with 30 to 80 people. All are active in public service, emergency communications, etc. Does International Friendship mean"if you don't throw a carrier on me I may be as courteous — as long as long as you are not on my frequency?" Hi hi.

ALBERT BOCKELMAN, K2ES
Wantagh, NY

Old vs. new

We hear so many comments about how easy it is to get an Amateur Radio license today compared to testing in the old days.

These comments bring to mind an incident which occurred while I was testing for my Radiotelephone First Class license in 1955. An old-timer was disrupting everyone. No one could figured out why he was in the test room. The R.I. was trying to get rid of him diplomatically.

The old-timer said loudly; "You damn kids have it easy today. When I took my exam we had to draw a diagram of an entire shipboard radio system." The R.I. quietly replied; "Yes but, in those days a complete shipboard radio system was less complicated than an Acey-Ducey radio today." This was a perfect squelch and the old-timer left immediately.

I try to keep that incident in mind when I am tempted to judge modern ways.

BILL BURNETTE, W7UNE
Otis Orchards, WA

Official appreciation

Editor's note: This letter was received by RACES Chief Radio Officer, Robert D. Malaby, KC6KHA. The letter shows how hams can provide a unique and valuable service to government agencies. This kind of incident develops respect and appreciation for the amateur community.

"On behalf of the City of Ontario and the Communications Division, I am expressing my gratitude for your assistance, along with that of the RACES members, in helping us to locate an interfering signal.

"Late in the afternoon on December 29, 1993, we received a call from County Communications that a radio signal was causing extreme interference on the Hospital Emergency Administrative Radio (HEAR) System. The interference had persisted for approximately three days and was causing problems on the Hospital Network throughout the entire West End.

"Our Communications Technicians checked all the base stations in the City and found no problems. I requested the help of RACES in locating the problem later that afternoon. The RACES members were happy to assist, responded very quickly and found the interfering transmitter in an adjacent city within two hours.

"Thank you again for the dedication and enthusiastic response of the RACES members in regards to a problem of utmost importance."

WILL PERRY
Communications Maintenance Coordinator, Ontario Fire Department, CA

More on CW in the media

While whiling away a soggy Sunday and catching up on my favorite subject, ham radio, (***Worldradio**, Dec. '93, pg. 26*) I read the "CW in the media" article and it struck a memory chord.

The computer game for IBM PC that my neighbor, and future ham Bobby, was playing had CW in the background.

Upon investigation here's what I found. The game "Wolfenstein," in the 6th episode, makes mention of "Little Red Riding Hood" and the "Big Bad Wolf" in CW mode. Therefore so as not to give the secret away you must decipher the coded message to see what it says.

P.S. Bobby is still working on his Morse to decipher the secret message. Someday he may be a ham because of the secret message in a computer game.

KRISS ANDERSON, WA7PHI
North Bend, OR

SPECIAL EVENTS

60th Anniversary

The Sandusky Radio Experimental League will operate W8LBZ on 26 March, 1994 from 1500Z-2400Z to celebrate its 60th anniversary. Operations will be in the General 40, 20, 15 meter bands and on 146.655 and 444.375.

For a certificate send QSL, contact number and SASE to Sandusky Radio Experimental League, 2909 W. Perkins Ave., Sandusky, OH 44870.

Albert Einstein commemoration

The Southern Patuxent Amateur radio club will operate N3IFL, from the Clavert Cliffs Nuclear Power Plant Visitors Center, on 12 March. They will commemorate the birthday of Albert Einstein and promote the peaceful use of nuclear energy. Many other nuclear power plants across the country will simultaneously operate their own special event stations with the same theme. Operations will be in the lower end of the 10, 15, 20, and 40M phone bands from 1400 UTC to 2200 UTC.

For QSL, send #10 SASE to N3IFL, 12480 Catalina Drive, Lusby, MD 20657.

Voice of America

Members stations of the Piscataway ARC will operate signing /VOA on 20 March from 0000Z to 2400Z to commemorate the World War II operation of the Voice of America relay station, WB0U, in the Bound Brook section of Piscataway. Suggested frequencies, but not limited to: CW — All Novice bands. Phone — lower third of General 75-15 bands and the Novice 10 meter band.

For a certificate, send QSL and 9x12 SASE to station worked via call book address.

Macon Cherry Blossom Festival

The Macon ARC will operate W4BKM 26 and 27 March from 1300Z to 2200Z at the 12th Annual Macon Cherry Blossom Festival. Frequencies are CW 7.135, 14.035, 21.135 and 28.135; phone 7.235, 14.235, 21.335, and 28.335.

For certificate send QSL and 9x12 SASE to Macon ARC, P.O. Box 4862, Macon, GA 31208. WR

Awards

Scholarships

The Foundation For Amateur Radio, Inc., a non-profit organization with headquarters in Washington, D.C., plans to administer forty-nine scholarships for the academic year 1994-1995 to assist licensed radio amateurs. The Foundation, composed of fifty local area Amateur Radio clubs, fully funds five of these scholarships with the income from grants and its annual hamfest. The remaining forty-four are administered by the Foundation without cost to the various donors.

Licensed radio amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school. The awards range from $500 to $2000 with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs. Clubs, especially those in Delaware, Florida, Maine, Maryland, New Jersey, Pennsylvania, Virginia and Wisconsin are encouraged to announce these opportunities at their meetings, on their nets, during training classes and in their club newsletters.

Additional information and an application form can be requested by letter or QSL card, postmarked prior to 30 April, 1994 from: FAR Scholarships, 6903 Rhode Island Ave., College Park, MD 20740.

Youth Forum

According to Carole Perry, WB2MGP, the Dayton '94 Hamvention Youth Forum will be bigger and better than ever. Preparations are already underway to interview speakers for this important forum. Any youngster under the age of 18 who is a licensed ham radio operator may be considered. Applicants should be articulate and enthusiastic about their Amateur Radio activities.

Each child will be allotted 10 minutes to address what we hope will be an audience filled with young people who have come to hear what their peers have to say about Amateur Radio. In the past many young people have gone on to get licensed after being motivated by the terrific young speakers who have conveyed the fun and enjoyment to be had in radio.

Interested children should send a brief outline of their radio activities to Carole Perry, P.O. Box 131646, Staten Island, NY 10314. Please include a phone number. All hams are invited to bring a child with them to this forum.

NHARA WNH award

The W.N.H. Award, sponsored by the New Hampshire Amateur Radio Association, will be presented to anyone showing proof of contact with New Hampshire residents in all NH counties after 1 January, 1983. All bands and modes are permitted. Earth based repeater contacts are prohibited. Endorsements will be issued for specific mode, band or SWL achievement. QSLs will be evidence of contacts. A $2.00 fee must accompany QSLs. Send to NHARA WNH Award, c/o North Country Amateur Radio Club, 12 Cottage Street, Lancaster, NH 03584. WR

Earl M. Frazier, NØVKQ and Pete Petersen, WY7Z

STATION APPEARANCE

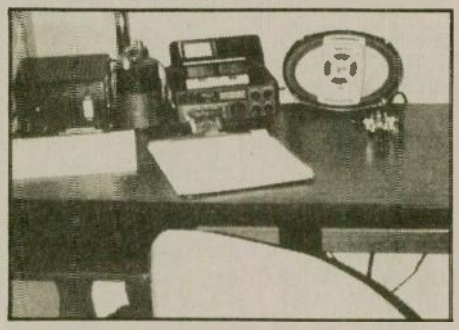
Send **Worldradio** *a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.*

Winners will also receive a top quality, Laserjet-printed copy of the DXCC and WAS BeamHeadings list (a $15.95 value) compliments of Jack Hurray, W8JBU.

This month we have a tie. Our first winner is Earl M. Frazier, NØVKQ, from Belton, MO.

Being totally disabled with a bad heart, I needed a hobby that required not much exertion. Since I served in the Armed Forces from 1959-62 and worked as a radio operator, I already knew the code. Being terribly busy earning a living and rearing five children until becoming disabled in 1990, I never got around to Amateur Radio. A radio club was formed nearby in 1992 and I immediately went for testing, passing Novice the first time. Purchased a Radio Shack, 10 Meter Xcvr and a used power supply and with a little help raising a dipole, went on the air in November, 1992. First QSO was a gentleman in Pleasanton, CA who was very patient and tolerant of my Novice status. The entire setup is on a small table top in a corner of a bedroom. The automobile speaker has since been replaced with a much better regulation external speaker.

I monitor the amateur bands and passed the Tech exam in January 1993.



Now I want to obtain a multi-band to try 15, 40, 80 Meters. I hear it's a whole new world! Since most hams are working people, I do most of my operating on weekends. Have worked CA, WA, MA & BC Canada, so far. Plan to work all states when I get a bigger rig. Ham radio is fascinating and I regret waiting for so long to become involved.

Our second winner is Pete Petersen, WY7Z, from Bellevue, WA.

Until recently, a former bedroom housed my grossly overgrown ham station, part of an antique radio collection, a small library, lots of neat stuff too good to be discarded and a part-time office. Finding ones way in and out the room was a challenge.

To gain space, I removed most of the impressive looking but mostly unused stuff (the four Hallicrafter receivers for instance) and a Gordian knot of wires, cable and cords from the station. As you can see from the pictures, a new station was built into half of a clothes closet, using the remaining necessary equipment. A drop leaf on the operating table can be lowered to allow the closet door to close.

A wall panel contains switches for seven antennas and a dummy load and provides antenna and rotor control outlets. It also has binding posts (remember those?) for a wire aerial and ground for listening to receivers of another era, like a 1920s Fada or Majestic. Another wall panel below the operating table contains outlets for 220VAC, 110VAC and 12VDC. The 12V system includes a backup storage battery. All cables, power leads, etc. to the panels are concealed inside the wall.

Now I have a much neater room, space to move about, complete HF and 2M FM capability and I can close off the station so it won't distract me from things that must be done, such as the honey-do list. Does anyone have any ideas for the other half of the closet?

WR

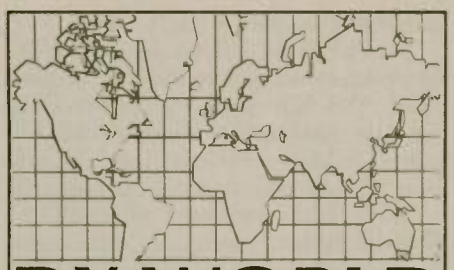
Amateur "Hi"

Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to ***Worldradio****!*

This tall tale comes from Dave Smith, WB7P.

After an extended period of time of not being on the air, I tuned in and heard several US call signs on CW. I sent CQ and a 5 call came back with a QTH of Durbin. My immediate thought was "a 5, probably another Texan." I asked him if Durbin was in Texas and he came back with "Durbin is on the southeast coast of South Africa." To cover my embarrassment (thank goodness it was CW and not SSB) for not noting that his call ZS5AL was from South Africa, I responded with "Well, you know how Texans feel that the world is a suburb of Texas." He gave me a polite "Hi."

WR



DX WORLD

John F.W. Minke III, N6JM
P.O. Box 310 Carmichael, CA 95609-0310

W-100-N

The following two DXers were awarded ***Worldradio***'s Worked 100 Nations certificates dated 5 January, 1994:

469. KA2ZZM Gerry Kravec
470. KK4XL James L. Young (All CW)

Certificates should be mailed shortly.

Guinea (3X)

The only station reported on from Guinea is Didier, 3XØDEX. He has been on 40 meters SSB near 7.060 MHz around 2000 UTC working Europeans. North Americans have worked him on 20 meters near 14.226 MHz around 0045 UTC and on 17 meters on 18.130 MHz at 1830 UTC.

Peter I Island (3Y)

The DXpedition to Peter I Island scheduled to commence with the pile-ups February 1st and continue around the clock until the 12th.

The DXpedition almost didn't come off due to a sudden "no guarantee" of a pick up from the island. This created a panic situation. Getting to Peter I Island is no easy matter and there are not many ships that can break through the ice to get there. To be stranded on the island would be fatal. If you don't believe this then get out your atlas and see exactly where the island is. Fortunately, the pick up has been resolved.

The DXpedition will be very expensive. Somehow we recall that this one will be the most expensive ever. And, if some of you have the idea a "QSL is the final courtesy of a QSO," send a postcard and expect a return without even considering an SASE you might as well come to my house for dinner and steal the silverware. If you have not contributed already, we strongly recommend including at least $5 with your QSL or more if you worked them on several bands.

Franz Josef Land (4K2)

From Franz Josef Land, 4K2MAL, has been quite active. You might try 40 meters CW for this one between 7.001 and 7.009 MHz after 0230 UTC.

He has also been on 20 meters using both CW and SSB. Check between 14.013 and 14.016 MHz and 14.226 MHz after 2000 UTC. Also, check 30 meters as he has been reported there near 10.102 MHz after 2300 UTC.

Also on 40 meters CW, we have reports of 4K2BY, 4K2OX and 4K2PGO, all within the lower 5 kHz of the band. Look for them after 0100 UTC.

Top-band types might listen for 4K2MAL, who was reported on 1.830 MHz at 1600 UTC and 4K2OX, on 1.831 MHz, both working Europeans.

Mauritania (5T)

Two stations have been reported recently from Mauritania. Often found on the lower bands is 5T5JC, near 3.789 MHz and 7.004 MHz after 2300 UTC. He has also been reported on 40 meters SSB on 7.055 and 7.184 MHz. We are not sure if he actually was that high in the band or that is where he was listening for American stations. Listen for him on SSB after 0700 UTC.

This station also appeared on 14.247 MHz at 2215 UTC and 21.272 MHz at 2300 UTC.

The second station was that of 5T5SV of which we found only two reports, 7.053 MHz at 2100 UTC, and 14.212 MHz at 2300 UTC, both of them SSB reports.

Algeria (7X)

On 40 meters 7X4AN has been very active. Look for this one between 7.002 and 7.007 MHz after 0900 UTC and again at 2300 UTC. On 80 meters look for him between 3.501 and 3.510 MHz after 2200 UTC and later.

On 15 meters SSB look for 7X2ARA on 21.290 MHz at 1330 UTC, 7X2LS between 21.286 and 21.292 MHz after 1600 UTC, and 7X2WAK near 21.225 MHz at 1200 UTC. 7X2LS also likes 75 meters and has been worked near 3.795 MHz after 0500 UTC.

Also reported active is 7X2DG, who was found on at least three bands recently. Check 14.183 MHz at 1130 UTC, 18.138 MHz at 1245 UTC and 24.946 MHz at 1600 UTC.

Kuwait (9K)

Very active from Kuwait recently has been 9K2MU who often shows on 75 meters near 3.789 MHz after 2300 UTC. He has also been reported on other bands such as 12 meters between 24.898 and 24.940 MHz after 1200 UTC. He has also been reported working CW on 3.512 MHz at 2300 UTC and 14.022 MHz around 1430 UTC during the early part of December.

Other calls reported from Kuwait include the following:

9K2GA	21.262 MHz	1700 UTC
9K2GS	14.217 MHz	1700 UTC
9K2IC	14.257 MHz	1500 UTC
9K2ZR	1.832 MHz	2000 UTC
9K2ZZ	14.013 MHz	2215 UTC

Some of those times may appear strange to you, such as the 160 meter contact. That one was a European report.

Nepal (9N)

Kiyoko, NH6RT, is reported to be active from Nepal signing with 9N1KY. During early January we only found one report for her, that being on 40 meters working Europeans on SSB near 7.075 MHz on a Friday evening around 2000 UTC. She should be there for another year.

Two other calls are reported to have been issued. 9H1HP was reported on 7.008 MHz around 1200 to 1230 UTC, and also on 15 meters near 21.255

MHz at 0930 UTC working Europeans. The operator is JA1OEM.

The third call, 9H1HA, has yet to be worked, or at least reported.

There was a DXpedition team of UT4UZ and UB4LRQ signing with 9N1UZ. They were reported on 75 meters on 22 December around 2300 UTC on 3.794 MHz working into the east coast, and also reported on 40 meters between 7.003 and 7.009 MHz at 0100 to 0130 UTC.

This is all good news for deserving DXers, as in the past, excluding occasional DXpeditions, the only possible contact with Nepal was Marshall Moran, 9N1MM. Father Moran is now a Silent Key.

Pratas Island (BV9P)

According to the DX bulletins BVØARL/BV9P was to have been scheduled for a few hours only on January 5th. We didn't hear anything around that date, and the date was past when we read about it. If they were on, most likely their log was filled with JAs only.

A second attempt will be scheduled for March.

Uruguay (CX)

DX calls from Uruguay often go unreported, mainly since most DXers consider them the garden variety type. Well, garden variety or not, we have a few to list this month:

CX2CB	24.925 MHz*	1500 UTC
CX4CR	3.797 MHz	0700 UTC
CX6CG	7.058 MHz	2200 UTC
CX8BR	7.009 MHz	2215 UTC

With the bands the way they are, now is the time to check 40 and 80 meters, especially with this one.

*Note that CX6CG was on SSB and was working Europeans. And, don't go on that mode there, unless you live out of the lower 48!

Vatican (HV)

Need a QSO with the Vatican? Then look for HV3SJ who works the deserving on several bands. Dxers snagged this one on 1.840 MHz at 0000 UTC, 3.506 MHz at 2200 UTC, 7.012 MHz at 2100 UTC, 10.105 MHz at 1800 UTC, 18.071 MHz at 1600 UTC, and 21.012 MHz at 1530 UTC. Almost all the reports were from Europe.

QRZ DX reports an HV4NAC on 3.800 MHz at 0006 on 24 December working into the mid-west of the U.S.

Jordan (JY)

Not much reported from this one lately. We have only three calls reported during the early part of December.

JY5IM	14.259 MHz	1500 UTC
JY5IN	21.242 MHz	1230 UTC
JY9MI	14.007 MHz	1400 UTC

Notice that last report is on CW, sort of rare for Jordanian stations.

Chatham Island (ZL7)

DX News Sheet reports activity of a station on Chatham Island signing ZL7FD the very early part of December. He was reported on CW near 10.104 MHz ar 0500 UTC and 14.005 MHz at 0800 UTC, and on SSB near 14.196 MHz at 1000 UTC. We have no North American reports for this one.

IOTA

As usual with our DX column we desire to push IOTA activity. For those of you who are new to Amateur Radio and are bewildered by this IOTA stuff, IOTA simply means Islands on the Air, sponsored by the RSGB, the Radio Society of Great Britain. The object is to work islands — any islands! However, this excludes inland islands in rivers, lakes and sheltered bays. An example of the latter is that of Alcatraz Island inside the Golden Gate. Don't even consider it for IOTA.

Here is a sampling of the IOTA activity during the dead of the winter:

EU-032	Aix Island	F6KIM/P
	7.002 MHz	1830 UTC
EU-052	Ionian Islands	SV8ZS
	1.829 MHz	1645 UTC
AN-010	Livingston Island	CE9MFK
	14.260 MHz	0015 UTC
AN-015	Ongul Island	8J1RL
	14.256 MHz	1800 UTC
AN-016	Antarctica	ZS7ANT
	14.260 MHz	0100 UTC
NA-014	Campobello Island	VE1ST
	21.253 MHz	1730 UTC
NA-019	Kodiak Island	WL7EM
	14.260 MHz	2300 UTC
NA-026	Long Island	NN2C
	14.260 MHz	2245 UTC
NA-036	Vancouver Island	VE7IU
	14.260 MHz	2245 UTC
NA-045	Isla Cancun	XF3RGS
	21.260 MHz	1930 UTC
NA-054	Berry Island	K5BDX/C6A
	21.260 MHz	1900 UTC
NA-069	Sanibel Island	AB4FT
	14.260 MHz	2300 UTC
NA-069	Pine Island	W4/GUØALD
	21.260 MHz	1800 UTC
NA-189	Isla Marieta	XE2/N6EK/XF1
	14.265 MHz	0200 UTC
OC-071	Koolan Island	VK6ELL
	3.799 MHz	1930 UTC
OC-136	Philip Island	VK3VQ
	14.265 MHz	0900 UTC

SA-008	Tierra del Fuego	LU9XPP
	14.260 MHz	0130 UTC
SA-064	Chonos Archipelago	CE7AOY
	14.260 MHz	0115 UTC
SA-	Borracho Island	YV5A/1
	14.257 MHz	0015 UTC

At the time of this writing no reference number has been assigned to the YV5A/1 operation pending action from IOTA headquarters.

From the above listing it is obvious where IOTA chasers congregate. There may be nothing at all going on and all of a sudden activity appears.

Perhaps the most populated island is that of Long Island, New York, (NA-026). Right after the first of the year we heard NN2C from Long Island call VE7IU on Vancouver Island and work him. And, believe it or not, someone else came on following the contact asking the Vancouver Island station if he could work the Long Island station. He had not yet worked Long Island!

Your DX editor is considering operating from a brand new IOTA island this summer during another trip north. And, if you are considering operating from an island this summer we suggest the weekend of 30-31 July, when the second annual IOTA Contest will take place. It will be a 24-hour event.

DX Desk

The ARRL Awards Committee voted 6 to 1 in favor of accepting the DX Advisory Committee recommendation to create an Honor Roll for RTTY DXCC. Qualification for this new Honor Roll is the same as for Mixed Honor Roll — 319 current countries. This total includes Eritrea, which was added to the DXCC Countries List the beginning of the year.

This action creates an Honor Roll for all DXCC mode awards. The RTTY DXCC accepts contacts made using Baudot, ASCII, Amtor, and other non-CW digital protocols.

Persons who qualify for RTTY Honor Roll will be recognized based on their RTTY DXCC records. No other action is required.

Miscellaneous

Bob Winn, W5KNE, editor of *QRZ DX*, reports that he made around some 7500 contacts during his visit as VI9XN on Christmas Island. The conditions were terrible. Bob also went on to say, "I have already received several complaints from DXers saying that we were weak." Well, Bob, what do you expect in this new era of exchanging reports via listmasters! There was no one there to relay the "first" or "second" number, or "that's a good contact!"

If you think you have heard it all, try this one. Jerry Skaife, W7ULC, was listening in the other day to the group that meets on 14.247 MHz. It seems that a WA4 from Florida was complaining about getting a letter back from the League rejecting a WAZ application that he sent in for one of the Africa DX stations that he manages. On hearing him complain about ten good hearted individuals came on the frequency to suggest that he try *CQ Magazine* instead. But, no he is still mad at the ARRL and is going to try again. Talking about hitting yourself in the head with a hammer because it feels so good when you stop. . . .

QSL Information

Hershel Bamford, W1APU, reports that QSL requests for CY9CWI via VE2CWI are being returned stamped "Unclaimed, Return to Sender". We wonder if someone has a better route than what was given in our October 1993 column.

Jerry Skaife, W7ULC, comments on that W3 QSL manager complaining about cards received via the bureau. I suggested we send him donations, which evidently is what he is looking for, as Jerry comments that he has received notes from this W3 QSL manager for donations up to $40 for his services and to help pay for the costs of the QSL cards.

