Worldradio

Year 24, Issue 10 April 1995 • $1.25

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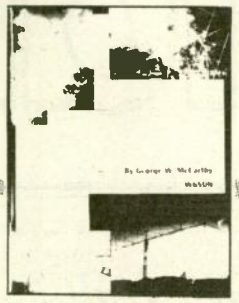

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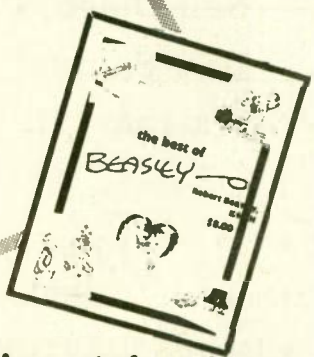

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Mayor Willie Wong of Mesa, Arizona, (left) stands alongside Gary Unger, K8RIQ (center) as he receives a plaque honoring him for his rescue efforts. Frank Smith, AHØW/ OH2LVG, (right) presents the plaque on behalf of the team.

Rescue of the Revillagigedos DXpedition

Frank R. Smith, AHØW/OH2LVG

Last October the dream of a few DXpeditioners from Russia, the United States, and Mexico to go to Isla Socorro of the Revillagigedos Archipelago was fulfilled after nearly two years of planning and anticipation. This is an account of how that dream turned into a Halloween nightmare.

The idea of going to Revilla came about during an earlier DXpedition many of the same team members made to Malyj Vysotskij Island, 4J1FM, in the winter of 1992. It was Victor Keller, XE1VIC, who, after that trip to Russia, immediately went to work to secure permits and documents in Mexico to allow not just a DXpedition to XF4 but to allow, on a highly exceptional basis, for the foreigners (Russians and Americans) to go there as well. Under ordinary circumstances, non-Mexican amateurs are not permitted to operate on any of Mexico's islands.

So after two years of planning, it all became reality in October 1994, and the XF4M team boarded the boat *Felipe Angeles* in La Paz, Mexico after a joyous sendoff by that resort-town's ham radio club. After a journey of approximately 350 miles and 50 hours in duration, the team arrived at Socorro Island. Soon afterwards, the DXers were welcomed by the island's Mexican Navy personnel, and the team was driven by amphibious military vehicles (formerly used by the American Army in the Viet-Nam War) up the island's volcanic mountain to a plateau about one mile from the island's now defunct airstrip, approximately 1,500 ft. in altitude.

The team was on the air within an hour of arrival, passing out QSOs to DXers worldwide, initially on 80 Meters. By the end of the second day, several beams and dipoles were in place along with three complete HF stations and logging computers.

The hardware would eventually include 2 Cushcraft A3 beams, one A3WS WARC beam, a two-element 40 Meter beam and dipoles and a vertical for the low bands, two 5 KW generators, large drums of gasoline, Kenwood and ICOM transceivers, amplifiers, several push-up masts for the antennas, personal luggage, etc.

The team stayed on the air day and night for nearly a week including a multi-single DXpedition entry in the CQWW/SSB Contest, logging a total QSO count of more than 15,000. After the contest closed down at 6:00 p.m. local time that Sunday, the team, taking less than an hour and a half, disassembled all the equipment, repacked

(please turn to page 6)

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— *Worldradio* NEWSFRONT —

Some information has been supplied to ***Worldradio*** **Newsfront** courtesy of *Newsline*.

ARRL President improves after stroke

American Radio Relay League president George S. Wilson, W4OYI, is in stable condition and continuing to improve after suffering a stroke February 11, in Washington D.C.

Mr. Wilson and other league officials were finishing up a series of meetings in the capital. The group was returning to their hotel when the president was stricken.

Taken to a local hospital, his condition was quickly diagnosed.

After being stabilized, he was moved the following day to a hospital in Virginia that specializes in stroke treatment.

Following surgery, President Wilson's condition has shown steady improvement and his friends and colleagues are hopeful that plans can soon be made to move him to his home state of Kentucky to continue treatment.

Get well messages may be sent via ARRL Headquarters, 225 Main Street, Newington, Connecticut, 06111, or to W4OYI at his ***Callbook***™ address. Look for an update in the next month's issue of ***Worldradio.***

Computer crook arrested

Fugitive computer hacker Kevin Mitnick, N6NHG, has been captured. The Van Nuys, California, man was convicted in federal court in 1988 for stealing computer programs and breaking into corporate computer networks. While on probation he disappeared from a half-way house.

Mitnick, 31, dubbed "The world's most wanted fugitive hacker" by the *New York Times*, was arrested in Raleigh, North Carolina after being traced there electronically by one of his purported victims. The *Times* credited computer security specialist Tsutomi Shimomura, of San Diego's Supercomputer Labs, with tracking down the culprit.

Shimomura was able to determine that on February 12, Mitnick was operating on-line using a computer and modem through a cellular telephone near Raleigh. On the 15th, federal agents, along with state and local law enforcement made the capture. Investigators believe that while on the run, Mitnick broke into many corporate and other communication networks, stolen as many as 20,000 credit card numbers, as well as damaging many computer files.

He is being held without bail (and very limited telephone access) in a North Carolina federal detention facility while further investigations are made into other possible crimes for which he might be responsible.

Alabama hams link cities after storms

Less than one week after Alabama Amateur Radio operators met to work together to expand their Skywarn communications network, they had first-hand evidence of just how important their capabilities have become.

The National Weather Service plans to close two of its offices in the state. As a result, storm spotter groups will need to rely more heavily on each other to get their 'severe weather' reports to the forecasters. The amateurs met in Huntsville on February 11 to consolidate their statewide plans for mutual cooperation. Just five days later, deadly tornadoes hit the state in the region between Birmingham and Huntsville.

Lightning struck the Weather Service office in Huntsville, knocking out its radar and communications. Forecasters in Birmingham requested help from the Amateur Radio operators to establish communications between the two offices. Amateur Radio operators manned the Weather Service offices in each city, and used remote base technology to link repeaters in Huntsville and Birmingham. Their services were needed for about two hours.

The experience drove home the point that had been under discussion only days before. To provide emergency communications for the state requires that resources, both human and material, need to be brought together, and planned for—the need for help may occur at any time.

Worldradio on tape update

In our December, 1994, issue we reported that Fr. Tom Carten, K1PZU, who records the audio tape version of ***Worldradio*** for the blind, was in need of donations in order to replace aging high-speed duplicating equipment.

The generosity of ***Worldradio*** readers has been phenomenal. Hundreds of you kind people sent in enough money that not one, but two duplicators were purchased! There was even a small amount left over, so the "kitty" now has a reserve for the purchase of some extra tapes and shipping boxes. Many thanks to all who contributed.

For details on how to obtain ***Worldradio*** on tape, pleae write to: Tom Carten, K1PZU, 1602-Y King's College, Wilkes-Barre, PA 18711.

Hamvention speaker

Cliff Stoll, K7TA, author of *The Cuckoo's Egg*, and soon-to-be released *Silicon Snake Oil*, will return to be the principle speaker in 1995 at the Dayton Hamvention banquet. Stoll was the featured speaker in 1993, when he described the pursuit of an international computer spy who was threatening national security, and how he was caught — the subject of his first book.

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features

departments

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Worldradio (USPS 947000) is an international conversation. You are invited to participate.

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

You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio.

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PUBLISHER'S MICROPHONE

The amateurs whose names appear below have something in common with the constellation named Orion. Orion is the only one visible from both the Northern and Southern Hemispheres.

To be seen from both hemispheres, and possibly from outer space if one of the astronauts (who is an Amateur Radio Operator) takes this issue on the next mission as reading material, are the following, the most recent to become ***Worldradio*** SuperBoosters (Lifetime Subscribers):

- **Herb Asmussen, OZ7SM, Beoly, Worcestershire, England**
- **Chris McCormick, N3JHR, Doylestown, PA**
- **Darrel Smith, N2BJV, Wilmington, DE**
- **Frank Rohan, KC4ROC, Melbourne, FL**
- **Leo Woodard, WD8DCA, Fremont, MI**
- **Bob Jensen, KK6GN, Dublin, CA**
- **Marvin Baker, W9KGE, Indianapolis, IN**
- **Jim McCarthy, KBØPKZ, White Bear Lake, MN**
- **Bruce Hammerschmidt, KA9NNH, Montecello, IL**
- **Leslie Day, KK6NH, San Diego, CA**
- **Michael Bailey, KK6NF, San Diego, CA**

An article in a magazine said that the Internet would replace Amateur Radio in emergency communication. That is an interesting premise until one asks what connects the Internet and remembers that is the same old telephone wires that go down in serious emergencies. What powers the computers? The same old electric lines that come down during emergencies.

Some have said that cellular phones would lower the need for amateurs. Yes, there are more people now who can report cars out of gas on the freeway. But when a situation needs real communications procedures the amateur will perform in a more professional manner.

What if the cellular relay stations lose power? The best comunications usage for the cellular phone then would be to wrap a message around it and throw it as far as you can. Should the relay station go to battery power that will mean that there will be massive congestion on the system as family members try to reach one another. The computer services can also become overloaded and refuse access to callers.

Amateurs, with battery-powered VHF rigs with directional antennas, could still communicate considerable distances. A modest HF station powered by an automobile battery can be heard worldwide. Communication through the Amateur Radio satellites is accomplished at low power.

When all else fails, it will still be the amateurs who get the message through.

There was an article in a club bulletin that has real meaning. Here are some excerpts:

"I got a phone call from someone I hadn't spoken to for quite awhile. We talked and I could tell he was excited about something. He began to tell me about getting into ham radio. That was a surprise as we had both been on CB for years. I had always figured that (ham radio) was out of my reach, as he did.

".....Since then I have gone on to pass General theory and 20 WPM code. I'm studying the Advanced theory and by this time next year, maybe I'll be an Extra."

Very instructive, wasn't it? He conquered that "out of my reach" that stops so many people, not just in getting an amateur license but in other avenues of life.

Many dreams and hopes crash upon the rocks when just a bit more effort (not made) would spell the difference.

Everybody runs into brick walls, everybody gets knocked down. It's those who get up one more time and one more time and another time who cross the goal line.

There are licensing classes that teach in the old tried and true method outlined in the books. That is, first come resistors, then capacitors, then inductors, etc. Eventually, after both students and instructor have dozed off, all the components are brought together. Boring!

Why not, first night, on the blackboard, draw a tube, put a microphone into the grid and a speaker out of the plate. Right off, something interesting students can immediately relate to. Make it a PA system at the football game or a hi-fi set. Explain audio frequencies, what amplification is and how it occurs.

Change the frequencies generated, replace the speaker with an antenna and it relates to the end purpose of the class much quicker and the student's interest is held.

Diego Garces, WA6IPX, Cerritos, CA wrote this to "All the members of the ***Worldradio*** staff:

"Just to say THANKS A MILLION to all of you for all these years of providing me with lots of information. You are, not just good, but THE BEST!!!!!"

Thank you, Diego.

—Armond, N6WR

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The rescue

(continued from p.1)

it and boarded trucks for the journey back to the *Felipe Angeles*, which was anchored just off the harbor of Socorro by a few hundred feet.

Once on the boat, a very exhausted crew of DXers got ready for what was expected to be a night of well-deserved sleep. Instead, what would follow would be a night of sheer hell for all. The boat's crew wrestled with the anchor for over an hour before the boat could depart. The hams on board were puzzled to see the captain repeatedly drag the boat's anchor and then try to raise it by hand. After straining the ship's engines like this, the smell of burned oil suddenly became evident. Then the crew discovered an electrical anchor winch designed for this very purpose and the anchor, twisted beyond recognition from being dragged across the ocean floor, finally popped out of the water and the boat left the harbor of Socorro Island. Evidently the captain never knew he had damaged the boat's engines in his unsuccessful attempt to raise the anchor.

Several hours later that night the DXers were awakened by the motion of the boat being tossed around by the waves and the sound of flares being exploded into the black night. Several of the hams got up and headed for the bow of the boat and were informed that the engines had burned up and the mechanic on board was helpless to do anything about it. The boat began to drift aimlessly about, being driven by the currents of a very black ocean in a very black night. The DXers were well aware of the menacing presence of hammerhead sharks that thrive in these waters just south of the Sea of Cortez.

The boat's crew responded to the crisis by going to sleep leaving the matter to the DXers on board to handle by themselves.

On board the vessel was well-known DXpeditioner Ed "the Red" Kritsky, NT2X/RV7AA, who quickly took the bull by the horns. This time the "horns" was a microphone of an ICOM-725. Ed scanned the 75 Meter band and came across a ragchew in progress between a couple of hams in Texas and California. He repeated the words, "maritime distress" in what would become a frustrating attempt to get these two hams to listen. One of them actually acknowledged that he heard the words "maritime distress" but then, stating that because he couldn't hear the boat's signal anymore, decided to go ahead with his ragchew.

Ed QSYed up the band and luckily found a ham from Mesa, Arizona, Gary Unger K8RIQ, who had just come home from his swing-shift job as a police dispatcher for the Mesa Police Department. Gary had just turned on his HF rig when he heard the cry for help.

Unbeknownst to the XF4M team, Gary had undergone specialized emergency communications training with a group of other hams from Mesa and other Phoenix-area cities. This group, called the Mesa Emergency Group, or "MEG," has about sixty active ham operators who conduct various emergency drills as well as formal training sessions. In fact, each member of the group has predetermined site responsibilities within the City of Mesa, including immediate personnel coverage of every public school in the community that might be affected during citywide emergencies, communications breakdowns, etc. This is also coordinated with the 911 system in the area.

One of them actually acknowledged that he heard the words "maritime distress" but then, stating that because he couldn't hear the boat's signal anymore, decided to go ahead with his ragchew.

Gary, K8RIQ, immediately went to work in behalf of the team staying up throughout the night coordinating radio communications between the boat and the US Coast Guard unit in San Diego whom Gary had earlier telephoned for help. Through Gary's assistance, the USCG was able to determine the exact location of the boat and later contact the Mexican Navy to explain the problem. Only when Gary was satisfied that the matter was fully under the control of both the USCG and the Mexican military authorities did he relinquish the situation. Since the USCG could not make contact with the boat on 75 Meters, all subsequent conversations with the Coast Guard took place on both 5 and 8 MHz frequencies.

Late the following day, welcome news came to the boat via UHF. The Commandancia of Socorro finally established radio contact with the boat and announced that a rescue boat was speeding its way to the *Felipe Angeles*. Late that night, the very exhausted team was returned to Socorro Island and housed in the island's dormitories. Team member Frank Smith, AHØW/OH2LVG, found some humor in the situation and jokingly commented to the naval commander that he and Ed, NT2X, and his Russians colleagues, Andy Chesnokov, UA3AB, and Harry Booklan, RA3AUU, now had the distinction of being the only foreign hams ever to go to Socorro *twice*!

But the nightmare did not end there. All the team members had family and jobs to get back to. Being 350 miles from anywhere else, how then would the team get home?

The best possibility would be to secure a plane and fly back. Literally dozens of phone calls went out to an equal number of pilots. For a variety of reasons, none of them could make the rescue trip to Socorro. Hams in La Paz and Mexico City contacted the team with the reassuring message: "don't worry, you are not alone. We will get you home!"

The team has since expressed its gratitude to the hams of La Paz. Frank further adds, "...and there is this beautiful angel in Mexico City. Her name is Nellie Lazard, XE1CI. Nellie, like Gary K8RIQ, stuck with us. She made countless telephone calls to our families in New York, Mexico City and Phoenix and gave them much comfort and assurance that this situation would turn out well." In 1993, Nellie herself was the first-ever YL to activate Socorro, when she took a team there as XF4CI.

Two days later, the Mexican Defense Ministry in Mexico City, seeing that every other resource had been exhausted, ordered a C-130 military transport plane to get the XF4M team off the island. After a two-hour flight back to the La Paz Municipal Airport, the team visibly shaken from this harrowing ordeal, got off the plane to be welcomed by the cheers of the La Paz Radio Club and their families who had gone out on the tarmac to greet them. The team will never forget looking out at this kind group of fellow amateurs and seeing little Irma, 4-year-old daughter of one of the hams, wearing a Mexican national costume crowned with a tiara in her hair, who came to welcome the group back to safety.

Afterwards, Frank, a team member of the XF4M DXpedition and fellow Arizonan, wanted to find out just who this K8RIQ was who did so much to help with the team's rescue. With the help of other hams in the Phoenix area, Frank located Gary by telephone. It was a very warm, pleasant reunion, Frank says.

Gary told Frank about the MEG group and the training he had taken. He recalled that during the amateur emergency training courses, one of the instructors asked the hams, "what would you do if, in the middle of the night you're monitoring the HF bands and you hear a maritime emergency? What would you do?" Gary related that it all came back to him during the night of 30-31 October, 1993.

On January 23, 1995, Frank represented the entire XF4M team in presenting a plaque commending Gary Unger, K8RIQ, for his life-saving efforts. The ceremony took place during a public meeting of the Mesa City Council. In attendance were the mayor, approximately 200 members of the public including about a dozen amateurs, Gary's co-workers in the Mesa Police Department, members of the press and Gary's wife. After the brief presentation, the audience burst into a wildly enthusiastic cheer for Gary. As one ham put it, "this will go down as a great day for ham radio in Arizona." Another commented, "this couldn't have happened to a finer person; Gary has given so much of himself over the years and he has long deserved an honor like this."

Afterwards, Gary recalled that harrowing night in October. He commented that as a dispatcher, he is used to relying on police or firefighters arriving on the scene within minutes, giving him the relief of knowing that help is close at hand.

"But not so with the Halloween call from the XF4M team. I was more nervous in helping these guys out than I've ever been on a 911 call," Gary said. "I was actually shaking when I was talking to them."

Frank explains, "there were two things that ultimately saved us. One was Gary Unger, K8RIQ, and the skills and experience that came from his amateur emergency training and police background. The other was an act of God: under normal conditions, the seas surrounding Socorro Island are exceedingly rough, according to Mexican colleagues who have gone there. In fact, we were told to prepare for 20+ foot waves, at least. Last Halloween, we were lucky. The ocean was unusually smooth, at times even looking like a mirror, allowing us to look deep into the black water. If the ocean had been in its normal, rough condition, we wouldn't have made it, certainly we would not have done so without the help of Gary Unger."

Frank summed up the experience. "I've travelled back and forth to Finland, well over twenty times in the last several years, plus trips to Russia, Germany, Sint Maarten and countless trips all over Mexico. And for the first time ever, I actually *enjoyed* going through US Customs!" **WR**

Signs above the transmitter (right) with "flags" helps visitors to read about the display in their own language. ***— photo by KØOWO***

The Resistance Museum - Denmark

William Erfurth, KØOWO

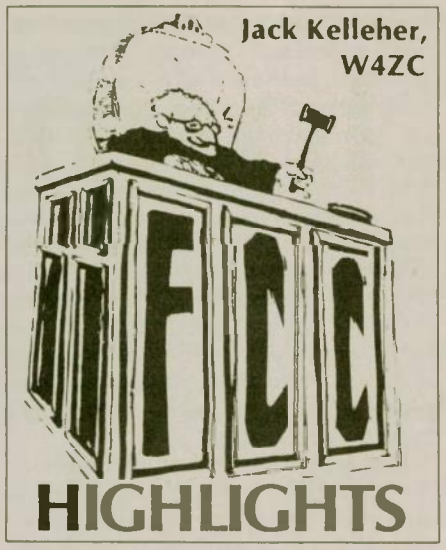
This is the operating position of OZ5MAY. The QTH is the WWII Danish Resistance Museum (Frihedsmuseet) in Copenhagen, Denmark.