QSL Routes

1B/KU0J	--KU0J
3D2MQ	--IV3DHD
3X0DEX	--FD1RUQ
3Y9YBA	--LA9YBA
4F2IR	--DU3DO
4K1F	--KF2KT
4K2BY	--KF2KT
4K9C	--UD6DC
4L9A	--IK3HHX
4M5I	--I2CBM
4U1ITU	--DK7UY (See Note 1)
4Z85TA	--4X6LM
5B2ABP	--OE2GEN
5K1R	--HK1LDG
5N33LRG	--WA4JTK
5N33NDP	--IK5JAN
5N8LRG	--WA4JTK
5R8/F6BQY	--F6FNU
5R8KH	--WB8LFO
5X1JM	--NK2T
5Z4FU/A	--DL8AAM
6W6/KB3AYP	--K3IPK
7Q7OO	--K6VNX
7X4AN	--DJ2BW
7Z1AB	--KN4F
7Z2AB	--K1SE
8Q7BX	--I4ALU
9G1MW	--IK3HHX
9G1SD	--N0NLP
9G1WJ	--K1SE
9K2YY	--KC4ELO
9K2ZC	--KC4ELO
9K2ZZ	--W8CNL
9M6/JH0SPE	--JA0VBJ
9M6/JA0VBJ	--JA0VBJ
9N1HP	--JA1OEM
9N1JA	--JA8MWU
9N1UZ	--PA3BUD
9V1YC	--AA5BT
9X5CW	--F6ITD
9X5DX	--F2VX
9X5GC	--IK0PHY
9Y4H	--K6NA
A22CT	--SV0HU
A25/OH7XM	--OH7XM
A35EA	--ZL1AMO
C21/AH0F	--JA2NQG
C21/ZL1AMO	--ZL1AMO
C21/AH0F	--JA2NQG
C50BI	--6W6JX
C56/G0UCT	--G1GMZ
C6AGN	--KA1DIG
C91BH	--SM5CTQ
CE0Y/JR2AIU	--PS7ZMA
CE7AOY	--CE7ZK
CH2SEX	--VE2ZV
CH2STN	--VE2STN
CH3VQL	--VE3MRN
CH9DH	--VE1DH
CN8NW	--KE8NW
CQ8C	--CT1EGW
CW0L	--CX2CS
CW93F	--CX3BJ
CY0SAB	--VE1CBK
ED6XXX	--N6RA
ED6YX	--EA5OL
EI7M	--EI5FT
EK1700GK	--GW3CDP
EK1700JJ	--GW3CDP
EL2PP	--I8NHJ
ER2CQ	--OE3SGU
ER2DX	--KD1CT
EV4A	--F6AML
EW/R3AW	--GW3CDP
EX0SY	--UM0MIG
F5OGG	--F6DGT
FH/DL5XU	--DL5XU
FH/DL9AWI	--DL5XU
GB5WW	--G4MVA
H44/DK7PE	--DK7PE
H44MM	--JF3PIE
HD9N	--AA5BT
HR2IQC	--JF1NZW
HS0ZAR	--K3ZO
HS7AS	--JA0MTR
HS0/DF1IG	--DF1IG
HT1T	--SM0KCR
IB0R	--IW0BET
IB9T	--IT9TQH
IU0PAW	--I0YO
IU2X	--IK2GSN
J37LA	--KB4VLO
J37ZY	--NS8G
J68AG	--WD8IXE
J68AK	--W8QID
J68AR	--K9BQL
J68AS	--N9AG
J68OK	--W8OK
J6DX	--N9AG
JD1BIE	--JA8FCG
JH1KSB/JD1	--JH1KSB
JT1/JE7RJZ	--JA7FWR
JT3SDX	--JR0CGJ
JU1HC	--JA3ULS
JY8KN	--DF1KN
JY8VJ	--DL1VJ
KC6FM/C21	--JR2BEF
KC6WP	--JA1WPX
KC6YK	--NH6YK
KE4EBF/5N1	--W4DVJ
KH0/JH1UUT	--JH1UUT
KH2/JI1GQL	--JI1GQL
KI7AM/DU8	--VE3XN
LI4WG	--LA7G
LX4B	--LX1TI
N2PQE/KH0	--JE2HCJ
NP4Z	--WC4E
OD5MM	--HB9CYH
OH0AM	--OH2BAD
OH0DX	--OH2BAD
OH0MYD	--OH3MYD
OH7W	--OH7AA
OK8AYA	--DL6NY
OK8EAR	--DL6RDE
OL1A	--OK1DWX
OL1HQ	--OK1DWX
P29VCW	--DK7PE
P4/W1EKT	--AA1M
P46J	--WX4G
P40N	--K1TO
P40W	--N2MM
PI4CC	--PB0AUI
PI4COM	--PA3CAL
PJ2/WJ2O	--WJ2O
PJ9Y	--OH3GZ
R1SRR	--UW1AE
R2SRR	--DK4VW
R6SRR	--UZ6LWZ
RAEM	--UZ3AXX
RK1QXM	--UA1QM
S01MZ	--EA2JG
S0RASD	--EA2JG
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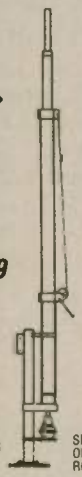

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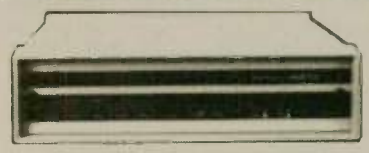

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TI1C	--N6TR	VP2MFA	--K8SJ
TL8BS	--SP8TK	VP2V/W2GUP	--W2GUP
TM5TLT	--F6GUA	VP5RX	--K1RX
TM7C	--F6CTT	VR2BH	--KA6V
TY8OBO	--WA4OBO	XE1L/C6A	--WA3HUP
UI0A	--G3LZK	XF4CI	--XE1CI
UI8ZAA	--K9FD	XX9AS	--KU9C
UI9ACP	--G3LZK	YB5AQG	--N6QLQ
UI9ACY	--G3LZK	YI1BGD	--DF3NZ
UI9AWX	--G3LZK	YI1IRL	--G0MMI
UM7/UA3TT	--DF7RX	YJ0AXX	--DK7PE
UO5OAS	--OE3SGU	YR0ATW	--YO4ATW
UR0EP	--UB5EOB	YV5A/1	--YV5AIP
UR7IA	--UB5INT	Z30M	--YU5GBC
UU2JZ	--W2FXA	ZD8M	--G3UOF
UX0IB	--RB5IB	ZD8Z	--VE3HO
UX0ZZ	--UB5ZND	ZF2RH	--KJ6BK
V31DL	--N0VYL	ZF2SP	--KB0JBX
V31JU	--WA2NHA	ZF2VP	--KC7V
V31KF	--W5ASP	ZF2VX	--K5VT
V31YZ	--W5YZ	ZF2VY	--K7GE
V63CT	--JA4ENL	ZF2WW	--G3SXW
VI9XN	--W5KNE	ZP5XYE	--JA7ZF

DX Prediction — March 1994

Maximum useable frequency from West Coast, Central US and East Coast *(courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).*

The numbers listed in each section are the average maximum useable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Tokyo, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio De Janeiro. Chance of contact as determined by path loss is indicated as bold *MUF for good, plain MUF for fair, and in parentheses for poor. UTC in hours.

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(15)*	10	*18	*(10)*	*17
10	*(14)*	9	*16	*(9)*	*16
12	25	13	14	17	21
14	31	*(14)*	*21	21	*28
16	33	*(13)*	19	20	*31
18	*32	*(12)*	*(17)*	17	*33
20	26	21	*(21)*	*(12)*	*34
22	22	22	29	*(11)*	*33
24	*19	20	33	10	*32
2	*17	*(14)*	27	9	*27
4	*17	*(12)*	25	9	*22
6	*(16)*	*(11)*	21	*10	*19

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(12)*	*13	*19	*(10)*	*17
12	*(11)*	*12	*17	*(9)*	*(14)*
14	*(21)*	*14	*14	17	26
16	*(25)*	13	*19	20	31
18	27	*(12)*	*(17)*	17	*33
20	27	21	*(21)*	*(12)*	*34
22	22	*26	28	*(11)*	*33
24	*(19)*	*28	32	*(10)*	*33
2	*17	*25	34	9	*27
4	*15	19	29	9	*22
6	*(13)*	16	27	*11	*19
8	*(12)*	*14	*22	*(10)*	*17

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	15	*(10)*	*(18)*	*10	*17
9	*(16)*	9	*16	12	*16
11	29	12	14	*19	20
13	33	*(11)*	*23	*22	*28
15	33	*(10)*	*(20)*	*21	*31
17	*35	*(10)*	*(17)*	*20	*33
19	*29	*(12)*	*(15)*	18	*33
21	24	*(19)*	*(26)*	12	*33
23	*20	*(20)*	31	11	*33
1	*18	*(14)*	*(27)*	10	*27
3	*16	*(11)*	24	9	*22
5	*16	*(10)*	21	9	*19

9G1NS -- Samir, P.O. Box 13291, Accra, GHANA

9L1JI -- Jeff Innes, c/o American Embassy, Freetown, Washington, DC 20521

9N1KY -- Kyoko, P.O. Box 3, Tokaimura, Ibaraki 31911, JAPAN

AP5N -- P.O. Box 1032, Islamabad, PAKISTAN

AT3D -- Doon Valley ARC, DEAL, Raipur Road, Dehradun 248001, INDIA

BV0ARL/BV2P -- CTARL QSL Bureau, P.O. Box 93, Taipei 100, TAIWAN

CE0YFL -- P.O. Box 7, Easter Island, CHILE

CE9MFK -- Ricardo, Luis Thayer Ojeda 814, Providencia, Santiago, CHILE

DU7LA -- Peter Sils, P.O. Box 901, Cebu 6000, PHILIPPINES

J28RP -- Jean-Pierre Leblanc, 59 Hameau de la Gondole, F-91650 Breuillet, FRANCE

KH2HB -- P.O. Box 4389, Agana, GUAM 96910

KH2HM -- P.O. Box 4389, Agana, GUAM 96910

LU9XPP -- Fernando Catoni, P.O. Box 103, 9410 Ushuia, Tierra del Fuego, ARGENTINA

P29KAB -- P.O. Box 1079, Goroko, EH, PAPUA NEW GUINEA

RØF -- P.O. Box 62, Sakhalin Island 693000, RUSSIA

TA1/W6QL --YASME Foundation, P.O. Box 2025, Castro Valley, CA 94546

NOTES:

1. This route applies for contacts made 3 through 7 January 1994 only. Operator was Wolfgang, DK7UY.

Many thanks to the following contributors: W1APU, KA2JMA, N2PLE, N4CD, KB4VLO, W7ULC, W9ACU, The American Radio Relay League (K5FUV), Ohio/Penn DX Bulletin (KB8NW), Salt City DX Association (KB2G), Western Washington DX Club (WA0RJY), *CQ Ham Radio*, *The Low Band Monitor*, *The Long Island DX Bulletin* (W2IYX), *DX News Sheet* (G4DYO), *QRZ DX* (W5KNE), and *The DX Bulletin* (VP2ML).

We gave our XYL an electronic rolodex for Christmas. She thought a FAX machine would be more useful, and exchanged it. So, if you wish to FAX me material directly try 916/485-3554. Of course, the first thing you will hear is "Hello." 73 de John N6JM. WR

The Youth Forum

Sammy Garrett, AAØCR
#8 Willow Ct., Florissant, MO 63031

Summer is probably the busiest time of the year for Amateur Radio operators all around the United States. Hamfests, contests, transmitter hunts, club picnics and countless other Amateur Radio activities take place nearly every day. There is one more summer event, however, which is probably the biggest radio happening of the entire year — Field Day.

Field Day is an annual operating event sponsored by the American Radio Relay League (ARRL) which is held during the third full weekend of June. It's true that June is still a few months away, but a great Field Day takes some planning.

So just what is this Field Day thing any way? If you asked a hundred hams that question you would probably get a hundred different answers. One thing they would all agree on though, is that FD takes a bit of hard work but it is also a lot of fun.

Field Day is designed to test operating ability and technical skills under emergency conditions. Most stations are powered by a non-commercial power source such as batteries, gas generators, solar power or even windmills. Antennas are also usually fairly simple. Dipoles, long wires, inverted vees and slopers are all popular choices. Individual amateur operators in addition to various clubs and organizations set up temporary stations on mountain tops, public parks, beaches and just about every other place imaginable.

Field Day participants are divided up into several categories according to their entry class. In many ways, Field Day is a contest. Stations compete against each other for contacts, and like any other contest, the highest scoring station in each category is declared the winner. This event is no ordinary contest, though. (In fact many hams do not consider FD to be a competition at all; but we'll get into that a bit later) In most amateur competitions the only way to score points is to contact other stations. Making contacts is one way to boost a Field Day score, but there are many other ways to score points. For example, originating and passing traffic, media coverage and having a Novice and Technician station all add points to a club or individual score.

So as you can see, Field Day is not only an operating event, but a great way to promote fellowship and increase publicity about the Amateur Radio service. Many clubs encourage the public to visit their operation and have experienced operators available to answer questions and give tours. This event is the first time that many people are exposed to the hobby and countless numbers of amateurs owe their licenses to their first Field Day experience.

Field Day also offers a lot of unique opportunities to people who are already licensed — especially young people. As I said earlier, this event means different things to different people. While some operators are pounding out contacts every few seconds, others may be socializing and getting to know one another or discussing the latest homebrew antenna designs.

Because so many amateurs flock to Field Day, new operators have a chance to talk with more experienced operators and can get hands-on experience with every aspect of Amateur Radio. This can be especially important because it allows a new operator or young ham to meet people and learn things to which they might not otherwise be exposed. One of the fondest radio memories I have is that of one of my elmers looking over my shoulder as I made some of my first Morse code contacts at my radio club's Field Day site a few years ago. I probably wouldn't have even had the courage to make those contacts if it hadn't been for Jim, NØJVK, and his comforting words and encouragement.

There are, without doubt, countless stories just like mine from nearly everyone who has ever participated in Field Day. You may even have had a similar experience. And if you haven't, check out your local Field Day this year — you'll probably like what you see.

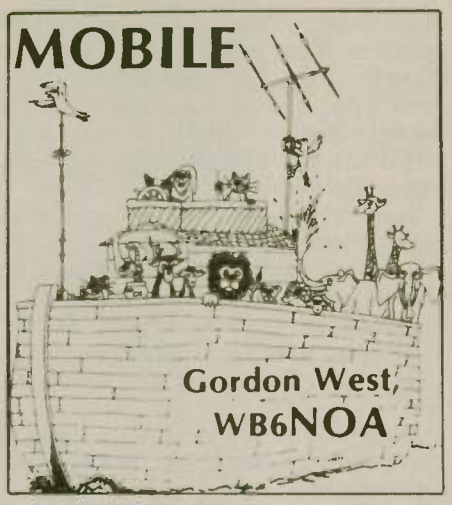
Hopefully by now you have an idea of just what this great event is all about. Of course this is a only a brief explanation of Field Day, but hopefully for those of you who haven't yet experienced it you've been inspired to find out more. For those of you who are already FD addicts, go find one of those hams who is looking for a Field Day in which to participate!

The ARRL Field Day takes place during the last full weekend of June. Consult *QST* Magazine or your local radio club for more details.

Help!

I need your pictures, story ideas, comments, criticisms and questions for and about the Youth Forum! I can't write about what you're interested in if I don't hear from you. So please don't hesitate to write to me or give me a call — even if it's just to say that you enjoy (or don't) reading the column.

Thanks and 73 until next time! WR



Not impossible mounts

I am convinced there is no vehicle out there that can't take one of these new antenna mounts. And the mounts I'm talking about are not those that require any holes punched into the side or roof of your vehicle. Those days are just about gone.

In fact, just the other day I was looking around for chain and strap mounts for a bumper antenna system; and when I finally found what I wanted, I realized there was no real way to get this assembly onto a vehicle with the new-fangled rubber bumper system with 5 mph shock absorbers. Just won't work easily. And same thing for those big ball mounts — yes, they still make ball mounts, but they aren't nearly as heavy and rigid as they used to be, and the ball mount still requires major gaping holes to be drilled into the vehicle. And then, after you've drilled a few holes, you mount the ball mount assembly, and then come to the realization that the fender that you mounted it to is so thin and so wobbly that you just drilled 3 + 1 big holes for naught.

Now enters the fabulous mounts from Diamond and Comet. These two companies are major competitors to each other, so check out both brands before you make a decision on which way you're going to go. Each company offers a full selection of mounts that will support everything from a little dual-band whip to a hefty Outbacker shaft.

The trunk and hatch mounts clamp onto the lip using an Allen wrench to dog into the under side of the trunk or hatch. When you tighten up the mount, the only area of the metal that get dug into by the Allen screws is on the under side of the trunk lip or hatch. A thin layer of plastic isolates the top part of the mount from marring your great paint job.

But before you go out and buy any old hatch mount, doublecheck that your mounting position isn't too thick for the mouth of the mount to get around. Also make sure that the top positioning device on the trunk or hatch-back mount allows you to swivel the antenna so it is positioned straight up when you open up the trunk or hatch. Also make sure that the antenna doesn't smash against the roof when you flap open the trunk!

If you want to get your mobile antenna up high, consider the gutter mount, or the lip mount. Usually one of these mounts will work with your particular type of vehicle frame. Gutter mounts normally work on older vehicles (like my black station wagon), and the lip mounts usually work well over the door. Take a look yourself—open up your door, and see whether or not there is a little bit of metal lip hiding under the rubber door seal that you can get the lip mount onto, and tightened up with the Allen screws. Then doublecheck that the door will close and not have problems with the slight protrusions of the back side of the Allen screws.

For recreational vehicles, both Comet and Diamond make excellent multi-purpose mounts that could lock into as many as 9 different positions, and bolt directly to horizontal or vertical aluminum ladders, runners, or anything else that is round or rectangular.

For massive HF antenna systems, you might even go for the Comet UB-ML under-bumper mount. It's 21 inches long, and sticks out from the rear of your vehicle just far enough that you can mount almost any type of big whip to it. But keep in mind your feedpoint is extremely low, and your SWR might not drop in when you try to tune your antenna by moving the stinger up and down.

You might be surprised that some of these rather small lip mounts and hatch mounts will nicely handle the Outbacker Perth antenna. No, not the big Outbacker, but the Outbacker Perth. This has less wind resistance because more of the antenna is the stainless steel stinger than the rugged big shaft. I haven't lost one yet, but I'm very careful not to drive under tree limbs. Always make it a practice to mount those big antennas on the left side of your vehicle, avoiding trees and limbs on the right.

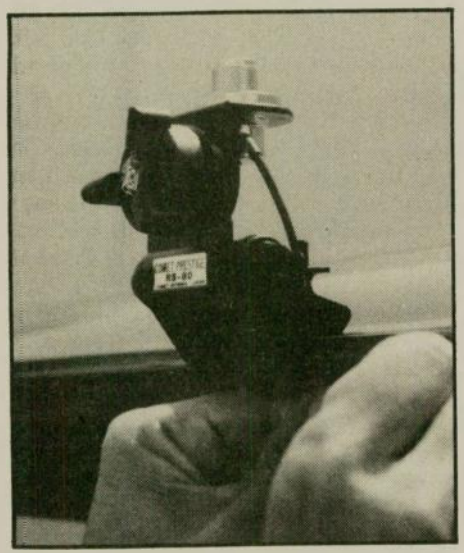
So now that you've got your antenna mount in place, your next decision is what type of coax feedline to use. You will probably need to go with the supplied feedlines that are available from both Comet and Diamond as part of their mount system. There is not enough room to make up your own coax assembly. It just won't work with these rather small and compact mounts.

These feedline assemblies are fabulous — the part that's going to get squished by your trunk lid or door is spaghetti-sized coax RG-174 which magically turns into an extremely flexible and low-loss coax a little bit smaller than RG-8. There appears to be virtually no loss in the transition, and it's completely weatherproof so you have no extremely exposed barrel connec-

tions to soak up water.

Even better news — you now get a choice of up to three different types of connectors, and you won't need a soldering iron at all. You simply screw into the supplied connector the device you want — be it a PL-259, or an N-connector, or even a small BNC. This way you can use the same feedline on a UHF radio that needs an N-connector, and then unscrew off the N-connector and use the feedline on your little HT with a BNC connector. Or screw on a PL-259, and use it on your friend's 40watt, 2meter transceiver.

More good news — now that your mount is in place, select the antenna of your choice for the amount of gain and height that you want or don't want. In the city, screw on the little 3 dB gain



This simple gutter mount will easily hold larger whips.

antenna that isn't very tall for dual-band operation. Then when you next drive out to the country, screw on the fold-over collinear dual-band antenna that's almost 6 feet tall, and enjoy an improvement in VHF and UHF range to distant repeaters.

So put away the drill, and forget about punching holes in your roof or fenders that are probably too thin in the first place to really accommodate any decent sized ham antenna. Go for the new breed of mounts, and buy them through a dealer that will let you try out the mount for size ahead of time to make sure it fits in your particular installation. You will be impressed with their cleverness of installation possibilities.

Code practice

Code practice on 2 meters? Yes, Mondays and Tuesdays at 8:00!

Gordon West Radio School offers code practice every Monday and Tuesday evening at 8:00 p.m. on 2 meters. The frequency is 144.330 MHz, simplex. This interactive net will ask for readbacks, too, so it is truly a Morse Code class on the air.

Monday nights at 8:00 p.m. on 144.330 MHz is code for beginners. Learn the code, and practice at 5 wpm (character rate 15 wpm).

Tuesday nights at 8:00 p.m. on 114.330MHz is General code practice from 5 to 13 wpm (character rate 16.5 wpm).

Join Gordon West, WB6NOA, and Bob Gregg, AB6CH, for an hourlong MCW class that is punctuated with fun code copy, readbacks from the licensed listeners, and tips on how to prepare for that upcoming code test.

The 2 meter simplex signal is heard loud and clear throughout the Southland from the WB6NOA remote high atop the Palos Verdes Hill. Guest code senders are always welcome, and please contact Gordon West Radio School for details on how to access the cross-band input.

Questions? Please call 714/549-5000 for additional details. **WR**

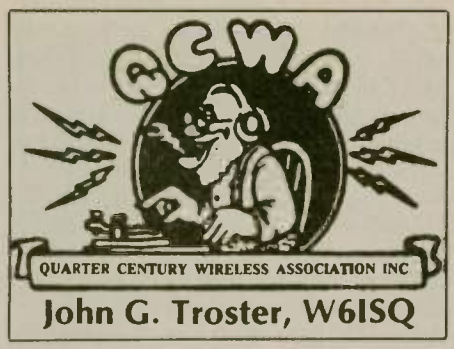
Quick response

(continued from page 24)

tions between county sheriff, fire and the city organizations, as well as area hospitals and shelters. This reporter being the District Communications Officer for the Cresenta Valley Sheriff's Stations was kept busy providing operations for that location, which works with the cities of Pasadena, Glendale and Burbank. The Glendale operators had their own set of problems, as the parking structure at the police station, where the emergency operations center is located, had collapsed, destroying a number of city vehicles in the process.

The hams responding to the city of San Fernando facility found it without power mains and generator power, and ended up rigging a handheld to the station's rooftop antenna. As we went on the air, hams were still on duty throughout the Los Angeles Basin keeping the lines of communications open. This particular ham was reminded on more than one occasion of his phonetics, N-6-Tiny-California-Quake.

—from Newsline Report #858, Courtesy of Amateur Radio Newsline



John G. Troster, W6ISQ

Hey, wanna do lunch? Great. How about with Don and Leo?

Mid-Winter-Mini-Convention

25 and 26 February, the QCWA Leo I. Meyerson Greater Palm Springs Area Chapter #154, is again hosting what's gotta be the number one place to be, the Mid-Winter-Mini-QCWA-Meeting. Master organizer, co-host Don Doughty, W6EEN, of tall antenna farm and large contest station, promises a grand time for all. Other co-host, Leo, WØGFQ himself, will be there, accompanying the fun on lorgan or piano keyboard. He's good and his music sets the right note (sic).

The Night-Before-Cocktail party at Phyllis and Don's home (read antenna ranch) kicks off the festivities with delectable canapes, hors d'oeuvres and finger food of all kinds. That's on Friday night, the 25th. Main event is Saturday, the 26th, the luncheon meeting. This year's speaker will be Bob Rose, K6GKU, a co-developer of MINIMUF propagation program and former ARRL Technical Advisor. Plus, QCWA Veep Lew McCoy, W1ICP, will slide down off the continental divide from Silver City, NM to warm up for a few days and to present a special 15 minute program on "The Future of QCWA." Fifteen minutes, huh! There's a record right there. It may take him 15 minutes just to settle on a topic. He may even give us a new hot chili recipe. Come find out.

The guest list grows evermore far-reaching. You might want to stay tuned for QCWA General Manager Mechanic Jim Walsh's mobile W7LVN/M, as he cruises down Highway I-5 from Oregon with Jan Haytor (you all know Jan, she's the power pac of the QCWA office). Pacific Division Director Fried Heyn, WA6WZO, will lay down his grand-slam bridge hand (he's a Life Master) to return again this year to the festivities, as will Vice Director Art Goddard, W6XD. From Arkansas, filters a rumor that, QCWA President emeritus Leland Smith W5KL, (tenchhuttt) and YF Helen, WA5WAR, may be there. And many, many more friendly QCWAers and YFs, just like last year.

Don and Leo send their personal invitation herewith. If you're QCWA, you're invited. Reservations are $20 per person, which price includes both the Friday night cocktail party and the Saturday noon luncheon meeting. Call Don Doughty, W6EEN, at 619/345-8780 or write him: 42-605 Byron Place, Bermuda Dunes, CA 92201. Do it right away—there's room for only 837 people in the dining room. First come, first served.

Audio cassettes for the visually impaired

Five years ago Esther Given, W6BDE, wrote a QCWA column about Tom Carten, K1PZU, QCWA # 21157, telling of his outstanding work preparing audio cassettes for sight impaired Amateur Radio operators. He's still doing these tapes, and once again, it seems appropriate to bring his work to the attention of all of you. Particularly, in case you might know someone who would benefit from receiving these tapes. Tom makes them available to all.

Leo Meyerson, WØGFQ, playing the piano.

The tapes are readings from ***Worldradio***, which play about 90 minutes each. He chooses those articles which he finds best translate onto tape, including features and columns, even sometimes this one. Tom also reads from the QCWA journal for tapes.

As in the case of so many unselfish services and works, this one got started almost casually and without any larger purpose in mind. Some 20 years ago, Tom had two blind amateur friends and when he visited them, he would read parts of *QST* for their interest and to keep them up to speed. Soon he realized it would be quicker if he taped his reading, and it just grew from there. When ***Worldradio*** began, Tom decided he would read it for tape and has been doing so ever since.

Tom's own hamming started when he got an old Hallicrafter S-20 in high school and began listening to short wave. He monitored nightly short wave news broadcasts and sent in information to hometown Bridgeport, CT radio station WICC. Then came a short stint in Amateur Radio as KN1PZU in 1960. He also organized and ran the school radio club and introduced others to the hobby. As WICC became more exciting, he let his ticket lapse. On the radio station where he was announcer, rock and roll disc jockey, classical music presenter, Mr. Everything. However, in the late sixties he took the amateur exams again getting his Extra class amateur and First Class Commercial license.

After high school Tom went off to King's College, in Wilkes-Barre, PA where he edited the newsletter for the local Wilkes-Barre radio club. In '73 he began recording books for a religious library and later read the daily newspaper for two hours every day over the local FM station, a program which even today has the top rating in its time slot in his area for senior citizens. He's been doing this reading over the air, daily, for 20 years, and insists he will continue until he gets it right. In 1979 he was ordained a Catholic priest and stayed on at his alma mater in campus ministry. Tom sits at his desk and reads into a Marantz cassette recorder, then reproduces the tapes on a high speed duplicator. He sends out over 250 tapes of ***Worldradio*** each month and 75 QCWA journal tapes per issue. In addition to ***Worldradio*** and the QCWA journal, Tom also records cassettes for the International Handicapped News.

That's by no means all. For the past 10 years Tom's been a local newspaper writer. He was the music/dance/drama critic for seven years, and for nine years, co-authored a weekly column on the big bands. He did two years as a radio/TV writer, and four as a substitute editorial writer. He also writes and edits the college's weekly religious bulletin, and the religious community's national newsletter. He taught in the Communications Department of the college, managed the college FM station for 10 years, was advisor to the college newspaper, and marched the "disorganized bunch we call the band." Oh, yes. He plays the piano and trumpet too. Would you have any doubt that he is listed in "Who's Who in Entertainment" and "Who's Who in the East?" He recently received the Jules Schick Award from the Blind Veteran's Association of Pennsylvania. This award was named for a WWII Associated Press photographer who worked

One of us, Tom Carten, K1PZU, QCWA #21157, at work at WRKC.

in the veteran's hospitals after the war. A highly appropriate recognition of Tom's years of selfless service. Tom says he has two voices. One for the telephone, a pleasant, melodious, normal conversational voice. The other, the tape reading voice, deeper, well modulated, affirmative, a tone that commands attention. Tom calls it his Senator Claghorn voice, if you remember Fred Allen's radio program. I've heard them both, and they're both easy listening!

How to get the tapes

If you know a sight-impaired amateur who would like to listen to Tom's tapes, do this. For the tape of ***Worldradio***, write Fr. Tom Carten, K1PZU, 1602 Kings College, Wilkes-Barre, PA 18711. For the QCWA journal tapes write Mrs. Blanche Randles, W4GXZ, 6002 N. Freemont, Tampa, FL 33604. (Blanche is YF of QCWA Treasurer Wes, W4COW, and co-organizer of the recent St. Petersburg National Convention). Tom asks that persons receiving his tapes contribute $3 per year to cover part of his mailing and shipping box replacement cost. If the recipient does not have an extra $3 that's OK, too. Tom sends the tapes to all requesting them. I will hazard a guess that Tom would welcome 90-minute audio cassettes if any of you have extras.

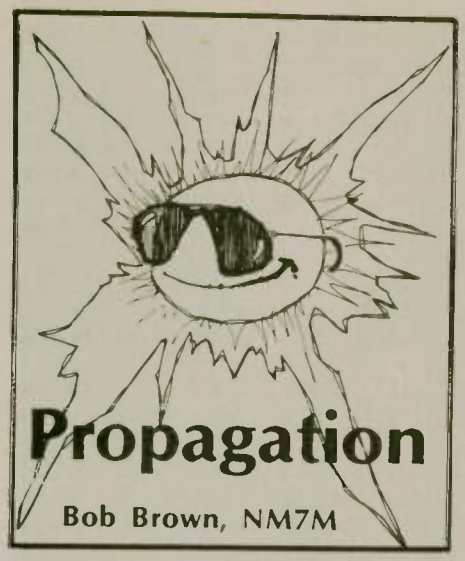
It's heartening to have Tom Carten, K1PZU included in our membership. Good feeling to remember, he is One Of Us, the Proud, the Experienced, the QCWA.

P.S. to W3WPY. I read another chapter.

P.P.S. Hope you are all monitoring those 14.1 MHz beacons.

May your best New Year's Resolutions, like mine, of course, be unbreakable!

73 25, Jack, W6ISQ **WR**



It's funny how things stick in your head. During WWII, I went in the Navy but at the time, there was no need for additional recruits in the radar and electronic programs so I ended up in the Japanese Language School. In the course of studying that language, various phrases became implanted in my skull. Take one, "Mono no Junjo." That means "The order of things." That phrase could apply to many aspects of life, even our interest in the ionosphere. So let's go with it for a while, exploring "The order of things IONOSPHERIC."

If one goes beyond the simplest aspects of propagation, say ground-wave or line-of-sight propagation on VHF, we come face to face with the two fundamentals of radio physics, ionospheric refraction and ground reflection. At this point, you probably take them both pretty much for granted. But if you stop to think about it, those were ideal circumstances — an ionosphere which is slowly varying with altitude and a smooth reflecting surface at the earth.

The ionosphere is a pretty wispy thing, up where the gases are thin, but there's no reason to think there's anything in the way of winds up there. As a matter of fact, all the things we know from aircraft altitudes apply — turbulence, wind shears , convection up and down. We could make a whole case out of those points but not now. Let's go to the next level in "The order of things" and deal with ground reflection from a rough and irregular surface, leaving talk of "ionospheric meteorology" for later.

At the surface, we know things can be bumpy, even with different composition, say water, ice, dirt and the like. Snell's Law of reflection from optics says that the angle of incidence of RF on a surface equals the angle of reflection. One can use different reference directions, say with respect to the local horizontal direction, i.e., the elevation or radiation angle, or with respect to the line perpendicular, i.e., normal, to the surface; the former is radio jargon while the latter is firmly fixed in the lore of optics.

Now loss of signal at ground reflection depends on frequency as well as the nature of the surface, say its dielectric constant and conductivity, and the angle of reflection. All in all, its a fairly efficient process at the radiation angles which interest us in DXing. By way of example, consider the reflection coefficients plotted in Figure 1. That's for 14 MHz signals reflected off of "average ground" and both horizontal and vertical polarizations are shown.

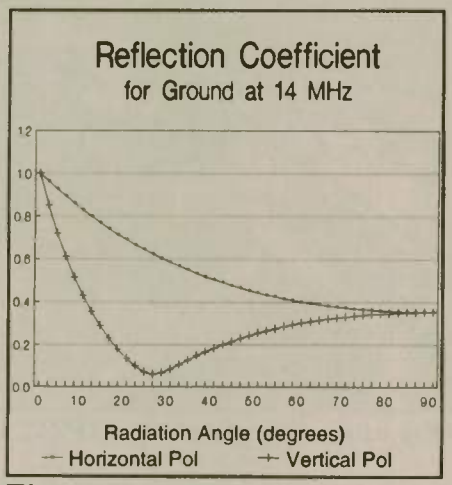


Figure 1.

For that material, the dielectric constant is roughly 4 and the conductivity is .001 mhos/meter. To see what those curves mean to us, note that they represent the ratio of the amplitudes of the reflected electric fields of a wave to the incident electric field. For a typical angle for DXing, say 10 degrees above the horizon, those ratios, when converted to intensity, amount to losses of 1.6 and 7.3 dB for horizontal and vertical polarizations, respectively. Those figures would apply to about 20% of the earth, the part where the terrain can be rough and irregular.

The minimum reflection coefficient for vertical polarization occurs at the "pseudo-Brewster angle," named after the case for pure dielectrics in geometrical optics. There, at the Brewster Angle, the reflection coefficient for vertical polarization goes to zero and only horizontally polarized waves are reflected. In the case of finite conductivity, the pseudo-Brewster angle is smaller for moist ground and is only a degree or so for salt water.

Speaking of salt water, the rest (80%) of the earth is covered with the oceans and the losses there are less because of the greater conductivity. While the terrain on the land masses is variable in space, it is essentially fixed in time; the ocean surface, on the other hand, may change in both respects because of wave action during storms. However, the heights of wave crests are much less and make scattering effects more important to the VHF range where wavelengths are of comparable size than in the HF range that's of interest to us.

The forward propagation of HF signals on multi-hop modes is based on ground reflections and signal strengths follow from the magnitudes of the reflection coefficients, as shown above. But the nature or the roughness of the terrain are not obvious when receiving signals from a distant transmitter. True, there may be multi-path effects from different modes, say 2F and 3F, on a path but they only involve ground reflections at different radiation angles for the incident radiation.

It's when the discussion turns to distances which reach into the nearby "skip-zone" that we get into how rough and irregular surfaces show their presence in HF propagation. Clearly, various orientations of surfaces will reflect RF waves in a wide range of directions. This is called "ground scatter" and can give rise to RF going in all sorts of directions, even back toward the transmitter, as shown in Figure 2.

In Amateur Radio operations such "back-scatter" is evident when one hears a strong multi-path component on the signals from a nearby CW transmitter. Most CW operators recognize the echo but have no means to measure the time interval. But ionosondes, with their time-distance displays, show some ground-reflection effects whether in a vertical or oblique mode of operation.

In addition to "back-scatter," there is also "side-scatter" where signals go off to the side, in directions well away from the original direction of forward propagation. As with "back-scatter," it proves possible to communicate between stations within a skip zone; the trick is to have a ground reflection outside the skip zone and yet have the side-scattered radiation reach the other station within the skip zone. In terms of Figure 2, that would correspond to

station R being located in or out of the plane of the page.

The size of skip zones does depend on ionospheric propagation and thus solar-terrestrial parameters like the sunspot number. On the other hand, ground-scatter of radiation is dependent only on the roughness of the terrain, view angles for the radiation and its wavelength. But for ground-scatter to be useful, signals must first be re-

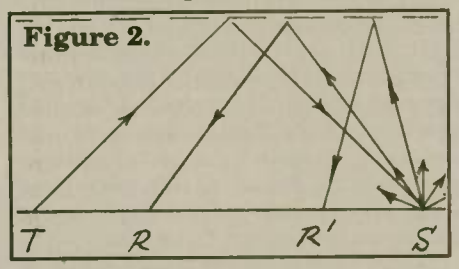


Figure 2.

turned by the ionosphere.

Given that, there are differences between what can be accomplished by using scatter modes, lower frequencies proving more reliable at times of low solar activity. Another point to be noted is that the ionosphere is more robust and MUFs are generally higher toward the equator so for a given situation, using one's beam to try for ground scatter at lower latitudes is a step in the right direction.

All in all, ground scatter, whether to the side or backwards, is stable and even predictable. In that sense, it may make a positive contribution to HF communications. But the same in not true for the next level of complexity in "The order of things," signal scattering by the ionosphere. Indeed, more often than not, that proves to be adverse when it comes to HF communications.

To start that discussion, it should be noted that the two situations are quite different, densities of the neutral atmosphere at high altitudes are more than three orders of magnitude less than at ground level and the conductivity is considerably higher. But when it comes to ionospheric scatter, the problem is much more complicated as the scattering regions are not fixed; instead they may vary in size and shape with time and even have both random and drift aspects to their motions.

When it comes to the mechanisms involved, it is important to note the difference between ordinary ionospheric refraction and ionospheric scattering. In the former case, the ionosphere is smooth and continuous in its properties, particularly in the vertical direction. Thus, ordinary refraction involves the advance of broad wavefronts where the velocity varies with height. In the case of refraction, the upper portion of a wave front advances faster than lower portions and there is a gradual bending of the rays normal to the wavefront.

In the case of scattering, the ionosphere is broken up into small-scale irregularities where the electron density varies in a random, fluctuating manner from one to another. As a result, only a limited portion of the advancing wavefront is intercepted by an irregularity; however, the electrons in the irregularity are excited in phase and reradiate the incoming radiation but now over a wide range of directions.

From that, one can see that a large number of irregularities may contribute radiation which reaches a distant point but the electric fields of the various wavelets will not always be in phase nor all of equal amplitude; instead, they may vary rapidly with time and and amplitude, leading to rapid fluctuations or fading of the scattered signal reaching a receiver.

To proceed any further with this discussion, one has to identify the regions and circumstances where irregularities are found. Actually, they range from the equator to the poles. At equatorial latitudes, the irregularities are at high altitudes, largely in and above the F-region and result from ionization driven from west to east by an electric field of solar origin. The earth's magnetic field being horizonal at equatorial latitudes, the ionization rises and then spreads or spills to the north and south, sort of a fountain effect.

Such rising plumes of ionization are full of irregularities, from about 1 meter to 1 kilometer in size, but their effects are most prominent in the late afternoon or evening hours, prime-time for overseas broadcasting. The irregularities give rise to "flutter fading" and distortion, making voice communication very difficult.

In that regard, one of my favorite stories goes back to the IGY. A German research group in Southern Rhodesia (now Zimbabwe) monitored Radio Berlin or some such station for domestic news and entertainment but the distortions in the evening were so bad that one observer remarked the flutter distortion "makes Beethoven sound like jazz."

If you want to get a first-hand glimpse of flutter fading and distortion, just listen to CW signals from beacons on the Russian satellites, RS-10 and RS-12, as they pass down through the equatorial ionosphere from 1,000 km altitude. At times, the CW is so badly distorted by Doppler shifts from motions of the irregularities that the CW sounds like keyed noise!

The equatorial F-region has its origin in solar ultra-violet radiation so the irregularities are there, day in and day out. That's not true of the irregularities observed at high latitudes where the influx of energetic electrons during auroral displays give rise to the ionization. And if you've ever been in the northern tier of states, you know how frequent or infrequent auroral displays may be but having seen an auroral curtain, you know that the atoms in the atmosphere are excited (and ionized) from great heights almost down to the tree tops.

Well, not quite; actually, the lower limit of auroral displays is down around the 100 km level and that's where the optical emissions and ionization reach their peaks. And the auroral displays give clear evidence of the patchy streaks that must be involved in the scattering of RF waves which pass through the auroral curtain, going to or from a ground reflection. Like scattering in equatorial regions, fading, now called "auroral flutter," is noted in transmissions which go across high latitudes during magnetic storms and unlike equatorial flutter, it is well-known to DXers in Amateur Radio.

In both the equatorial and auroral situations, the geomagnetic field is a controlling factor and the electrons in the ionospheric irregularities spiral around the field lines. Thus, one reads about scattering by "field-aligned irregularities" or FAI in books on radio propagation. But the discussion is more in connection with VHF than HF radio. The reason is simple; HF radio propagation depends on a smoothly varying ionosphere and makes predictions as to which paths are open and others that are closed, all phrased in terms of MUFs.

With propagation of waves through irregularities, the ideas behind MUF calculations do not apply and it is not surprising that scattering allows forward propagation at frequencies above and distances beyond those which might be obtained from classical methods. And that's the excitement for those interested in VHF propagation. But they have to pay a price, using greater power and bigger antenna systems, for new records of frequency and distance on VHF as ionospheric scatter is an inefficient mode of propagation. WR

The night was dark and it was snowing. I had 45 miles to drive, half of which was on seldom-used country roads in North Dakota cattle ranching country. The temperature was near 0° Fahrenheit and dropping rapidly. Winter on the North Dakota prairies can be rough.

My wife and I had checked into the usual motel we stay in when we visit our daughter who lives on the cow-calf operation ranch, so we were about to return to spend the night. Every bed at the ranch house was filled for the weekend, so under conditions like that we normally stay in the city of Rugby and commute to the ranch during our visit.

I regularly have my 2M mobile in use when I travel on the highways, but the ranch location is out of range for the ham repeaters I normally monitor when in the area. So, my daughter, concerned about the winter weather, volunteered to loan us the portable mobile business phone she uses when she drives in bad weather. "You won't have any trouble, dad," she said, "you're an expert in using two-way radios."

Her radio unit has a magnetic mount roof antenna and a cigar lighter power plug, so I put it on the front seat in place of my usual Icom two meter rig. After a brief instructional period on the use of the various "towers," as she called the repeater sites, we set out for the motel.

The snow had obliterated whatever wheel tracks there had been on the gravel road, and the light snow that was falling made visibility variable at times. It was neither a good night nor a bad night to travel, but because we had driven the road a number of times in the winter, we set out for Rugby.

If you live in North Dakota, you have winter survival gear in the trunk of your car. Mine consists of heavy duty sleeping bags, arctic boots, a snow mobile suit, plus a box of survival stuff recommended by the auto clubs in the area.

The first few miles went by easily. The radio was sitting between my wife and me, the power on and the readout glowing in the dark. My daughter had told us that if we got stuck, all we had to do was call on the phone and someone would come to our rescue with the ranch four wheel drive pickup. "I'll call you after a while," she said as we left, "and all you have to do is pick up the phone and answer. I'll check on your progress that way."

It started to snow more heavily, the visibility dropped. If I put the headlights on high beam all you could see was snow, so we ran with them on low beam. Now and then there were vestiges of wheel tracks, so from my point of view it was going all right. We went down through a slough area where pillow drifts had formed in the lee of the higher ground, the car bucked the snow but it kept on going. Our front end drive automobile bounced and bucked, but we went through the drifts all right.

A few miles further we came to a sheltered area where trees had partially blocked the wind and the pillow drifts were larger. Just as we hit the first drift, the phone started to ring. "Radio expert" Bill, the driver, reached for the phone, but it wouldn't come off the hook. "Grab the phone," I said to my wife. I had to have both hands on the steering wheel as the snow was counteracting my efforts to guide the Oldsmobile through the drifts.

"I can't get it off the hook," she said as she struggled to pull the phone away from the box it was on. Then suddenly the readout box went dark and that was that.

My first thought was that she had accidentally pulled the plug out of the cigar lighter and caused the radio to go dead. When I had a chance I checked for that possibility but the plug seemed to be securely in the socket.

I was not about to stop and check the radio because I didn't want to lose the momentum of the auto banging into the pillow and finger drifts that had formed on the road, so I kept going until I reached the four lane highway leading into Rugby. From there on the road was good, although the passing lane was packed with snow and anyone who passed me would create a storm of snow fog that was extremely dangerous, so I kept in front of the traffic behind.

At Rugby I took the radio into the motel and checked it out. It had a latching arrangement that was very simple. All you had to do was pull the handset back a bit to unhook it from the box, a feature that my daughter had failed to explain to the "radio expert" who was driving the car. And I found the cause of the blackout: a tiny power switch was located on the side of the handset and apparently in my wife's efforts to unhook it from the box, she had switched the phone off and that was that.

My daughter's instruction had been very thorough on the use of the "towers" and the protocol of toll calls, but she didn't tell me how to unhook the phone to use it. Sometimes simple things can be quite frustrating — and that experience was a good example.

Mailbag stuff

Packet message from Frank, KI7SY,

had this gem in it: "Bill, I recently visited Saipan and saw the following sign over the door of a video arcade in a hotel that caters primarily to Japanese tourists: ATTENTION: YOUTH UNDER AGE 14 PERMITTED ENTRY ONLY NEVER!"

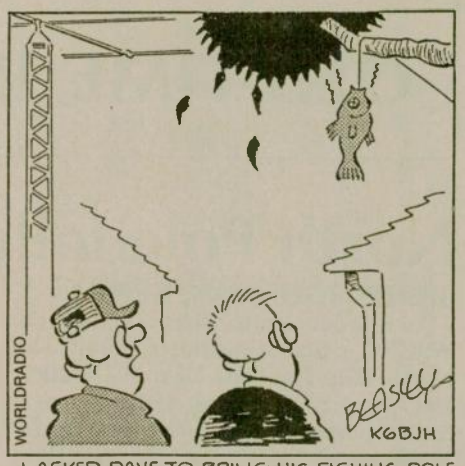
When I read that malapropism, it reminded me of my days in Africa after I left the Gatti-Hallicrafters African Expedition which was written up in the December 1993 *QST* magazine. I had joined Wendell Phillips' University of California African Expedition and we had a young African lad named Sebastian working as a "gopher" on our filming safari. After I returned to the states, I corresponded with him while he was going to technical school in Nairobi, Kenya to learn to be a telegraph and telephone technician. Sebastian always began his letters to me by saying, "I am so happy to remind myself to you once again."

Whenever I received such a greeting from Sebastian, I "reminded myself" to him by sending him a little stipend of American green stamps to help him with his education. We kept "reminding ourselves" back and forth until after his schooling ended. Now I sometimes wonder how he made out after he joined the Post and Telegraph department of the Kenya government, because he was a very sharp kid or "toto" as they say in Kiswahili.

By the way, the story in the December, 1993 *QST* was written by a Springfield, Missouri newspaperman, Mike O'Brien, NØNLQ. It had previously been published in *"Electric Radio,"* P.O. Box 57, Hesperus, CO 81326. If you are into collecting or using "vintage" ham radio gear with vacuum tubes, *"Electric Radio"* is a nifty little magazine to have around the shack. It is full of editorial information on set modifications and repairs. The classified section has both "for sale" and "equipment wanted" advertisements to help you in your collection efforts. I noticed one "want ad" that asked for a specific transmitter, "smoking or not." So that should give you an idea of what the little magazine is all about.

EAVESDROPPINGS

"I OWN A TWO-AILMENT ANTENNA, IT'S LOOSE ON THE MAST AND I THINK THE COAX HAS WATER IN IT. . . . WHEN I WORK A YL ON RTTY I TRY TO SWAP PICTURES WITH HER, BUT PICKINGS HAVE BEEN PRETTY SLIM. . . HAM RADIO ISN'T THE ONLY THING THAT KEEPS ME OFF OF THE BOOZE — I HAVE A WIFE. . . I HAVE A VERY INTERESTING JOB IN THE LOCAL BREWERY. . . OUR SNOW MOVING BUSINESS HAS BEEN PRETTY GOOD, BUT IT IS PRETTY DEAD DURING THE SUMMER. . . LET ME KNOW IF YOU DON'T GET THIS PACKET MESSAGE. . . I'M TOO OLD FOR THE GERITOL NET ON 75 PHONE. . . I USED TO HAVE A LOT OF HARD-EARNED CASH UNTIL I WENT TO LAS VEGAS. . . SOME RADIO MANUALS ARE WRITTEN BY WELL-EDUCATED MORONS FOR USE ONLY BY WELL-EDUCATED GENIUS TYPES. . . YOU ASK HIM WHAT TIME IT IS AND HE TELLS YOU WHAT CPU CHIP YOU SHOULD BE USING. . . I JUST BUMPED THE MAIN TUNING DIAL AND I CAN'T REMEMBER WHERE IT WAS. . . WE'VE GOT A JACKASS HERE ON THE FARM NAMED "LID". . . . WHAT KIND OF CATFISH DID YOU SAY YOU CAUGHT? . . . . THANK THEE OLDE TIMER FOR THE NICE CALLE. . . I HIT THE SEND BUFFER KEY TWICE BUT THE LITTLE BUFFIES DIDN'T COME OUT. . . MY UNCLE IS A BISTRONAUT — HE FLIES HIGH DURING THE DAY. . . . THIS IS THE FASTEST 11 YEAR SUNSPOT CYCLE IN MY 40 YEARS

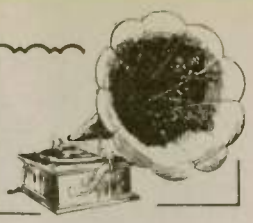


I ASKED DAVE TO BRING HIS FISHING POLE AND LINE AND HELP ME STRING A LONG-WIRE THROUGH THE TREES

OF HAMMING — WHERE DID IT GO? . . . . MY WIFE CALLED ME FOR BREAKFAST — I SUPPOSE IT IS THE OLD "CLUCK" AND "GRUNT" WITH HASHED BROWNIES ROUTINE . . . . I DRIVE A COMMERCIAL 18 WHEELER — GO OUT WITH A LOAD OF MACHINERY AND COME HOME WITH IT FULL OF POST HOLES. . . HAD ANY EARTHQUAKES OR OTHER EARTH-SHAKING NEWS OUT THERE IN CALIFORNIA LATELY? . . . . I CAN REMEMBER WHEN A PACKET MESSAGE WOULD GO ACROSS THE COUNTRY IN NO TIME AT ALL. . . . 73 AND ALL THAT KIND OF GOOD STUFF."

If you wish to communicate with the "radio expert" write: Bill Snyder, WØLHS, 1514 South 12th St., Fargo, ND, 58103-4134. Packet messages addressed to WØLHS@WØLHS.#SEND.ND.USA.NA may or may not find their way to North Dakota. Let's hope they do, for I'll answer them with the hope that they make it back to you. 73 de Bill. DIT DIT. **WR**

OLD-TIME RADIO



North Pole follow-up

JERRY JOHNSON, KEØKI

As a follow up to Russ Rennaker's, W9CRC article, December 1993, "The North Pole Incident," From October, 1947, until December, 1950, I was a radio operator on the *USS Burton Island*, a navy ice breaker. In the fall of 1949 during the resupply expedition to Point Barrow and Barter Island, Alaska, the ship lost one of her screws between Point Barrow and Barter Island due to the heavy ice. It was necessary to call for assistance from the Coast Guard ice breaker *Northwind* down in Kodiak.

As the duty radio operator on the ship/shore circuit, it was my duty to contact a navy shore station to have a message relayed to the Coast Guard. Communications were absolutely impossible. Using a Meissner preselector in series with the inverted vee antenna and the superhet in use, no signals were heard from 2 MHz through 30 MHz. I called various navy stations without any luck. So I cranked the 3kw rig into the Maritime band and called CQ/anybody—no answer from anyone!

Finally after about 5 to 6 hours of calling on various frequencies I heard a very weak CW station. Turned out to be a tramp steamer over near Shanghai, China, and he agreed to accept my traffic.

I learned later my message had gone from near China, south to the Philippines, further south to Singapore and Australia. Then north to Guam, Pearl Harbor, San Francisco, Seattle and finally to Kodiak and then to the Icebreaker *Northwind*.

Eventually she showed up, turned us around and started us on our way home to Long Beach, CA. While onboard the *Burton Island*, I visited the Antarctic in the summer of 1947/1948, the Arctic in 1948 and 1949 (also in the summer) and the Bering Sea north to Nome in the winter of 1949/1950.

Mystery solved

RICHARD L. THOMAS, KB7BAD

The question of what happened to Harold S. Bride, the *Titanic*'s second wireless operator, was raised in the Old-Time Radio column in your January issue. That mystery was solved several years ago by David O. Norris, N8HKV, a Michigan private detective. Norris told the story in the February 1989 issue of *CQ Magazine*.

In summary, Bride continued as a shipboard wireless operator after the *Titanic* inquiry, working for the Marconi Service until about 1916. He served in the British Navy in WWI. Then he dropped from public view, reportedly becoming a traveling salesman. He never gave up his interest in wireless communication however, and was a radio amateur. He died at the age of about 66 in Glasgow, Scotland on April 29th, 1956.