The station is operated and maintained by members of the Copenhagen chapter of the Danish Amateur Radio Society. Everything you see is authentic, kept in original operating condition.

The receiver is an old RCA, and the transmitter and key are ones that were actually used by the Danish resistance forces during the war.

This is a small museum that is conveniently located in Churchill park. The park is just a few blocks north of Amalienborg Palace, and just south of the statue of the "Little Mermaid." All of the exhibits here are just fascinating, and very well done.

The Resistance Museum is open from 6 a.m. until sundown. All of the museum staff are very knowledgeable and speak English...as do most of the people in Denmark. If you plan to travel to Copenhagen, a visit to see the OZ5MAY operating position along with the rest of the exhibits will be worth your time. Admission is free. **WR**



A vanity call sign system

A news release on this subject by the Federal Communications Commission, dated January 24, 1995, is quoted in its entirety below. (The implementing Report and Order was released on February 1st, but is too lengthy to be reproduced here. The R. and O. carries the FCC number 94-343, and is titled "PR Docket No. 93-305 — In the Matter of Amendment of the Amateur Service Rules to implement a Vanity Call Sign System." The amendments become effective March 24, 1995.)

Here is the news release.

"Commission amends Amateur Service rules to implement a vanity call sign system (PR Docket 93-305).

"In recognition of the strong sense of identity among amateur operators that is grounded in the call signs of their stations, the Commission has decided to offer a vanity call sign system to the amateur service community. The Commission will also resume issuing new club and military recreation station licenses. The Commission said these actions are fundamental to its commitment to putting the needs of people first in providing the services that they want.

"Each new amateur station licensed by the FCC is assigned a unique call sign. An automated process selects the call sign in accordance with the sequential call sign system. Until recently, the Commission was unable to accommodate the many thousands of requests for call signs of the licensees' choice. The Commission stated that one of its many steps in reinventing Government is to implement new licensing processing capabilities that make it practicable to grant such requests.

"The Commission will implement the new system by using a series of four "starting gates." Gate One would allow a previous holder of a call sign to apply for that call sign or, where the holder is deceased, a close relative could apply. Gate Two would allow the 66,000 Amateur Extra Class operators, who have passed the most difficult license examinations, to apply. Gate Three would allow the 112,000 Advanced Class operators, who have passed the second most difficult license examinations, to apply; and Gate Four would open the system to any licensee, including a club station license trustee applying for the call sign of a deceased former holder. The Commission will announce the opening of each gate by a Public Notice. The first gate will open as soon as the new application form, FCC Form 610-V, is available and the Commission's licensing facility is prepared to begin processing the applications.

"With respect to new club station licenses, the Commission stated that persons not already holding a club station license must first apply for and receive a license before filing an application with the fee collection contractor requesting that the license be modified to show a vanity call sign. However, the Commission will begin accepting applications for new club and military recreation station licenses on the date the Report and Order in this proceeding becomes effective. (note: This date is March 24, 1995)

"Action by the Commission December 23, 1994, by Report and Order (FCC 94-343). Chairman Hundt, Commissioners Quello, Barrett, Ness, and Chong.

Bill Grenfell, W4GF a Silent Key

William A. (Bill) Grenfell, W4GF, died on January 27, 1995 at the age of 82, after a long illness. Bill was the editor of the FCC Highlights column in *Autocall* and in ***Worldradio*** from 1971 until the fall of 1991, when he had to give it up due to poor health.

His career with the FCC began in 1940 when he took the examination for Federal Radio Inspector and trained in monitoring techniques at the Portland, Oregon monitoring station. He was

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 February 1995.

For more information about the call 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
Ø	AAØVS	KGØTJ		KBØQVG
1	AA1MB	KD1ZH	N1UFI	KB1BNN
2	AA2VU	KG2AP		KB2TLZ
3	AA3KC	KE3RA	N3UIZ	KB3BGK
4	AE4CX	KS4MX		KE4VDD
5	AC5AH	KK5JD		KC5MKA
6	AC6JX	KO6PF		KE6QOX
7	AB7HT	KJ7JB		KC7IQZ
8	AA8SA	KG8OO		KB8WQX
9	AA9NS	KG9AJ	N9ZZZ	KB9JCR
N. Mariana Is.	KHØQ		KHØDQ	
Guam	WH2K	AH2CZ	KH2NB	
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6NU		WH6CSL
Amer. Samoa	AH8M	AH8AH	KH8CF	WH8ABB
Alaska		AL7PW		WL7CKG
Virgin Is.	WP2Q	KP2CD	NP2HY	WP2AHV
Puerto Rico		KP4YM		WP4MWC

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then assigned to Seattle, Washington as an Assistant Monitoring Officer for the FCC Radio Intelligence Division. In 1941 he was transferred back to Portland as the Radio Inspector. This position covered all classes of radio inspection, including ships, broadcast stations, and Amateurs on occasion.

When World War II came along, Bill joined the Navy as a Lieutenant J.G. He completed his radio and radar training at MIT, where he graduated first in his class, and earned a full stripe. Next came two stripes and a tour of duty at Navy's Bureau of Aeronautics in Washington, D.C.

In 1946 Bill left military aeronautics and returned to the FCC as a radio engineer assigned to the Commission's Frequency Allocation Division. In 1952 he became Chief of the Amateur Branch of the Amateur and Citizens Radio Division, where he ably guided the course of Amateur Radio in the U.S. until he retired in 1971.

Bill learned the Code from the Boy Scout Handbook back in 1926. He was first licensed in 1930 as W7GE. In 1931 he upgraded to a Class A license and got on 'phone. After earning a BSEE at the University of Oregon in 1935, Bill worked for the Washington State Highway and Police Departments as a radio technician, responsible for all outside maintenance and installation.

Bill's ham activities were legend. His first rig was a 210 oscillator with a slop jar rectifier. With this equipment he was soon an active traffic handler and avid contester and DXer. He took part in five separate DXpeditions to Curaçao, and many of us enjoyed his photography and talk shows of these trips. He was a member of the Potomac Valley Radio Club since 1953, serving as Secretary and Treasurer, and then President in 1955. He was a member of the A-1 operator's club; the First Class Operator's Club (FOC) and held WAC, DXCC and WAZ Awards. He was a Life Member of the ARRL and an Assistant Director of the Roanoke Division; a Life Member of QCWA; President of Washington D.C. Chapter 23, QCWA; and the first President of Vic Clark (Northern Virginia) Chapter 91 of QCWA. He held an Extra Class amateur license; was also an active pilot; held a private pilot's license with instrument rating; and owned his own aircraft.

Those of us who knew Bill mourn an outstanding amateur and a fine gentleman.

Reallocations near 2.4 GHz.

A Notice of Proposed Rulemaking was issued on November 8th, 1994. In the NPRM the FCC acknowledged arguments from the amateur community concerning the impact of the proposed allocations on amateur activities in the subbands involved, which are shared by amateurs on a secondary, non-interference basis.

The ARRL filed comments and reply comments on the NPRM, which are summarized in the January 12 issue of the *ARRL Letter*.

In its comments, filed on December 19, 1994, the League asked that the Amateur Service be given primary allocation status in the band 2402-2417 MHz, and that it be given at least co-primary status between 2390 and 2400 MHz. The League said that a previous government study had recommended the 2400-2402 MHz segment for amateur use, and that it would be desirable to make the entire segment 2390 to 2450 MHz amateur primary.

Reply comments were filed by the League on January 3, 1995. They said that , with few exceptions, comments filed by others did not respond to the Commission's questions regarding the compatibility of the proposed commercial service with the amateur or other services. (The FCC had proposed maintaining a secondary allocation for the amateur service in all or part of this spectrum or, to make the Amateur Service the primary user in a portion of this spectrum while either maintaining a secondary allocation in the remaining portions of the bands or eliminating the other portions from the amateur service)

The FCC also sought comments on "the ability of various radio services to share spectrum with the amateur service." The League, in its reply comments, said that the bulk of comments filed were "absolutely silent" on the effect of a new proposed use on the Amateur Service.

Space limitations do not permit repeating the remainder of the reply comments.

An editorial in the February, 1995, issue of *QST* magazine relates this particular action to the ongoing FCC program of auctioning assignments.

The editorial says in part: "With so much money chasing so little spectrum, it isn't surprising that some folks who have little understanding of the radio spectrum are proposing to extend a reasonable idea in an unreasonable direction. Not content to use the auction as an assignment tool, they want to use it also to make allocation decisions." After citing a Heritage Foundation comment that "radio spectrum management . . . should be removed from the statute books" the editorial goes on to ask: "Is every spectrum allocation decision to be made by using commercial value as a surrogate for the public interest? If so, the danger to Amateur Radio (and a host of other vital services) should be obvious."

The editorial concludes "Auctions as an assignment tool for some radio services, where their use is appropriate, is an idea whose time has come. Auctions as an allocations tool is an idea best left on the cutting room floor."

(Note: This writer lauds the League for its forthright stand. Not only is auctioning allocations a bad idea, but it might be at odds with the regulatory objectives of the International Telecommunication Union, of which the United States is a member.)

Spread spectrum

The FCC has just renewed the Special Temporary Authority (STA) that

allows unrestricted use of spread spectrum emissions from 6 Meters and up in the amateur bands, according to an item in *W5YI Report* for January 15th, from which the following is taken.

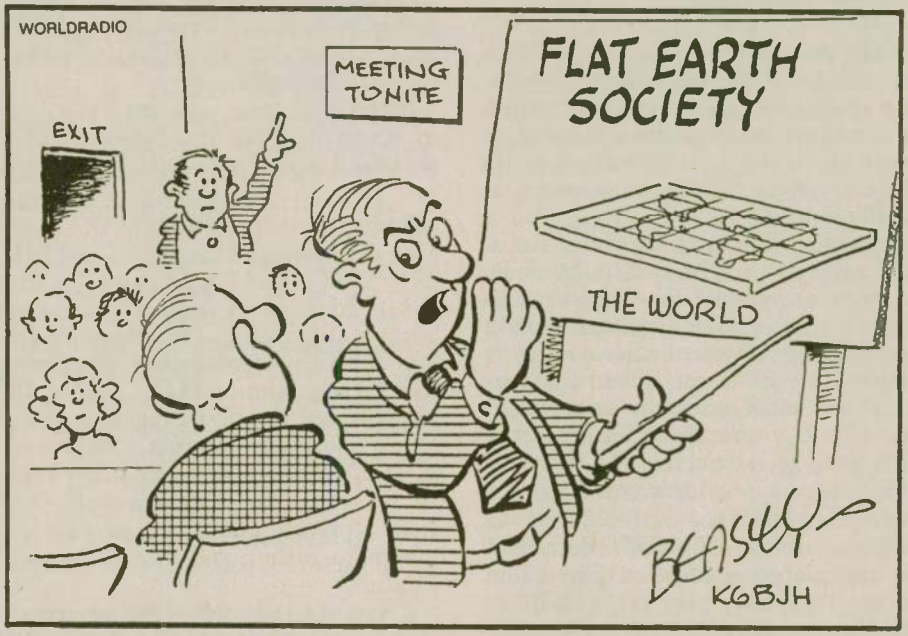
This STA was originally granted three years ago to Robert Buaas, K6KGS, and has been renewed each year. This latest renewal is significant in that it has no expiration date.

Spread spectrum technology can multiplex many low-power QSOs by hopping among frequencies in a list and by combining the data to be transmitted with fast codes. Much of the world's commercial mobile and military communication systems are embracing spread-spectrum, especially for cellular systems.

The STA authorizes work with spreading schemes and codes, power levels and various hardware implementations not otherwise permitted by Part 97. Much of the development has been performed with direct sequence and frequency hopping systems in the heavily populated 2 Meter band in Southern California, demonstrating robustness and lack of significant interference. K6KGS plans more experiments in the 6 Meter band.

Amateurs from the digital community have long been interested in revising Part 97 to permit more choices for hams in the spread spectrum technologies and codes they may use. We understand that a Petition for Rulemaking to that effect is in preparation.

The FCC renewal says in part: " . . . the STA and waivers granted May 26, 1993, are extended until completion of your data communications experiments. All other conditions of the May 23, 1993 authorization will remain in effect." **WR**



WE BETTER START KEEPING HAMS OUTTA HERE---THIS GUY WANTS TO KNOW IF THE EARTH IS FLAT, WHY ISN'T EVERY RADIO TRANSMISSION LINE-OF-SIGHT?

Going mobile

Phil Salas, AD5X

Second of a 3 part series

Mobile antennas

What a variety of choices. First, though, lets talk some basics. Radiation resistance is what you want to get your power into to get it radiated. A ¼ wave vertical has a radiation resistance of about 35 ohms (assuming a perfect ground system) giving you a pretty good match to 50 ohms. Actually, as your ground system becomes worse, your ground losses increase giving you a better SWR but also reducing the efficiency of your antenna! This is called "Low SWR for the wrong reasons" by Walt Maxwell in his excellent book *Reflections* (ARRL). Unfortunately, as you shorten the antenna much below a quarter wavelength, the radiation resistance decreases as the height squared. And—it also decreases as the frequency squared. Therefore, as the frequency goes down and the length goes down, the radiation resistance plummets! So, who cares as long as we can match to it? No problem as long as there are no other losses in the system. Unfortunately, there are other losses. Ground losses typically run from 10-15 ohms depending on whether you have a large car with the antenna mounted in the center of the roof (lowest ground losses) or a small car with a side or bumper mounted antenna (highest ground losses). Matching coil losses can also be significant.

Short antennas look capacitive — around 3.75pf/foot or about 34 pf for a 9-foot antenna. The required base loading inductance can be calculated as seen in figure 1.

Incidentally, for a center loaded antenna, you need twice the inductance as a base loaded antenna so your coil losses will double for a constant Q.

If we didn't have any ground or coil losses, we could match into these low radiation resistances and get all our power into the air. But in the real world, these additional losses look like a resistive voltage divider to your transmit power. You can calculate your power loss in DB from:

Power loss (DB) = 10 LOG [R_R/(R_R + R_L + R_G)]

Of course, this is with respect to a quarter-wave vertical over a perfect ground with no feeder losses. In the real world, most base stations don't have lossless antenna systems. Ground losses due to inadequate radial systems typically run around 20 ohms for the average ground mounted vertical antenna less than 20 radials). This gives a 2 dB loss over perfect ground. Typically, another dB is lost in the feedline, connectors, low pass filter, etc. Therefore, the typical ground mounted vertical base station is around 3 dB down from a perfect system (close to half an S-unit).

So, to see where we will wind up, see figure 2 below.

As you can see, you are about one S units down from the typical home base station with a ground mounted vertical antenna. Center loading buys you 2.3 dB (kind of close to half an S-unit) over base loading. You can also see that the losses will get worse fast if the ground losses or the coil losses increase much due to the low radiation resistances. Things get much better as you go higher in frequency because the radiation resistance increases as frequency squared and so the other losses don't hurt you as much. Conversely, they can get much worse when you go to 80 or 160 Meters.

So, we've learned that ground losses are determined by your antenna mounting position and your car size. Center loading helps and high coil Q helps. Incidentally, high Q means very narrow operating bandwidth but you get more power out. Low Q gives you a broader operating bandwidth but a less efficient antenna. There are commercially available mobile antennas that advertise broad bandwidths - but watch out for them. Incidentally, high Q coils have the turns spaced by about one turn or more from each other. Low Q coils have the turns right up against each other. So — go for high Q center loaded antennas.

Next time we'll look at specific antennas available for mobile operation. See you then.

Phil, AD5X. WR

Figure 1.

L = 1/[(6.28F)²C] where L is in henries, C is in farads, F is in hertz. So, for 40 Meters and a 9-foot antenna,

L = 1/[(6.28X7.2X10⁶)²(34X10⁻¹²) = 14.5 uH

If you assume a coil Q of 300 (which is high but achievable), your coil loss is

R_L = 6.28FL/Q = 6.28X7.2X14.5/300 = 2.2 ohms.

Now lets look at radiation resistance. The radiation resistance for a base loaded short antenna can be calculated by:

R_R = 2.978 X 10^{-6}(hF)²

where: h = height in inches

F = frequency in MHz

For 40 Meters: R_R = 1.8 ohms for a 108 inch base loaded antenna.

The radiation resistance for a center loaded short antenna can be calculated from:

R_R = 6.7 X 10^{-6}(hF)²

For 40 Meters: R_R = 4 ohms for a 108 inch center loaded antenna.

Figure 2.

	40 Meters (with a 9-foot antenna)					dB Loss Over
Loading	Inductance	Rr	Rg	Rl	dB Loss	Typical Base Station
Base	14.5 uH	1.8	10	2.2	8.9 dB	5.9 dB
Center	29 uH	4	10	4.4	6.6 dB	3.6 dB

DX vacation travels of WF2S

Stephen Licht, WF2S

What better plan than to celebrate our first anniversary than to spend two weeks on a quiet Caribbean island, basking on a white Sandy beach. Throw in an HF rig and lots of "sweet talk" to the XYL, and you have all the ingredients for a DX vacation.

In late September, when our Western New York summer is but a faint memory, Melissa (aka wife) and I headed for Toronto and met up with W2KKZ and his XYL. After a brief catnap we were up and headed to the airport. Because luggage is weighed, all radio equipment is put in our carry-ons. Stop for a moment and consider carrying your HF rig, power supply, keyers, mike, extension cord, 100 ft. of feedline, G5RV, a backup antenna of ladderline as well as a tuner. We divided up the load among the four of us but it was still quite a cumbersome situation. Of course we remembered that our tool kit had to be in the stowed luggage because of airline security.

Having our carryon bag X-rayed is always a mini-adventure in diplomacy. I learned long ago to hand them the bag, opened, and explain what the contents are before the officer enters a state of complete confusion. No problem!

I had earlier contacted the ARRL for licensing information. On the air QSOs with V2 stations and a letter to the Director of Telecommunications for Antigua and a fax from the hotel's general manager giving permission for antennas had all the details covered.

Clearing customs on Antigua is simple, again I put the carryon bag on the counter and explainthe contents and the only response from the young man in a very official looking uniform was, "Oh, Amateur Radio, OK." Getting to the hotel was a trip none of us will soon forget, especially when we cut through a pasture spotted with grazing cattle rather than take a long detour.

Arriving at the hotel, first things first, we checked out antenna supports and found an abundance of palm trees. After some rum punch and a walk about our tropical home for the next two weeks, W2KKZ and I along with KN2M, agreed to meet the folowing morning at 9 a.m. for a trek to the capital of St. Johns to get our licenses. W2KKZ and I found the office with the help of Teddy, our taxi driver. It was air conditioned, which in itself was a treat. Here we met V2AR, Mickey Matthew "the chairman of the FCC." While we were visiting, I asked about the possibility of a special call sign rather than the prefix V2/ added to our calls. To our surprise, if we agreed to use the call sign only on digital modes (that includes CW) we could be issued special personal calls for life. Mr. Matthew said instead of checking the files, he knew that V26 X, Y, and Z were unissued; so in the name of expedience he issued the call signs and promptly printed our licenses on his laser printer. Our conversation was more as three hams visiting than dealing with an impersonal public servant.

Now we had all the details ironed out and needed to get our station on the air. My balcony was selected as the station location. The maintenance foreman furnished us a crew of three men to assist with the antenna party With an extension ladder, the ends were secured up at about 30 feet and the feed point of the G5RV was off a corner of the building. In a flash the feed line was connected, the rig was powered up and V26Y and V26Z were on the air.

We had agreed that the hamming would be limited to early morning and at noontime when the sun was too much for our pasty white complexions. We made QSOs on all HF bands, but 40, 20 and 17 were the best. We learned the SSB was not efficient and the confusion caused by some Europeans made it less than pleasant operating. CW was another story. A CQ call on 17 was greeted by an ever growing number, many of whom told us that V2 was a new one for them. We worked lots of folks back home and filled page after page in our logs. W2KKZ would come knocking at our door at 5 a.m. to come in and operate 40 CW while I held my head asking Melissa what her plans for me were that day.

We flew to Montserrat, VP2M, where I am also licensed as VP2MBJ, for some sightseeing. I was busy antenna spotting and was surprised. I met the XYL of VP2MO, Sir Robert Martin, known to thousands as Bobby on the DX nets. We were invited to the home of VP2MR, Perry, to whom I have spoken many times. His estate, which I can only describe as palatial, had two guest homes with complete contest stations including antenna systems for 160 through satellite. His beautifully landscaped gardens prompted my XYL to remark that the frost back home had probably killed all our flowers.

Back on Antigua, V26Y and V26Z had settled into a routine of radio operations and playing on the beach. The food was excellent, liquid refreshments abounded and the tropical scenery was magnificent. Fifteen days later, like all good things, it was time to pack up our station and head home. Working DX is fun, but take it from someone who has been on the other side of a DX QSO, there is no thrill like being DX! WR

Using the phone during disasters

Gary Morns, KK6YB

When a major disaster strikes, it seems that everyone tries to use their phone at the same time. This puts the phone system way over its normal peak usage, over its capacity, resulting in the absence of a dial tone on the phone. The common perception in this situation is that the local phone system is out of service due to the disaster, but usually the only problem is simply too many people trying to get a dial tone at one time. How does this effect us as emergency responders and how do we deal with it?

What about the situation where you need to use the phone, perhaps the repeaters are down or overloaded, and you can't get dial tone? First, don't hang up. When you pick up the phone you are put in a queue when a dial tone becomes available the next person in the queue gets it. Each time you pick up the phone you start over at the end of the queue. Depending on the load on the phone system it can take anywhere from 30 seconds to an hour to get a dial tone. If the wait for dial tone is too long, you do have two alternatives.

The phone company designates certain phone lines as 'essential service lines.' These lines get priority for dial tone and always go the head of the queue. The lines that usually have that feature are dial-out lines for Emergency Operations Centers, Sheriff, Police Departments, Fire Departments, etc. However, public pay phones are also designated as 'essential service lines.'

If you can't get dial tone at home, try a nearby public pay phone. If you expect to make a lot of phone calls in an emergency, such as to direct a strike team, activate an EOC or RACES station personnel, you might want to consider having your phone designated as an essential service line. There is no charge and under normal circumstances you can't tell the difference. However, in a disaster it could save you many minutes or hours in getting calls through to direct emergency personnel. If you have a phone in your RACES station it might be a good idea to ask if that phone line is designed as an essential service line.

As emergency communications providers to government agencies, we need to be prepared to use any circuit available to transfer information, whether it be Amateur Radio, OASIS satellite phones, or the plain old phone system. —*Tac-One,* the newsletter of San Diego County RACES.

Additional radio spectrum discovered

Dick Sisson, W5ØNL

Investigators recently uncovered some lost documents from a classified research project conducted during World War II. The project has now been declassified, making this report possible. This research discovered a hitherto unknown region of electromagnetic spectrum below zero cycles per second. Although referred to in the documents as "Negacycles," this region will no doubt now be known as a Negahertz." Several interesting phenomena were reported concerning the properties of this region and the equipment used in the tests. The conclusion of the limited research showed, antennas of negative length, termed "imaginary antennas," performed remarkably well at these frequencies, particularly when buried "the deeper the better."

Wartime security prevented extensive evaluation of propagation in this new portion of the spectrum, but the documents indicate researchers were optimistic about its potential for meeting special communications needs. Preliminary findings did indicate the best propagation seemed to coincide with sunspot minimums.

Space limitations here do not permit inclusion of the many pages of complex mathematical calculations supporting the various conclusions in the research notes. Suffice it to say that the "j" numbers in the calculations take on a whole new meaning when applied to these frequencies.

One of the more critical problems the researchers encountered was the severe chilling of the components when running at high power on these frequencies. A number of defrosting methods were tried, but only with limited success.

The entire project was finally discontinued in mid-summer 1943, when tests conducted in the Mojave Desert ended in the loss of several members of the research team to hypothermia, exposure, and frostbite. Since all of the research was conducted entirely with vacuum tube equipment, it remains for modern day researchers to explore the impact of newer solid state technology on this problem.

—*The Chattering Relay,* Cuyahoga Falls ARC, Cuyahoga Falls, OH

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UHF/VHF anti-virus filter

Ann Shaver, AH2E

Concern over the possibility of Hawaiian repeaters becoming infected with mainland viruses has prompted Richard LaChance, AH6IO, to develop an effective, inexpensive anti-virus filter for use with all HTs. I tested this innovative product for one week, trying it on a variety of 2 Meter and 440 equipment and was very impressed with its performance. For the first time in many months, I was confident I could enjoy area repeaters without fear of picking up a virus.

The anti-virus filter works well on VHF and UHF equipment. — ***photo by NH2Z***

"The Aloha State is particularly prone to viruses," LaChance explained recently. "First, we're the crossroads of the Pacific. Every month scores of hams from Europe, Asia and the rest of the United States visit here. For that matter, recent statistics show a significant proportion of our visitors now come from Oceania and Latin America as well. So the chances of someone importing a virus are relatively high.

"Second," LaChance continued, "our warm, tropical climate is the ideal environment for the incubation of viruses. In my line of work, I see a lot of sick radios (LaChance is the technician in Hawaii's leading radio store) and I wanted to do something to prevent the spread of the problem. Honestly, I'd be overwhelmed if users of the City Hall or Diamond Head repeaters, for example, picked up some virus.

"These days, you just can't be too careful."

Although the anti-virus filter looks simple, much sophisticated engineering has gone into it. Just as important, it is easy to use. With the addition of only a simple adapter, it can be used on any VHF or UHF equipment. Imbedded in a small puka (a Hawaiian technical term generally translated as "hole") is an adjusting screw that permits the user to null out any detected virus.

My only complaint is that the anti-virus filter does alter the center of gravity of HTs, particularly the newer micro-minis on the market. I found my unit to be slightly unstable when the 5/8 wave-length telescoping antenna was fully extended. Admittedly, this is a minor complaint, given the value of this simple device. On the other hand, the filter is equally effective with all types of radios and antennas. Versatility counts a lot! Although I have not yet had a chance to test it, I am looking forward to using it with my hardhat-mounted 440 6-element cubical quad.

"It is an awfully good idea," agreed Chuck Burch, AH6IN. "In my own experience with antennas, I've always found that monopoles offer adequate protection, but Richard has come up with something that the average ham, particularly the newer, less technically inclined ham, can use to good effect."

Since the Center for Disease Control in Atlanta knows of no antibiotic that is effective against deadly repeater viruses, LaChance's filter will no doubt find a wide market.

Check with your local frequency coordinator. If he/she thinks your area is prone to viruses or if you plan to operate mobile or portable, consider protecting your equipment with an anti-virus filter. If your local ham supply center does not stock this item, contact LaChance directly. He is listed in the *Callbook*.™ **WR**

Call for papers

The 14th annual ARRL Digital Communications Conference will be held September 8 to 10 at the LaQuinta Conference Center in Arlington, Texas, near Dallas.

Co-hosts for the conference are Tucson Amateur Packet Radio, Inc. (TAPR) and the Texas Packet Radio Society.

The ARRL Digital Communications Conference is an international forum for radio amateurs and experts in digital communication, networking, and related technologies, at which they can meet, publish their work, and present new ideas and techniques for discussion.

Presenters and attendees can exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications.

Anyone interested in digital communication is invited to submit a paper for publication in the Conference Proceedings. Attendance at the conference is not required for publication. Papers are due by July 21, 1995, and should be submitted to Maty Weinberg, at ARRL Headquarters.

For more information on the conference, registration, and hotel reservations, contact TAPR at 8987-309 E. Tanque Verde Rd., No. 337, Tucson, Arizona 85749-9399 USA. Phone 817/383-0000; fax 817/566-2544; Internet: tapr@tapr.org. **WR**

MFJ Dual Band Mobile Antenna

For an incredible $14.95, you get a dual band 2 Meter/440 MHz mobile antenna with strong magnet mount, stainless steel radiator, 15 feet of coax and BNC adapter for your handheld -- It's the fastest selling mobile antenna in ham radio!

MFJ-1724B **$14.95**

For an incredibly low $14.95, you get an MFJ dual band 2 Meter /440 MHz mobile antenna!

It's the fastest selling mobile antenna in ham radio!

You get excellent gain for solid, noise-free QSOs. On 440 MHz, it's a high gain ½ wave over ¼ wave radiator. On 2 Meters, it's a *full size* ¼ wave radiator.

Its tough *stainless steel* radiator is only 19 inches tall -- won't knock off when parking in your garage.

An extra powerful magnet holds it steady -- even at highway speeds.

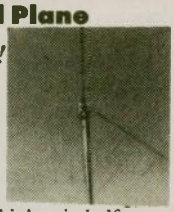
You get 15 feet of coax with a standard PL-259 coax connector for your mobile rig.

You get a BNC adapter so you can also use it with your handheld!

Your MFJ-1724B is protected by MFJ's famous one year *No Matter What*™ unconditional guarantee.

DualBand 144/440 MHz Ground Plane

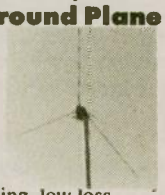
MFJ-1754 **$24.95** *New!*



Dual band ground plane antenna for 2 Meters and 440 MHz gives you extra long range on 440 MHz with a high gain halfwave over quarter wave radiator. On 2 Meters you get solid quarter wave performance. Mounts on 1 to 1½ inch mast with single U-bolt. Easy-to-tune.

1/4 Wave Ground Plane

MFJ-1740 **$12.95**



The MFJ-1740 brings up 2 Meter repeaters as well as any ¼ wave ground plane made!

You get easy tuning, low loss ceramic antenna insulator and strong lightweight aluminum construction.

Single U-bolt mounting for 1 to 1½ inch mast. Cutting chart included for 220/440 MHz. Made in USA.

MFJ Pocket Roll-Up™

2 Meter halfwave J-pole antenna

MFJ-1730 **$14.95**

Roll up this *halfwave* 2M J-pole antenna and stick it in your pocket! It's the perfect *gain* antenna for traveling.

Get home station performance on the go. Just hang your *MFJ Pocket Roll-Up*™ in the clear and plug the BNC connector into your handheld.

It's omni-directional and has significant gain over a ¼ wave. It does not need a cumbersome ground plane so it's convenient for indoors and works great with handhelds. Made in USA

Dual Band *flexible* Ducks

144/440 MHz flexible ducks for HTs

A. *High Gain FlexiDuck* **MFJ-1717, $19.95.** Enjoy dependable QSOs when other rubber ducks give you noise. High gain ½ wave on 440 MHz, full size ¼ wave on 2M. Won't jab you -- bends, twists, flexes with you. 15¾ inches.

B. *FlexiDuck*™, **MFJ-1716,** A. B. **$16.95.** Similar to MFJ-1717. Full ¼ wave on 440 MHz, efficient loaded ¼ wave on 2 Meters. 8¾ inches.

Shorty Duck™ for HTs

Add this *short*, 4¼ inch *ShortyDuck*™ to your 2M handheld for a Q-5 signal! Impedance matched for maximum gain. High-Q helical wound radiator.

MFJ-1718 **$12.95**

5/8 Wave 2 Meter Mobile Antenna

MFJ-1728/B **$24.95**

For *maximum range* while mobile, use MFJ's *Maximum Gain*™ 5/8 Wave 2 Meter Mobile Antenna. You'll get the maximum possible gain of any single element mobile antenna!

Competitive 5/8 wave mobile antennas can't work any better -- no matter how much more they cost.

You get low SWR so your rig can safely deliver maximum power into your antenna. It's rated at 300 watts PEP so you can use any mobile rig plus a mobile amplifier.

You get a heavy-duty magnet mount that holds your antenna tight at highway speeds and a black magnet base that'll look good for years.

You get a stainless steel radiator that'll endure years of harsh mobile use and 12 feet of coax cable.

You get MFJ's one year *No Matter What*™ unconditional guarantee.

Order MFJ-1728 with standard PL-259 coax connector or MFJ-1728B that also includes a BNC adapter for your handheld.

Stacked 5/8 Wave for 2 Meters

gives twice the omni-directional gain of a single 5/8 wave

MFJ-1764 **$34.95**

MFJ's stacked 5/8 wave radiators give you *more than twice* the *omni-directional* gain of a single 5/8 wave radiator!

Wide 10 MHz 2:1 SWR bandwidth . . . excellent ferrite choke balun feedline decoupling . . . shunt choke for bleeding off unwanted static . . . strong lightweight aluminum.

Fully assembled -- simply attach radiators -- no tuning required. Mounts vertically for FM/Packet or horizontally for SSB. Installs with single U-bolt on 1 to 1½ inch mast or tower leg. 1½ lbs., two 47 inch radiators, 23 inch boom. Made in USA.

Also works as excellent *6 Meter* full halfwave centerfed antenna.

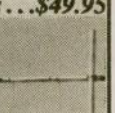
MFJ-1766, $89.95, gives you *four times* the gain of single 5/8 wave. Includes 2 MFJ-1764, phasing cables. Doubles gain on 6 Meters.

MFJ-1765, $29.95, phasing cables for 2 MFJ-1764s, other 2M ant.

MFJ dual band 144/440 MHz Yagi

5 elements on 440 MHz . . . 4 elements on 2 Meters . . .$49.95

MFJ-1768 **$49.95** *New!*



Get two Yagis for the price of one . . . enjoy two Yagis in the space of one with single coax feed!

MFJ's *exclusive* dual band balanced feed with *FerriteChoke*™ decoupling prevents pattern skewing and gives you low SWR.

The MFJ-1768 is based on the *National Bureau of Standards* design that's optimized for maximum forward gain with high front-to-back ratio and a clean symmetrical pattern.

Mounts vertically for FM/Packet or horizontally for SSB with single included U-bolt on 1 to 1½ inch mast or tower leg.

High strength 6061-T6 aluminum 5 foot, 1⅛ inch diameter boom. 2 pounds. Elements are electrically isolated from boom. Made in USA.

Portable 3 element Yagi for 2 M

MFJ-1763 **$39.95**

You can set up or take down MFJ's *portable* 3 elements 2 Meter Yagi in seconds! Elements simply screw into the boom.

You can take it with you wherever you go and have the "oomph" and directivity of a beam.

It's easy to store and sturdy enough to use as your home station antenna.

Mounts vertically for FM/packet or horizontally for SSB. *Center* or *end* mounts with single U-bolt. Great for packet/PacketCluster™.

It's compact 2¾ foot boom gives you a calculated gain within 1 dB of a four element Yagi with a boom nearly twice as long.

Extra thick elements maintain high gain and directivity over entire 2 Meter band. MFJ's *FerriteChoke*™ decouples feedline.

Elements and boom are made from strong lightweight aluminum and protected by MFJ's *Permanent Molecular Bonding Technology*™.

Weighs just 2 pounds. Boom is 30½ inches. Made in USA.

5/8 Wave Ground Plane

MFJ-1750 **$19.95**

For a low, low $19.95, you get a *high performance* 2 Meter 5/8 wave ground plane home station antenna -- you'll get the maximum gain of any single element antenna.

More expensive 5/8 wave ground planes can't work any better -- no matter how much they cost.

You get . . . shunt fed matching that bleeds off unwanted static and gives you low SWR . . . strong lightweight aluminum construction . . . low loss ceramic antenna insulator . . . MFJ's *RapidTune*™ radiator . . . MFJ's one year *No Matter What*™ guarantee. It mounts on 1 to 1½ inch mast with single U-bolt and is Made in USA.

MFJ-1752, $19.95, for 220 MHz .

HT Range Extenders

Telescoping antennas for handhelds

A. *Long Ranger*™ 2 Meter Halfwave, **MFJ-1714,** $16.95. For really long range this MFJ endfed halfwave is hard to beat. It outperforms a ⅝ wave on a handheld because the ⅝ wave needs a ground plane. The MFJ halfwave doesn't. It's shorter, lighter, has more gain and places less stress on your antenna connector than a ⅝ wave antenna. When collapsed, it performs like a rubber duck. 40" extended, 10½" collapsed.

B. *Dual Bander*™ for 2 Meters and 440 MHz, **MFJ-1712,** $14.95. Got a new dual band handheld or separate units? One antenna fits all. It's a ¼ wave for 2 Meters and a ⅝ wave with gain for 440 MHz. 7¼" collapsed, 19" extended.

A. B. C.

C. *Pocket Linear*™ ⅜ Wave, 2 Meters, **MFJ-1710, $9.95.** Carry this pen size antenna in your pocket like a ballpoint pen. When you're using your rubber duck, on the fringe and noisy, put on the *Pocket Linear*™, extend it to 24½" and carry on your QSO. Has pocket clip. 5¼" collapsed.

144/440 MHz Duplexer

MFJ-916 **$29.95**

Lets you use dual band 144/440 MHz antenna with separate transceivers *or* separate 144/440 MHz antennas with dual band transceiver.

Nearest Dealer/Orders: 800-647-1800
Technical Help: 800-647-TECH (8324)
• 1 year *unconditional* guarantee • 30 day money back guarantee (less s/h) on orders from MFJ • *Free* catalog

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MFJ TUNERS

MFJ's world famous 3 KW Antenna Tuner

If you won't settle for less . . . here is the finest 3 KW tuner money can buy!

The MFJ-989C is not for everyone.

However, if you make the investment, you'll get the finest 3 KW antenna tuner money can buy.

Here's why . . .

Massive Transmitting Capacitors

You get two *massive* 250 pf transmitting variable capacitors with detailed logging scales. They can handle *amps* of RF current and withstand 6000 RF volts because the plates are smoothed and polished and have extra wide spacing.

Precision Roller Inductor

A precision roller inductor, 3 digit turns counter and spinner knob gives you *exact* inductance control for absolute minimum SWR.

Ball bearings on steel shafts give you a velvet smooth vernier feel and long term durability.

You won't have arcing problems with this roller inductor. Firm springs put high pressure on a plated contact wheel for excellent electrical contact.

Wide, low inductance straps are used for high currents and a new core minimizes RF loss.

MFJ-989C **$349.95**

Cross-Needle Meter

You get a lighted *peak* and average reading Cross-Needle SWR/Wattmeter with 200 and 2000 watt ranges. Its new directional coupler gives you accurate readings from 1.8 to 30 MHz.

Super Heavy Duty Balun

You get a super heavy duty current balun for balanced lines. It has two giant 2½ inch powder iron toroid cores and is wound with *Teflon®* wire connected to high voltage ceramic feedthru insulators. It lets you operate high power into balanced feedlines without core saturation or voltage breakdown.

Ceramic Antenna Switch

A two wafer 6 position *ceramic* antenna switch with extra large contacts gives you trouble free switching.

Plus much, much more

You also get a 300 watt dummy load, full one year *unconditional* guarantee, flip stand, all aluminum cabinet, tough baked on paint, locking compound on all nuts and bolts. 3 KW PEP. 10¾x4½x15 in.

Don't settle for less, get yours today!

More hams use MFJ tuners than all other tuners in the world! Why settle for an imitation when you can have the real thing?

MFJ's *deluxe* 300 Watt Tuner

MFJ-949E **$139.95**

More hams use the MFJ-949E than any other antenna tuner in the world! **Why?** Because you get proven reliability, the ability to match just about anything and a one year *unconditional* guarantee.