Norris is a licensed private detective, and, according to his *CQ* story, began tracing Bride after meeting Walter Lord, author of "A Night to Remember," the story of the *Titanic* sinking. WR

Visit Your Local RADIO CLUB

*For information on how to get your club listed in "Visit Your Radio Club," plus receive many other benefits, write to Club Liaison, **Worldradio**, 2120 28th St., Sacramento, CA 95818.*

ALASKA

North Pole Hamsters ARC. Meets 1st Mon./monthly, 7 p.m., VFW Bldg., Old Rich Hwy. & VFW St., P.O. Box 56424, North Pole, AK 99705.

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.37/146.97 PL 103.5 Hz.

ARIZONA

Central Arizona DX Assoc., (CADXA). Meets 1st Thurs./monthly, 7 p.m., Salt River Project Pera Club, 1/2 mi. West of 68th & Continental Dr., Scottsdale, AZ. Rptr. K5VT 147.32/92. Packet Cluster nodes (S): 145.09, 144.93, 145.03. Info: Warren Hill, KF7AY, (602) 396-2218.

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.16/76 rptr.

Scottsdale Amateur Club. Meets 1st Wed./monthly, 7:30 p.m., Scottsdale Sr. Cntr., 7375 E. 2nd St., Scottsdale, AZ. Net Tues., 7 p.m., 147.18 rptr. Info: Barney Fagan, KB7KOE, (602) 861-2817.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Pima Co. Sheriff Bldg., 1750 E. Benson Hwy. Net Thurs. 7:30 p.m. 146.22/82 (146.88-, 147.08-, 448.550-, & 145.15 Packet).

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835.

Amateur Radio Club of El Cajon, WA6BGS. P.O. Box 50, El Cajon, CA 92022. Meets 2nd Thurs./monthly, 7 p.m., La Mesa Church of Christ, 5150 Jackson Dr., La Mesa, CA. Rptrs. 147.675(-), 224.08-. PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info: (619) 697-2700.

Conejo Valley Amateur Radio Club, (CVARC). Meets 2nd Thurs./monthly, 7:30 p.m. Thousand Oaks Elks Lodge, 158 Conejo School Rd., Thousand Oaks, CA 91360.

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94803-0661. Meets 2nd Sun./monthly (except May & Dec.), 7 a.m., Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA60FR, (707) 996-0962.

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 8 p.m.-10 p.m., West Co Times Bldg., 4301 Lakeside Dr., Richmond, CA 94806. Info: Rachel Lewellen KB6LHR, (510) 233-5034.

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975 (-600). Info: Bob Hastings, K6PHE (714) 990-9203.

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.25/85. Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico.

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562.

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly, 4 p.m. with potluck supper following. Talk-in on 144.50 Simplex.

Lake County Amateur Radio Society, (LCARS). Meets last Thurs./monthly at either Red Cross HQ, Clearlake, or the Nice Community Clubhouse, Nice, CA, 7 p.m. Net Mon., 7 p.m. 146.775(-) for info.

Lee DeForest Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Simpson Neighborhood Center, 305 E. Devonshire, Hemet, CA.

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12+. For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

Manteca Amateur Radio Club (MARC). P.O. Box 545, Manteca, CA 95336. Meets 1st Thurs./monthly, #1 Firehouse, 7 p.m. Talk-in on club rptr. 146.985- PL 100Hz. Info: (209) 823-3611.

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA. (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael.

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Denny's Restaurant, 2314 17th St., Santa Ana, CA, (100 yds. west of the 55 Fwy.) Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036.

Mount Diablo Amateur Radio Club. P.O. Box 23222 Pleasant Hill, CA 94523. Meets 3rd Fri/monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+). Info: George KI6YK, (510) 837-9316.

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Elks Lodge, on Cypress at Hackberry in Carmichael, CA. (P.L. 162.2) Net K61S Thurs., 8 p.m. 145.190. 220 Net, Tue. 8 p.m. 224.40(-).

North Shores ARC. Meets 1st Tues./monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 224-1294.

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293.

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. + Stockton Blvd., Sacramento, CA. Info net every noon on rptr. W6AK/R 146.910. Jim L. White, N6UGO, (916) 773-5890.

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830.

San Fernando Valley ARC. Meets 3rd Fri./monthly, 7:30 p.m., Red Cross, 14717 Sherman Way., Van Nuys, CA. Net every Thur., 8 p.m. KB6C/R 147.735.

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385+/442.425(+) PL 107.2

Santa Clara Valley Rptr. Society, (SCVRS). P.O. Box 2085, Sunnyvale, CA 94087. (408) 247-2877. 146.76(-), 224.26(-), 444.60(+). 2 meter/220 net Mon. 9 p.m. Mtgs./3rd Fri.

Santa Monica—Westside Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Santa Monica Red Cross, 1450 11th St., Santa Monica, CA. Info Net every Tues., 8 p.m., 146.67(-).

Shasta Cascade Amateur Radio Society, (SCARS). P.O. Box 664, Anderson, CA 96007. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m.

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 10m, Wed. 7:30 p.m., 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86- .

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Airport, 3301 Airport Dr., Torrance, CA. Talk-in on WB6MYD rpt. 244.38/78. Info: (310) 328-0817.

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thurs., 8 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300.

Stanislaus Amateur Radio Assoc., Inc. (SARA). Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus County Admin. Bldg. (lower level conf. rm.), 11th & H St., Modesto, CA.

Stockton-Delta ARC. Meets 2nd Thurs./monthy, 7:30 p.m., Red Cross Bldg., 747 N. Pershing Ave., Stockton, CA Rptr. 147.165(+). Net Wed., 8 p.m. 146.655.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA.

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m.

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn. on Vine St. in Vacaville, CA. Rptr.: WD6BUS 145.470- PL 127.3. Dan Bissell (707) 446-7411.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:30 p.m., Victor Valley Museum, 11873 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), info net Sun. 7 p.m. 146.94(-).

West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. (except Dec.) Cambrian Sch. Dist. Office, 4115 Jackson Dr., San Jose, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39(+), 223.96(-).

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5.

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95991. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City.

CONNECTICUT

Shoreline ARC, (SARC). P.O. Box 256, Westbrook, CT 06498. Meets 3rd Thurs./monthly, 7:30 p.m., Westbrook Ingraham Sch., (203) 245-1969. Call-in: 145.29.

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church on Rt. 12. Info: Bob, KA1BB, (203) 739-8016.

FLORIDA

Gulf Coast ARC, Inc. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptr. 146.67(-).

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL.

Orlando Amateur Radio Club. P.O. Box 3262, Orlando, FL 32802. Meets 1st Wed./monthly, Beardall Center, Gore St. & Orange Ave., Orlando. 146.76(-), 145.11(-), 146.82(-), 147.015(+), 443.275. CTCSS 103.5 Hz on all except 146.76.

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Melbourne Public Library, 540 Fee Ave., Melbourne, FL.

Suncoast Amateur Radio Club. P.O. Box 1992, New Port Richey, FL 34656-1992. Meets 2nd Mon./monthly, 7:30 p.m., First Lutheran Church, corner of Polk & Delaware, New Port Richey, FL. Sponsor of WC2G/rptr. on 145.35, serving west Pasco County.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tue./monthly, 7 p.m., HELCO Auditorium, 1200 Kilauea Ave., Hilo. Talk-in on 146.68(-), 146.76(-), 146.88(-), 147.02(+) & 147.04(+).

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 148.80(-), 148.88(-), 148.98(-) 146.94(-). Info: (808) 621-5916.

IDAHO

Idaho Society Radio Amateurs. Boise Chapter 146.94. Meets 3rd Tues./monthly, Borah H.S., 7 p.m. Rptr. at 8000. Membership welcome.

Kootenai Amateur Radio Society, (KARS). P.O. Box 5222, Coeur d' Alene, ID 83814. Meets 2nd Mon./monthly, 7:30 p.m., Sheprock Bldg., Coeur d'Alene Airport.

ILLINOIS

Chicago FM Club Inc., (CFMC). 146.76 (PL 107.2)/224.10/224.18/443.75 (PL 114.8). P.O. Box 1532, Evanston, IL 60204. Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76. Meets 3rd Wed./monthly, 8 p.m.

Chicago Suburban Radio Assn., (CSRA). P.O. Box 88, Lyons, IL 60534. Meets 3rd Tues./monthly, 7 p.m., Mid City Nat'l Bank, 7222 W. Cermak Rd., N. Riverside, IL.

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.250. W9DUP repeaters 145.250(-) (107.2PL), 442.550(+) (114.8PL), 224.680(-).

Fox River Radio League. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL.

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, IL 60642. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.41 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.07. Info: (312) 974-3291.

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.25/85 & 147.675/075.

Schaumburg ARC, (SARC). Meets: 3rd Thurs./monthly, 7:30 p.m., Schaumburg Park Dist. Community Rec. Ctr. at Bode & Springinsguth Rds. Schaumburg, IL. Net 145.23, 8 p.m. Thurs. Info: (708) 213-0910.

The Starved Rock Radio Club, W9MKS. P.O. Box 22, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.72/.12.

Tri-Town Radio Amateur Club. P.O. Box 302, Hazel Crest, IL 60429. Meets 1st & 3rd Fri. (Sept.-June), 8 p.m., Hazel Crest Village Hall, 3000 W. 170th Pl. Net Wed. 146.49. Info: (708) 335-9572.

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Ellyn, IL. Nets Sun. & Tue. 8 p.m., 145.39 MHz. 440 MHz net on Tues., 8:30 p.m. on 444.475 MHz.

York Radio Club. Meets 3rd Fri./monthly, 8 p.m., Elmhurst College (Science Bldg.) Elmhurst, IL. Net Mon., 8 p.m. W9PCS/147.42 simplex. Rptr. 442.875.

MICHIGAN

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118.

Oak Park Amateur Radio Club. Oak Park Comm. Ctr., 14300 Oak Park Blvd., (same as 9 1/2 Mile Rd., west of Coolidge) Oak Park, MI 48237. Meets 2nd Mon./monthly, 7:45 p.m. Talk-in on our 224.36 MHz or 146.64 MHz.

Utica Shelby Emergency Communications Assoc., (USECA). P.O. Box 1222, Sterling Hgts., MI 48311-1222. Meets 2nd Tue./monthly, (Sept.-June), Donald Bemis Jr. High Sch., 12500 Nineteen Mile Rd., Sterling Hgts, MI (between Schoennher & Clinton River Rds.) Talk-in on 147.18+ 100Hz PL. 24-hr. hot line: (313) 268-6730.

MINNESOTA

Minneapolis Radio Club. P.O. Box 583281, Minneapolis, MN 55458-3281. Meets 3rd Fri./monthly, Mpls. Red Cross Bldg., 11 Dell Place, Mpls, 7:30 p.m. Making waves since 1916.

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202.

MISSOURI

Central Missouri Radio Assoc. P.O. Box 283, Columbia, MO 65202. Meets 2nd Tues./monthly, 7 p.m., Boone Electric Coop, 1413 Rangeline Rd., Columbia, MO. Talk-in 146.76.

Gateway To Ham Radio Club, N0DN. Young hams of all ages. Meets 1st Sun./monthly, 2-4 p.m., Sacred Heart Sch., 10 Ann Ave., Valley Park, MO 63088 (St. Louis). Net Sun., 8:30 p.m. 146.94 rptr. Beginners classes, VE exams, Club station & mtgs. Info: Rev. Dave Novak (314) 225-1952 (voice or Fax).

PHD Amateur Radio Assn., Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEBRASKA

The Ak-Sar-Ben ARC of Omaha, NE. Meets 2nd Fri./monthly, 7:30 p.m., Omaha Red Cross near 38th & Dewey St. 146.34/94. Contact Jim Miller (NØORV), (402) 253-8272.

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Mon./monthly, 7 p.m., Denny's Restaurant across from Nevada Palace, 5318 Boulder Hwy, Las Vegas, NV. Net Mon. 7:30 p.m., 145.39 Rptr. on Black Mountain. Club info: Jim Frye, NW70, 456-5396.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm.. Talk-in: 147.57.

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.10/70, 223.24/224.84, 449.15/444.15.

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 144.40 9 p.m. Wed.

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29 rptr. Club call K2AA.

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955/.355 rptr. W2PVL.

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285+ W2RCX.

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Charlie, WA2JUJ, (518) 420-0046.

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27 — WA2DQL.

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Masonic Temple, Rt. 78, Java Village, NY. Other Wed., 8 p.m. 145.1701 144.57- Repeater KC2JY.

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL!

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21 rpt. Morten Eriksen, KA2UIU, (516) 929-6911.

Westchester Amateur Radio Assoc., (WARA). Meets 1st Thurs./monthly, 7:30 p.m., Scarsdale Town Hall, Scarsdale, NY 10583. All invited. Info: Dan Grabel, N2FLR, Pres. (914) 723-8625.

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains. Contact WB2VUK or call WECA INFORLINE (914) 962-9666 or WECA landline BBS (914)738-6857 for details. Talk-in WB2ZII/R 147.66/06 MHz.

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-8995. 146.865-, 445.15/440.15.

NORTH CAROLINA

North Carolina Chapter TSRAC. Meets Mondays, 28.35 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240 and Wed. 9 p.m. on 7259. "The Alligators" — all mouth, no ears.

Stanly County Amateur Radio Club. P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thurs./monthly, 7 p.m. at Stanly Community College, Albemarle, N.C.

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m. County rptr., 146.715.

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 44811. NF8E rptr. 145.35 and 442.625 MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS.

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Ohio Veterans Home, Sandusky, OH. WB8LLY rptr. 146.805-/205. Net Sundays, 8 p.m. Info: Rob Harshbarger, N5XRB.

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (613) 563-7373.

Lancaster & Fairfield County ARC. Meets 1st Thurs./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info net Mondays, 8 p.m., K8QIK/R 147.63- rptr.

Northern Ohio Amateur Radio Society, (NOARS). Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: rptr. K8KRG 146.70, DX alert rptr. 145.15.

Springfield Independent Radio Assoc., (SIRA). Call-in 145.45—224.26. Meets 2nd Tues./monthly, 7:30 p.m., Mercy Hosp. & 4th Tues./monthly, 7:30 p.m., Am. Red Cross. Info: Rodney Myers, KB8WV, (513) 399-1022.

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brian, WD8MXR, 385-5624.

Triple States Radio Amateur Club. Meets Wed./weekly on 28.48 at 8:30 p.m., 7260 at 9 p.m. Rptrs. 146.91- & 146.115/715-. P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

Van Wert Amateur Radio Club, Inc. 1220 E. Ridge Rd., Van Wert, OH 45891. Call-in: 25/85. Meets 1st & 3rd Sat./monthly, 8 p.m.

OKLAHOMA

Enid Amateur Radio Club, Inc. W5HTK, WA5QYE, WA5OUB. P.O. Box 261, Enid, OK 73702. Meets 4th Thurs./monthly, OK Hwy. Patrol Stn.

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06(+) MHz. Info: (503) 382-1739.

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736.

Oregon Coast Emergency Rptr., Inc. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80. Info: 997-2323 or 997-3081.

Salem Amateur Radio Club, (SARC). Meets 4th Tues./monthly, 7:30 p.m., Four Corners School, 500 Elma Ave., SE, Salem, OR. Talk-in 146.86. Info: (503) 390-1386.

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 311, Douglas St., Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310.

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.96/36. Net 10:10 p.m. nightly.

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35 W3LIF, Digi. 145.01.

TEXAS

Brazos Valley Amateur Radio Club, (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thurs./monthly, 7:30 p.m., Sugar Land Community Ctr., 226 Matlage Way., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in: 145.47, 442.5 rptrs.

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st & 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Repeaters 146.13/73 & 449.55(-5). VE Exam Info: (804) 898-8031, W4RTZ.

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462.

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82 rptr. Doors open at 9:30 a.m.

WEST VIRGINIA

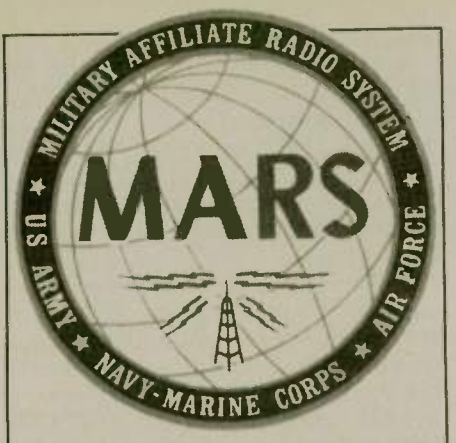
Jackson County Amateur Radio Club. Clark Stewart, W8TN, Pres., 104 Henrietta St. Ravenswood, WV 26164. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67/.07 WD8JNU/R.

WYOMING

Sheridan Radio Amateur League, 146.82. 926 La Clede, Sheridan, WY 82801. Meets 4th Thurs./monthly, 7 p.m., Sheridan College Tech. Cntr.; Saturdays, 8 a.m. at J.B.'s. Info: (307) 674-6666, WA7B.

MEXICO

Lake Chipala Amateur Radio Group. Meets Fri./weekly, 10 a.m., St. Andrew's Episcopal Church, Chipala, Jalisco, Mexico (30 mi. so. of Guadalajara). Simplex 146.49. Info: W4AFW/XE1. Charles C. Leonard, APDO 381 Ajijic, Jalisco, Mexico.



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

The month of March is always a month of transition and change — transition from the cold days of winter to the warmth and new growth of spring — change from the prevalent depth to the promise of new life and new progress.

March, 1994 finds Army MARS enjoying an outburst of spring-like change that is unprecedented in its entire history.

At the beginning of 1993, Chief Robert Sutton made the statement that ". . .without change there cannot be progress, . . .without progress there is no growth, . . .and without growth there is no future."

The challenge to accept positive change and to encourage development and progress was given and was carried forward by every Army MARS member from Headquarters staff to the newest trainee. These changes "have, in fact, produced positive growth within the program in both numbers and talent and which has laid the foundation for the future of Army MARS."

Chief Sutton credited the management team effort with making many contributions toward the improvement of the posture of Army MARS in all areas throughout the world. "The contributions of each individual as part of the management team effort have accomplished much more than expected or anticipated." The management team, of course, cannot be effective without the support of every MARS member with whom it works. The springboard to the future comes to the forefront during this new spring season.

Many new elements or "firsts" have been introduced and developed in the field of our major mission — emergency communications and support. Many states have held their first statewide exercises and interstate exercises coordinating with their neighboring states. Real-time emergency operations have been conducted including severe weather storms in Maine, earthquakes in Oregon, search and rescue in Panama, and support for Army field teams in the state of Washington. Army MARS invitation to participate in the ARRL SET exercises was another "first." This participation proved to be most successful.

Army MARS has become a key component in the emergency planning of the Director of Military Support (DOMS). Army MARS has successfully established a commitment to provide the DOMS EOC (Emergency Operations Coordinator) with vital information after a man-made or natural disaster — or any other need that may arise. Army MARS is continuing to "forge forward and the emergency operations planning and needed networks are being developed to support this effort."

In another aspect of emergency preparedness, Army MARS has entered into the SHARES (Shared Resources) program in which federal agencies and agencies associated with the federal government share frequencies and operations. This program serves to render a more unified service to the nation and the community rather than the fractionated services that have resulted in the past when agencies had no way to talk to each other during an emergency. Army MARS has a higher number of registered SHARES HF radio stations than any other single agency within the system. We have the stations; we have the fine professional operators.

Army MARS membership begins 1994 with well over 5000 members with many more applications pending. The new VHF only licensing has been a strong factor in this growth; but growth in the HF/VHF ranks has also been strong. The new visibility and vitality of Army MARS are the real catalysts at all levels.

A new type of membership is in the development stages. Auxiliary MARS membership was officially launched in January, 1994. This type of membership is comprised of non-radio personnel who can support the efforts of Army MARS programs at all levels. The full scope of the exact duties and privileges of this group are still to be determined. It might seem strange to open a membership status without a complete idea of exactly what they are supposed to do. In a dynamic, growing program, however, this is an advantage to those of us who will be using their services. Essentially, this membership is designed for those who want to help Army MARS and are willing to support the efforts of the MARS organizations of the state in which they live. The duties will emerge as time, opportunity and various needs develop. For example, in a state in which there are wide gaps in the location of members, the auxiliary member might be in a position to relay information from one member to another and save everyone from having toll call charges. The auxiliary member might be asked to serve at hamfest MARS tables. That member might be asked to distribute public relations materials to various civic clubs et al; activities that the radio active member may not have the time to do. It is the vision of Army MARS Headquarters that this auxiliary membership may become a vital force in the visibility and quality of Army MARS in the future.

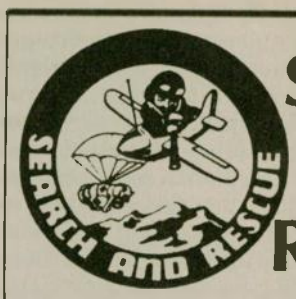
The new Army MARS manuals are almost ready for distribution. The DA PAM 25-MARS has been three years in the making and during the last two months of 1993 has been under close scrutiny and editing in the field. It is now being finalized and will soon be the operating guide for all of Army MARS. Unlike some of the earlier versions of Field Manuals, this one will be kept quite flexible and easily amended by using a loose-leaf, correctable by page format. As situations change and new technologies and questions occur, amendments will be made and/or sections added, thus negating the necessary to rewrite the entire manual.

Army MARS is an exciting organization of which to be a part. Much more is happening than this column can report at this writing. As the months of 1994 unfold, I can perhaps report on some of the developments that are emerging at this time.

Army MARS — Proud. . . Professional. . . Ready. WR

If your club is involved in any emergency situations, send the story and pictures to WORLDRADIO.

See your group in print — your story may help others be better prepared.



Search And Rescue Communications

Jerry Wellman, WB7ULH
P.O. Box 11445
Salt Lake City, UT 84147

Have you noticed how many training opportunities are available to an emergency responder? Wow! You can find general training as well as highly specialized courses. The topics available today sure contrast to the few available as recent as ten years ago. It is amazing!

The training observation I want to make this month concerns our attitudes toward learning and sharing new things. After some thought I have some descriptions that may fit members of your group:

- The member who does not want any training and is happy with the old ways ("old ways" often escape definition if you were to ask this type of person).
- the member who would like to have a specialty or be trained but has no idea where to start
- the member who has undertaken so much training that completion certificates would fill a large notebook, yet has no real handle on anything
- the member who is an expert in several areas and conversant in several others, but not overextended (These are the people you want.)
- the member is pretty competent but not educationally aggressive (They'll take the class if offered, generally do a good job, but won't take the initiative to find the training opportunities.)
- the member who is on the cutting edge of technology and is never quite available to participate, but throws his "learning" around as he criticizes the existing operation
- the member who attends training and "collects" classes, equating classes with expertise or status (The more I have, the better I am and I won't share because you might catch up.)
- the member who attends training, takes notes, and is eager to pass along knowledge (You want these people too!)

To me, the frustrating people are not those that stick to the "old ways" or those that can comfortably do an acceptable job and are willing (but not eager) to attend training. The frustrating people are those that stack up training to increase their status — people unwilling to share the wealth, so to speak.

Demands for time

We're under siege. Things to do, people to see, bills to pay, errands to run, etc. Time is critical (as well as money). Social value aside, the reason I want to attend a training session is to improve my skills. There's nothing more exciting to me than to have someone attend (or develop) a training session and then share it with the rest of the group. Not only does it enhance the group as a whole but it does show you're a team player.

In discussions with other volunteer responders, it seems we hold in higher esteem the people willing to share skills versus the people who are well trained. I would have to speculate the perception is that the sharing type of leaders see that a group of stronger individuals makes for a stronger group — and we all feel better because we know the team is stronger as a group. If we all have to wait around for someone (who is the only one trained) to call all the shots and parcel out information it can be very discouraging.

Bottom line: attend training, share the wealth. It's the old "train the trainer" concept.

World Trade Center

If you get a chance, read through the December, 1993 issue of *Fire Engineering*. The whole issue covers the World Trade Center bombing. There are articles from the New York (Fire) Chief of Department as well as from firefighters, dispatchers, investigators and others.

The whole issue is brimming with valuable lessons for any emergency responder. I've not contacted the magazine to verify that copies are available, but you could contact *Fire Engineering* at 1421 S. Sheridan, Tulsa, OK 74101. It might cost you a couple of bucks, but well worth the price.

I would hope no one ever has to deal with something of this scope — yet we cannot ignore that a large earthquake, major air crash or another terrorist incident might happen in our community. Several specific items caught my attention as I read through the various articles. Rather than attribute each one, let me just say the following all are taken from *Fire Engineering's* December, 1993 issue:

- Communications were severely stressed. Capabilities must be established so that they can handle the largest of emergencies.
- Our standard portable radio tactical frequency was overloaded and ineffective.
- The importance of the (field communications unit) requires that it be amply staffed with highly trained and experienced people.
- A specific tone alert for portable radios signaling all radio transmissions to cease would be invaluable, allowing a commander or member to gain control of the network and transmit a mayday or urgent message.
- The incident commander at a major incident has a dual problem: too much information coming in with very little or not enough time to evaluate and act in a timely fashion and too many chiefs and officials demanding attention.
- In a large operation, the Incident Command System must be used and expanded to ensure adequate span of control and personnel accountability/safety.
- Human message relays were an important method of communications at this incident.
- To be effective, interagency protocols require routine drills. During drills, friendships will be established and maintained and a deeper understanding of the other agencies' roles will lead to better interaction during emergencies.
- The division of command into manageable segments allows for adjust-

ments to tactics.