You get a lighted *peak* and average reading Cross-Needle SWR/wattmeter, antenna switch, 4:1 balun for balanced lines, 1.8-30 MHz coverage and a *full size* dummy load that easily handles 300 watts of abusive tune-up power.

New 8 position antenna switch lets you pre-tune into dummy load to minimize QRM.

The inductor switch is designed for high RF voltages and currents--it's not a *plastic* switch made for small signals and wired with *tiny* gauge wire.

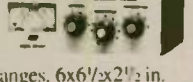
Each MFJ-949E cabinet is chemically treated and has a new tough scratch-proof *vinyl* cladding -- not paint that can scratch or chip off. You won't find a tougher, longer lasting finish anywhere.

MFJ's *versatile* 1.5 KW Tuner

MFJ-962C **$229.95**

Use your barefoot rig now and have the capacity to add a 1.5 KW PEP amplifier later! Lighted Cross-Needle SWR/Wattmeter. 6 position antenna switch, *Teflon®* wound balun, ceramic feedthru insulators for balanced lines. 1.8-30 MHz. 10¾x4½x14⅞ in.

MFJ's *portable/QRP* Tuner



MFJ-971 **$89.95**

Tunes coax, balanced lines, random wire 1.8-30 MHz. Cross-Needle Meter. SWR, *30/300 or 6 watt QRP* ranges. 6x6½x2½ in.

MFJ's *super value* Tuner

MFJ-941E **$109.95**

The new MFJ-941E gives you a 300 watt PEP tuner with *lighted* Cross-Needle Meter that covers everything from 1.8-30 MHz for an incredible $109.95.

Antenna switch selects 2 coax lines (direct or thru tuner), random wire, balanced line or external dummy load. 4:1 balun. 1000 volt capacitors.

2 Knob *Differential-T*™ Tuner

MFJ-986 **$289.95**

The MFJ-986 Differential-T™ 2 knob tuner uses a differential capacitor to make tuning foolproof and easier than ever. It ends constant re-tuning with broadband coverage and gives you minimum SWR at only one best setting. 3 KW PEP. 1.8-30 MHz.

Roller inductor makes tuning smooth and easy. Turns counter lets you quickly re-tune to frequency.

Lighted Cross-Needle Meter reads SWR/forward/reflected/*peak*/average power in 2 ranges. Current balun reduces feedline radiation and forces equal currents into unbalanced antennas.

MFJ's *mobile* Tuner

MFJ-945D **$89.95**

Don't leave home without this mobile tuner! Let the MFJ-945D extend your antenna bandwidth so you don't have to stop, go outside and adjust your mobile whip.

Small 8x2x6 inches uses little room. Lighted Cross-Needle SWR/Wattmeter makes tuning easy while in motion. Has lamp switch. 1.8-30 MHz. 300 watts PEP. **Mobile mount,** MFJ-20, $4.95.

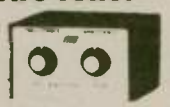
MFJ's *smallest* Versa Tuner

MFJ-901B **$59.95**

The MFJ-901B is our smallest --5x2x6 inches --(and most affordable) 200 watt PEP tuner -- when both your space and your budget is limited. Great for matching solid state rigs to linear amps.

MFJ's *random* wire Tuner

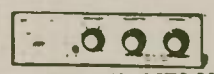
MFJ-16010 **$39.95**



Operate all bands anywhere with any transceiver with the MFJ-16010. It lets you turn a random wire into a transmitting antenna. 1.8-30 MHz. 200 watts PEP. Ultra small 2x3x4 inches.

MFJ's VHF or UHF Tuners

MFJ-921 or MFJ-924 **$69.95**



MFJ-921 covers 2 Meters/220 MHz. **MFJ-924** covers 440 MHz. SWR/Wattmeter. 8x2½x3 in. Simple 2-knob tuning for mobile or base.

MFJ's *artificial* RF Ground

MFJ-931 **$79.95**

Creates artificial RF ground. Eliminates or reduces RF hot spots, RF feedback, TVI/RFI, weak signals caused by poor RF grounding. Also electrically places a far away RF ground directly at your rig by tuning out reactance of connecting wire.

Free MFJ Catalog

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MFJ . . . making quality affordable

Ham radio advertising: a suggestion

James E. Sackey, N9ESM

Looking through a favorite ham radio magazine, I see something that looks interesting. In fact, I want to order a Super-Widget Five. Oh wait. A problem.

The ham radio equipment marketing techniques which were successful, common and widely-used in the 1930s through the 1960s need to be modernized for the 1990s. What techniques are these?

The advertising ploy based on the idea "Once we talk with them, we will successfully sell to between 40 to 60% of the people we talk to." When most of the hams were more technically oriented, the salesman/technician could wax eloquent about the features of whatever item was under discussion. Because it was a technical discussion between two technically minded people, very often a sale did result.

Of course, in those bygone days most towns had at least one store that sold all types of electrical and electronic components for the builder. Many, if not most hams, built some or a lot of their own equipment and the local store was both an excellent source of parts as well as advice. The store staff were, usually, knowledgeable about ham radio. Indeed, many of the owners and the employees of these stores were hams.

Almost every city worthy of the title had one or more stores that were ham radio havens. The buying ham did not have far to go to actually see, touch, feel, fondle and caress the item or items of his radio desire. At the time, cities had functioning mass transit systems, be they bus, trolley, elevated or inter-urban train. It was easier to travel from Skokie to downtown Chicago or from Renton to central Seattle then than it is to travel from Peoria, Illinois to Chicago or Milwaukee, Wisconsin today.

Like it or not, today, most people and this includes hams, are into "instant gratification." Hams no longer scrounge discard piles looking for usable parts. Many of today's hams do not have a junk box full of parts "we might use someday." Most hams no longer design and build their own receivers or transmitters.

Indeed, if we were to price each individual component, resistor, capacitor and IC chip in a modern VHF or HF radio, we could not afford to build our own. If for no other reason than some of the ICs used in modern radios are the specific copyright and patented design property of the individual radio manufacturer and cannot be obtained anywhere, except from the manufacturer, who won't sell.

What do we do in the 1990s? We pick up the phone and call the dealer of our choice. We use the plastic credit card and say "I want one, how soon will it arrive?" Herein lies the problem.

What do KG4SH and VQ9SM have in common? They are both ham calls I have held. Both are located where it is difficult, if not impossible, to "call for price." I was first licensed, in the early 1980s, while I was stationed at Naval Base Guantanamo Bay, Cuba. I was KG4SH then.

The telephone circuits between GTMO (a Navy form of verbal shorthand, pronounced Git-mo to stand for the full word Guantanamo) Bay and the States had not been modernized since the early '60s, for reasons students of history will understand. Calls from GTMO to the States were difficult to make, hard to hear and to understand. The tariff for the poor quality trans-oceanic calls was more than calling person-to-person coast-to-coast in the States at the same time.

I was VQ9SM at the Naval Support Facility at Diego Garcia, British Indian Ocean Territories in 1987-1988. Diego Garcia is about 3,000 miles south of Bombay, India, at seven degrees south latitude in the Indian Ocean, where phone calls cost $2.00 per minute.

From Diego Garcia, you cannot access "800 numbers" and you cannot call collect. All phone calls are "pay now, call later." Makes it very expensive and anger-provoking to be placed on 'hold' when it costs $2.00 a minute to listen to Muzac®. Oh yes, just as an aside, Diego Garcia is about 12 hours (plus or minus) out of sync with Chicago, Illinois. When it is 0800 in Diego Garcia it is about 2000 in Chicago. This has to be allowed for before you start to make phone calls. Mail takes an average of 7-15 days each way.

My suggestion to all of the nice people who make, distribute, advertise and sell Amateur Radio equipment and the ancillary gear that goes along with it is: *Put the price in your ad.* I consider my time to be of some value. Most stores selling Amateur Radio equipment end up selling the same item at nearly the same price, anyway.

Why should I spend several hours of my time to call all around the country to find "the best deal?" When I add shipping, handling and insurance, the net cost is going to be within ten or fifteen dollars of the first place I called. The radio, or whatever I am buying, was made at the same factory, (probably) brought into this country by an importer, handled by a dealer and ends up on a retail shelf. The store's overhead, that is, the cost of operating a business, the lights, rent, employees salaries, taxes, wholesale cost of what is sold and so on will be nearly the same. The net apparent cost to me — what I pay — will be the price of the item, plus tax, insurance, shipping and handling.

The unseen cost, to me, includes the value I place on my time, the increased cost on my phone bill and my unmitigated frustration and anger at dealing with "voice-mail." You know, the recording which gives you several options, but only if you are calling from a touch tone phone. (Yes, Virginia, some people still have and use rotary dial phones).

"If you wish to talk to a technician, press 'one' now; if you have a question about your order, press 'two' now; if you are inquiring about a bill, press 'three' now; if you want to complain, press four now; if you want to place an order, press five now; if you want to talk to a real, live human, enter the total national debt, press the pound sign and lots of luck."

Oh yes. This "call for price" notice in the various advertisements is particularly galling to me. Right now, I am on active duty with the United States

Navy. My ship is "somewhere in the Pacific." Just try to "call for price" when you are underway or swinging at anchor in the Persian Gulf. Ha. I can order by mail. But I am against having to write to inquire about something I should be told upfront. The ads for ham radios and related equipment talk about features, convenience, quality of construction and "the comfort of extended operations." Why not list the price?

If dealers, retailers, advertisers and manufacturers put the "out-the-door" price in their ads, hams could do their homework, balancing "bells and whistles" versus price at any time of the day or night or wherever in the world they happen to be, even on a ship at sea. The dedicated haggler could still call and try to negotiate for a better price or the "best deal," but putting the price in the ad would make it easier for everyone to balance their checkbook against their desire for new equipment.

A grateful nod of appreciation to Ten-Tec® of Sevierville, Tennessee on their ads for the "Scout 555." It tells you about the features, the conveniences, the quality of construction, that it is "made in USA" and it tells you the price in easy to see type. There is no "call for quote" or uncertainty about the "bottom line."

The ad says it costs $549* with an asterisk after the price. The asterisk directs us to the bottom of the section where it clearly states the price is *plus shipping and handling. The ad also lists all of the accessories available and the price for each accessory. The ad gives both the address to write to place an order as well as a toll-free number to call for speed and customer convenience. The hours you can call are also listed.

This ad is designed to sell a product. It provides all the information a person needs to decide "I want one. Here is my money." According to the advertising and marketing classes I have taken, the first and best reason to advertise is to generate business, make the cash register ring, to sell something! Yes, there are "awareness" ads, to keep your product name in the public eye. To make the cash register ring, your ad must provide all the information needed to change a potential buyer into a cash- (or credit card)- customer.

Will I buy that Super-Widget Five by mail order? That is, start the long, tedious process of writing to three or four stores to find out "how much does it cost?" Will I wait until I either can visit a ham store or will I just decide that I don't want it? The easier a seller makes it for me to become a buyer, the more likely the seller will get my money.

Amateur Radio room dedicated

Robert Randleman, N6CEU

A dedication of a Riverside county RACES/ARES radio room was held recently at the California Division of Forestry's Perris Emergency communications center. The dedication was attended by Riverside County Fire Department Chief Michael Harris; Division Chief, Emergency Services Division Thomas O'Keefe; Fire Communications Manager and ARRL Technical coordinator (digital) Mike Burton, N6KZB; Orange Section Manager and Section Emergency Coordinator Joe Brown, W6UBQ; Chief Races Officer/ District Emergency Coordinator for Riverside County Brett Roamer, N6NLN; and most of the Riverside County's 45 Emergency and Assistant Coordinators.

"RACES/ARES is an important aspect of the Riverside County Fire Department California Division of Forestry communications system," said Chief O'Keefe who administers the RACES program in Riverside County. "Our communication plan relies on RACES/ARES in the event of a disaster."

The Perris ECC has been equipped with a very capable Amateur Radio station consisting of an HF rig, 2 Meter packet station, and FM rigs on 2 Meters, 220 and 450 MHz. "In the past, RACES had to work in a small office next to our Emergency Command Center," O'Keefe says. "In addition to RACES we used that room for expanded dispatch, situation status, and an office for the department's Duty Officer." According to O'Keefe, "The room was crowded, noisy, and really limited what RACES could do for us."

Pictured left to right; Bret Romer, N6NLN, Mike Harris, Thomas O'Keefe, Merrils Scheffer, N6PON.

The newly dedicated radio room is centrally located in the headquarters and has operating positions for each rig, a VHF/UHF scanner, multiple telephone lines, four rechargeable Maxxon VHF handhelds on amateur simplex frequencies, and a desk for the RACES supervisor. The handhelds were added to help the amateurs maintain communications around a three acre complex that includes all of the maintenance, logistics and supplies for the fire department. "Now RACES is in a better position to assist with fire information, general communications and, hopefully in the near future, logistical traffic," added Chief O'Keefe.

Riverside County Chief RACES officer Brett Roamer, N6NLN, thanked Chiefs Harris and O'Keefe for the tremendous support they have provided the RACES/ARES program in Riverside County.

The new radio room was conceived by the Emergency Service Division Chief's Advisory Council led by former chief RACES Officer/District emergency Coordinator John Wendt, WA6BFH. Implementation of the radio room was by Emergency Services Division Coordinator Steve Rathbone, KF6ZH, and Mike Burton, N6KZB, who devoted much time and effort to see the project to completion. WR

Ever had a funny or strange experience with Amateur Radio, either on or of 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!***

SPECIAL EVENTS

Marconi Day

International Marconi Day — 22 April, 0000Z to 2400Z. In celebration of Marconi's birthday the Cornish RAC will sponsor over 25 special event stations representing the locations of early Marconi experiments and transmitting stations including:

CT1TGM	DAØIMD	EI2IMD
EI4IMD	GBØIMD	GB1IMD
GB2GM	GB2IMD	GB2MDI
GB2MID	GB2SFL	GB4IMD
GB4MD	GB4MDI	IYØGA
IYØORP	IYØTCI	IY1TTM
IY4FGM	K1VV/IMD	KK6H/IMD
VE1IMD	VO1IMD	ZS6IMD

Certificate for working 12 stations. For information, contact G4USB@GB4AKE. #44.GBR.EU or the Cornish R.A.C., Box 100, Truro TR1 1RX, Cornwall, England.

Founding of Somerset

The Somerset County Amateur Radio Club will operate special event station NJ3T from the Somerset County, Pennsylvania Courthouse celebrating the founding of Somerset County 200 years ago. Operations will be 17April, 1400 UTC to 2100 UTC. We will be on the lower 50 kHz of the general class phone bands of 40 Meters from 1400 UTC to 1700 UTC and 20 Meters from 1700 UTC to 2100 UTC. Also, 14.105 Packet the entire time. For a special QSL card send QSL and SASE to NJ3T, James Crowley, RD. 5, Somerset, PA 15501.

Titan Missile Museum

The Green Valley Amateur Radio Club will operate special event station KC7MF from 22 April, 1600 UTC to 23 April, 2300 UTC at the Green Valley Titan Missile Museum, a Historical National Monument. Operation will be on SSB: 3.860, 7.230, 14.250, 21.330, and 28.450 MHz. Local 2M FM repeater operation will be on 145.29 MHz. For a certificate send QSL and an 8x12 SASE to GVARC, 601 N. La Cañada, Green Valley, AZ 85614.

Rose Festival

The Thomasville Amateur Radio Club will operate special event station W4UCJ, 1700Z to 2300Z 28 April, 1100Z to 2000Z 29 April to commemorate the 74th annual Rose Festival. Operation will be in the lower portion of the General 80, 40, 20 and 15 Meter phone subbands and the Novice 10 Meter phone subband. For certificate, send QSL and a 9 x 12 SASE to: TARC/ Rose Festival Station, P.O. Box 251, Thomasville, GA 31799.

The "Branson Belle"

The Kimberling Amateur Radio Club will operate special event station NQØG on 21-22 April to celebrate the Inauguration of Kenny Rogers Showboat the "Branson Belle." Our CW station will be on 20 Meters at 14.030-14.040 and 40 Meters at 7.125-7.150. A 10 Meter phone station will be on 28.300-28.350.

For certificate, send an SASE to: KARC, P.O. Box 1171, Kimberling City, MO 65686.

F. D. Roosevelt memorial

Poughkeepsie Amateur Radio Club will operate special event station W2CVT at F. D. Roosevelt Memorial Library, Hyde Park, NY, to commemorate the 50th anniversary of the death of the President, 12 April 1300Z to 0100Z 13April, and 15April from 1300Z to 2100Z. Frequencies will be around 7045, 7175, 14045, 14245, 21045, and 21310 kHz, 146.550 MHz and the YCCC Packet Cluster. For certificate and QSL send SASE to Herbert Sweet, 6 Covey Road, Hyde Park, NY 12538.

Caltrans Centennial

The CaliforniaDepartment of Transportation will celebrate its Centennial 1985-1995 this year. As part of its Centennial Celebration, the volunteer members of CARS (Caltrans Auxiliary Radio System) will be operating a commemorative special events radio station on Saturday, 8 April 1995, 1600Z to 0100Z.

CARS District stations will be operating their special event stations at various locations throughout the state. Station call signs will vary according to location.

Operations will be in the General portion of the 10, 15, 20, 75 Meter bands and Novice/General portion of the 40 Meter band. Two Meter voice contacts on 146.52 simplex and Packet on 145.05 MHz.

There will be a special commemorative QSL card, with special postal stamp cancellation that will be made available for contacts made. For further information, contact Carol Dulay, N6WCV, at 916/654-8884.

Valley of the Moon

The Valley of the Moon Amateur Radio Club, WB6DWY, is operating its annual special event station during its ARRL hamfest Saturday, 29 April, 1700 to 2200 UTC from the Sonoma Veteran's Memorial Building, in Sonoma, CA. The event celebrates the long and colorful history of Sonoma and the Valley of the Moon. Sonoma is the site of the northernmost Spanish California mission as well as the Bear Flag Revolt of 1848, which signaled California's independence from Mexico. Sonoma Valley, known as the Valley of the Moon, is the final home of world famous writer Jack London, author of *Call of the Wild, Sea Wolf,* and *White Fang*. Special event station WB6DWY will be in operation on 20 and 40 Meters at 7.115, 7.240 and 14.420 MHz (±) during the hamfest. For certificate, send QSL and SASE to VOMARC, 358 Patten St., Sonoma, CA 95476.

OFF THE AIR

No more O.J. please!

January 24th was the date set for the prosecuting attorneys to present their opening statement to the jury in the **O.J.** Simpson murder trial.

From the moment I awoke on that 24th day of January, I was inundated with a multitude of data relating to **O.J.** ....statements, pictures, opinions, hypothesis, what-if's...etc etc. The morning paper was full of **O.J.** news and editorials, the TV stations carried **O.J.** full time and when I went in my car to do some shopping, the commercial broadcast radio had **O.J.** on most every station. Stopping by at the local coffee shop the main topic of conversation was, of course, **O.J.**

After my wife and I finished our supper that evening I told her that I was going to retire to my ham shack where, for sure, I could escape the constant bombardment of **O.J.** Feeling quite secure in the confines of my shack, I called a CQ on 40 Meter CW. I received an answer to my CQ from a station in Cuba. His name was Oscar and his QTH was Habana, Cuba. But....what do you think his call was? You guessed it....CO2OJ.

ROGER SCHMIDT, WØVBD
North Mankato, Minnesota

• • • • •

Arizona ham plates

To all Arizona ham operators: If you have your call sign on your license plate it will now cost you $25 a year. It was $5, and that was $5 too much. You use the same plate year after year. The state was making $5 clear on this; there you are.

In the state I came from it didn't cost anything. You didn't have to run all over the county to get your plates either.