• Achievement of multiple tactical tasks requires specific assignments and accountability.

• The use of a unit status board was necessary to account for units operating, relieved or staged and is essential at each operations post. It provides a visual view of what the operating structure is and was which area of responsibility.

• Unless direction is given to stage members away from the command post, confusion and interruptions will occur (as reporting units overwhelm the command post).

• Gather as much information from (as many) sources as possible in making tactical decisions.

• When normal communications methods are ineffective, we must improvise by using relays, runners, cellular phones, etc.

• Time spent during building and hydrant inspections and local familiarization drills saves valuable time and effort when an incident occurs.

• "All hell broke lose at 1218 hours." With only three dispatchers to answer 15 incoming phones all ringing at once our jobs became overwhelming from the beginning.

• The foremost thing for a fire dispatcher to remember is to keep cool and set out to deal calmly with the unfolding major emergency.

• In terms of the number of fire units that responded, it was the equivalent of a 16-alarm fire.

"The search, rescue and evacuation of the World Trade Center was the largest and most complex operation to which FDNY has responded. The effective implementation and utilization of the incident command system, the resources available to FDNY, and the training and professionalism of its members enabled this department and its rescuers to accomplish one of the most successful search and rescue missions in fire service history."

ICS and Communications

After reading about the WTC response and studying SAR and other emergency responses, I would pose the following for discussion. Communications is as vital to the success of an operation as the traditional ICS operational areas (operations, planning and logistics).

There is some discussion among SAR groups concerning ICS and placing communications at the same importance level (the "chief" level) as operations, logistics and planning. What do you think and why? Do you have any experience operating under the present structure (communications as a part of logistics) or under a modified structure.

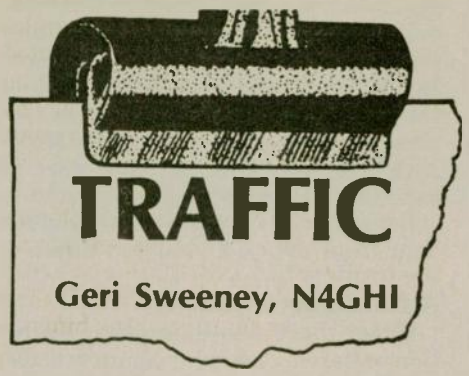
Let's kick this around a little. Let me hear from you and what you think.

A final observation

When there's an emergency operation underway use your common sense and don't let your pride get in the way. Just because you're nose is out of joint ("we were not officially invited to this search") it is not an excuse to be snotty about responding to an agency request. The issue is saving lives and responder safety — if you cannot understand that, you're in the wrong volunteer endeavor.

And, to the Amateur Radio reader from California who called about the Boy Scout publication. Please call back. The call was disconnected in mid-sentence and I didn't get the information or your name. I enjoy all calls and letters, your call is important!

Best wishes from Salt Lake City! WR



Where did the traffic come from in 1993? The station at the Smithsonian Museum in Washington DC originated traffic, thanks to W4HU... QSL managers, like W3HNK, notified people that a card awaited their envelope... The Newington Kiwanis Club queried other clubs throughout the U.S. as to whether they had any creative programs to assist the disabled and handicapped... The Pittsfield, ME, Kiwanis sent out hundreds of anniversary congratulations to other Kiwanis Clubs. It must be about time to get a new signature on those messages.... Country Cousins, NZ4O, Knoxville, TN, continued to wish birthday and anniversary greetings... N5IAG, Dallas REACT, endeavored to contact fellow members via NZ2T on packet... WAØTDA, Pat, and WBØWJN, Judy, blitzed us with a double dose of December greetings... QCWA members W1PEX, W1EFW, W3VR, and K6UYK wished members hello... Ted, K6UYK, also welcomed newcomers to the SSA (soaring association) and spent a month in St. Thomas sending messages to all his friends... K2GCE and W1EFW wished birthday greetings to OOTC members... W1PEX wished 'hope everything is great this Spring/Summer/Fall/Winter' to QCWA, OOTC and SOWP members... W3VR's QCWA number is 96. Wonder if his is the lowest surviving QCWA number? Al inaugurated adding one's QCWA chapter name to the signature. Check out (the stats are in *QST*) the amount of traffic his wife, Mae, W3CUL, sends each month... Other traffic families include, WM1C, (SM of Maine) and W1KX (sends all the Pittsfield Maine Kiwanis Club messages)... Are there other active traffic handler families out there...? The Yohi Group continued their birthday wishes. This is a group of people who went to high school in Yokohama...

Messages about sports, travels, health, animals, presents, packages, letters, pictures, QSOs, marriages, births, relocations, schedules, achievements, food and weather moved by. Many were filled with blessings, regrets, congrats, and love... lots and lots of love. Messages sent with a light, thoughtful, humorous touch were as much appreciated as preachy messages were not. As you originate a message, remember that it will be seen by many. Ask if it's something you would want to deliver to a stranger.

Some of my favorite messages were: "Sorry I missed Sunday sked, I fell asleep." "Pecan alert." "We survived the storms. Now about 845 miles from St Thomas." Happy endings are good. In August I started following the voyage of a sailboat from Tahiti (where their dog died and the fish were beautiful), to Bora Bora and the Cook Islands. By November, they were in Tonga. I'm looking forward to relaying more of their messages this year.

We often find ourselves in the middle of continuing dramas and wondering about the outcomes. Hope you got some of the health and prosperity which was dispersed in great quantities in December. And, finally, I trust everyone got all those letters that were going to follow throughout the year.

KP4DJ:

Willie, in Puerto Rico, should get an award for missing fewer than just a handful of sessions of the 4RN (twice a night) year after year. Puerto Rico receives and sends very little traffic. I wonder what Willie thought when K6UYK appeared on his doorstep (American Virgin Islands) and set up operations. Thanks Willie.

WA3YLO:

Speaking of awards, Tony, who is very active on nets for Maryland, 3RN, EAN and IATN received the Amateur of the Year award from his division — Atlantic.

NCS:

Off frequency, three is company. Four is a crowd. After two stations are sent off to pass traffic, often NCS will send another along to wait for one of the first two. That's the mark of a superior NCS. It's much more efficient and speeds the net along. To send another station to the same frequency to wait, invites trouble. The NCS who needs time to think generally gives very long directions. He not only tells you where to go and who to work but then adds after whom. We don't need to know this information.

Newsletters:

Every net manager should create a newsletter, if only once a year. You need to include a roster, establish your expectations, and give some gossip. An example from the last *Idaho Montana Net Newsletter*. Their net preamble was given along with some expectations, such as: net speed, frequencies to avoid, and certificate qualification information. A newsletter is an excellent source of training, especially for any newcomers.

The following article was in the October issue of the *Empire Slow Speed Net Newsletter*, W2WSS manager. "When folks first join a traffic net, I think they tend to hope that there will be no traffic coming their way. Often the attraction is the joining of a structured operating group, with its prescribed procedure and the fellowship of, at least name recognition. Fitting into the proper net procedure is enough of a learning effort, without adding to the stresses of copying a message and understanding what the various parts of the message are there for... This holds even more true of CW nets, where the necessity of learning the QN signals and other abbreviations... but, if you are a regular check-in and never find any traffic going your way, you may eventually become a little bored, or feel you are not useful, and your attendance may diminish. If NCS bears this in mind, s/he can often distribute traffic so that several stations can handle pieces, even if that is not the easiest way to run the net. Often you may have two stations that can make a delivery or a valid relay. You don't have to give all the traffic going to that destination or that local net to the same check-in: divide it up and put more people to work. If you notice that a newcomer has been checking in for a number of sessions without any activity, try to originate a message for him. Liaison functions are another source of activity. People are often reluctant to volunteer. Try asking. This gives you a chance to offer the needed information to do the task. Sometimes it's very beneficial to ask other stations on the net to give a net call. By involving and training our newcomers, we renew the pool of operators available to take on those vital functions. Don't let them slip away for lack of activity and encouragement. And always remember to show courtesy and patience to the newcomer to the greatest possible degree!"

Minnesota activity:

NØFKU, Randy, notes that "participation and traffic have been slowly decreasing over the past 10 years. Minnesota has two section phone nets, and 3 CW nets, all on the 75 meter band. While there are more phone participants, the CW ops appear to be more

dedicated, and thus, more reliable." Many of you know that Handihams headquarters are in Minnesota. Thus, it was no surprise that Randy states that an unbelievable amount of messages are originated from them.

Randy relates that digital traffic moves through the local boards but that there is a real lack of NTS interested operators. He has seen NTS traffic sit for days, and into months, at a time; finally being killed when the board was updated. He feels that this is a big problem.

Summing up, Randy says, "The average traffic handler is commended for all the work they do, which is probably one of the most important services we can provide. The current NTS system is fine, but they are dependent on the actual people that use them."

Digital coordinators:

NTS's three area digital coordinators (N4SS/Eastern, N5TC/Central, and NØIA/Pacific), met in December of 93. I think most of us await a synopsis of this meeting to see what direction they feel our digital modes are taking, and should be taking. This is analogous to a teenage orphan being adopted and given some guidance on how he can fit in with the existing world. The coordinators welcome grass root input to provide the coordination and direction which is needed.

It is hoped that once they develop an agenda for their child, they will inform the traffic world, giving folks a chance to review and comment; rather than making changes and pushing him out the door. **WR**

County Hunter

Ace Jansen, N3AHA

51 Kenbrook Circle, San Jose, CA 95111

This month, I'll give you the scoop on planning and operating a county expedition, portable or mobile. There are three phases of the expedition; before (planning), during (operating) and after (paperwork-QSLs). Each of these phases are integral parts of your expedition success.

Planning your trip

Where should you go?

Invariably, one of the first questions a new expeditioner asks is, "What's a rare county?" The answer always is, "it depends!" Of course, that doesn't help plan an expedition. It's easier to say what DX country is rare because several organizations survey DXers to decide "the most wanted" and this is a driving factor in the BIG expeditions. These lists don't exist for county hunters; however, some county hunters do send a list of needed counties to county hunter newsletters. A county is rare if someone hasn't contacted it before, but common sense says a rare county is one where few active amateurs live. Common sense doesn't always apply when it comes to the County Hunter's Net because many county hunters are trying to contact all counties with mobile stations only. If most mobiles assume a rare county is where amateurs don't live, they will skip the counties where mobiles do live. This leaves a lot of "green stamp" or easy counties left to contact. The best thing to do is make radio contacts from every county you can. Don't use your judgment; you'll always be surprised what someone needs.

Which way did he go?

If you're planning a trip from point A to point B, operate your radio along the way. There are probably many routes you could take; 1) the safest and quickest (interstate), 2) the most scenic, or 3) the path that nets the most counties. If you have the time, plan your trip so you drive through many counties. Several county hunters enjoy giving out counties without the expressed purpose of getting from A to B — they're just out having fun. Once you decide which way you're going, write it down — by road and county. Then, let people know you'll be there by sending a planned trip announcement to the County Hunter newsletters. Once you're on the road, your list will help you tell everyone what your next county will be.

What should you take?

Remember the survival quiz? Should you take the matches, the gun or the bug spray into the jungle? To survive as a county expeditioner, you need to take some supplies. The important thing is to decide what you need and make a list. Having a list of items will make it easier each time you get ready to go on a trip. You will need standard operating supplies like a log, paper, pens and pencils. One very popular mobile operator item is the tape recorder, take lots of tapes and extra batteries. I hope this is obvious, but . . . take your radio, antennas, etc. Make sure all your equipment is working properly before you leave home and check to make sure your antennas are resonant on the correct frequency, i.e. check the SWR. You'll also need a map and your route plans. Also take standard automotive supplies, oil, water, jumper cables, etc.

When to go?

Not during a contest! Check your radio magazine contest column and see if there are any contests planned during your weekend trip. If there is an international DX contest or a big national contest, like ARRL Sweepstakes, prepare for lots of interference or if possible, pick another weekend.

During a contest! Having said that, if the contest is a state contest, plan a trip through counties in that state. Mobiles are very popular in state QSO parties because the state's counties are the score multipliers (meaning more points). Look for contests like the California, Pennsylvania, or Illinois State QSO Party.

Here I am!

Each time you travel into a new county, you are rare (to someone!) and are basically a mini-contest station/DXpedition. This is your opportunity to make a maximum number of radio contacts in a minimum amount of time. How much time you spend in a county depends on your plans; are you mobiling through the county or are you setting up a portable operation and plan to stay for awhile? If you're mobile, consider checking into the County Hunter's Nets (14.336 MHz SSB and 14.0565 MHz CW). These nets give the mobile operators 10 minute opportunities to make radio contacts from each county they drive through. These nets are

predominately where the County Hunters hang out and look for new counties. This translates into more county contacts for you.

While you work 'em

It's very important to make sure your radio contacts are complete and you have the correct call of all the stations you contact. Accurate logs will help you in the post-expedition phase when you start answering the many QSLs. Always give your full call and request that stations call you with their full call. Don't be afraid to announce your county often, after all, that's why you're there in the first place. I hear so many mobiles on the County Hunter's Nets announce their county once at the beginning and once at the end of their ten minute run. Help those you're trying to help, tell them where you are.

If you want to continue driving and you don't have someone with you to help with logging, use a tape recorder. I use a small recorder with micro cassettes. The good news is with a tape recorder you don't have to stop to write down calls and signal reports. The bad news is, at some later date, you'll have to relive the trip and transcribe all those tapes on to paper or computer. If you have the time to stop, it may be better to use paper immediately. Pay me now or pay me later!

Be safe

If you're driving and operating, concentrate on the road more than the radio — county hunting isn't worth an accident. If you're stopped and making contacts, notice your surroundings, lock your doors and always park in a spot where you could leave quickly. Be careful not to put yourself in danger. For example, if you pull off the road, be well away from traffic. If you're planning to operate from a county line, make sure that spot is a safe place to park. It's better to be safe and run two counties separately, than to run them together and get hurt.

Health and nutrition

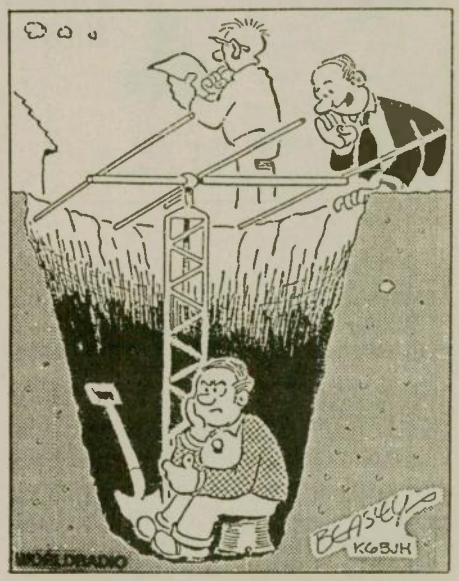
I know what you're thinking, "What does health and nutrition have to do with anything?" Don't forget to eat well and remain healthy. Sitting in a car for many hours focusing on operating and not eating/drinking/sleeping can't be good for you. In fact, speaking from experience, it isn't. I have often driven all day, making radio contacts from multiple counties, eating and drinking very little only to stop for the night feeling sick and weak. I can remember lying down in the back of my van, my heart pounding (from all the concentration and stress), my stomach growling, and my ears ringing. But, I was having fun!?!

The fat lady sings!

Eventually it will all come to an end, but not until the last card is signed. County Hunters use a Mobile Reply Card (MRC) to confirm multiple county contacts with the same mobile. If you operated mobile from several counties, expect to get these in the mail. These are cards from the stations you contacted on the County Hunter's Net. At no cost to you, the Mobile QSL Bureau will forward cards to you for your signature. All you do is sign the cards and return them in the self-addressed-stamped-envelope (SASE). Some contesters I know do not QSL, even if they receive an SASE. My philosophy (like you care) is if you have time to make the contact, you should plan to make the time to confirm the contact. Yes, QSLing takes time, but consider it the last official part of the contact (SK).

Next time

In May, I'll share with you the proper way to make contacts from different counties. My focus will be on County Hunter net procedures and how to be an effective mobile operator. Until May, happy hunting! WR



YOU'LL BE GLAD TO KNOW YOUR TOWER NOW CONFORMS TO THE COMMUNITY'S MAXIMUM HEIGHT LIMITS – WHAT IS IT YOU HAMS SAY, "HAPPY DX-ING?"

Richard Fisher, KI6SN

1940 Wetherly St.
Riverside, CA 92506

Lending "The HW-8 Handbook"

Eureka! Thanks to a generous contribution by Robert W. Randall, N2TWY, of Long Beach, CA, a copy of the first edition of "The HW-8 Handbook," the modification manual for Heathkit's HW-W7, HW-8 and HW-9 QRP transceivers, is available for lending from the newly-established ***Worldradio*** QRP Column Library, with yours truly as librarian.

If you're interested in borrowing the book, write to me at the address at the head of this column. I'll send you details on how the lending library works. In addition to the handbook, you'll also get the manual's older cousin, "The Hot Water Handbook" first edition, circa 1985, which was compiled and edited by Fred Bonavita, W5QJM "The HW-8 Handbook" was compiled and edited by Michael Bryce, WB8VGE, of Massillon, OH, and came out in the early 1990s.

Meanwhile, interest remains keen in pushing for a reprint of "The HW-8 Handbook." Adding their names to the growing list of radio amateurs in hot pursuit of a copy are: Frank Powell, KA8SYV, Charleston, WV; Bill Shipley, KB3XS, Duquesne, PA; D. Evan Crow, KE4BWD, Culpeper, VA; Harry Bump, KM3D, Richland, PA; and Doug Hensley, WJ5J, Baton Rouge, LA. If you'd be interested, but have not let your voice be heard, please drop me a line. A copy of all cards and letters expressing interest in the handbook's reprint are being forwarded to Bryce. He's shooting for a press date sometime in "early spring," so keep your fingers crossed.

The Argonaut 509, revisited

In the October, 1993 QRP column, we took a look at the earliest history of perhaps the most renowned series of SSB/CW QRP transceivers ever: Ten-Tec's Argonauts. The inaugural rig was the 505, introduced in 1972. But the story only begins there.

With the help of Ten-Tec's Paul Clinton, WD4EBR, here's a look at the Argonaut 509, the second generation of the rig, introduced in 1975.

Principally, the 509 offered the same basic package as the 505, with 80 through 10 meter coverage on CW and SSB. The rig boasted five watts input, with two and a half to three watts out. No tubes: it's all solid state.

Finding the improvements took a look at the front panel and "under the hood." In the original version, the 505, a resonate control at the upper left of the front panel peaked both the receiver and transmitter. Not so in the improved 509. The control peaked only the receiver, because the transmitter's design was made broadbanded.

The sensitivity control at the upper right of the front panel of the 505 was replaced with a drive and microphone gain control in the 509.

These may appear to be only minor improvements to the original, but in the Argonaut's long and distinguished career, each upgrade was a benchmark in polishing what today is widely regarded as a classic series of QRP transceivers.

Our next venture into the Argo's history will take us to the 1980 debut of the 515, so stay tuned.

A doctor in the house?

"I recently bought a used, but in excellent condition, HW-8," writes Craig Clifton, N6BWJ, of San Jose, CA. He says that it has all of the original documentation, and came with both editions of "The HW-8 Handbook."

"I need to know if there is someone who works or reworks them, or someone who does mods. Any help or direction would be great, as I'd love to get this rig up and running." If you can help or know of someone who can, write Craig at P.O. Box 32414, San Jose, CA 95152-2414.

Wanted: An 80 meter Field Day antenna

Joe Bulger, AA6WG, from Los Angeles writes with a question about antennas. "Next Field Day I am going to operate on 80 meter CW and phone QRP and am wondering what antennas would work out best.

"I will have access to some 90-foot tall trees at an elevation of 6,000 feet. I would like to be able to work the West Coast, the Midwest, and the East Coast, propagation permitting. There is usually a lot of noise to deal with, so I am looking for something that will have gain and also be quiet."

Joe asks if anyone can suggest "any combination of antennas that would be best, or a single antenna that possibly I could predictably vary the take-off angle on?"

Well, how about it? Anyone have a suggestion for Joe? Send your ideas to the address at the head of this column, and we'll feature your recommendations in a column before Field Day 1994.

QRP, on the road again

Robert Lee, K8RL, of Huber Heights, OH, writes that he wholeheartedly agrees with David Goldblatt, KA1DPW, of Sharon, MA, who wrote in a letter in the August 1993 QRP column that he'd "like seeing pictures of other people's QRP stations, port-

able stations, compact-hidden low-profile stations, and hearing how people travel with their mini-stations; how they set them up when they get there. . ."

With Field Day only a few months away, Robert's and David's suggestion is a very good one. If you've got a portable set up or have had success in traveling with a QRP station, please drop me a line with the details. A photograph would help tell your story, too.

QRP and mobile operation are made for each other, so let's hear what has made your travel so enjoyable, and what suggestions you have for setting up a successful QRP station on the road.

QRP and public service

Dennis Vincent, WW1P, of Berwick, ME, issues a reminder to all QRPers that is well worth remembering: "Even with low power, we can still provide public service.

"I participate regularly on a Maine CW traffic net, and I'm also a net control station using my HW-8," Dennis says. "I'm heard statewide on 80 meters, and all the operators copy me with no problem."

Dennis' other gear includes an MFJ 9030, a homebrewed Lectrokit "Spider" transceiver, multiband dipole and a 30-meter loop.

Any other readers of the ***Worldradio*** QRP column regularly take part in public service activities using low power? It is an important and time-honored tradition in Amateur Radio. Drop me a line and we'll share the story of your participation with other readers.

Off and running (QRP)

The October 1993 ***Worldradio*** QRP column announced the formation of the "MFJ 90s Radio Club," for users of the popular MFJ 90 series of QRP radios, "such as the MFJ 9040, 9020, etc."

Just a month later, Joseph Falcone, AA8HV, of Southfield, MI, issued the club's first newsletter, "MFJ Nineties." The nine-page publication features news about members, and focuses on operation and modification of MFJ's QRP transceivers and station accessories.

The club lists 24 members from around the United States and Canada in the November issue.

Featured also are tips for improving the audio output of the 90s transceivers, improving audio filtering, news about MFJ's upgrade of the 9020 rig, and tackling drift problems. There's also a review of the MFJ 20 Meter QRP Transceiver, and a reprint of an October 1993 *73* article titled "More Gadgets for Your MFJ-9020: Add Features to this Great QRP Rig."

The Ten-Tec Argonaut 509 SSB/CW transceiver, as featured in promotional photographs in 1975.

It looks like everyone would like to be involved in a net of some sort," writes club-founder Falcone. "In the next issue (of "MFJ Nineties") I will suggest net times and frequencies and pick some contest dates."

If you're interested in more information about the club write: Joseph Falcone, AA8HV, 3000 Town Center, Suite 2370, Southfield, MI, 48075.

Catalog of the month

In our continuing search for homebrew components, here's a solid suggestion for adding to your catalog library: the 100-page book from the Arizona-based Circuit Specialists, Inc.

If it's resistors, capacitors, transistors, chips, or even wire you're looking for, be sure to give this outfit a look.

There's a minimum order of $15, unless you prepay by check or money order, in which case there is no minimum.

For information, call toll free at 800/528-1417. If you're in Arizona, call 602/464-2485. The fax number is 602/464-5824. WR

Worldwide DX CONTESTING

John Attaway K4IIF/ZF2JI

P.O. Box 205 • Winter Haven, FL 33882

The spring DX contest season peaks in March, with the ARRL DX Phone Contest the first weekend of the month, 5 and 6 March, and the *CQ* Worldwide WPX SSB contest the last weekend, 26-27 March. In between we have the Bermuda Contest, which has changed to a new format, the weekend of 19 and 20 March.

The DX contest calendar for March

5 March, 0000 UTC — 6 March, 2400 UTC — ARRL DX Phone contest, W/VE send RS + abbreviation for state or province. DX send RS + 3 digit number for transmitter power, i.e. 59 125. See December 1993, *QST*, pg. 125 for complete rules.

19 March, 0000 UTC — 20 March, 2400 UTC Bermuda Amateur Radio contest. Exchange is RS(T) and serial number i.e. "599 001."

26 March, 0000 UTC — 27 March, 2400 UTC, 37th Annual *CQ* Worldwide WPX contest, SSB Weekend. Exchange is RS + contact number, i.e. 59 001. See January, 1994, *CQ*, pg. 22 for complete rules.

More on the Bermuda contest

There have been major changes in the rules for the Bermuda contest. In past years, participation was limited to amateurs in Bermuda, Canada, the Federal Republic of Germany, the United Kingdom and the United States. However, this year the event is open to licensed amateurs worldwide. The contest period is 48 hours, but actual operating time is limited to 24 hours. Both phone and CW may be used on the 3.5, 7, 14, 21 and 28 MHz bands, but no crossband or crossmode contacts are permitted. For stations outside Bermuda, valid countries are those on the most recent DXCC and WAE country lists. For complete rules send SASE to K4IIF.

Some 1993 contest results

Congratulations to Larry, N6TR, for his top score among overseas participants in the 1993 Keyman's Club of Japan (KCJ) contest held 14-15 August, 1993. Larry had 283 QSOs for a claimed score of 31,696 points. The top 10 JA stations in the multiband category were JA6GCE, JL1EUP, JA7KJR/7, JG3VEI, JK2XXK/5, JA5BXP, JP1JFG, JR4JRP, JJ2UIH and JEØBKI. The 1994 KCJ contest will take place 20-21 August, 1994 (Thanks JA1DD).