So, fellow hams, do whatever you like; if you want to throw your money away that is okay too.

So spread the word around and maybe they will wake up.

I guess they don't realize what good all the hams do. How about floods, earthquakes etc? They are always there to lend a hand.

VEON KEYT, W7LOA
Mesa, Arizona

Silent Keys

Mildred O'Brien, W6HTS

Whether she was identifying as W6HTS on the amateur bands, or as AFA6QT on the MARS frequencies, Mildred O'Brien could be relied upon. Whether the situation called for sending, relaying or delivering MARS grams, or teaching Morse code to aspiring or upgrading amateurs, there she was! Of course, there was always time for a friendly QSO to relate the latest escapade of her chubby Siamese cat, Hammy, too.

First licensed in 1948, she joined her husband Jack, W6HSB and their son Jay, now W6GO, in this family-encompassing hobby.

A survivor of polio which she contracted at 16, Mildred had some physical limitations, and used a wheelchair; but her world had fewer limits than most people live with. After all, Tuesday was code class, Thursday was the MARS training net, Friday night was the regional MARS net for New Mexico, Nevada, Arizona and California, and so it went.

On January 10, 1995, this gallant lady became a silent key at the age of 84. Mildred was preceeded in death by her husband Jack in 1975. She is survived by her son Jay, W6GO, and daughter-in-law Jan, K6HHD, of Rio Linda, California, grandsons Donald O'Brien, WA6FZL, of Cupertino, California, and Robert O'Brien, WA6RGA of Mountain View, California. —*submitted by Lou Ann Keogh, KB6HP.*

Charles F. Jordan, W6MKI

It is my sad duty to announce the passing of Charlie Jordan,W6MKI of Lebanon, Oregon on January 15, 1995, at the age of 75.

Charlie was not very active on the air but took great delight in restoring old radio gear such as an old SBE-34 transceiver. It was always sort of a joke that Charlie could not keep the cabinet on any piece of gear for long because it needed "adjusting."

W6MKI was his original call from way back in the '30s. I will miss him as I'm sure others in the hobby will. —*submitted by Keith Flanagan, W6RIR*

STATION APPEARANCE

*Send **Worldradio** a picture of your shack and the staff will choose a winner to receive a free one-year subscription to **Worldradio**!*

Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.

Marilyn Bagshaw, N6VAW

Amateur Radio entered my life in 1985 when my son, Trevor, N6JRO, received his license while in high school. It left my home when he went to college and I immediately felt a huge loss! The absence of the excitement and intrigue of various contacts and the building of a private repeater created a black hole in my life.

I studied hard and got my ticket in 1987. Using my skills as crew on open ocean sailing races, I spent most of my time in radio rooms, met other hams on the air, and was so excited about radio, upgraded to Extra class. Then, in 1990, DX entered my life, introduced to me by Rich Carbine, WB6UDS, a fellow Marin County Amateur Radio Club member. Prior to that, the only DX contact I had was on 10 Meters CW to Alaska, on a borrowed Ten-Tec rig on a homemade dipole! Things got out of control as the radio shack you see pictured materialized.

On the top shelf, left to right:

Drake MN2700 Matching Network; Alinco DR112, 2 Meter Transceiver; Astron RS-35M power supply; Heil boom mike/headset

Bottom shelf, left to right:

Dentron GLA-1000B, 600W Amplifier; Kenwood TS-450S HF Transceiver; Kent Paddle; and K1 Logikey.

I have never had a radio room. Amateur Radio has always been such a constant part of my life that it has resided where I live and eat...in the kitchen/dining area. All coax is fed through the floor between the kitchen and dining room walls, exiting through an electrical outlet plate so that it is almost invisible. My property is 25 feet wide, and is located two blocks from the City Hall. In spite of that, I have managed to conceal a TH-3 Junior Yagi for 10, 15, and 20 Meters; an all-band Hustler vertical I use for 40 and 80; and, an AEA Isopole for 2 Meters. The longest element on the Yagi is 25½ feet so it has a definite parking position during daylight hours!

I am the Mill Valley RACES Officer, but my first love is DXing, especially going on DXpeditions. Rich and I have been on three; two to French Polynesia, and one to the South Cook Islands. I have earned DXCC on SSB and CW, WAS and WAC and belong to the Northern California DX Club, the oldest DX Club in existence.

As my Elmer, Frank Turco, K6OVV, said..."It's a good thing you raised your family and learned to cook before you became a ham!" I must admit, most other areas of my life have taken second place to Amateur Radio! **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**!*

Gender blunder from downunder

Bruce Frahm, KØBJ

As a teenaged Novice in the late '60s, I was excited to hook up with a VK station in Australia on 15 CW one evening. When the op sent "name Laurie" my heart skipped a beat. Shy and awkward around girls, I suddenly saw my chance to strike up a chat with a YL over the airwaves — a much less intimidating procedure than in person. My CW fairly exuded 'suave' as I regaled this exotic Laurie with all manner of personal details, and I signed off with a twice-sent 88.

My dreams of international romance came to a jolting halt when Laurie's QSL was found in my mailbox. In this particular Dear John letter, the object of my electronic affectations explained that in the Commonwealth countries the name Laurie was given to males! My immediate disappointment was soon followed by embarrassment over my faulty assumption. However, I'm sure that Laurie had probably fended off at least a few other overly amorous, but unworldly-wise CW QSOers! **WR**

DAYTON hamvention® '95

April 28, 29,30, 1995

General Chairman, Ken Allen, KB8KE — Asst. General Chairman, Dick Miller, N8CBU

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

When and Where
April 28, 29 and 30, 1995; Dayton, Ohio at Hara Arena

Communications
FAXMail (information sent to you via FAX): (513) 276-6934

BBS via America Online: Keyword "Ham", Select "Hamvention"

PHONE: (513) 276-6930. For fast response, please obtain the committee Voice Mail box numbers via FAXMail or BBS.

FAX (incoming): (513) 274-8369

MAIL: Hamvention, Box 964, Dayton, Ohio 45401-0964

Special Services
Lodging information and special award nomination forms are in our 1994 Program. Call FAXMail or BBS for more information.

License Exam by appointment only. Call FAXMail or BBS for details.

Deadlines
In order to have time to return tickets to you, we must have advanced reservation orders postmarked not later than April 8 (USA) or April 1 (Canada). Tickets will not be mailed before January 15th, 1995. Ticket requests that are received **AFTER** the deadline will be processed and **HELD** for pick-up at Hara Arena. Tickets can be picked up beginning Thursday, April 27 at 8:00 a.m.

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 for each person 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 orders received by February 1. Please use 1st class mail *only*.

Notification of Flea Market space assignment will be mailed by **March 15, 1995**. Checks will not be deposited until after the selection process is complete. Please indicate in the box below if you would like to attend regardless of Flea Market space assignment.

Free bus service
Free bus service will be provided between Hamvention, Air Force Museum, Salem Mall and Forest Park Mall parking areas. We are investigating ways to improve service to hotels. Please call our BBS or FAXMail for specific information.

Returned Checks
A $20 service charge will be assessed on all returned checks.

HAMVENTION Is sponsored by the Dayton Amateur Radio Association Inc.

Advance Registration

Enclose check or money order for amount indicated in U.S. dollars and type or print your name and address clearly.

Make checks payable to:
Dayton HAMVENTION Mail to -
Dayton Hamvention Box 1446, Dayton, OH 45401-1446

Flea Market tickets *Please check one and enclose **two** checks.*
❑ Send admission tickets **only** if flea market space(s) assigned.
❑ Send admission tickets **regardless** of flea market space assignment.

		How Many		
Admission (valid all 3 days)	_____	@ $12.00*	$	_____
Grand Banquet	_____	@ $23.00**	$	_____
Alternate Activities				
Saturday Luncheon	_____	@ $9.00	$	_____
Sunday Luncheon	_____	@ $8.00	$	_____
Flea Market ‡	_____	$35/1 space		
(Max.3 spaces)	_____	$70/2 adjacent		
	_____	$160/3 adjacent	$	_____
Electricity **add**	_____	$40.00/space	$	_____
Covered tent	_____	$230.00 ea.	$	_____
		Total	$	_____

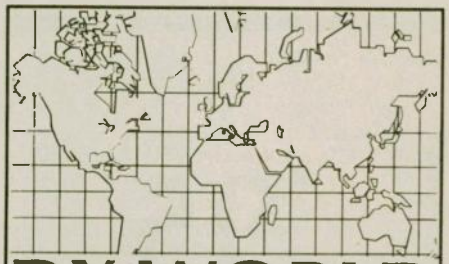
Name _____ Call _____

Address _____

City _____ State _____ Zip+4 _____ – _____

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

* $15.00 at door
** $25.00 at door, if available
‡ *Admission ticket must be ordered with flea market spaces*



DX WORLD

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

W-100-N

Congratulations to the following DXers for completing the necessary requirements for *Worldradio's Worked 100 Nations Award*:

485. Les Rauber, AA2FJ, 05 January 1995
486. Paul H. Geerdes, K8JJC 24 January 1995
487. Jeffrey S. Spinler, N7VPN 26 January 1995

Rules and application forms are available from N6JM to ***Worldradio***. Please include an SASE with $.55 postage. Also, please read the rules completely. One application had many invalid contacts. Those contacts were made prior to 1 January 1978, the starting date for this award.

Ross Guldenbrein, WX6D, a recent Life subscriber of ***Worldradio***, (Armond is pleased), says that most of his DXing is on CW and wants to know if he can get the W-100-N with a CW endorsement. This award has no special endorsements. However, we make exceptions when an application is a single band entry, or such modes as CW or RTTY. No certificate will be endorsed "all SSB" unless it is all on one band.

Belau, now Palau, gained independence on 1 October 1994, and was admitted to the United Nations two months later as its 185th member. Stations in Palau are presently signing with the KC6 prefix followed by two-letter suffixes. I assume a new call sign allocation will be assigned. Palau cards for W-100-N will be accepted provided contacts are made after the date of independence.

Spratly Islands 1S

DX News Sheet reports that DU9RG, along with a group of other Philippine operators are planning a DXpedition to the Spratly Islands around April 10, 1995, for approximately one week signing with the call of DUØK.

Conway Reef 3D2

A group of DXers, Pekka Kolehmainen, OH1RY, Garry Shapiro, NI6T, Nils-Goran Persson, SM6CAS, and Mats Persson, SM7PKK, will arrive on Conway Reef on 24 March for 10 days of operating through 3 April. The DXpedition is designed to include two full weekends of operation, with the first coinciding with the WPX Contest. There may be the possibility of an additional operator joining the group.

At the time of this writing no call sign has been decided, but will be available shortly.

The preferred frequencies will be as follows.

CW: 1.823 MHz, 3.503-3.523 MHz, 7.003-7.023 MHz, 10.103 MHz, 14.003-14.023 MHz, 18.071 MHz, 21.003-21.023 MHz, 24.893 MHz, 28.023 MHz.

SSB: 1.843 MHz, 3.785 MHz, 7.085 MHz, 10.135 MHz, 14.195 MHz, 18.115 MHz, 21.295 MHz, 24.935 MHz, 28.495 MHz.

RTTY: 7.030 MHz, 10.120 MHz, 14.082 MHz, 18.100 MHz, 21.082 MHz, 28.082 MHz. They will listen and attempt to use a minimum bandspread in the pileup. The DXpedition will be costly and any financial support will be greatly appreciated. All support and questions should be directed to Mats, SM7PKK, the team coordinator. His address is below. A rough budget is about $15,000 not counting the personal tickets and hotels. Mats' FAX number is 046-40-187413. There will be two QSL routes for this operation. SSB contacts will be handled by Philip Marsh, G4WFZ, 28 Orcheston Road, Bournemouth, Dorset BH8 8SR, ENGLAND. All other modes will be handled by Mats Persson, SM7PKK, Zenithgatan 24 #5, S-212 14 Malmî, SWEDEN.

Swaziland 3DAØ

Franz Taschl, 3DAØBK, operating out of Ngwenya in Swaziland, has been found often on 80 Meters. Look for him near 3.506 MHz around 0200 to 0300 UTC. Another call, 3DAØCA, has been worked on several bands. This one has been found on 3.502 MHz at 0100 UTC, 7.027 MHz around 0430 UTC, 10.102 MHz at 2345 UTC, 14.027 MHz at 2100 UTC, and on RTTY near 21.085 MHz at 1730 UTC.

United Nations HQ 4U1UN

The UN Headquarters station, 4U1UN, including other special prefixes such as 4U5ØUN, 4U49UN, etc., uses W8CZN as QSL manager, and other routes have been mentioned. *QRZ DX* notes that Jerry, WB8LFO, is actually the person who actually processes the QSL requests for 4U1UN and its special event operations. Jim, W8CZN, acts only as a mail drop. Jerry started with a backlog of 15,000 cards and is presently working on the 4U49UN cards. The 4U5ØUN cards have not been printed yet. Jerry also says the 4U5ØUN cards can be sent directly to his address.

Israel 4X

Activity on RTTY from Israel is from at least two calls, 4X4UO or 4X6UO, which may be the same station. Check 14.086 to 14.089 MHz around 1500 UTC for either call. On 80 Meters there have been a few calls reported such as the following:

4X4DK	3.502 MHz	1445 UTC
4X4WN	3.501 MHz	0300 UTC
4Z4KX	3.501 MHz	2230 UTC
4Z4WD	3.501 MHz	0415 UTC
4X4JU	3.791 MHz	2215 UTC
4X6UJ	3.782 MHz	0430 UTC
4Z4UR	3.786 MHz	0300 UTC

On 160 Meters 4X4NJ has been found between 1.826 and 1.830 MHz after 0430 UTC. 4X4DK has also been reported on 1.828 MHz at 2330 UTC in Alabama. On 40 Meters the following calls were heard:

4X4NJ	7.013 MHz	1930 UTC
4X6ZK	7.005 MHz	0530 UTC
4Z4DX	7.009 MHz	0115 UTC
4Z4KX	7.002 MHz	1500 UTC

WARC band activity comes from 4X1FQ on 18.155 MHz at 1430 UTC working into Ontario, and 4X4WN on 10.102 MHz at 1530 UTC into California.

French Guiana FY

Marius de Lepine, FY5YE, has been active from Cayenne on at least three bands: 7.001 to 7.004 MHz from 0200 to 0500 UTC; 10.100 to 10.101 MHz after 2100 UTC; and 14.003 to 14.005 MHz from 1400 to 2000 UTC.

Another active call is FY5GJ who was found on 3.519 MHz at 0415 UTC; 7.010 MHz at 2300 UTC; 14.023 MHz at 1800 UTC; 14.240 MHz at 1000 UTC, 21.026 MHz at 1400 UTC, and

28.453 MHz at 1700 UTC. Other calls and reports included:

FY5FJ	21.253 MHz	1230 UTC
FY5FY	10.106 MHz	2345 UTC
FY5GF	18.153 MHz	2045 UTC
FY5GF	21.212 MHz	1400 UTC

Iceland TF

Activity from Iceland continues. On 75 and 80 Meters the following activity was noted:

TF3DX	3.502 MHz	0200 UTC
TF3EJ	3.503 MHz	1215 UTC
TF3BM	3.799 MHz	1045 UTC
TF3TF	3.789 MHz	2200 UTC

Additional band activity included TF3DX on 1.834 MHz at 0100 UTC, TF3GC on 1.830 MHz at 2100 UTC and 14.025 MHz at 2300 UTC and TF3SA on 14.007 MHz at 1730 UTC.

Guatemala TG

DXers needing Guatemala might try looking for TG9AQ who has been active on 20 Meters CW. He was reported between 14.005 and 14.032 MHz around 2145 and 0030 UTC. TG9NX has been on 75 Meters on 3.775 and 3.797 MHz as early as 0200 and as late as 0500 UTC. This station has also been on 160 Meters near 1.831 MHz around 0600 UTC. Other activity included the following:

TG9AKC	7.004 MHz	0315 UTC
TG9IKN	18.119 MHz	1645 UTC
TG9AGY	21.345 MHz	1815 UTC

South Georgia Island VP8SGP

I have not seen the full report on the recent South Georgia DXpedition and there must be many disappointments. However, this was beyond the control of the operators. It wasn't their fault the propagation was poor. The DX bulletins listed several reports from 17 through 160 Meters. The only bands where the West Coast sent in reports were 40 and 80 Meters. *QRZ DX* reported that the operation was cut short with the team leaving the island on January 15, which was at least 4 to 5 days earlier than expected. Here at N6JM I had to settle for a single QSO and that was 40 Meters CW. I consider myself very fortunate. I hope VP8SGP was worked and not Slim! Also reported on South Georgia Island is the husband and wife team of VP8CID and VP8CGE, but I have seen no reports of any activity.

Vanuatu YJ

On December 18th YJØMB was reported on 15 Meters near 21.250 MHz around 2300 UTC working into the East Coast. Down on 75 Meters around 1200 UTC on December 27th YJØAFU was working near 3.799 MHz. DXers in Virginia and Arkansas got this one. Most likely there were others.

Antarctic bases

There are several countries that have bases at the Antarctic. These bases cover at least two DXCC countries, Antarctica and the South Shetland Islands. If you will check the Antarctic continent you will see that the South Shetland Islands are just off the Palmer Archipelago and really appear to be part of those islands. As with Antarctica several different nations have bases on the South Shetlands.

I have attempted to gather information on these bases from the various DX newsletters, much of it provided by Bob, K4MZU, who is also QSL manager for several of these stations. Some of the calls are as follows:

4K1D:This is a Russian base in the Antarctic. I found a single report for this one on 14.195 MHz at 0300 UTC on January 17th.

AT3D: This station operates from India's Maitree Station on the Princess Astrid Coast.

CE9MFK: This is a Chilean station operating from Yelcho Base on Wiencke Island. In 1993 they were reported to have been on Shirreff Base.

DP1KGI: Operated by Tom, DL1VTS, operating from Ardley Island, in the South Shetland Islands.

ED0/EA7DLF: Deception Island in the South Shetlands.

HC1JXC/P: Ecuador has a station located at Patriot Hills Base with HC1JXC/P, appearing on the bands occasionally.

IAØPS: This is an Italian base located at Terra Nova Bay, on the Pennell Coast.

KC4AAA: Right at the South Pole is KC4AAA, located at Amundsen-Scott Base. For IOTA purposes KC4AAA counts as AN-016, the main body of Antarctica. *QRZ DX* makes note that there are several operators at KC4AAA with different QSL routes. Be sure to ask for the specific QSL route when working the station. I did note some activity reports for KC4AAA, all on 20 Meters SSB: 14.165 MHz at 0200 UTC, 14.243 MHz at 0130 UTC, and 14.300 MHz at 0200 UTC.

KC4AAC: This one is Palmer Station on Anvers Island in the Palmer Archipelago (AN-012) off the Antarctic Peninsula in West Antarctica. I found only one report for this one, that being on January 11th on 14.243 MHz at 0115 UTC.

KC4AAG: An American base located at Terra Nova Bay.

KC4USB: This American base was worked in early January on 14.270 MHz around 0030 UTC.

KC4USV: Also on 14.270 MHz this one was reported 10 days later at 0400 UTC.

LW8EYK/Z: This is an Argentine station operating from Livingston Island.

VE3OOG/P: The Canadians are down there too, this one operating from Patriot Hills Base.

VIØANT: This is Eddie DeYoung, VK4EET, operating from Australia's Davis Base. Look for Eddie on 20 Meters between 14.001 and 14.010 MHz around 1600 UTC and a bit higher for RTTY between 14.082 and 14.088 MHz. He has also been on 40 Meters CW and has been known to operate SSB on 20 Meters.