And a tip of the ***Worldradio*** hat to Robby, VY2SS, who topped all scorers in the 1993 Canada Day contest. Robby operated all bands, but made 75% of his 930 QSOs on 20 meters. High on 20 meters in the single band category was Frank, VE7AV, with 508 QSOs. Special mention was made of Bill and Alan, K4LTA and K6XO, who take part regularly. Bill had the 3rd highest QSO total with 611 and 6th highest number of multipliers with 43. (Thanks VE2ZP).

Contesting from the Caribbean

We are fortunate to have two long and informative letters this month about popular Caribbean contest locations, Dominica and Anguilla. Doug, VE7RA wrote about his operation from Dominica as J7D, and J77DX, and Bob and Catherine Rieman wrote about their visits to Anguilla.

DOMINICA

Doug writes about Dominica as follows: "I flew from Antigua on LIAT to Dominica (1 hour) with a short stop at Guadeloupe. I chose the earliest flight departing at 7:30 a.m. in order to give myself plenty of time when I arrived. There are two airports on Dominica. On the north east coast there is Melville Hall, which can handle larger aircraft than the one on the south west side, at Canefield. Canefield is close to the capital, Rouseau. I chose Melville Hall because of the size of my equipment. "In all likelihood your equipment will be held at the airport in customs until you get your license. Unlike Antigua there was no deposit required. My destination was Portsmouth on the north west side of the island. I had to make a trip from Melville Hall across the island to Rouseau to get my license. I was fortunate to catch a taxi ride with a couple of other fellows (taxi rides are expensive!) and arrived in Roseau about 1½ hours later.

"While in Antigua I had met a German ham, DK7UY, Wolfgang, who had just come from Dominica. I had 'picked his brain' and was well prepared. I went to the Ministry of Communications, Works and Housing at Government Headquarters in Roseau, asked for and spoke with Mr. Lancelot and filled out the application form. My earlier written communication with the licensing authority had indicated that I should appear in person. I had a choice of call signs using either the J73, J77, J79 and perhaps other J7 prefixes. I chose J77DX and I also received permission to use J7D during the ARRL SSB test. The cost was US$12.50 total, and the license was only good for the length of my stay.

Take your papers

"I always take and present the necessary documents at the time of my license application. My passport, my home station license, my operators license, and police certificate (record of criminal convictions — none). "I had to come back for my license later. It had to be signed by the Minister for Communication, etc. I explained that I needed it as soon as possible in order to get my luggage out of customs. They were very accommodating and when I returned at 1 p.m. it was ready.

"Public transportation runs when the small bus is full and is relatively inexpensive as compared to a taxi. You get to see places you would normally never think of going as the bus takes the passengers practically to their doorstep. If you can stand being packed into a seat (chose one beside a window as there is no air conditioning) and have more time than money — go for it. I took the bus back to the Melville Hall airport, presented my license, and retrieved my luggage without any trouble.

"Just a side note about the luggage weight limit. I think it was 30 kg max for checked luggage and you paid extra for anything over the limit. I was over but didn't pay anything. I observed that if it was in one suitcase there was no additional charge, but those with two suitcases were charged.

"While I was in Roseau I found the club ham station in the Swiss Red Cross building. It was closed — I had missed the period when it was open. I phoned Mr. Stan Boyd, J73AZ at home (this information from an earlier column by K4IIF) and talked to him for a while before returning to the Melville Hall airport to pick up my luggage.

"I managed to catch a ride with one of the airport workers who was going

to Portsmouth — remember taxis are expensive and on this route buses charge the taxi rate. I stayed at 'Mamies on the Beach' (inexpensive, and a good bargain), for a couple of days. I had permission to set up a station there but didn't. I spent the time looking around.

Where to stay

"I chose the Coconut Beach Hotel from which to operate the contest and set up the R7 vertical on the beach and strung the 80-160 meter dipole in between the trees. In the contest I lost a lot of time because the generator was shut down for servicing for 1 to 1½ hours every morning and I had to shut down or change bands when I was causing TVI, telephone RFI, etc. The staff were very understanding which was helpful. If the ARRL contest group decides to correct my score (their error) I placed third in the single op all band category. Beside the Coconut Beach, the Picard Beach Cottage Resort is also very suitable for contest operations. "Most of this is from memory as I haven't been able to find my notebook from this trip. Hope this has been useful."

ANGUILLA

Bob Rieman writes about Anguilla as follows. "My first visit was in 1989 and was prompted by a personal introduction to an Anguillian citizen who rented rooms at their home in Anguilla. This was actually my preference because I hate rigid and formal hotels and resorts. My reasoning was that if I wanted to stay in a hotel why go all the way to the West Indies to do it. I preferred the more informal vacation so that I could soak up the local sun and culture. Needless to say, a low profile approach offers a great deal of freedom to play ham radio.

"Anguilla is a coral reef island and so getting a good earth ground is frequently difficult. I've found that special precautions (such as using 100% shielded antenna lead, baluns and ferite chokes on the lead in coax) are a must; otherwise so much RF will be floating around and nothing will work. The high ambient temperature easily causes over-heating of equipment and power line surges are quite common. Muffin fans and voltage protectors are recommended. 115 volt, 60 cycle AC outlets common in the USA are standard in most places. Salt air and sand is a real menace to connectors, circuit boards, and antennas. Keeping your equipment covered with a cloth or plastic cover when not operating is a good practice.

"Since 89 I have made 16 trips to Anguilla, each averaging about one month in duration. I love it!!! I probably have had the ham radio's man dream come true. Not only have I made fabulous contacts all over the world from VP2E land, but in 1991 I became engaged to an island girl and marriage plans are set for July 1993. She, (Catherine) now has her ham ticket and we plan to spend considerable time in Anguilla.

"Anguilla does have its radio restrictions; 10 through 20 meters are the usual frequencies allocated to visitors; power is limited to 100 watts. Lower frequencies seem to be cluttered with rather strong harmonics from local radio stations. An Anguillian license ($38 cash) must be purchased; proof of ownership of the equipment (bill of sale or a catalog showing priced item) is handy to have; you must carry your original amateur license.

Be prepared

"The amateur should be prepared to open his radios for internal inspection. I carry a small screwdriver in my pocket for this purpose. Make sure you have loosened the screws beforehand because sometimes factory tightness is too tight. I have found it best to pack radios in suitcases that are easily opened; besides, if you use boxes or cartons it appears to the customs man that you are bringing in new duty items. Electronics duty is 30%. No customs deposit is required at this time.

Inquiries can be directed to the Minister of Broadcasting; The Valley, Anguilla, B.W.I. Like most government bureaucracies, application forms tend to sit on someone's desk. One has to remember that Anguilla is a developing country and the governing rules are still being written. Attempting to lay out all one's plans by mail doesn't always guarantee perfect results. Everyone and every thing is really laid back. Your USA address must be used for QSLs. Several years ago a contest station received over 20,000 QSL cards that bombarded the little post office in Anguilla.

Where to stay

"Anguilla like most Caribbean islands is marketing to the tourist. It is not uncommon for hotel accommodations to start at 200 US dollars per day. Rental cars (you drive on the left) are about $30 to $40 per day when available. "No problem" is the popular island saying, but very few islanders understand the ham radio DXing hobby. My experience over the last 4 years has given me better insight to Anguilla and my growing acquaintance with the local Anguillians has allowed me to move about the island and research those "favorite watering holes."

"Catherine and I have put together a kind of a package to help visiting hams. There are many beautiful apartment buildings and cute local apartments for rent that are not advertised through travel agencies. We plan to be around on the island and will be thrilled to death to show visitors the hot spots on the island.

"With the increase in air fares, I think that most hams today are interested in saving on accommodations, keeping daily costs down, and having good operating locations. For those hams who can't manage to get all the equipment in their suitcases along with the XYL's shoes, we have some amateur gear here they could use. Our intention is not to profit from the hobby of ham radio. We are really interested in being kind of Anguilla travel hosts with the Amateur Radio operators interest and needs at heart. We are familiar with most of the big hotels and their restrictions, costs and topographical locations. I would be happy to make sure that the rooms are ideally located for antenna access. But, our desire is really to help hams find local accommodations for 100s of dollars less than the tourist rates.

Where to write

"Most travel agents have brochures on the big hotels and resorts. We have lots of brochures of Anguilla and most contain pictures, features and prices. We would be happy to forward them along with some of our own ideas and pictures to interested ham's SASE. We would be happy to receive letters or phone calls for further information. Catherine and I do have some operator photos and as soon as we get copies made, we will send you some.

"There are several hams already living in Anguilla. Most notable is Dave, VP2EF and Dorthea Mann, VP2EE. Dave and Dorthea are principals in the Anguilla Amateur Radio Society and they really have the ham radio scientifics perfected.

"Hope to see you there, meanwhile we can be reached at RT 5 West, Box 805 (The Domes), Herkimer, NY 13350." WR

Why radials?

Part I

DON NEWCOMB, WØDN

There are few subjects in Amateur Radio that are so clouded in mystery as radials and ground systems for vertical antennas. That this should be so is itself something of a mystery, for countless books and articles have examined this subject in considerable detail over the last 50 years. The basic points are quite well known by now *except*, it seems, among the amateur community.

Why so much confusion? Some people will tell you that vertical antennas *require* them for effective operation or even for low SWR, but you'll see ads stating (a) that a particular vertical antenna works like a bomb with no radials at all, (b) that another doesn't need any radials because it's a "half-wave" tall on one or another band and remotely tuned, another (c) that *their* antenna can get by with a greatly abbreviated radial system because its feedpoint is a few feet above ground, and our favorite (d) is the one that claims that only a few 14 foot radials will allow it to deliver *maximum* operating efficiency.

The ARRL *Antenna Book* tells us that more than 100 much longer radials would be needed for that kind of efficiency on must amateur bands, even though the advertisements say otherwise! And what is meant by "ground" anyway? Much of the misunderstanding can be laid at the door of over-zealous dream merchants who prefer to gloss over unpleasant truths. Let's review the basics and try to separate the facts from the hype.

What is a ground? It can be a connection to the earth itself and often is. At power frequencies, the earth is usually a good conductor, and most electrical codes dictate a copper-plated steel rod driven into the earth to a depth of six feet or more. Unfortunately, such a ground connection is next to worthless at radio frequencies, although it's useful in preventing shocks. Too many amateurs have been electrocuted when they contacted the "ground" side of a feedline connected to ungrounded (or poorly grounded) station equipment while standing on damp earth! Be espe-cially leery of old two-conductor house wiring, and don't count on the newer three-conductor wiring to take the place of a good earth ground to all station equipment that plugs into the power outlets in the shack! An ungrounded chassis can be lethal whether the unit is switched on or not, so drive that copper-plated steel rod into the flower bed and connect a heavy wire between it and all station equipment while everything is still unplugged.

But why should a ground connection that serves quite well at 60 Hz not also suffice into the megahertz range? And why do we even worry about it? Consider a vertical radiator installed at ground level and fed through the usual coaxial feedline, the braided outer conductor connected to the inevitable copper-plated ground stake. What is not so obvious is that the "business" end of a vertical antenna is also "connected" to the earth through the capacitance of the vertical radiator to the earth itself. True, this capacitance won't be very great, but it'll be great enough to cause current to flow in or along the earth all around the antenna out to a distance greater than the length of the vertical radiator. These "return" currents make their way back to the feedpoint to complete the circuit and can be seriously attenuated if they must pass along or through lossy earth. Even the most conductive earth is fairly lossy at radio frequencies, and the "return" losses can be severe unless an extensive radial system is used to provide a number of low-loss paths back to the feedpoint.

But what kind of losses are we talking about in the average case? The ARRL *Antenna Book* (any edition) suggests that 120 radials equally spaced and each a halfwave long would make an essentially lossless ground system at RF, and the FCC mandates such ambitious systems for stations operating in the AM broadcast band. A lossless ground system means that all power applied to a vertical antenna apart from conductor and loading losses (usually only a few percent) will be radiated instead of being lost in the earth as heat.

Amateurs must usually make do with much shorter and many fewer radials, particularly on the lower frequencies, but one can often reduce the length of radials and their number considerably without incurring significant loss. Still, the *Antenna Book* observes that with only two 1/8-wavelength radials (about 17 feet on 40 meters) overall efficiency is not likely to exceed 25%, in which case the difference between a bare-minimum ground system and an "ideal" one might amount to a whopping six decibels or more. Much depends on the natural conductivity of local soil. Sandy, arid regions are probably the worst, but the best is none too good compared to seawater. It's worth noting that what matters is conductivity at or near the SURFACE of the earth. If your RF has to fight its way through several feet of high resistance sand or rock to find a low-resistance path back to the antenna feedpoint you've probably lost the battle already. Subsurface mineral deposits and high water tables don't help much either, for these are usually too far down to do much good. Fresh water, by the way, is not a very good conductor at RF, so don't look for any great benefit from nearby lakes, ponds, rivers, creeks or swimming pools!

Some people imagine that they have a wonderful ground system because they're connected to a well casing that goes down several hundred feet. Not so, alas! Remember that your return currents will be flowing all around the antenna on or slightly under the sur-

face, so even a six-inch casing won't provide much surface area along which current can flow. In other words, your well casing could go down 15 feet or 1500 feet without doing much to reduce your earth losses in the HF range.

Some practical considerations, however, before we take a close look at some fairly typical installations and draw some rough conclusions: the *perfect* ground system for a vertical antenna operating in the HF range is probably out of the question on most residential lots, but that doesn't at all mean that nothing can be done to reduce earth losses and turn more of your applied power into useful radiation rather than heat. The most important thing to keep in mind as we go along is that some of your precious RF will be radiated straight-away (good), a relatively small amount will be lost forever in feed line, traps, loading coils and the like (not so good, but we can usually live with it), and a fair amount will come raining down from the vertical radiator onto your lossy real estate. Your main task will be to help this last portion of RF to work its way back to the to the antenna feed point with as little wear and tear as possible so that most of it will be available to run up the radiator again on the next cycle. How to do it? Copper-plate your backyard? Hardly practical, but you can do quite a bit with plain old wire (bare or insulated) in any gauge heavy enough to stay in one piece if stepped on or if ground between rocks during a hard freeze.

Many radial wires emanating from the base of the antenna will offer a number of low-resistance paths back to the feed point. These radial wires can be buried an inch or two under the sod to protect them from lawnmowers and foot traffic, or they can simply be draped on the earth. There's no point in burying them any deeper than is necessary to get them out of the way. Space them more or less uniformly over 360 degrees (not always possible, but that's the goal).

How many wires? That depends on how long they are. How long should they be? Answer: The longer the better. The hitch is that as the wires become longer more of them are required to take full advantage of their greater length. This is because a longer wire will intercept current on the surface out to a greater distance than will a shorter wire (good), but for a given number of wires the separation between adjacent wires necessarily increases as the wires become longer, in which case currents on the surface between two highly-conductive wires must cross an ever-greater stretch of lossy earth to encounter a low-loss path home (not so good). Of course, four 1/2-wave radials will do a better job of reducing ground losses than will four 1/4-wave radials, but the difference may not be very great for the reason just given and because the intensity of currents flowing out near the end of the wires will be much less than that of currents closer to the antenna.

It's generally reckoned that approximately half the ground loss encountered occurs within a circle having a radius equal to the antenna's height and that most (though not all) of the remaining loss resistance occurs in the next quarter wavelength out from the antenna as the capacitance between the vertical radiator and the earth rapidly decreases. In any case, it's clear that for a given amount of wire it pays to lay down a larger number of radials when they have to be short, although some have pushed this sound principle to ridiculous lengths, cutting 120 one-foot radials (covering approximately the same surface area as a garbage can lid) when a dozen 10-footers would have done a much better job.

Perhaps you've heard or read that all radials should be some particular resonant length, say a quarter wavelength, before they're draped on the earth or buried slightly under the sod. Resonant radials have their uses (as we'll see shortly), but within a few feet of the earth any practical length of wire in the HF range will have enough capacitance to the earth to be tightly coupled to it and thus be detuned considerably, much as a horizontal wire dipole at very low heights will be detuned from the formula lengths for resonance by the earth. Luckily, radials at ground level need not be resonant at all, so at ground level your only problem is to make the earth around the antenna more conductive than it is to start with. In practice that means putting down as many radials as possible and making each one of them as long as possible.

In essence, all we're talking about is efficiency. If you put 100 watts into an antenna, how much of that leaves the antenna as useful radiation and how much is lost as heat? Some of the quantities we have to deal with are elusive and usually can be measured only indirectly, but with a little theory and seventh-grade math we can begin to evaluate things more or less logically and usually come up with useful insights into the probable effectiveness of a proposed vertical installation. WR

(to be continued next issue)

Disaster preparedness tips

BY JIM SACKEY, N9ESM

Earthquake! 6.6 on the Richter scale. 0431 on 17 January 1994, Martin Luther King Day, is a poor time and bad manner of being awakened. As the ground still shook, or maybe it was me that was still shaking, I crawled out of my apartment, got out to the car and turned on the 2-meter radio, set on the Simi Repeater (117.930, minus split - CTTS 127.3).

Among the first voices I heard checking in were Jerry, KC6UIJ and Dan, KK6MU, the two Assistant Emergency Coordinators for Ventura county ARES/RACES Area One, which is Simi Valley.

Others will write the log of events when things calm down. As I write this, Simi Valley is still being rocked by aftershocks, some 3.1 and higher on the Richter Scale. This is a collection of thoughts and observations that may be of interest to others who "will do disaster planning next week, next month, but I don't want to think about it now."

This collection of thoughts also applies to areas subjected to hurricanes, tornadoes, floods, fires, blizzards, snow and ice storms or places where a traffic accident or terrorist activity could disrupt normal services. In other words, any place humans live, work or play.

Everyone, even longtime California residents (which I'm NOT) subconsciously thinks of the earth as solid. *Terra firma* means firm earth. When the ground starts to rumble and shake, there is a period of disbelief. "It is a heavy truck driving by on the street outside," or "My gosh, someone ran into the side of the building." Then the electricity goes off everywhere in the vicinity.

Suggestion 1

Have a few emergency nightlights, the kind that turn on when the power goes off — not the kind that come on when it is dark.

Do not use candles, matches or your cigar or pipe lighter. The shaking may have fractured gas lines and any spark can cause an explosion.

Your first task is to find a flashlight so you can see to help your family out of the building. Having emergency lights come on when the power goes off makes it easier to evacuate. Put on shoes! As a result of the quake there will be broken glass from pictures, dishes and so on all over the floor. Find your shoes, upend them and tap the soles to make sure there are no glass shards inside before you put them on.

Where is the flashlight? Mine, which was kept close at hand on the bookcase near my bed, ended up under a lot of other stuff — unfindable for the moment. I carry two flashlights in the car, an AA-size pen light and a 2 D-cell Maglite. The Maglite was the flashlight I chose to use.

Since you are reading a publication for Amateur Radio operators, I assume you are a ham. Where is your Handi-Talkie? It won't be on the desk or shelf were you left it. Do you have a two meter rig in the car? How much gas is in the car? It may be days before you can buy more.

Suggestion 2

Never let your gas tank go below half-full. Your car battery may be your only source of power for your radios for several days. If you are set up for HF mobile operations give yourself an extra credit point.

Check into your local repeater frequency. You do know it, don't you? You also know the simplex backup in case the repeater is down, don't you?

In Simi Valley, the local repeater has a backup battery source. But, in case the batteries were damaged, know the local simplex emergency frequency. This is usually announced every week on the local ARES/RACES net. You do check in don't you? Or at least listen.

If you are a member of ARES or RACES, you already have had disaster training. If you are not a member and you have nothing to contribute stay off the air! A big problem is people wanting to "help" but with no knowledge of disaster response, directed net procedures or any training. Yes, make a call for lifesaving assistance or to report a major fire. Otherwise, keep the frequencies clear and allow emergency communications by trained people who have practiced.

Suggestion 3

The time to plan and prepare for emergencies is NOT when the building is falling down around your ears, or when the tornado hits, etc.

Food and water will be a problem. Most people do not know (or really care, until an emergency) but most cities in the U.S. are 72 hours away from hunger and famine. That is, stocks of food at your local Kroger, Lucky or Piggly-Wiggly store are replenished daily. If the supply is interrupted by destroyed roads, rings of fire or whatever, within 72 hours the stores will be mostly empty of food.

Food: Have several cans of food that can be opened and eaten cold. I suggest enough food for at least a week per person. Where is the manual can opener? I carry on my key ring a "John Wayne," also known in the military as a "P-38" and properly described as "Opener, can, folding, manual, one-each." You may get tired of cold pork 'n beans, corn, peas, Spam and chunk pineapple out of a can but it will keep you alive. Other long-storage, not-needed-to-be-cooked foodstuffs are also recommended. The military issue Meals Ready to Eat have a shelf life of over five years. They contain food, matches, toilet paper and often candy. While not gourmet meals they do taste better than the Korean War C-rations, and MREs do not need a can opener!

When I was a radio announcer in western Illinois, an area where tornadoes are common, the operator of the Western Zero, the local locker plant, said that when the power goes off, food in the freezer will stay frozen solid at least three days, if you keep the freezer door shut! This is in the 90-degree heat of an Illinois summer. So, you do not have to worry about spoilage. After several days, you may have to start cooking and using foods from the freezer. By this time, gas leaks should be non-existent and campfires and camp stove may be used.

For those of you with babies, stock enough extra formula, diapers, wipes, powder and so on for at least a week. Check and update as the children grow. The formula for a two-week old will not work well for a six-month old.

Water: The water mains may be damaged. Your own supply of water, a gallon a day per person for drinking, is vital. How do you store it? The thought that quickly comes to mind is rinse out a couple of gallon milk jugs. Not a good idea, the lids on the plastic milk jugs will not hold water if the jug is jarred to the floor. During an earthquake, you will have enough stuff on the floor, you do not need more mess.

Suggestion 4

Use 2-liter plastic soda bottles. They have a screw cap and are nearly unbreakable, plus they are easier to handle. They are free, after you have consumed the soda, and they are easy to store in the refrigerator.

I keep three 2-liter and two 1-liter soda bottles filled with water in my refrigerator as my normal water jug. This way, when one is emptied, I refill it, put it in the back and use the next one. The water is changed, normally, at least once a week, depending on how much I drink. I am not married so I don't have to worry about "style or fashion."

When the water is restored, it may be contaminated. If you have a camp stove you are ahead of the game. You can and, depending on advice from your local authorities, should boil your water. My 1960s edition of the Boy Scout Handbook says to boil water for 20 minutes. Boiled water tastes flat because of the lack of air suspended in the water. You can restore the taste by pouring it from one container to another for about five minutes. If boiling is not possible — no camp stove, or the smell of gas in the area makes it unsafe — you can purify the water by using 8 drops of unscented bleach per gallon of water. If the water is cloudy or discolored, the ration is 16 drops of bleach per gallon. Let set for an hour and then pour into a different container. You can use a clean cotton t-shirt to filter out sediment.

Batteries: Where are the batteries for your HT? Flashlight? Portable AM/FM radio? How old are the batteries? My HT has both a NiCd pack and two cases using AA batteries.

Suggestion 5

Have at least one HT battery pack for AA batteries, or whatever size your HT uses. Without electricity, how will you recharge the NiCd?

My problem (my own fault) was the batteries in the HT and the portable radio were old and weak. All sets died within an hour of the quake. To compound the problem, the extra batteries I had on the shelf were also old and mostly flat.

Suggestion 6

Rotate your battery supply at least every six months.

There are several books that cover disaster preparation more fully, one is available through ***Worldradio***. I have not covered your first aid kit or first aid training. This is deliberate. The Red Cross holds classes on First Aid, CPR and these classes are, in Ventura County, announced on the county-wide ARES/RACES net. First aid training should be part of your preparation for disaster. Not IF it happens, but WHEN it happens.

A couple of final thoughts. After a disaster, you and everyone around you will be in a state of shock, varying from confusion to almost catatonic paralysis. How well you handle the immediate crises and the aftermath will depend a great deal on (a) how well prepared you were, (b) how much training you have had in dealing with emergencies and (c) your mental attitude.

In the past three years, Simi Valley in the eastern end of Ventura County, has had to deal with or contend with floods (Ventura, Jan-Feb 1992), riots (Los Angeles, Apr-May 1992), fire (L.A. and Ventura counties, Sep-Oct 1993) and now earthquake (Jan 1994). As this is being written the eastern half of the United States is gripped by a killer cold spell with large amounts of snow, ice and winds.

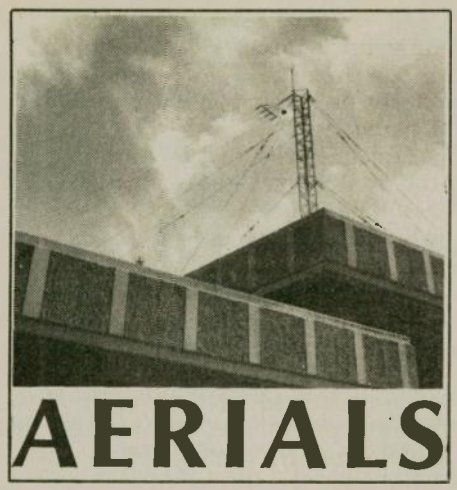
Your preparation and training are important. The most important factor in your survival is mental attitude!

After an earthquake you will find many things are damaged or destroyed. My great uncle's glass-fronted bookcase, used in his medical practice in the late 1800's and early 1900's suffered massive damage. I don't know if it can be repaired, likewise a family heirloom table. Read the first sentence of this paragraph again. "Many things are damaged or destroyed." The key word is "things." It is sad, but your mental attitude must be: "I may be injured, but I AM ALIVE!" Things can be repaired or replaced. I have hands, feet, mind and will. I have survived. I will survive. I will rebuild my life.

I can not stress positive mental attitude enough. Preparation and training are important, but the will to live, the will to survive is the vital key. You can't buy it at the five and dime or at the discount mall. You have to develop it yourself. The person who says "I can" is right 95% of the time. The person who says "I can't" is right 100% of the time. He or she is defeated before starting. The motto of the working journalist is and has been for years *Illigetimae Non Corabundum*, which translated politely means "Don't let the (so-and-so's) grind you down.

Me, my apartment is a mess. I can not find things because they are stacked here and there. Sorting and putting away will be a major project. But, I am a functioning unit. I survive! **WR**

Jim Sackey is a Public Information Officer and a member of the Simi Setlers Amateur Radio Club



AERIALS

KURT N. STERBA

When do the grown-ups take over? In a recent issue of *The Newington News* there was a product review of an antenna. To establish the superiority of this particular antenna over another, the comparisons of contest results (VHF) were mentioned. The contests were one year apart!

Not mentioned was the time of day or night that were being compared. Were the ionosphere, troposphere (skip) conditions different?

Could one have been eating: breakfast, lunch or dinner, napping, whatever, and missed the big "opening" of the previous year?

A valid antenna check is not based on memory.

"I'm not spending as long in the pileups as I used to before I work them." In which direction? To what countries? Let's see now, is that with your new amplifier in the line?

Contrary to what many may believe about me, I am truly a kind-hearted person. As long-time readers know, I've offered to look over antenna books for mistakes (prior to publication) for FREE! This is of course due to the deep-seated altruism I feel toward my fellow hams.

So far NO book publisher has accepted my kind offer, so they continue to embarrass themselves. There is a new antenna book that is so riddled with bullony that I am preparing a massive report on it. When it runs here, the book's author and publisher will cringe. They could have spared themselves the humiliation.

All they needed was for Kurt to spend a day with their manuscript. But, oh no, they would prefer to go their blissful way.

I do have in front of me a book aimed at beginners. There is one chapter on antennas.

To spare the "5" who wrote it and the publisher the notoriety of being "roasted" I'll just drink a TAB and allow them their deserved anonymity.

Page 251 . . ."at distances between 50 to 100 feet (about 150 to 300 meters)." Alas, exactly backwards. A meter (or as Lil prefers, a metre) is 39.37 inches. There are 3.28 feet in a meter.

Page 253 . . . "The ground plane serves as a mirror, reflecting the radiated waves into space."

Now, years back there was someone who claimed that radials did that for a vertical. As I recall they were hooted out of the room.

Page 268 . . ."Some amateurs prefer to use an antenna-impedance bridge. . ." I guess it's just because I'm stuck out here in the sticks but I just can't find one of those "antenna-impedance bridges." I keep reading about them, book writers keep mentioning them. But I just can't find a bridge or meter or whatever that reads out the actual impedance. I'd sure like to have one. Yup.

In talking about a 40 Meter Novice antenna this book suggests, "Vary the antenna length one inch (2.5 centimeters). First, why not millimeters? I have a millimeter ruler.

And trimming half an inch off each end of a dipole at 7.125 MHz???? Is this a joke?

Page 269 . . . (About the noise bridge): "for measuring resistive, capacitive, and inductive characteristics."

Well, actually you measure either capacitive OR inductive with one control and resistive with the other control.

The book tells us that the "controls are adjusted for a mull (sic) (minimum noise out of the receiver"). Well, instead of just sitting around thinking about it, I suggest you instead tune for a null.

We find in this book that you hook your antennas up to a "Diode antenna center connector." And that a wire with "length of one wavelength or more produces highly directional radiation patterns."

Highly directional? This from (described) a wire coming out of the back of the tuner?

We're told that quarter-wavelength verticals provide good low-angle radiation for long-haul DX. What is missing is the fact that such is true ONLY with a good radial system.

I really can't figure out a box with "XMTR" in it sitting right over a designation saying "ground surface." Does this mean that you have to take your radio outside and lay it on the ground?

This book then tells us two things that are absolutely backwards!!!! It says that on bands below and up to 40M that the vertical angle is relatively unimportant. Then it says, "Above these bands, and particularly on 10 meters, many long-haul DX contacts cannot be made without high-gain directional antennas".

(To digress. I've heard that Lew McCoy is coming out with an antenna book. All I can say is Thank Zeus.)

In reality: It is on *ten meters* that you can work the world (during proper conditions) with the metal clothesline. It is on the lower bands that a more serious antenna system is needed to get the required low angle for DX.

Someone seems to be having a hard time with conversions. Describing an antenna that is 22.5 feet long it says "(or 6-9 meters)." Well, I guess if you don't like "6" or "9" you can settle for anything in between.

Now comes the absolute doozy of them all.

"Fig 10-24 shows a practical design for a quarter-wavelength vertical antenna that can be used for Novice operation." Looking closely we see the

diagram of a vertical antenna with "four radials, #14 copperweld wire installed at a 45-degree angle." The accompanying chart tells us that for 80M the length of the vertical element is 63.5 feet and the radials are 66.7 feet each.

Even the most obtuse Novice of all time reading this "Beginner's Handbook" may be wondering how this 130-foot monstrosity is supported. How do you keep up a 63.5 ft. piece of "aluminium tubing" which is on top of four wires each 66.7 feet long? And this is a (and I quote) "practical" antenna. Well, they could have sent their manuscript to Kaptain Kurt first, but they didn't.

We're told: "The radiation resistance of a three-element beam is on the order of 10 ohms."

Hmmm, that will be news to many. Well, enough of that.

A reader from our neighbor to the north tore "oot" a page from their national magazine and sent it here. The underlined passage showed that Art Blick, VE3AHU, (in talking about impedance measuring and half-wave lengths of line) said it had to be an ELECTRICAL half wavelength of line.

Bravo for Blick! A flick of my cap to him. It is just crazy the number of articles and BOOKS that leave out the ELECTRICAL length and end up with people cutting physical lengths which don't work! You must factor in the velocity factor of the line. The ELECTRICAL length will always be shorter than the yardstick halfwave. Or depending on where you may live, the metrestick. (A meter being 1.0936 yards.

It was relayed to me that one antenna manufacturer called ***Worldradio's*** international headquarters and said that ***Worldradio*** was the only ethical ham magazine because we were the only one calling to task all the horsepower race overblown dB claims and other phony stuff.

I usually don't mention the names and calls of hams who write in so that they will be spared any abuse from hams in their town. "You wrote in to Kurt N. Sterba, YUK." However, I think Harold Tolles, W7ITB, Sonoita, AZ won't take any guff from anybody, so. . .

(I will change the name of the company.) He wrote to one of the dealers and said, "There is NO way that Salisbury can obtain 15.8 dBd from their 13XX antenna without ground reinforcement."

He went on to say "Fresnel Zones produce gain AND LOSS! I will evaluate free-space gain every time. Keep up the pressure on 'Super Gain' antennas!"

Another subject. I understand that some of the commercial antenna manufacturers who build antennas for industrial use are having a good laugh over a hammy antenna that is put together with rivets.

I went into the ARRL 10M Contest with a Lakeview Hamstick about eight feet off the ground. I attached it right at the corner of the garage. Looking at my logs (operating barefoot) I see 3 contacts in 3 minutes, 4 in 4, 5 in 5, five other times of 3 in 3. Got many LUs and other assorted DX.

This may be the answer for the "I can't put up an antenna" crowd. Mount a bracket on the garage and put one of these Hamsticks on it. When the gestapo homeowner's association comes around to tell you to take that antenna down you tell them this story. You have to work about three hours a night at home. That antenna is something like a cellular phone and it sends all your computer work to the office all night. If you, and others, don't get all the work done, you will be fired and have to sell your home and move. Hey! If you sell your home in a rush, that will lower the price. That makes your neighbor's homes worth less, too. That's the last thing they want! Somehow, I'll just bet that your cellular antenna gets to stay up. You can change bands without the snoops knowing, because each Lakeview antenna for the different bands is the same length.

Here's what would impress me. If any of those Yagi companies claiming this or that gain would haul their stuff to, let's say, New Mexico State University. Let "Blue Sky" antenna company have the measurements made at the university antenna range. Ah, so.

Let them be able to say in their literature, "Independently measured by, and etc."

Of course, there is no guarantee that the production line runs would be exactly the same as the tested one, but it would be a good start in the right direction.

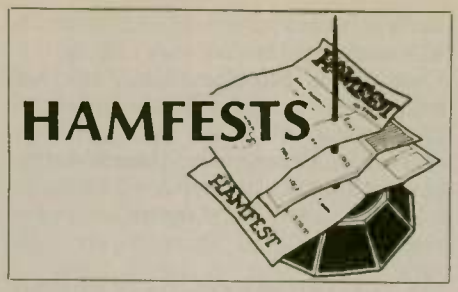
I close with a bit from *Intermod*, (Mt. Tom Amateur Repeater Assoc., Springfield, MA) by Jim Ussailis, W1EQO.

"Tis fall again, time to get that antenna repaired for the winter. If you are like me, you will wait till the day before the VHF contest. Two years ago I installed the six meter beam on that day when it was 10 below with a howling wind outside."

Now there's a real antenna man.

(Kurt can be spotted because he, similar to Captain Queeg, rolls around in his hand a couple of objects. Except in Kurt's case they are a couple of SO-239 connectors.) WR

Build a construction project . . . then build a feature construction article for ***Worldradio.***



Alabama

The Black Warrior Swapfest will be held on 5 March, 1994, from 8 a.m. to 4 p.m. at the Northport Civic Center. Features include commercial dealers, tailgating, free parking and prizes. VE exams begin promptly at 8:30 a.m. Admission is free. Tables are $10 each. Vendor set-up is on Friday 5 p.m. to 9 p.m. Tailgate spaces are free and are available on a first come, first served basis. Talk-in on 147.060(+), 145.350 (-) and 444.700(+). For more information contact David, WB4HHY, at 205/339-7915.

California

THE LIVERMORE ARK is sponsoring an Amateur Radio/Electronic/Computer Swap Meet on 6 March from 7 a.m. to 12 noon at Las Positas College. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. Talk-in on 147.045(+) from the west and 145.350(-) PL 100Hz from the east. Contact Noel Anklam, KC6QAK, at 510/447-3857 eves. or leave message days at 510/783-2803.

Illinois

The STERLING-ROCK FALLS ARS will sponsor their 34th annual hamfest on 20 March beginning at 7:30 a.m. at the Sterling High School Field House. Features include flea market, concessions, space to accommodate self-contained campers overnight, radio, electronics, computer and hobby items. Admission is $3 in advance and $4 at the door. Tables are $5 including electricity (bring your own cord). Talk-in on 146.85(-). Contact Lloyd, KB9APW, P.O. Box 521, Sterling, IL 61081; 815/336-2434.

The LIBERTYVILLE and MUNDELEIN AMATEUR RADIO SOCIETY will sponsor their 15th annual hamfest on 27 March from 8 a.m. to 2 p.m. at the Lake County Fairgrounds. Features include large all indoor electronic, radio & computer swapfest, commercial exhibitors, rest area, free parking and public cafeteria. Admission is $4 in advance with SASE, $5 at the door. Swapfest tables are $10, wall tables are $15, commercial tables are $25 by reservation only. Vendor set-up time is 6 a.m. Talk-in on 147.345(+) NSRC repeater; 146.52 simplex. For information write Lamarsfest 94, 650 Green Bay Rd., Lake Bluff, IL 60044; or call Frank, W9GLO, at 708/234-4124 before 10:00 p.m.

Indiana

The MORGAN COUNTY REPEATER ASSOCIATION will hold their hamfest and computer show on 13 March beginning at 8 a.m. at the Indiana State Fairground's Pavilion Building. Features include free parking, ladies' programs, 8 ft. flea market table is $15. Advance reservations recommended, (always sold out before show opens). Vendor set-up 12 March 3 p.m. to 9 p.m. and 13 March 6 a.m. to 8 a.m. Security provided overnight. Admission is $7. Talk-in on 145.25(-). For more information, send an SASE before 21 February to Aileen Scales, KC9YA, 3142 Market Place, Bloomington, IN 47403; 812/339-4446.

The MICHIGAN CITY AMATEUR RADIO CLUB will sponsor a hamfest on 26 March from 8 a.m. to 2 p.m. at Rogers High School In Michigan City, ID. Features include commercial vendors, VE testing, computer flea market, coffee and food. Admission is $5 for 10 years old and up. Tables are $6, electrical hookup is $2 as available. Talk-in on 146.49 simplex or 146.97(-) (131.8 Hz PL). For more information contact Michigan City ARC, P.O. Box 148, Michigan City, IN 46360.

Kansas

The TROJAN AMATEUR RADIO CLUB will sponsor their swapfest on 12 March from 9 a.m. to 5 p.m. at the Colby National Guard Armory. Features include presentations by the National Weather Service, EMS, ARRL and an early-bird dinner. Admission is $2, tables are $5. Vendor set-up time is 6 a.m. Talk-in on 146.82(-). Contact TARC, Box DX, Colby, KS 67701 for more information.

Massachusetts

The MT. TOM AMATEUR REPEATER ASSOCIATION, INC. will sponsor their 10th annual MTARA Amateur Radio flea market on 6 March beginning at 9 a.m. at the Smith Vocational School, RTE 9, Northampton. Features include handicapped accessible, refreshments, door prizes, raffles, static equipment displays. Tables are $12 in advance, $15 at the door, (tables provided and includes one admission), tailgating is $5 per parking space (does not include admission). Admission is $3, under 12 is free. VE testing at 9 a.m. (advanced registration). Contact Mt. Tom Amateur Repeater Association, Inc., 30 Colorado St., Springfield, MA 01118-2132.

The SOUTH SHORE AMATEUR RADIO CLUB is sponsoring a ham radio flea market on 6 March from 10:30 a.m. to 3 p.m. at the DAV#29 Hall, Liberty St. in Braintree. Features include ample parking, light refreshments and all tables are indoors. Admission is $2. Tables are $12 in advance and include 1 admission fee per table and $14 on the day of the sale. Talk-in on 146.67(-). For more information contact Thaire Bryant, KA1MJR, 37 Gilmore Rd., No. Easton, MA 02356; 508/230-2248.

Michigan

The SOUTHERN MICHIGAN ARS will sponsor a hamfest on 19 March

from 8 a.m. to 3 p.m. at Marshall High School. Features include free carry in help, free parking, full food service, computers and crafts for the ladies. Tables are $1 per foot (min. 4 ft.). Vendor set up is at 6 a.m. Talk-in is on 146.66 or 146.52. For more information contact SMARS, P.O. Box 934, Battle Creek, MI 49016; or call Wes, N8BDM, 616/979-3433.

Missouri

The JEFFERSON BARRACKS ARC will be holding their radio auction on 11 March. The doors open at 5 p.m. and the auction starts at 7:30 p.m. at the Concordia Turner's Hall. Features include a fish fry, refreshments and free coffee and cake. Admission is free. 10% commission on items or $1 minimum. Talk-in on 146.94(-), 145.21(-). Contact Vivian, WDØEMS or Scotty, KAØFJA, 4121 Fabian Dr., St. Louis, MO 63215; 314/631-4068.

New Hampshire

The NORTH COUNTRY ARC AND LITTLETON ARC will sponsor a hamfest and flea market to benefit D.A.R.E. on 5 March from 8 a.m. to 3 p.m. at the Twin Mountain, NH Town Hall. Admission is $2 general and $4 if selling. Talk-in on 146.55 simplex. For more information contact Richard C. Force, WB1ASL, 12 Cottage St., Lancaster, NH 03584; 603/788-2202.

New Jersey

The SHORE POINTS AMATEUR RADIO CLUB will sponsor its 12th annual hamfest on 5 March beginning at 9 a.m. at the Holy Spirit High School. Features include heated indoor selling area, outdoor tailgating, refreshments and free parking. Admission is $4 (non-ham XYL and children are free). Tables are $5 per 8-foot section. Outdoor tailgating is $5 per painted parking space. Vendor set-up time is 7 a.m. Talk-in on 146.985(-). Contact SPARC, P.O. Box 142, Absecon, NJ 08201.

New York

The WESTCHESTER EMERGENCY COMMUNICATIONS ASSOCIATION will hold their 10th annual hamfest and computer show on 20 March, 1994, from 9 a.m. to 2 p.m. at the Yonkers Raceway. Features include free parking, handicap accessible, over 250 selling spaces, tailgating, food service, door prizes, radio tech clinic and commercial dealers. Walk-in VE exams 9 a.m. to noon. Admission is $5, under 14 free with adult admission. Tables are $20, includes 2 free admissions. Outdoor tailgating spaces are $10 and includes 1 free admission. Talk-in on 147.06(+) repeater. For more information contact Tom, WB2NHC and Jeanne, N2NQY, Raffaelli, 544 Manhattan Ave., Thornwood, NY 10594.

Pennsylvania

The 7th Annual York Springfest will be held 13 March beginning at 8 a.m. at the York Fairgrounds. Features include indoor tables, blacktop tailgating, food, refreshments and prizes. VE exams at 8 a.m. Admission is $4, unlicensed spouse and children under 12 are free. Inside tables are $19 and $25. Tailgating is $5 per space. Talk-in on 146.97(-), 447.275(-) and 53.97(-). For more information write York Springfest, P.O. Box 526, Red Lion, PA 17356.

Texas

The MIDLAND ARC will be holding their annual St. Patrick's Day Swapfest on 19-20 March from 9 a.m. to 5 p.m. on Saturday and from 8 a.m. to 2:30 p.m. on Sunday at the Midland County Exhibit building. Features include prizes, flea market, dealers, contest, T-hunts, concessions and VE exams at 12 noon on Saturday. Admission is $7 in advance and $8 at the door. Tables are $10 each for the first four and $15 each for additional tables. Contact AA5RS or N5TQU via M.A.R.C., P.O. Box 4401, Midland, TX 79704.

Washington

The MIKE & KEY ARC will sponsor an electronics show and flea market on 12 March from 9 a.m. to 4 p.m. at the Washington Fairgrounds. Features include free overnight for self contained RVs. Admission is $5, under 16 free with adult. For more information contact Michael Dinkelman, 637 2nd Ave. S, Kent, WA 98032; 206/854-4031 evenings.

The WALLA WALLA VALLEY ARC will sponsor their 48th annual swapfest on 20 March from 8 a.m. to 3 p.m. at the Milton Freewater Community Center. Features include swap tables (radio gear and related equipment), snack bar and prizes. Admission is free. Talk-in on 147.28(+). For information contact David Pence, KB7WRT, 810 E. Sumach St., Walla Walla, WA 99362-1348; 509/525-2529.

Wisconsin

The TRI-COUNTY ARC will hold their annual hamfest on 20 March from 8 a.m. to 2 p.m. at the Jefferson County Fairground. Features include prizes, food, handicap accessible, VE exams and plate lunches and beverage provided by Jefferson County 4-H. Admission is $4. 6-foot table space is $5, 8-foot table space is $6. Vendors will be admitted at 7 a.m. Electricity is available. Monies generated go to providing a scholarship to a second-year electronics student from the Tri-County area. Talk-in on 145.49(-) repeater. Contact TCARC, W9MQB, 213, Frederick, Fort Atkinson, WI 53538; 414/563-6381. WR

CONTESTS

1994 Virginia QSO Party

The Virginia QSO Party, sponsored for the nineteenth year by the Sterling Park Amateur Radio Club, is scheduled for 1800 UTC 19 March, through 0500 UTC 20 March, and 1100 UTC 20 March, through 0200 UTC 21 March, 1994. Plaques will be awarded to the top scoring Virginia and out-of-state stations, and to the top CW only, Novice/Technician, Club and VA moble stations. Certficates go to the high scoring single operator fixed station in each Virginia county, the state, Canadian province and DX country.

Work fixed stations once per band/mode. No cross-mode or repeater QSOs. Work VA mobiles in each county they operate. Mobiles parked on county lines count as one QSO and as many county multipliers as they offer. Count fixed stations only once as multipliers. VA Mobiles receive a bonus of 100 additional points overall for each Virgina county in which they log a valid QSO. Exchange QSO number and QTH — county for VA stations; state, province or DX country for others.

Frequencies: 160 meters through 2 meters, except no WARC band QSOs permitted.

Suggested frequencies: CW — 1805 kHz and 50 kHz up from band edge on others. SSB — 1845, 3860, 7260, 14260, 21360 and 28360 kHz. Novice/Tech — 10 kHz up from the edge of the novice CW band edge and 28360 on SSB. All frequencies plus or minus QRM.

Scoring: Count one point per SSB, 2 points per CW and 3 points per VA mobile QSO (SSB or CW). Virginia fixed stations multiply QSO points by the total number of VA counties, provinces and DX countries. Mobiles add to this the bonus points for Virginia counties in which QSOs were logged. Others multiply QSO points by the number of Virginia counties worked (maximum of 95) to obtain final score. Virginia independent cities follow the USA-CA award guidelines for county mulitplier.

Follow standard ARRL contest guidelines. Logs must include name, call sign, mailing address, band/mode, QSO number sent and received and time of contact in UTC. For club competition (minimum of 3 valid entries), indicate the name of the club. VA mobile stations, indicate mobile operation and log QSOs by county of operation. Novices and Technicians, include a copy of your current license as proof of status. Include a summary sheet and a dupe sheet for 200 or more QSOs.

Mail your entires by 15 April, 1994 to VIRGINIA QSO Party, c/o William T. Free, W3FTG, 3627 Great Laurel Lane, Fairfax, VA 22033-1212.

1994 MARAC CountyHunters SSB contest

0000Z Saturday, 9 April, 1994 to 2400Z Sunday, 10 April, 1994

The Mobile Amateur Radio Awards Club is pleased to sponsor the 23rd Annual County Hunter's SSB Contest. Mobile and fixed operation from every county in the U.S. is welcomed and operation from less active counties is encouraged. Fixed stations may be worked only once on each band. Mobiles may be worked each time they change counties. Mobiles operating on county lines count as one contact, but each county may be a separate multiplier. (Mobiles must identify by signing /M after their call.) To be eligible for an award, a station must not operate more than one transmitter at any one time.

Exchange: signal report, county and state for US stations. Signal report, province or country for others.

Scoring: QSOs with fixed US/Canadian stations are worth 1 point; mobiles are worth 15 points. US/Canadian contacts with DX are worth 5 points. Contacts with stations operating under a net control are invalid for contest purposes. FINAL SCORE = Total QSO points times (X) total number of US counties worked.

Frequencies: 3.880, 7.240, 14.270, 21.340, 28.340 Mhz. Fixed stations should work above the suggested frequencies and allow low power mobiles to operate below the suggested frequencies.

Awards: Certificates to winning stations as follows:

- Fixed Station in each state, province, and country with 1000 or more points.
- Mobile in each state operating in 3 or more counties with a minimum of 10 contacts from each county. Mobile is defined as capable of being in motion at all times in the contest period transmitting and receiving with no connections to stationary power lines, generators, antennas or other objects. Mobile antennas used must be on the vehicle being driven, not towed or pushed and must be capable of operation while in motion under bridges, overpasses, etc.

MARAC Plaque to 1st and 2nd place mobile in the U.S., highest scoring North American Fixed station, and high scoring DX station with at least 50,000 points. For contest purposes DX is any country other than US, Canada and Mexico.

Mobiles who change states during the contest should calculate their scores (1) for individual state certificates and (2) for total score for the overall plaque. Total overall score must not count a county as a multiplier more than once regardless of the location or frequency.

A check sheet of counties is required for entries with 100 or more counties worked. Completed logs, summary sheets, and check sheets must be received by 11 May, 1994 sent to Bill Nash, WØOWY, 13212 N 37th Ave, Phoenix, AZ 85029. A set of log sheets, summary sheet, and check sheet is available now from WØOWY at the above address. Send #10 SASE with adequate postage. WR

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

What is your TNC doing?

This book is for everyone who asks why?, how?, and what is my TNC doing? Why is my TNC transmitting when I haven't typed anything? How do I set parameters for best performance and throughput? What does all this header information, <RR1 > <REJ3> [RJ,P;3] <DM>, mean?

What is your TNC doing? Answers these questions and much more. This book explains how the TNC talks to other stations, the computer and the radio. Troubleshooting tips are given throughout the book and the last chapter is dedicated to troubleshooting the most common problems.

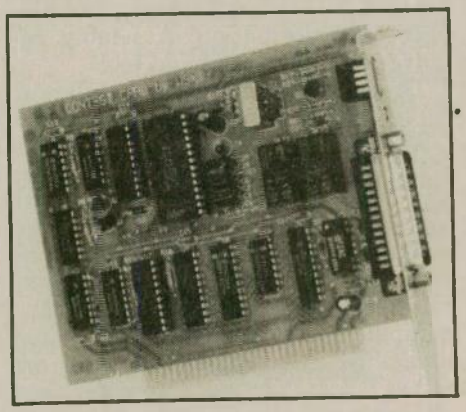
What is your TNC doing? by Gloria Medcalf, KA5ZTX is available from dealers or contact ZM Xpressions for order information. 913/842-6808.

The Contest Card

Unified Microsystems introduces the Contest Card, a PC plug-in interface board that contains a voice recorder/keyer and CW interface. This unit allows hams to record their CQs, call signs, contest exchanges, or other voice messages for transmission under control of their computer. Primarily designed for contesters and DXers, the Contest Card can also be used with PC based repeater controllers for ID and special voice messages, meteor scatter transmit sequences, and other applications. The Contest Card can drive an external speaker for nonradio applications.