VKØFPS: This station is located at Australia's Davis Base on the Ingrid Christensen Coast in East Antarctica.

VKØIX: This station is located at Casey Base, another Australian base on the Budd Coast in East Antarctica.

VP8CMR: This station is located at Halley Base on the Caird Coast in Queen Maud Land. Check 14.260 MHz around 2300 UTC.

VP8CQR: This is Chris, SP2QOH, on King George Island in the South Shetlands.

VP8CQS: Another Polish operator, Andy, SP2GOW, is also operating from Smith Island in the South Shetlands. Andy had also operated as JWØF from Svalbard. Andy has been very active on 40 and 80 Meters, both CW and SSB. Listen between 3.502 and 3.506 MHz, 3.793 MHz, and between 7.001 and 7.007 MHz. His operating times vary.

VP8GAR: This was the call of a recent DXpedition to Fossil Bluff on Alexander Island for a new IOTA island, AN-018.

ZXØECF: This station operates from a Brazilian base on King George Island. The calls with the VP8 prefix are usually stations in the Falkland Islands, and include British bases located in the Antarctic and the South Shetlands. The Diamond DX Club of Italy sponsors an award for working Antarctic bases. For details refer to our column in the April 1994 issue.

IOTA

If you catch Tom, SMØCNS/DU7, on the bands you have worked Cebu Island (OC-129). Tom operates mostly CW. Tom was also reported signing with 4E7/SMØCNS for the benefit of

the WPX types. Steve, GØOYQ, is planning another IOTA trip for this May. They will be operating from the Island of Inishman (EU-006) which is part of the Aran Islands off the west coast of Ireland. They will be using their own calls appended with the prefix EJ. Look for this one starting May 13th for about 7 days of operating. Band conditions have been poor, but that doesn't hinder the die-hard IOTA types. This is a sampling of what was on during the month of January:

AN-012	Palmer Archipelago	KC4AAC
AS-014	Masirahi Island	A45XJ
AS-024	Taketomi Island	JS6LIH
EU-165	San Pietro Island	IM0USB
NA-036	Vancouver Island	VE7IU
NA-041	Revillagigedo Island	KL7IBG
NA-055	Vinal Haven Island	AK1L
NA-056	Isle of Pines	CO4AL
NA-057	Bahia Islands	K7QXQ/HR6
NA-147	Carriacou Island	J37VG
NA-160	Cayos Cochinos	HQ6DX
OC-098	Pukapuka Island	ZK1KH
OC-137	Bribie Island	VK4LV
OC-141	Groote Eylandt	VK8KTC
SA-012	Isla Margarita	YV7RE
SA-016	Maranhão State Centre	PR8FT
SA-026	Santa Catarina State South	PP5AM
SA-079	Rasa Island	PY1UP

Revillagigedo Island, where Ketchikan is located, is one of the many islands that make up the Alexander Archipelago, and is not to be confused with the Mexican islands of the same name. Alaskans even pronounce it differently, usually shortened to plain Revilla Island. In reference to our IOTA summary of the Japanese islands in our February column, please add JS6LIH on Taketomi Island in AS-024 and 7N2NJA on Aogashima Island in AS-043. JS6LIH was active on December 20th.

IOTA DXpeditions

The *DX Bulletin*, edited by Chod Harris, VP2ML/WB2CHO, reports on the possibilities of DXpeditions of the gentler kind to IOTA islands. These should prove to be a challenge in operating from the DX end. Frontiers International Travel has scheduled six three-week cruises to the Pacific, including some rare spots such as the North Cooks, Pitcairn, and Palmyra.

Chod states that some of the many potential IOTA sites include Ducie Island (OC-182), Henderson Island (OC-056), Marquesas Islands (OC-027), Fanning Island (OC-084), Carline, Malden and Starbuck islands in East Kiribati, (yet to have IOTA reference numbers), plus many more. The costs will range from $6,000 to $13,000, aboard the *World Discoverer*. For further details contact Frontiers International Travel, P.O. Box 959, Wexford, PA 15090-0959. Telephone: (800) 245-1950, or FAX: (412) 935-5388. The California Academy of Science has a cruise in July to Svalbard and Bear Island (EU-027), and later down the Norwegian coast, aboard the *Polaris*. Cost for this one runs between $6,500 and $10,500. Contact the travel office in San Francisco at (415) 750-7348.

Bob Schmieder, KK6EK, one of the 3YØPI crew, is organizing an expedition to Easter Island and Sala y Gomez Island, with a tentative date of August 26 to September 14. They are looking for a team of 24 operators, equally split between the two islands. Sala y Gomez will be a new IOTA reference number when activated. Duties will include more than just Amateur Radio. For further information contact Bob at Cordell Expeditions, 4295 Walnut Blvd, Walnut Creek, CA 94596. Telephone: (510) 934-3735. The cost per person will be about $2,000 plus air-fare to Easter Island. In early January there were approximately 18 DXers showing an interest.

Yaesu will be sponsoring a second DX-Caribe Amateur Radio theme cruise in June starting at Aruba and sailing to Dominica, Barbados, Martinique and Curaçao aboard Dolphin Cruise line's S/S *Ocean Breeze*.

Additional information is available from Landry & Kling, 1390 South Drive Highway, Suite 1207, Coral Gables, FL 33146. Telephone: (800) 448-9002, or FAX: (305) 661-0977.

DXCC Desk

The DXCC Desk reports that the number of unprocessed applications for DXCC at the end of December was 183 (21,082 QSL cards). A total of 423 applications (42,105 QSLs) for endorsements and new awards were received during the month of December.

Silent Keys Award

Worldradio staff is considering a brand new award for working Silent Keys. To qualify you must work Silent Keys entirely on your own. Contacts via mediums or list masters will not count.

New DXCC Countries

It has finally happened! I have some brand new DXCC countries, which include New Helvetia, Alcatraz Island, and Aurora Borealis. Who will be the first to mount an all-out DXpedition to one of these? It is interesting to note that New Helvetia has been around for some time.

Hamvention

DX gatherings are a part of Hamvention each year at Dayton. To encourage participation this year Amtrak announces a special train leaving Sacramento on Thursday, April 1st and arriving at Dayton the day after Hamvention closes.

Clubs

The Southern California DX Club announces the election of their 1995 officers: President, Harvey G. Shore, K6EXO; Vice President, Richard A. Bongeorno, WU6T; Secretary, Willem A. Angenent, KN6DV; Treasurer, Leonard Svidor, W6AUG; Membership, Larry D. Shapiro, KJ6HO; and Directors, Allan C. Breller, KJ6ZH, Joseph A. Locascio, K5KT, and Robert W.

Selbrede, W9NQ. New officers for the Salt City DX Association include: President, Larry Reader, KE2VB; Vice President, John Merrill, N1JM; Secretary, Wil Parker, KB2G; and Treasurer, Roger Rovall, WB2KCI.

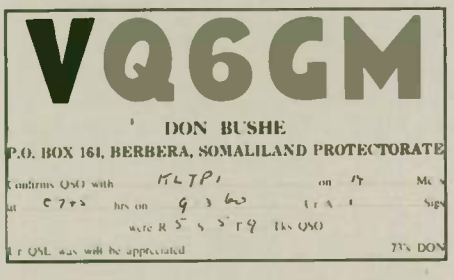
Grid Squares

I have been considering a Grid Square Award for working grid squares on HF, patterned after the VUCC on VHF and UHF. According to *QRZ DX* the JARL already sponsors such an award - Worked All Square Award (WASA). For additional details on this award I suggest that you write to *QRZ DX* and ask for Issue 95-02 at P.O. Box 832205, Richardson, TX 75083-2205. And, while you are at it you might include a check for $37.00 for a year's subscription (50 issues). If you desire to start collecting grid squares it will apply for all HF contacts after 01 July 1992.

Antique QSL Department

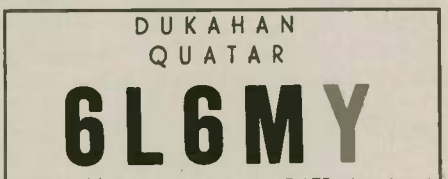
Time to go back in time again! Our thanks for this month's selection of antique QSL cards go to John Munroe, W7KCN, of Bellingham, Washington. The cards are from the estate of Joe Pacquette, KL7PI.

EA9DD of Rio de Oro was the call used by Luis Viguera, EA4BH, whom Joe worked on 26 October 1953 on 20 Meters CW. Rio de Oro went to the deleted DXCC countries list, and later was reinstated as Western Sahara (SØ).



In 1960 Joe worked VQ6GM of British Somaliland, also on 20 Meters CW. The date is given as 9-3-60. As this country went on the deleted DXCC countries list the end of June that year, we are not sure if this card would count as the deleted DXCC country of British Somaliland, or the new DXCC country of Somalia. In other words, is the date on the VQ6GM card March or September?

This is a classic example to ALWAYS spell the month, or use Roman numerals. The third card is that of 6L6MY of Dukahan, Quatar. The operator is given as G.R. McKercher, now WØMLY. This is an interesting card, as the reverse side is a QSL card for HZ1MY,



another call used by Dick. Joe worked Dick back in August 1952, over 42 years ago.

QSL Information

Charlie Gunther, N2KTH, is looking for a QSL route for TZ7C, who he worked on 20 Meters CW Christmas

DX Prediction — April 1995

Maximum usable 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 usable 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	*(16)*	*(11)*	*19	*(11)*	*14
10	*(19)*	10	*17	*(10)*	*16
12	26	*14	*15	16	18
14	29	16	*(15)*	19	24
16	30	*(14)*	*(14)*	19	*27
18	*29	*(11)*	*(13)*	18	*30
20	24	19	25	15	*31
22	20	21	29	*(11)*	*31
24	*17	20	31	*(10)*	*26
2	*15	*(18)*	30	9	*22
4	*15	16	28	14	*18
6	*(18)*	13	23	12	*16

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(12)*	*15	*19	*(10)*	*16
12	*(17)*	*13	*17	*(10)*	*(14)*
14	*(22)*	*16	*14	16	22
16	*(24)*	14	*(14)*	19	26
18	25	*(11)*	*(13)*	18	29
20	24	18	24	16	31
22	20	23	29	*(11)*	30
24	*(17)*	*25	31	*(10)*	*29
2	15	*26	31	*(9)*	*23
4	*15	23	30	*16	*20
6	*(16)*	*21	28	14	*17
8	*(14)*	18	*23	*(12)*	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	16	*(11)*	*19*	10	*15
9	*(17)*	10	17	14	*16
11	25	*14	15	18	18
13	29	*(13)*	*(15)*	*20	23
15	30	*(12)*	*(14)*	*20	*27
17	29	*(10)*	*(13)*	*19	*29
19	*26	*(13)*	*(20)*	17	*31
21	22	*(18)*	28	12	*30
23	*19	20	31	11	*29
1	*16	*(18)*	30	10	*24
3	*13	15	28	*9	*20
5	*18	*(13)*	23	*11	*17

Eve. Perhaps you worked T77C.

Ross Guldenbrien, WX6D, wonders if there is any method other than first-class mail for sending DX QSL cards. Ross is aware of the ARRL Outgoing QSL Service but is not a member of the League at the present time. Sorry Ross, I can't help you. Please reconsider and rejoin the ARRL. The benefits are more than just the QSL service.

Barney Moffatt, W5CJZ, is looking for a route for 5U7Y, whom he worked last October. The QSL route was given as JG3UPM, but he cannot find the call in the *Callbook*. Checking back through several issues of the *DX News Sheet* I did find an address for JG3UPM. Try Takayuki Yoshino, 1-83, Uriwari-higash 4 chrome, Hirano-ku, Oskaka 547, JAPAN. You could also send your card to the JARL via JG3UPM.

Les, VP8CPC, who operates from the Falklands, suggests that any mail sent to the Falkland Islands should be addressed "via United Kingdom" as such addresses without it will be directed through Chile. Les says that mail addressed to the Falkland Islands Amateur Radio Club never arrives unless sent via the United Kingdom.

QSL Routes

The following QSL routes are correct to the best of our knowledge, but cannot be guaranteed. Please report any errors.

4L1AA and 4L50	—Omar Odoshashvili, P.O.Box 71, 61000 Trabzon, TURKEY
7N2NJA	—Tetsuo Onaga, Aogashima Island, Tokyo 100-17, JAPAN
9I3OA	—Hisao Noda, P.O. Box 30027, Lusaka, ZAMBIA
A71EZ	—P.O. Box 12170, Doha, QATAR
CG6ARC	—CG6ARC, P.O. Box 767, Grande Prairie, AB T8V 3R5, CANADA
D44AB	—Daniel Travares, P.O. Box 166, Praia, CAPE VERDE, via Portugal
J2ØUFT	—ARAD Radioclub, P.O. Box 1076, Djibouti, DJIBOUTI
JA6HFY	—Sakae Adachi, 1180 Yoron Oshima-gun, Kagoshima 891-93, JAPAN
JI7BCD/JD1	—Seizou Ishizawa, 13-40 Sakuragi-chou, Mutsu-city, 039-51 Aomori, JAPAN
JS6LIH	—P.O. Box 363, Taketomi Yaeyama-gun, Okinawa 907-11, JAPAN
LQØA, LRØA LTØA, and LVØA	—Serio D. Vilchez-Temporini, LU1ARL, P.O. Box 454, CP-1000 Buenos Aires, ARGENTINA
OD5FR	—Fagues Rabal, P.O. Box 10.000, Asuncion, PARAGUAY
OK1DOT	—Petr Gustab, Na Cihelne 1335, Cesky Brod 28201, CZECH REPUBLIC
SU1SK	—Said Kamel, P.O. Box 62, Shobra Alkima, 13411 Cairo, EGYPT
V51BO	—P.O. Box 1823, Tsumeb, NAMIBIA
VU2MTT	—Vishnu Moorthy SG, s/o S.G.Bhat, Palashathadka House, P.O.KAV, Puttur T.q.D.K, INDIA 57 4223

D2XC	JE1DXC	D2XX	KC4MJ	N3SIY/HH2	KB5IPQ	V31CW	AAØKL
3DAØCW	DK7PE	DP1KGI	DD6UAB	N7QXQ/HR6	NA7X	V31JU	WA2NHA
3V8/F5HV	F5PFP	EA9BP/P	EA5OL		(See Note 1)	V31MF	K5AZ
4KØCOC	KJ5CN	EDØBAE	K4MZU	N7RK/ZB2	N7RK	V31MI	N5FTR
4K1HX	IK2MRZ	EG6URE	EA5OR	NH2L	JA1BRM	V31MX	KØBCN
5H3IA	AAØOB	EI7M	EI6HB	OHØ/NØAFW	WA2FIJ	V31MY	K5AZ
5N8NDP	IK5JAN	ER3ED	I8YGZ	OHØMYF	OH6YF	V31RY	WNØB
5R8DP	JA1OEM	ET1WK	LX1UN	OHØWF	OH3WF	V31XA	KØIYF
5R8DQ	I2ZLG	ET3RA	HB9CVB	OH1KAG/TF	OH3NE	V5/DL7UTR	DL7UUO
5V7MD	AB7BB	EX1W	DL8FCU	OH1NOA/OD5	OH1MRR	V5/DL7UUO	DL7UUO
5W1MM	JE6IBJ	FG/K5BDX	K5BDX	OMØAA	OM3CVN	V63AS	JA3JA
5Z4DU	KG4X	FG5FC	F6DZU	OM7A	OM3KTU	V63MN	JR1TNE
6E2T	KD6QK	FG5GZ	F6CLK	OM7DX	OM3CGP	V63WW	JA2NQG
6W1/F5NHJ	6W1AAD	FOØTSK	JK4VSE	OM9A	OM3KII	V73GT	WF5T
7P8CW	DK7PE	FOØTSU	JK6SKS	OX3GL	K6DC	VE3OOG/P	K4MZU
7Q7UM	JA1UMN	FR5HG	F6FNU	P4ØJ	WX4G	VE3PJH/C6A	DL2NCY
7Q7ZZ	JA1UMN	FR5ZU/G	JA8FCG	P4ØMR	VE3MR	VI6YY	VK6VS
7S3OWG	SM3CVM	FS5/F2PI	F2PI	P4ØTR	VE3MRS	VI8TRACY	VK8DA
8P6QY	KU9C	FS5PL	FG5BG	P49I	K4PI	VKØFPS	VK3MA
8P9CU	K9JJR	FS5PS	FG5BG	PA3CXC/STØ	KC4MJ	VK8AN/6	VK4CRR
8P9HG	DJ3NY	GBØJSA	GWØSGL	PA56XMT	PAØLVB	VK9CR	DJ5CQ
8Q7BX	I4ALU	H5ANX	A22RS	PI5ØNWG	PAØLVB	VK9LY	JA3IG
8Q7BX	I4ALU	HC1JXP/P	K4MZU	PJ9JT	W1AX	VK9XY	DJ5CQ
8Q7DF	G3II	HH2Z	KA9RLJ	PQØMM	PP5JR	VP29EI	I5JHW
8Q7DM	HB9DDM	HI7V	HI7JM	PS8AM	PS8AK	VP2E/I5JHW	I5JHW
9CØHZ	EP2HZ	HL9HH	KJ6YR	PZ5JR	K3BYV	VP2EWW	AA7VB
9G1AA	PA2FAS	HP3/KG6UH	KG6UH	R1FJL	JA3AFR	VP2EXX/HI7	KC8JE
9G5AA	G3SXW	HP8ADU	HP8AQF	RX6LF	DL5GCF	VP2MDE	K5GN
9J2SZ	SP8DIP	HQ6DX	HR2JPQ	SØIM	EA7EL	VP2MDQ	K5TSQ
9K2F	9K2RA	HSØZAK	N4TMW	SØRASD	EA2JG	VP2MFM	WD4KXB
9M6BH	KU9C	HSØZAL	N4TMW	S21YC	JH8XIZ	VP5PP	KØPP
9M6NA	JE1JKL	HT5JC	F6FNU	S21YE	GØEHX	VP8BKT	GØKUC
9M8DJ	9M8BL	I1A/1P4A	I1RBJ	S21YK	JI1CJN	VP8CQR	DL1EHH
9M8PFB	PBØALB	IAØPS	IKØUSA	S21YO	JA2KTP	VP8CQS	DL1EHH
9M8X	KU9C	IK/3A2LZ/1PØD	3A2LZ	S21ZV	JA2KTP	VP8CRB	W4FRU
9N1CC	JH8BSY	J28EN	K1AR	S79CC	JI1NJC	VP8CRC	W4FRU
9Q5BJN	DL1BJN	J3/AA1IZ	AA1IZ	S79KMB	KN2N	3VP8SGP	W4FRU
9Q5FH	EA1DOD	J3/K5BDX	K5BDX	S79SS	JI1NJC	VQ9TN	K5TNP
9Q5MRC	G3MRC	J3/KF8OY	KF8OY	S79TR	JI1NJC	VS6VW	KØTLM
9Q5ZP	LA2ZP	J37VG	AA1IZ	S79XE	JI1NJC	WV9F/6Y5	JJ1NYH
A22MN	WA8JOC	J52AK	IV3TIQ	SU3AM	DK6FZ	XE1UFO	KA5SUT
A25/N3HCA	N3HCA	J55UAB	F6FNU	T2ØXC	JE1DXC	XE2XW/1	W5XW
A35VI	K8VIR	J68BU	N9NCX	T3ØGI	JA3IG	XE2Z	XE2GV
A73CW	K7CW	JU355UB	JT1KAA	T3ØXC	JE1DXC	XU7RJZ	JA7FWR
AA5DX/KP4	N2AU	K6JAH/6Y5	K6JAH	T3ØXP	VK1XP	XX9TJZ	JA7FWR
AHØF	JA2NQG	KB9CRY/TI2	KB9CRY	T32A	JA5EXW	XX9TR	KU9C
AH2CW/NHØ	JA2NVY	KB9CRY/TI4	KB9CRY	T32J	JR5JAQ	XX9TZ	KU9C
AP2N	AP2MMN	KC4/KA6JNF	KA6JNF	T32O	JF4LNO	XX9X	KU9C
AT3D	VU2DVC	KC4/KK6KO	KK6KO	T32Q	JR4QZH	XX9YD	K8PYD
BV/WA6IZT	WA6IZT	KC4AAG	K4MZU	T32X	JA4GXS	YBØARF	N2MM
BV4AS	KA6SPQ	KC4USB	K4MZU	T5TR	SMØDJZ	YJØAFU	NA5U
C2/W9GW	W9GW	KC4USF	KA1RPA	T91ELD	S51VQ	YV7RE	YV7AJ
C21/JA	JA3JA	KC4USX	K4MZU	T93M	K2PF	ZD8KJ	GØFXO
C31LFT	PA3FYM	KC6CW	JA2NQG	T94DD	K2PF	ZF1A	W8BLA
C6AFT	AA5NT	KC6KE	JH6BLS	T95LSD	DL3MGW	ZF1DX	W8BLA
CEØ/JA7AYE	JA7ZF	KC6WP	JA1WPX	TA1FA	TA1AL	ZF2RO	JH1ROJ
CEØZ/ZP5XYE	JA7ZF	KC6WW	JA2NQG	TG9IKN	KC5AGX	ZF2UO	N9JCL
CN2SK	DL1DA	KHØAM	JE1CKA	TI2IDX	WA9BXB	ZF8AA	N8AG
CN8TM	JR2ITB	KHØDM	JR7OEF	TI2PDX	KB9CRY	ZK1KH	ZL2HU
CN8UX	EA8LU	KH6JNF/KC4	KH6JNF	TJ1JR	AB7BB	ZK1VAW	N6WAW
CN8YB	N6EK	KP2A	W3HNK	TMØL	F5ZK	ZL1BAI	VK9NS
CO6AP	W3HCW	KP4RV	KD8IW	TU4EX	HH2HM/F	ZL6WA	ZL1HQ
CQ4I	CT4IN	KP4SB	KD8IW	TU5EV	W3HCW	ZP5XYE	JA7ZF
CS3T	CT3FT	KP4VP	KD8IW	UAØAZ	W3HNK	ZP8ZZ	ZP5JEA
CS6EDX/P	CT1EDX	LW8EYK/Z	LU4EDL	UK8BBB	IØWDX	ZKØECF	PY2ASK
CS8UW	WA3HUP	LZØA	LZ1R	USØHZ	W3HNK	ZYØFK	PS7KM
CU3/CT1FDD	CU3AV	LZ4AX	LZ1KBB	V29EI	I5JHW	ZZ5AVM	PP5LL
D2RU	GMØFET						

NOTES: 1. Please include one "green stamp" in lieu of postage with an SASE as cards will be shipped to Honduras for handling and mailing.

Many thanks to the following contributors: N2KTH, KC5ALW, W5CJZ, KN6DV, WX6D, Western Washington DX Club (WAØRJY), Western New York DX Association (KB2NMV), Salt City DX Association (KB2G), Northern Arizona DX Association (W7YS), The American Radio Relay League (K5FUV), The Ohio/Penn DX Packet-Cluster (KB8NW), Amateur Radio Action (VK9NS), *The Canadian Amateur Radio Magazine* (VE3JLP), Long Skip (VA3JS), *The Low Band Monitor* (KØCS), *Inside DX* (N2AU), *DX News Sheet* (G4DYO), *QRZ DX* (W5KNE), and *The DX Bulletin* (VP2ML).

The Dayton Hamvention is just around the corner. In the advance flyer sent out they comment that the weather will be 72°, sunny with blue skies and white fluffy clouds. Bring suntan oil, fan, shorts, raincoat, sandles, boots, spring jacket and a winter coat. I could have used the raincoat last year as I was snooping around the flea market and got caught in a downpour. Hope your DXing isn't all wet! 73 es GL de John N6JM. WR

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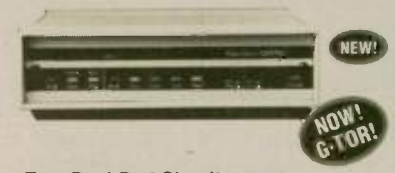

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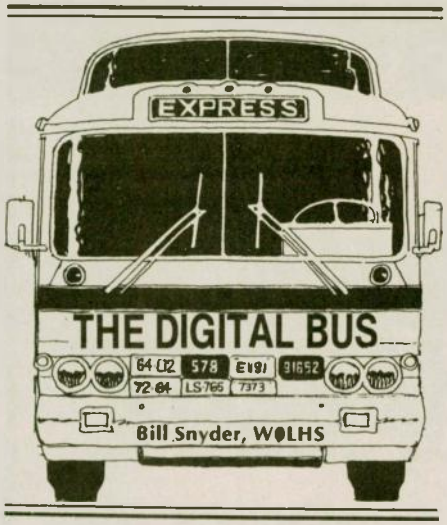


In January of each year our ham club sponsors the North Dakota QSO Party. It is usually held the third week of the month. The club has been doing it for years, and it always draws a lot of amateurs throughout the world who are looking for contacts with North Dakota, one of the hard states to get for the "Worked All States" award from the American Radio Relay League. The main reason we sponsor the Party is to help both newcomers to the hobby and the old timers who hope to get the "Five Band WAS Award."

I usually enter the CW side, and this year, like most of the years since we started the contest, I worked 15 and 20 Meter CW. I enjoy working Morse code now and then. I have an ARRL certificate for 35 WPM, but I purposely keep the sending speed down below 20 words per minute so beginners can handle our contacts without much trouble. After all, we want the world to work North Dakota, that's the purpose of the QSO Party.

There are plenty of amateurs around the world who want North Dakota, but we have trouble getting our own North Dakota hams to participate; many balk at entering because they have to answer too many QSL cards. "It costs me too much money to enter the ND QSO Party," some real contesters say.

This year, Mike Olson, KIØE, the contest chairman, and I shared the frequency area around 14.035 and 21.035 MHz, the spot on the dial listed in the rules published in *QST* and the other ham magazines. It historically has been the prime place to look for North Dakota CW stations. Mike ran up a big score; I was way down the list because of previous time commitments.

Along with the other North Dakota stations in the party, Mike and I took care of a lot of people who need the state. KI0E worked 250 out-of-state hams before he quit.

Now the QSL cards are pouring into our mailboxes, and with domestic letter mail postage at three stamps to the buck, I would like to admonish all hams to always include in their request for a QSL card a self-addressed postage-paid envelope — or a green stamp (that's ham jargon for a US dollar bill) if it is for Air Mail to a foreign country. If you don't enclose postage, you many not get your wanted card.

It wasn't too many years ago that a letter went anywhere in the USA for a 3 cent postage stamp, that's 33 for a buck. Post cards at that time traveled for only a penny, so you could answer 100 requests for a dollar of postage. But today, there are a growing number of hams who won't answer a QSL request unless there is postage enclosed.

As I write this, exactly one week after the finish of the QSO Party, Mike has received 50 cards and I only a dozen. A few QSLs arrived sans envelopes, they were mailed as post cards, the way all QSL cards circulated years ago. Some, although actually mailed in an envelope, came with neither a return envelope nor postage.

Mike and I compared statistics on the number of cards that did not include postage. About a third of those received at the end of the first week were either naked or in help-empty envelopes. Applying that percentage to the estimated cost of answering QSL cards for the ND Party, it will cost Mike a bunch of bucks to help out the WAS chasers.

Years ago I used to get a stack of DX cards each month through the ARRL DX incoming card bureau. The system, although slow, worked great, but recently the incoming numbers for me have dwindled down to a very few, so I now put off mailing my return cards till the end of the year. So, if you have a card coming from me and it was requested by a card to the ARRL bureau, you'll be getting it in a few months.

African memories

Recently I mentioned the book that Bob Leo, W7LR, and I have been putting together documenting our experiences with the Gatti-Hallicrafters African Expedition back in 1947-48. The idea of doing a book on the first big DXpedition began when Bob and I held a reunion with Weldon King, one of the photographers on the expedition. The three of us are the only survivors left out of nine participants.

Mike O'Brien, NØNLQ, of Springfield, Missouri, had previously published an excellent *QST* article (December 1993) on our African experiences, so when the three of us got together with Mike in Springfield, the book idea blossomed. So far it has been a lot of fun for me, for I have been going through diaries, notes, letters, press clippings, of every kind on paper and microfilm trail I could find with one exception: the ham radio log books from the expedition.

The logs were all sent directly to the Hallicrafters Company in Chicago for QSL answering purposes; however, as the company is no longer in business, the logs are missing. Bob Leo attempted to locate the logs, and the best guess is that they are in one of the many boxes of company records stored somewhere in the USA, but nobody knows for sure.

With that as a background, I would like to ask any of our readers who remember the expedition to take a look in their QSL file and log books for the period of January through June of 1948, and see if you can find any records of your QSOs with VQ4EHG, VQ3HGE, VQ5HEG and/or VQ5GHE. Those were the call signs we used while in Kenya, Tanganyika, and Uganda. If you find anything interesting, or remember any contacts with those calls, I would appreciate hearing from you.

I'm particularly interested in contacts when we were located in Camp #2 up about 6,000 feet up on the slopes of Mount Kilimanjaro in Tanganyika. We were there for about a month during February and March of 1948. We were very active on ten Meter AM phone in those days, although we worked other bands and, of course, a lot of CW.

We did most of our stateside contacts on ten phone because we had a great following of short wave listeners as well as DX operators. We boomed into the states during the USA noon hours, so many hams would go home and listen to our signals while they were eating lunch. Those were the days before the rapid fire "59-QSL. QRZ?" QSO had

been invented. We tried to tell what was going on in our camp and describe some of the activities such as photographing wild animals, and native life.

The sun spot cycle in 1948 was nearly at its peak, so our AM DX contacts were almost land-line quality on the 28 MHz phone band. Keep in mind that single side-band radio had not been authorized in those days — in fact, it was a couple years later that I heard the first side-band for ham communication seminar at the ARRL National Convention in Seattle, Washington.

One of the highlights of my African contacts was talking to my mother while she was at Goodwin Dosland's shack in Moorhead, Minnesota, a few miles from Ma's home in North Dakota. Dos, WØTSN, was the Dakota Division director for the ARRL at that time, and he later served as president of the League for ten years. I know that QSO was thrill for Ma, too.

When I mentioned the expedition using AM phone transmissions in this column, it caused Paul Courson III, WA3VJB, of West Friendship, Maryland to tell me there is a rising interest in "Classic Radio" on the ham shortwave bands. Because I confine most of my ham activities to computer driven operations, I was not aware of this growth.

Paul, a spokesman for AM Radio Network, said, "...we nurture the old-fashion ideals of broadcast-quality audio and vacuum tube construction to the best commercial standards. Remember the homebrew days? Well, they're still alive and well!"

Yes, Paul, I remember my days of homebrew; you can bet I do! In my shop I still have some of the relics of those days: tube socket punches, wire strippers, various soldering irons, numbered drills, and enough various screwdrivers and other tools to start a hardware store. And today they just sit there, while I run "appliances."

I still have the tuning unit I built for running my first radio teletype machine. It's a great boat anchor, but I don't have a boat to use it with, so I just let it sit on the shelf, a remembrance of those fun-filled homebrew days.

When digital counter chips and LED displays became available, I built a lot of counters and allied equipment for my industrial motion picture studio. I had a 16mm sound recording and mixing system that consisted of six 16mm magnetic film phonographs, a movie projector, and a Magnasync film recorder, all driven in sync by individual selsyn motors connected to a big selsyn generator. I couldn't buy some of the things I wanted for that system, so I built them. It was fun making printed circuit boards in our darkroom and tinkering with chips of many kinds.

I now look at construction articles in the magazines and the itch to blow the dust off the tools becomes quite strong. I have to fight off the desire, but I manage!

EAVESDROPPINGS

IF THE REPUBLICANS THINK THE BALANCED BUDGET AMENDMENT IS GOING TO WORK, WHY DON'T THEY INTRODUCE AN AMENDMENT TO CURE THE COMMON COLD AT THE SAME TIME. . . GINGRICH IS THE DEFINITELY THE TOP BANANA OF THE C-SPAN COMEDIANS ON THE BOOB TUBE. . . MY SKIING SEASON ENDED THIS YEAR WHEN I BROKE MY ANKLE RUNNING TO MY CAR IN THE PARKING LOT AT THE SKI LODGE. . . THE BEST THING THAT HAPPENED LAST YEAR WAS THE BASEBALL STRIKE, THEY SHOULD GIVE THOSE PLAYERS A MEDAL FOR DOING IT CAUSE I DIDN'T LOSE ANY MONEY ON THE WORLD SERIES. . . . HE'S BUYING A ROTARY BEAM ON THE INSTALLMENT PLAN, ONE ELEMENT AT A TIME. . . HE BOUGHT ONE OF THOSE DUAL BAND HANDHELDS AND NOW IS LONG-WINDED ON TWO BANDS. . .

Write me: Bill Snyder, 1514 South 12th Street, Fargo, ND 58103. My packet address is WØLHS @ WØLHS.#SEND.ND.USA.NA. 73 DIT DIT. WR

1BCG replica

The Antique Wireless Association is building a replica of the famous 1BCG transmitter used in the 1921 ARRL Transatlantic Tests—the first to send a complete message across the Atlantic.

The AWA hopes to have the transmitter operating sometime this fall and to be able to work amateurs who participated in the 1921 tests.

The AWA knows of only one licensed amateur (other than 1BCG) still active who was heard by Paul Godley, in England—Jim Russell, now W8BU, then 8BU. Another participant, Bob Morris, W2LV, also is still active. The AWA would like to hear from other amateurs who might have heard 1BCG during the tests, including amateurs in the US. 1BCG was operated from East Greenwich, Connecticut, by members of the pioneering Radio Club of America.

1BCG was on 230 Meters in 1921. The AWA, using the call sign W2AN, will put the replica station on 160 Meters.

If you can help, contact AWA Curator Bruce Kelley, W2ICE, 59 Main Street, Bloomfield, NY 14469. WR

Search And Rescue Communications

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

It's just a matter of time!

Several recent avalanche missions, another plane crash and a couple of lost person searches have caused some reflection on the state of communications for search missions. A plane search began late Thursday night and by Friday morning it was over. An avalanche hits three skiers and within hours the mission is concluded.

It's all about immediate response. When two workers were trapped in an underground mine following an earthquake in Wyoming, the response was quick. In each emergency mission the news media response was also quick.

Years ago we didn't have satellite relay. We didn't have "electronic news gathering" trucks or field microwave links. We didn't have still cameras that send images without chemical film processing. We didn't have cellular phones. When an emergency struck, it took hours or days for reports to filter in and reach the public via newspaper, television or radio.

Today we can monitor live satellite images following an earthquake in Japan. Today we're "live" at the scene as the rescue teams arrive and we watch as injured are treated or the dead are transported.

Live coverage

One effect of live coverage is a more informed audience (although some may argue this issue). We can see history as it happens and can make our own interpretations. We no longer rely on the writer or commentator to tell us what is going on — we can see it and witness it from the safety of our big-screen, larger than life, television.

Of importance to any emergency responder is the immediacy of the situation. "The public" wants to see it happen. It has to happen now — just like last time and the time before. Emergency responders are under a lot of pressure.

There is pressure to be a volunteer group but respond as if you were "at the station" and with an array of equipment that would stagger any agency budget.

What's the trend? People are pushing the envelope. I would argue that we're becoming dependent on technology without a foundation of understanding. A fellow in Texas and I visited recently concerning map and compass skills. Some months ago I volunteered to teach a Boy Scout class on map and compass techniques. One of the adult leaders suggested this was an archaic skill. He said "we use a GPS" and don't use maps and compass.

When pressed, he detailed how the group would set the coordinates of the vehicles, the camp, and other critical points and then head out. To return, they'd just follow the directions provided by the GPS unit. In short, here is a group fully dependent on an electronic device for their safety.

"What if the unit fails?" I asked. The leader expressed faith in their ability to figure out how to get back and should they have problems, "there's always the county search team."

To me, that's one scary philosophy! Yet I hear the same threads among other groups. There are the back-country skiers who carry avalanche beacons. There's the pilot who carries an extra emergency locator beacon. There are the hikers who carry a cellular phone. Many people look toward technology to compensate for taking the time to learn basic skills. We want our fun right now — and if we get into trouble, we want the SAR team here now, too!

Almost every weekend local SAR groups respond to rescue climbers who have taken to the hills with newly purchased ropes and a desire to experience adventure. Some have climbing experience and others just watched someone else do it and it looked easy.

Quick response time

What can we do to improve our response time — for surely we're going to face higher expectations as more and more people are willing to take chances with their lives.

Let's apply a tool of project management called critical path analysis. Here is a simplistic overview of how it works.

If you're in charge of a big project for your business, you determine what tasks are necessary, who is going to be responsible for each task, what resources are needed for each task, and then you create a schedule. If you've studied project management, you'll associate the above with Gantt Charts (scheduling) Project Evaluation and Review Techniques (PERT) and Critical Path Method (CPM).

After you have planned and scheduled your project, you know how long it will take to finish — and along this path of start-to-finish you have a critical path. Essentially this path determines how long your project will take and any time savings or extensions affects finishing the project early or late.

In an emergency response, we know our "project" starts right now. If we need KA7MVX to bring the coax and KC7GKE to bring the radio and KDØJ to bring the antenna, our critical path is the longest response time. Let's say that KC7GKE will need two hours to arrive and the others will be there in 45 minutes. Our critical path is two hours. This means the "45 minute" folks have over an hour of slide time — they can either arrive and wait or can take their time to get there.

If we are going to improve our response time, the critical element is KC7GKE. We have got to improve on the two hour response time because every minute saved puts our emergency station on the air sooner. Obviously this is a simplistic response and you'll agree that any response has many components you must consider to determine what is critical. The point is, we should be aware of what is required and what will be the critical element.

Here is where planning, experience and training become important. Based on exercises we know what is needed,

for example, to provide communications for a missing aircraft search. Because we have a resource inventory, we know that two of our members have air-to-ground radio gear. We also know that 75 percent of these searches involve communications with helicopters and require air-to-ground gear. We've just identified a potential critical path.

What's needed

If we are called on an aircraft search and our air-to-ground gear is delayed or perhaps unavailable, we have a problem. Critical elements include people, equipment, experience and information — so our focus is on recruiting members, keeping current resource lists, continual training and sharing of information.

Past columns have focused on equipment and training. This month let's talk about people and information with regard to what is critical to accomplish your mission.

Our greatest communications asset is our people. We simply need people to make it work. In past years one or two people could handle communications needs for a mission because it wasn't as technical, it wasn't as complex and it wasn't as demanding. Today's search missions often require a team effort to deal with multiple frequencies with complex equipment and demands for high reliability.

People must be able to work as team members. We focus on teams because we can accomplish more together than we could do as individuals. There is a synergy created that becomes greater when individuals combine to tackle a task.

Each member brings skills that are often unique and needed for the team to complete the mission. Because the group needs people with motivation, interests, skills, proficiency and ability, you cannot just open the door to everyone. Your group must have established criteria for selection and training.

It is possible to establish teams for a wide variety of tasks — but these teams should have qualifications and standards of readiness. A search support group (such as a communications team) pushes its luck if they don't have standards and don't document training. Every group will have people who are not going to function within the group mission or contribute to the group's purpose.