Voice messages are stored in nonvolatile memory on the Contest Card and do not use up computer memory or disk space. The built in CW interface lets your computer send CW on both negatively and positively keyed transmitters. The Contest Card works with XT (8088), 286, 386, and 486 based PCs.

For contesters, the Contest Card is compatible with K8CC's NA™ and K1EA's CT™ contest logging software. The included disk contains voice keyer control programs and programming information for writing your own software for the Contest Card.



The Contest Card is available in kit form for $119.95 and assembled and tested for $179.95. Shipping $5.00 (US & Canada). Cable not included. Unified Microsystems, P.O. Box 133, Slinger, WI 53086; 414/644-9036.

Extra, Extra, new book!

Gordon West, WB6NOA, announces the availability of his new Extra class theory book finishing a four-year project of Amateur Radio test preparation manuals from Novice through Extra.

"The complete selection of training materials for all Amateur Radio license grades is a continuous process," comments West. "Just as soon as I finish a new book, I go back and begin the yearly revision of another book for the 1 July question pool change," adds West, an active member of the National Conference of Volunteer Examiner Coordinators.

Ray Adams, N4BAQ, Chairman of the National Conference of VECs, comments, "FCC Rule 97.523 requires each question pool to contain at least ten times the number of questions that are to be on any examination taken from that pool. Although this ten-times rule applies only to the entire question pool, we have applied it to each sub-element and each syllabus topic." This allows students to easily determine where to concentrate their study from Gordon West books when they get into more difficult problem areas.

All Gordon West Amateur Radio license preparation books and code tapes are available through every Radio Shack store throughout the country, Amateur Radio dealers and mail order from the W5YI Group, 800/669-9594.

"The Extra class book also encourages the Amateur Radio operator to join up with a local volunteer examiner qroup, and take an active part in test sessions," comments Gordon West. "Passing the Extra class Amateur Radio exam with this book and my code tapes takes you to the top, and this is where you can encourage other hams to follow in your footsteps," adds West.

Gordon West is now working on the Commercial General Radiotelephone book, and it should be available by this summer.

Battery Charger kits

Jade Products, Inc. announces its newest members to the FUN-KIT line: the Lead-Acid/Gel-Cel Battery Charger

Kits. This series of products is based on the Unitrode UC3906 battery charger chip. This "smart chip" is specifically designed to sense the condition of the battery and adjust the charging requirements accordingly.

The charger can be left connected indefinitely to the battery, keeping the battery ready for service at all times. This charger can prolong the life of the battery and protect it from overcharge/undercharge damage.

The UC3906 operates in several modes depending upon the condition of the battery. When maximum charging is required the UC3906 goes into "bulk charge" mode and charges the battery at the maximum rate, which, in this particular application, has been designed for 0.5 or 1.0 amp as determined by the kit builder. An intentional "overcharge" occurs once the battery is near its full charge condition, and then the charger goes into a "float" charge state once the battery is fully charged.

This battery charger series is intended for users who need to keep their battery ready at all times. Applications such as repeater back-up batteries, QRP station batteries, motorcycle and emergency equipment batteries are just a few of the many areas in which these high quality chargers can prove to be invaluable.

The kits are easy to assemble and are ideal for first-time builders. The step-by-step manuals guide the builder through each phase of the building process with schematic and troubleshooting information. Assembly requires only common hand tools.

The chargers come in three different configurations:

The BC01 is a complete kit. It comes with a durable enclosure, an EMI filter on the line voltage input, and a current meter. Assembly is easy and the manual assumes no previous kit experience. Simple tools (wire strippers, pliers, screwdrivers and soldering equipment) are all that is needed for assembly. The unit can be built for either 0.5 amp or 1.0 amp maximum charging rates and sells for $79.95.

The BC02 is a stripped down version of the BC01. It is the complete charger, minus the enclosure, RFI filter module, line cord and current meter. It can be installed into any equipment that can accommodate the 3" x 5" (7.6 mm x 12.7 mm) circuit board. It sells for $39.95

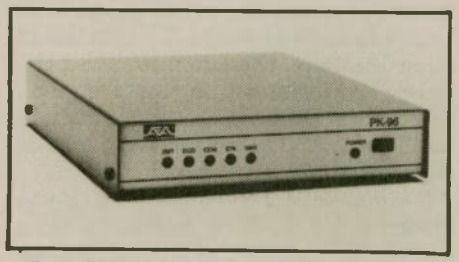
The BC03 is essentially the same as the BC02, except it does not include the power transformer; one needs only to supply the 16 to 21 VAC (50/60 Hz) for either 0.6 or 1.2 amps depending on the selected charging rate. This very cost reduced unit sells for $29.95

For further information, please contact: Jade Products, Inc., P.O. Box 368, E. Hampstead, NH 03826; 603/329-6995; fax 603/329 4499.

AEA's PK-96 Packet Controller

Lynnwood, WA/AEA is proud to introduce the latest addition to our high-quality line of data controllers, the PK-96 Packet Controller. The PK-96 is a cost-effective, high-speed, single-mode data controller offering 1200 baud AFSK tone signaling as well as 9600 baud K9NG and G3RUH compatible direct frequency modulation.

The PK-96 offers amateurs an easy solution to the frustration of waiting for packet data being transferred at slower baud rates. As a data controller, the PK-96 allows you to communicate on existing 1200 baud packet systems, as well as communicating with the 9600 baud systems now coming on line. As a high-speed data link, the PK-96 eliminates system bottlenecks and increases system capacity. These features make the PK-96 an ideal data controller for terrestrial as well as satellite communications.



In addition to the speed, the PK-96 comes standard with 14K of battery backed MailDrop memory that is easily expanded to 100K This MailDrop has the same command set you have come to enjoy in the rest of our products.

Other great features include:

- Hardware HDLC controller to guarantee accurate protocol conversion at 9600 baud.
- Hardware "true DCD" state machine for open squelch operation.
- Enhanced MHEARD function identifies TCP/IP, NET/ROM, and <The-Net> stations.
- Small size — leaves more room on your bench for other equipment!

Suggested retail price for the PK-96 is $229.00. The PK-96, as well as the rest of AEA's high quality product line, is available from your favorite Amateur Radio dealer.

For more information, please contact: Advanced Electronic Applications, Inc., P.O. Box C2160, Lynnwood, WA 98036; phone 206/774-5554, fax 206/775-2340. WR

When will AMSAT-OSCAR-13 be in range?

ROSS FORBES, WB6GFJ

Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations East = New York City; Mid = St. Louis, MO; West = Reno, NV.

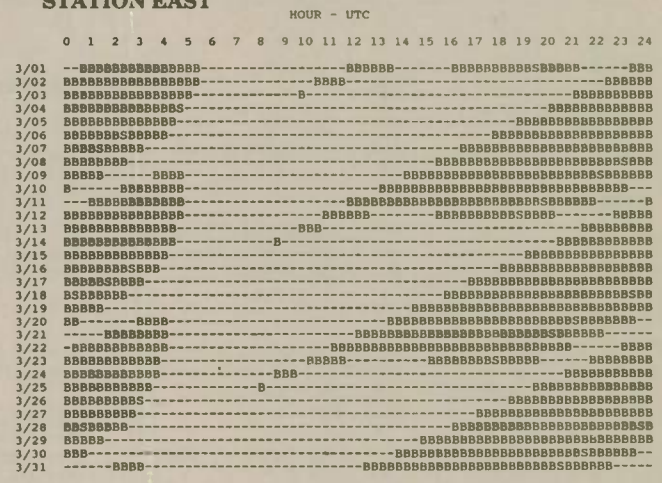
As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the telemetry beacon on 145.810 MHz. the letter "L" indicates the satellite is audible but will hear signals between 435.650 and 436.000 MHz (SSB and CW).

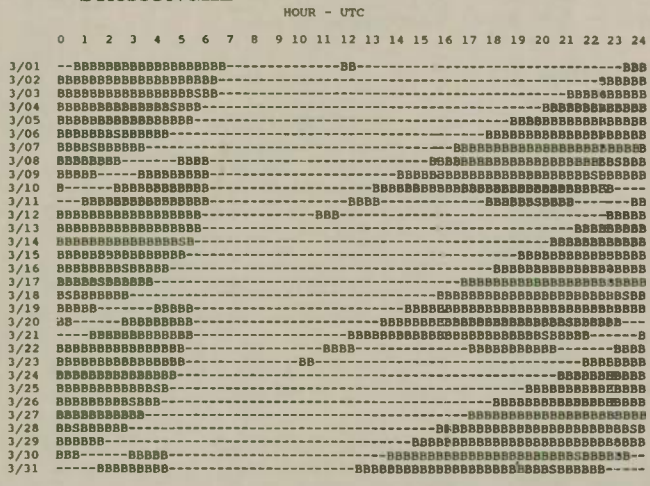
Remember, if a letter is printed on the chart, you should be able to hear OSCAR-13.

For more information about OSCAR, please send an SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. WR

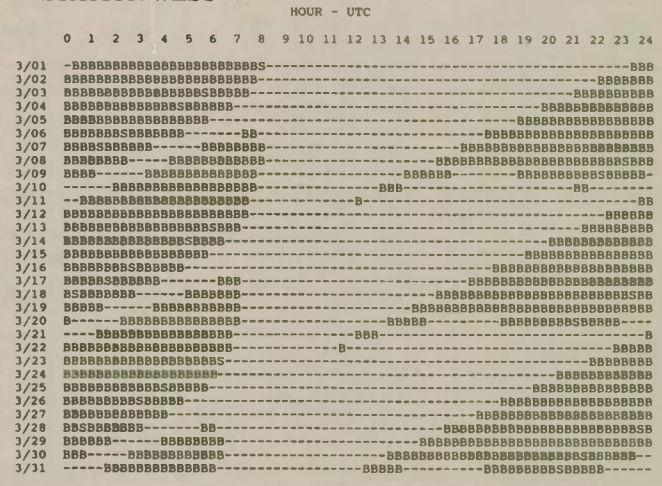
STATION EAST



STATION MID



STATION WEST



VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

Worldradio, 2120 28th St., Sacramento, CA 95818.

Please mark the envelope "VE Exams."

List the location, any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

p/r=pre-register w/i=walk-in

Date	City	Contact	Notes
Alaska			
4/9/94	Anchorage	Jim, KL7CC 907/338-0662	p/r; w/i
Arizona			
4/1/94	Tucson	Micki, AA7RR 602/883-8305, call for info, testing done as requested	p/r
4/9/94	Tucson	Joe, K7OPX 602/886-7217	w/i
California			
4/3/94	Concord	Gene, WW6H 510/254-5090	w/i
4/5/94	Fremont	KJ6EP 510/791-6818	w/i only
4/6/94	Sacramento	Jim, AB6OP 393-8839 or Earl, AB6CN 331-1115	p/r pref.; w/i OK
4/9/94	Camarillo	George, KN6LA 805/388-2488	p/r pref; w/i OK
4/9/94	San Pedro	N6DYZ 310/325-2965	p/r pref.; w/i ltd.
4/9/94	Santa Rosa	Dave, 707/527-0961	p/r pref
4/9/94	Sunnyvale	408/255-9000 24-hr.	
4/9/94	Torrance	Joe, WB6MYD 310/328-0817	w/i
4/10/94	Chico	W6YKU 916/342-1180	p/r pref.
4/16/94	Sacramento	Lyle, AA6DJ 916/483-3293	
4/16/94	Redwood City	Joe, KB6OWG	w/i
4/17/94	Hanford	Carleton 209/924-4221	w/i
4/24/94	Fairfield	Jerry, AA6NO 916/662-0801	w/i OK
4/24/94	Sunnyvale	408/255-9000 24-hr.	w/i only
4/28/94	Long Beach	W6LRF 714/847-6370; N6LUH 310/592-1713	w/i OK
4/30/94	Sonoma	Jim, 707/996-6461	p/r pref
4/30/94	Vacaville/ Elmira	Barbara, KM6AC 707/429-4878	w/i only
Colorado			
4/9/94	Denver	Glenn,WØLJR 303/360-7293, 24-hr. message	w/i OK
4/16/94	Westminster	Phil, NP2X 303/421-2795	p/r or w/i
Connecticut			
4/10/94	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i
4/12/94	Thomaston	WJ1T 203/283-1044	w/i pref.
4/16/94	Hampton	Dick, WE1Y 203/423-6420	p/r pref.
Florida			
4/16/94	Melbourne	WB9IVR 407/724-6183	w/i OK
Hawaii			
4/16/94	Hilo	AH6P 808/935-8893	w/i
Idaho			
4/9/94	Boise	W7JMH 208/343-9153	w/i
Illinois			
4/6/94	Paris	WO8X 217/463-2213	p/r; w/i
4/9/94	Oak Forest	David, NF9N 708/448-9432	w/i
4/16/94	Loves Park	Dennis, W9SS 815/877-6768	p/r; w/i
Indiana			
4/3/94	Terre Haute	K9EBK 812/466-2122	w/i OK
Iowa			
4/23/94	Mt. Pleasant	Dave, KAØFBL 319/986-6677	w/i OK
4/30/94	Council Bluffs	Lorraine, AAØBS 712/322-1454	w/i OK

Date	City	Contact	Notes
Maine			
4/29/94	Alfred	N1KMZ 207/985-4825	w/i OK
Maryland			
4/16/94	Laurel	WB3GXW 301/572-5124 after 6 p.m.	p/r pref. w/i OK
4/26/94	Annapolis	Lois, KA3VVQ 410/647-4178	p/r pref; w/i ltd.
Massachusetts			
4/9/94	Braintree	Phil, K1UPY 617/326-6446	
New Jersey			
4/9/94	Cranford	24-hr. hotline: 201/377-4790	
4/13/94	Fort Monmouth	MARS 908/532-5354	w/i
4/16/94	Bayonne	Bob, N2IYY 201/435-5953	w/i OK
4/21/94	Bellmawr	WA2VQG 609/933-1500	w/i
New York			
4/9/94	North Tonawanda	Vern, AA2AC 716/634-5276	p/r only
4/12/94	Hicksville	Bob, W2ILP 516/499-2214	w/i
4/20/94	Lancaster	Chuck, WD2AIK 716/937-3592	p/r only
4/25/94	Manhattan	VE 24-hour hotline 212/456-5224	w/i OK
4/30/94	Lockport	Judy, N2KJB, 716/751-9223;	p/r only
North Carolina			
4/26/94	Jacksonville	Dick, KD4YOT 910/455-8834	w/i
Ohio			
4/2/94	Cincinnati	Herb, WA8PBW 513/ 891-7556	w/i OK
Oregon			
4/9/94	Eugene	Steve, AA7CF 503/689-5534	p/r pref.
4/12/94	Pendleton	Mike, AA7SL 503/566-3597	w/i OK
4/13/94	Roseburg	KB7CMB 503/672-5997 or AA7GD 503/672-7564	w/i OK
Pennsylvania			
4/2/94	Erie	W3CG 814/665-9124	w/i OK
4/16/94	Hermitage	WM3H 412/347-5960	w/i
Rhode Island			
4/2/94	Middletown	Jack, N1HYA 401/683-2250 or Jim, KC1SD 401/847-5239	w/i
4/14/94	Providence	Judy, KC1RI 401/231-9156 or Al, NN1W 401/454-6848	w/i OK
4/30/94	Slatersville	Bob, W1YRC 401/333-2129	w/i OK
South Carolina			
4/16/94	N. Charleston	Ed, KC4OOZ 803/871-4368	
Texas			
4/9/94	Houston	Jim, KB5AWM 713/488-4426	w/i only
4/12/94	Houston	ND5F 713/464-9044	p/r pref.; w/i OK
4/16/94	Austin	Jim, AB5EK, 512/327-6184	w/i
Virginia			
4/10/94	Chesapeake	KC4YX 804/424-4764	p/r pref.; w/i OK
4/30/94	Williamsburg	WJ4X 253-2811	w/i only

THE MART

Classified
• Buy • Trade
• Sell • Inform

MART deadline 20th of the month two months prior to issue date. Please include an address on all ads so prospective clients can contact you by mail, if they prefer.

Commercial rate: 35¢/word, prepaid.
Private rate: 20¢/word, prepaid.

THE MART *Worldradio*
2120 28th St., Sacramento, CA 95818

WORLDRADIO ON CASSETTES for the blind. For information, contact TOM CARTEN, K1PZU, 1602-Y King's College, Wilkes-Barre, PA, 18711. F194

FREQUENCY DIRECTORIES: Large selection, SWL and scanner books, frequency guides: SWBC, utes, spy, press, weather, FAX, RTTY, military, federal agencies, Marine, aero, police, fire etc. Big free catalog! CRB RESEARCH, P.O. Box 56-WR, Commack, NY 11725; 516/543-9169. 992-1194

QSL SALE! 300/$14, 500/$20, 1000/$33, 1500/$38, 2000/$48. Many designs! Free shipping! Phone or write today for samples or ordering. SHELL PRINTING, KD9KW, P.O. Box 50, Rockton, IL 61072; 815/629-2193. Anytime. 593-494

CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC each Saturday, Sunday, Monday and Thursday on 7040 kHz, starting 2000Z, each Tuesday and Friday on 14060 kHz, starting at 2000Z. Speeds range from 20 to 60 wpm. F194

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92033. 1293-1294

AMATEUR RADIO REPAIR: FCC licensed, 17 years experience, lab quality NBS traceable test equipment, reasonable rates. G.B. COMMUNICATIONS, INC., 963 Birch Bay Lynden Rd., Lynden, WA 98264. 206/354-5884. 593-494

DISCOUNT PRICES AT RT ELECTRONICS. 10/11 meter radios, antennas, scanners, power supplies and more. Free flyer. P.O. Box 2123, Warren, OH 44484; 216/369-1789. 6-594

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LEARN THE CODE — A course for family members and friends who don't know the difference between a dot and a dash. Mon.-Fri., 0630-0700 California local time, 3762 kHz ± A2/A3/LSB, Mar.-May, Sept.-Nov., K6RAU. Starts first Monday of each month. F395

LET THE GOVERNMENT finance your Amateur Radio-related small business. Grants/loans to $500,000. Free recorded message: 707/449-8600. (LH3) 1193-494

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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 SASE to W6LS, 45527 3rd St. East, Lancaster, CA 93535-1802 to get data sheet. F195

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write PAM MYERS, N8IAK, 510 W. Harrison, Alliance, OH 44601. F294

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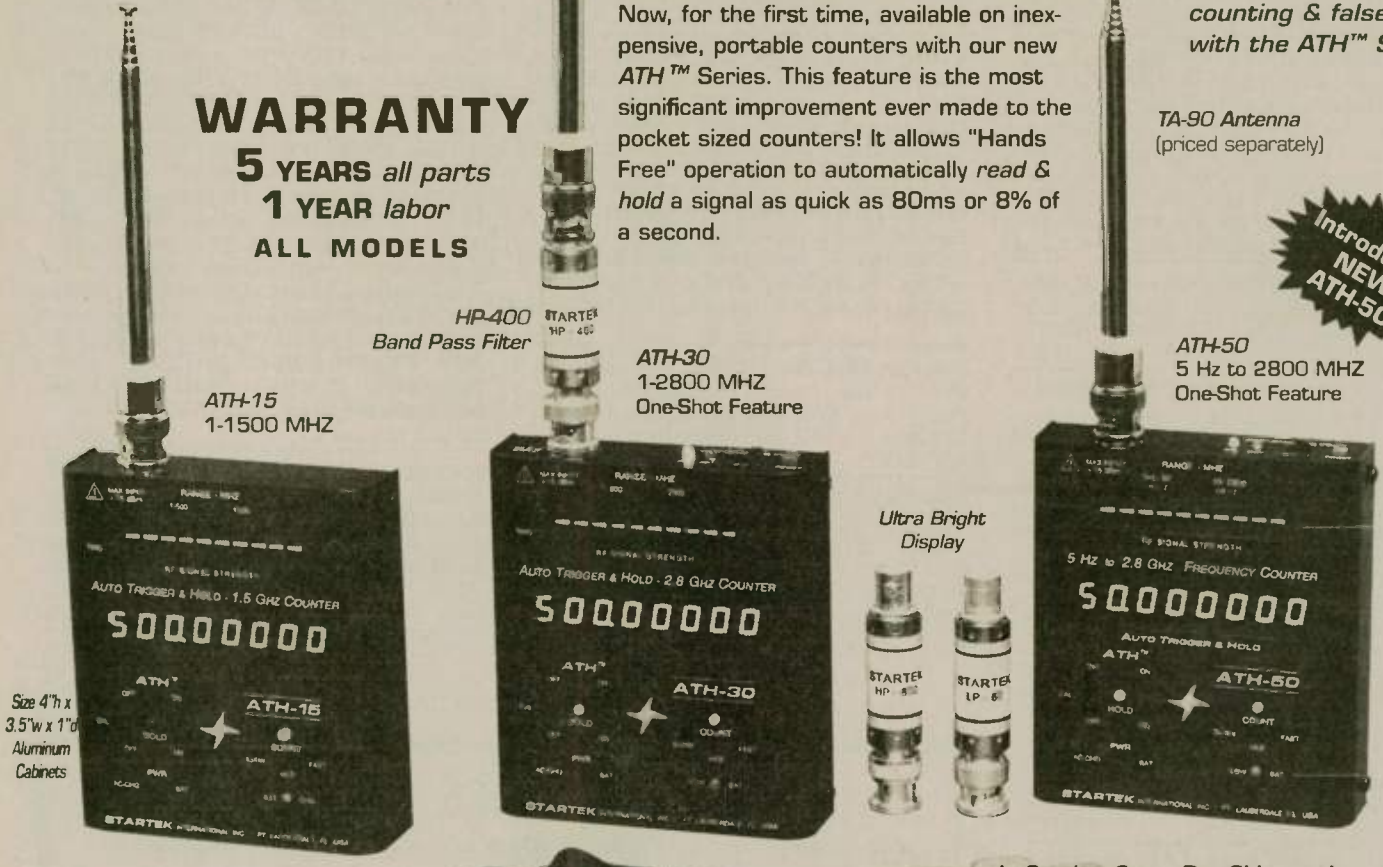

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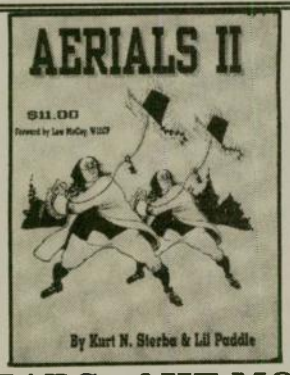

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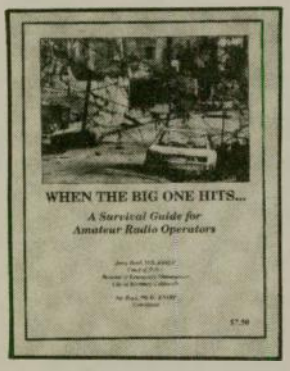

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Marathoner raises funds for kids

Fred Doob, AA8FQ, a 47-year-old Amateur Radio operator licensed since 1958, will run in the Los Angeles Marathon to benefit children with cancer.

Fred's goal isn't to cross the finish line first, but rather to make as many QSOs as possible during the grueling 26.2 mile marathon course originating at the L.A. Memorial Coliseum at 8:30 am on Sunday, 6 March, 1994. For every contact made during the race, ICOM America, Inc. will contribute $5 to the Children's Cancer Research Fund (CCRF) of Los Angeles, one of the leading pediatric cancer research funding organizations in the country.

Fred will communicate using his ICOM IC-W21AT handheld transceiver strapped to his waist. He will also use an HS-51 headset/boom mic with a specially modified PTT control in his hand. Repeater coordination for two meters, 70cm and an HF link is being coordinated by the Baldwin Hills Amateur Radio Club of Los Angeles. Fred will monitor the following frequencies starting approximately one hour before the race: 145.200,146.925, 445.325, 447.235 and 146.52 MHz simplex. If propagation is favorable, he will also take calls on 20 meters at 14.295 MHz. He anticipates that it will take about four hours to run the marathon. All hams who contact Fred will receive a special commemorative QSL card.

You can further assist Fred and ICOM to "Go The Distance" in helping kids with cancer by sending a contribution of any amount payable to CCRF, c/o Fred Doob, P.O. Box 20100, Shaker Heights, OH 44120. If you pledge $1 or more per mile ($26), you will receive an ICOM hat like Fred's race hat as well as a syringe of Solder-it Silver Solder Paste. All pledges will directly benefit the Children's Cancer Research Fund.

Fred's QSL from the New York Marathon.

Fred participated in the New York City Marathon in November 1993, and with ICOM's backing, raised approximately $2,500 for the Memorial Sloan-Kettering Cancer Center. He logged over 300 QSOs and received many individual pledges from the Amateur Radio community.

Fred said, "My experience in the New York City Marathon was so gratifying I want to continue my efforts and raise more money for kids with cancer. This is a great way for hams to make a contribution by doing what they like to do most... make contacts. I am hopeful that the QSO count and pledges from the L.A. Marathon will double that of the NY Marathon".

Fred and his wife, Diane, reside in Shaker Heights, Ohio. They have five children and five grandchildren. Fred has run about six miles a day for about the past ten years. Why did he start running? "To stop smoking," he said.

For more information, please contact Fred Doob, AA8FQ, at 216/721-2466 or Charlotte Alderton, Advertising Manager, ICOM America, Inc. at 206/454-8155. **WR**

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Everett, WA — Radio summer school

Glendale, AZ — Chaverim International

Istanbul, Turkey — Lloyd Colvin, W6KG, Silent Key

Kenosha, WI — Salvation Army net volunteer workshop

Ocean Shores, WA — That's ham radio

Washington, D.C. — FCC reg update

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