Expect it! Plan for it! It's not a pleasant side of the leadership task, but you cannot risk your group's reputation or risk a lawsuit because you don't have the heart to screen your members or require proficiency in critical tasks. Often you can assign members to tasks they can accomplish but resist the urge to treat people on the basis of personal "like" or "dislike." You need people who can help you function as a team — not people for whom the team is constantly making excuses.

Information is also critical and you must share it, you must seek it and you must keep current. Ideas and more effective ways of handling emergency communications are published in many magazines and available through services such as the Internet. Computers have changed how a net control handles traffic.

Your group must have an attitude of information gathering and sharing. It is no longer OK to keep doing something just because we've always done it that way. Keep your "antennae" tuned for improvement and look at every process for ways to increase effectiveness. Your group must contribute to an attitude of sharing and exchange of ideas.

Every idea and every suggestion need not be adopted or incorporated into your procedures — but when there is a better way or a different, more effective way, you need to give it a try or at least discuss it. Simply pretending that changes don't happen is not a good plan.

The idea is to identify critical elements and either focus on improvement or at least be aware they are critical to what you do. The last thing you want to do is create your own critical paths where none need be.

A sheriff's office is the target of a lawsuit in Idaho because they didn't respond fast enough and with the best available resources when someone was reported missing. The missing person died and there is the possibility that the relatives can prove the sheriff's office didn't act quickly.

Unless there were indications of trouble, many agencies over the years have not considered someone missing until they were gone over 24 hours. I think you'll see this time reduced and a lot more search efforts launched.

The demand for qualified search teams will increase and these will be volunteers because of the trend to reduce government expenses. If you are in a team now or want to get involved, get prepared for some serious training demands. You will need to put in many hours to attend training and spend your own money to obtain quality gear. Your "pay" is the satisfaction of a job well done.

If you are aware of the demands and the increasing focus on being accountable, your group will do fine. Don't promise more than you can deliver and don't create the image of being able to do everything. Develop and communicate your own limits before you get called.

A new season

It's again that time of the year to check your gear and prepare for temperature changes. Keep your gear ready, check your antenna efficiency and get ready for a great summer of public service.

Until next month, 73 from Salt Lake City! **WR**

WANTED:

Picture stories about outstanding hams. Know of any? Let us tell the world!

YLs on the Air

Kay Eyman, WAØWOF
Route 2, Box 366
Garnett, KS 66032

Coming Events

April 1-2 Thelma Souper Memorial Contest (WARO)

April 12-14 DX YL to NA YL Contest - CW (YLRL)

April 26-28 DX YL to NA YL Contest - SSB (YLRL)

YL Contests

For the past 11 years, YLs in Auckland, New Zealand, have been having a lot of fun in a 2 Meter simplex contest, held in August. It's called the Powder Puff Contest and is meant to encourage newly-licensed YLs to get on the air. Most contestants fire up their mobile rig and head for the highest hill to gain as much elevation as possible. In 1994, 13 YLs took part, and the winner was Teresa Burt, ZL1VFR, who received a trophy at a meeting in Pukekohe in September. This seems like a great idea for YLs everywhere. It might be just the thing to get some of the newer YLs on the air, and it's always fun to meet up with old friends again.

The New Zealand Women Amateur Radio Operators (WARO) will sponsor the annual Thelma Souper Memorial Contest the first weekend in April. This is held between 0700 and 1000 hours each of the two evenings and is limited to 80 Meter contacts. YLs contact YLs and OMs; OMs contact YLs only. Logs must be received by Contest Manager Chris Armstrong, ZL1BQW, by May 6.

YLRL is also sponsoring the annual DX YL to North American YL Contest in April. This one is for YLs only, and the CW and SSB portions are scored as separate contests. Each one begins at 1400 UTC and runs for 36 hours until 0200 UTC; however, participants may only work 24 hours and operating breaks must be indicated in the log. Logs go to Carla Watson, WO6X, and must be postmarked not later than 30 days after each contest ends.

YL Meetings

I don't have any new information on the International World-Wide YL Meeting, to be held in Berlin, in June, 1996, but I'm hearing from YLs in several countries who are already making plans to attend. If you missed the previous notes on this meeting, drop me a line and I'll send you the preliminary questionnaire that organizer Gertrud Szyza, DK8LQ, has mailed out. This will help her make all the necessary arrangements.

Plans for the 1996 YLRL Convention are also underway. SAYLARC, the group sponsoring this meeting, has scheduled a planning session at their next luncheon, which will be held on April 22, 1995, in West Orange, New Jersey, at Pal's Cabin. All YLs are cordially invited to the meeting, whether or not you're a SAYLARC member. Contact YLRL President Christine Haycock, WB2YBA, for details.

A YLRL Forum should also be on the agenda for the Dayton Hamvention. Check the Hamvention program for the time and location.

Members of the YL Radio Club Italiano "Elettra Marconi" celebrated its 25th anniversary last October, with a special meeting in Grosseto and were honored to have two of their DX members, Raija Ulin, SMØHNV, and Nozomi Gohara, JH3SQN, attending. The Italian YLs held a special operating event from September 17-26 to celebrate the anniversary, with 21 members using the special call IUØYL and they made over 6,000 contacts. Anyone who made five contacts with this call qualified for a special award, and over 120 requests for the award were received by December.

G6QA - A new YL with an old call sign

Over 50 years ago, Arnold Whiteley, G6QA, used the skills honed in Amateur Radio to serve his country. During World War II, Arnold was a member of the secret Radio Security Service and for three hours a day, from 1940 to 1945, he copied code from France, Germany, Belgium, and Holland on his home-built receiver. As a group leader, overseeing eight other interceptors, he never knew the contents of the thousands of messages that he copied. He was instructed to simply copy the five-letter code groups and then send them to a specified postal box number for British Military Intelligence to decode. Accuracy was paramount so if a letter was missed, a space was left to help the decoders. After the war, Arnold was active in Amateur Radio until his death in 1977, and he kept his wartime activities secret for over 30 years.

But G6QA is back on the air. Lynda Jopson, the granddaughter of one of Arnold's closest friends, who was also licensed, tried to get her grandfather's original call sign when she qualified for a full license. When she was unable to track down his call sign, Lynda then contacted Arnold's daughter, Mrs. Pat Barnes, and asked if she could receive the call sign G6QA. Mrs. Barnes was so delighted at the thought of her father's call sign being back on the air that she gave the special permission needed for the call sign to be allocated to Lynda and wrote a formal letter of confirmation to the Radio Communication Agency.

In June, 1994, a schedule was set up between Lynda, now G6QA, in Kearsley, and Mervyn Rigg, GØEUP, who lives in Mrs. Barnes' hometown of Rochdale, so that Mrs. Barnes could hear her father's original call sign on the air again. While that QSO was in progress, all three were surprised when Phil MacKimm, G8HDS, who had also known Arnold, joined them on the air. Lynda is active now, so listen for G6QA

April Fool's: Try to find all of our April Fool's Day pieces.

From left to right: YLRCI President Laura Bruni, N5IXD; Nozomi Gohara, JH3SQM; Raija Ulin, SMØHNV, and Ruth Geering, IT9ESZ.

on the bands.

YL Updates

Dot Burden, KA1LDS, and Deb Clark, KB1AOV, operated from W1AW during the YL Anniversary Party last October and had such a good time that they're planning to go back again in April and operate during the SSB portion of the DX YL to NA YL Contest. They each worked six hours during YLAP, with Deb on 75 Meters and Dot on 20. Deb had 72 contacts in 11 states, and Dot had over 100, with some QSOs from Canada and Great Britain. Many were non-contest QSOs with OMs, and they met some very interesting people. One OM told Deb that his first contact with W1AW had been with Hiram Percy Maxim.

Last October, Maggie Herrick, N2XJC, who enjoys operating packet radio, sent out a bulletin to the WOMEN@USBBS category, with the subject "Women Hams on PKT?" and received so many responses that the packet equivalent of a YL net is now in progress. YLs can address bulletins to the category YL&XYL @USBBS, subject "Women's PKT Net," and Maggie's address is N2XJC @WA2YSM.ENY.NY.USA.NA.

Janis Cameron, VE7AAP, now has over 150 photos of radio cats and would like to have more. A "radio cat," of course, is a cat that spends a lot of time with an Amateur Radio operator, and if you have one (or more) no further explanation is needed. Janis takes her collection of photos to hamfests and conventions so make sure your state or country is represented. Send your cat's photo to her at 3528 11th Avenue, Port Alberni B.C. Canada V9Y 4Y7. She can usually be found on the Air Capital Net on 28.775 MHz, at 2030 UTC, on Sundays.

My husband Mike, WØXM, and I will be in Ireland during the first two weeks of April to attend the IRTS Annual General Meeting. If you'd like a contact with an EI-YL, please listen for EI7HQ. WR

FM & REPEATERS REPEATERS REPEATERS REPEATERS REPEATERS

BILL PASTERNAK, WA6ITF

ARRL to host National Repeater Association meeting

Repeater coordinators, put on your traveling shoes. The ARRL is inviting you to an open meeting sometime this year. The League's Board of Directors says the meeting is to discuss ways of strengthening FCC support of local and regional coordinators, and related issues.

The decision to hold the meeting was reached by the ARRL BoD at their January annual meeting. There was no real announcement made. Rather, the decision to hold the gathering was simply included in the minutes of the meeting an the ARRL official bulletin that followed.

Such a meeting is long overdue, but before it can be held there are several questions that need to be addressed. First, where and when do you hold such a gathering. The "when" is easy. A weekend — probably on a Saturday since few people can afford to take off from work during the week to "play" at ham radio.

The "where" is a lot harder. Obviously it has to be an easy-to-reach location somewhere in the central part of the country. Preferably a "hub" for one or more major airlines since competition means lower airfares. Keep in mind that some people will may be flying 1500 miles or more to attend.

And, if I may be so bold, the meeting should NOT be held in conjunction with a hamfest or convention. Yes, hamfests draw hams to a central spot, but the attraction of the event tends to overshadow anything else, making it impossible to focus on a business meeting. You will note that the ARRL BoD holds their meetings at ARRL headquarters or in meeting rooms of major hotels. They are not held at the Tropical Hamboree or the Dayton Hamvention for that very reason.

Finally, the big question. Who to invite? Should the ARRL put out a general invitation to anyone who calls himself an Amateur Radio frequency coordinator or should they be selective and invite only those whom they recognize? And if its the latter, who is to say that the judgment of the ARRL is correct? Something to ponder, isn't it?

From the mailbag

The following is a FAX we received from Tom Blackwell, N5GAR, of Dallas Texas. Tom serves with the Texas VHF FM Society and his letter is actually a copy of a letter sent to the now defunct *Westlink Report* ham radio newsletter. Since we also ran the story of the fine issued against a ham in Puerto Rico for running an uncoordinated repeater, I felt it might be of interest to reprint it here and address Tom's concerns:

"According to news reports, the FCC Field Operations Bureau in San Juan, Puerto Rico issued a Notice of Apparent Liability for $7000 to the operator of an uncoordinated repeater which was interfering with a coordinated system. The Engineer In Charge (EIC) issued a press release (See *Westlink Report* No. 889, Friday August 26, 1994).

"I am concerned that some may have misunderstood the press release. First, it appears this is NOT a situation where two or more organizations are competing to coordinate repeaters. As in most localities, it seems that there is only organization volunteering to coordinate repeaters in Puerto Rico. It routinely provides its listings to the ARRL for its repeater directory. Because of this, the FCC press release included the comment that 'PR/VI Volunteer Frequency Coordinators, Inc. was recognized by local repeater trustees and by the American Radio Relay League as the frequency coordinator for Puerto Rico and the U.S. Virgin Islands.'

"This does not represent a change in policy or new interpretation of the rules by the commission. Nor would a local EIC have the authority to make such a change. The commission has not delegated any coordination authority to the ARRL. The application of the rules is explained in the "Kowalski Letter." It relates that multiple frequency coordinators can exist in the same geographic area. Coordinators need not confer with one another before making coordinations. If a repeater coordinated by one coordinator causes interference to a repeater coordinated by another coordinator, it is the amateurs who operate the repeaters, not the coordinators, who have the responsibility to resolve the problem. Any amateur, or even a non-amateur, may act as a coordinator.

"Perhaps we would all better be served if the FCC Rules on coordination, Part 97.201(c) and 97.205(a), were changed to recognize volunteer coordinators in much the same way as the FCC recognizes volunteer examination coordinators (VECs). New rules on coordinators could provide for high standards of fairness and impartiality. Their records would be open and readily available in public places for inspection. Many issues would have to be resolved for such an agreement to work. Yet such a measure could resolve the issue of multiple frequency coordi-

nators within any one geographic area.

"While I would not suggest it as a solution to the problem, it appears the case of this 'uncoordinated' repeater would have had a different legal outcome if its users had declared themselves to be a 'coordinator.' —Tom Blackwell, N5GAR"

Well after rereading the original press release from the Puerto Rico FCC Engineer In Charge, I cannot imagine any way that this issue could even remotely be confused with that of multiple coordinators serving the same geographic area. The concept of multiple coordinators is not ever mentioned in the release so there is absolutely no way anyone could be confused. More relevant is Tom's assumption that the various FCC Field Offices do not have the authority to set Commission policy. If that were true, then the FCC "parent" in Washington would not have delegated them the authority to determine a given entity (human or corporation) had violated a rule and to issue a "Notice of Apparent Liability to Monetary Forfeiture" (a fine) whose exact dollar amount can vary from case to case for the same violation, at the whim of the EIC for a given geographic area.

Unlike most independent government agencies, the FCC has, for over a decade, given their personnel wide latitude in the way that each can individually interpret all rules and regulations of that agency, and this includes the Part 97 Rules and Regulations governing the Amateur Radio Service. I am not saying that this is good or bad; or that it will forever remain this way. Nor do I believe it to be official FCC policy in and of itself. I think it just kind of evolved.

But, for better or worse, it is apparent to those of us who have followed the FCC through the past two decades of deregulation that the EICs of today have a lot more authority than those of 20 years, or even 10 years ago. They do set policy; it happens every day; the Field Operations Bureau of the FCC in Washington almost always backs these policy decisions 100% as do the Commissioners themselves in most cases.

And indeed, a precedent was set because of the terminology used by the EIC — not the reason behind it. The words "ARRL recognized coordinator" are specific and legally binding on the agency. It is not something that needs deep thought or interpretation. Rather it is a specific statement on the part of the FCC that this action has been taken is because the PR/VI Volunteer Frequency Coordinators, Inc. is recognized by the ARRL which is the singular national society that the FCC recognizes as the unified voice of all licensed United States radio amateurs; be they ARRL members or not!

What the FCC has done is to try and gently coerce the ARRL into doing something it has avoided since the 1950s. That of assuming more legal responsibility for repeater coordination.

This is not the first time pressure has been exerted on the ARRL by the FCC to become the single "super-coordinator" serving all hams in the United States. This has been outlined in several articles, including an in-depth piece that appeared in the November 30, 1994, issue of the *Westlink Report*. It is an article that documents numerous attempts in the past year by the FCC to nudge the ARRL into this task, and the way that the ARRL has so far, wisely smartly resisted.

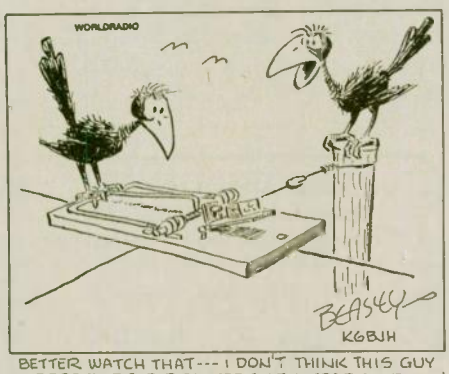
Where Tom and I are in full agreement — and he and I have discussed it at length — is in the realm of establishing a Volunteer Frequency Coordination system that mirrors the highly successful VEC system. Only through the development of a unified set of guidelines and rules adhered to by all of the nations' frequency coordinators, can the coordination process be depoliticized. As a record number of new hams come into the service and directly to our VHF and UHF bands to stay for their entire ham radio "career" the need for more and more repeaters as "home base" is of paramount importance. The time has come to revamp the entire coordination process, take it to the public and codify it into law. I support Tom, or anyone else who wants to get involved in making this happen.

Happy Birthday to us

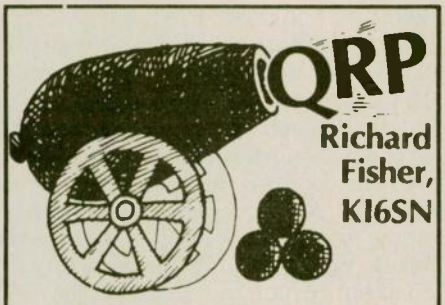
In case you have not noticed, this column is one year old this month. On behalf of the entire staff of ***Worldradio***, thanks for making it the success it has become. And, on a personal note; thank you all for the kind words and thoughts in your letters, E-Mail and faxes. See you at the ***Worldradio*** booth the end of the month at Hamvention '95 in Dayton!

de WA6ITF

(FM and Repeater column author Bill Pasternak, WA6ITF, receives mail at 28197 Robin Avenue, Saugus California 91350. His 24 hour/day voice and fax line is (805) 296-7180. He can also be reached by electronic mail on the following services to the mailboxes: (GEnie) B.Pasternak; (Internet) b.pasternak@genie.geis.com; (America Online) BILLWA6ITF; (MCI Electronic Mail) 324-1437.) **WR**



BETTER WATCH THAT--- I DON'T THINK THIS GUY UNDERSTANDS THE CONCEPT OF A TRAP ANTENNA!



Richard Fisher, KI6SN

1940 Wetherly St.
Riverside, CA 92506

More 'Spider' audio

"I've long felt the 'Spider' (QRP transceiver) could use a little more audio gain, but it was Jim Lageson's comment in your September, 1994, column that finally activated me," writes Mike Agsten, WA8TXT. "The result is the AA-1 Kit."

Lageson, WAØRPI, had written from Minneapolis that he was having a ball with his 30 Meter "Spider," with 35 states in the log book, and DX to boot. He wished, though, this crystal controlled one-watt rig (reviewed here in July, 1993) had a bit more audio punch.

Agsten, whose Sandusky, Ohio-based Lectrokit Co., produced the SP-1 "Spider," was quick to oblige with a new, tiny add-on kit called the AA-1.

"This low noise audio amp tacks on to the AF-1 audio filter module, if installed, or may be installed without the AF-1," Agsten said. "It provides a voltage gain of 10, which is sufficient to drive the LM386 to full output on a wider variety of signals.

"Routine operation at a lower volume control setting becomes possible and this reduces those annoying T/R clicks in the speaker."

Agsten said the AA-1 was designed for retrofitting into existing "Spiders," and is available now for $7, postpaid. Lectrokit's address is 401 W. Bogart Rd., Sandusky, OH 44870.

The kit comes complete with a *very small* printed circuit board (just a quarter inch wide, and two-and-one-eighth inches long), and the nine parts necessary to get the AA-1 up and running. The sole active device is an MPF102 field effect transistor.

It took me less than one hour to unpackage, build, install and test the AA-1. And, as advertised, it is a very nice addition to the original "Spider." The kit comes with easily understood instructions and a short treatise on its theory of operation.

Agsten said that it is widely believed an amplifier "is a gizmo that makes a signal bigger: a small signal goes in, is boosted (somehow) and comes out larger. This is really sloppy thinking — if not totally false. A signal cannot be boosted; it is what it is."

"Fortunately," he said, "we can make an enlarged replica of a signal that is sufficiently faithful, compared to the original, to suit our purposes."

In the AA-1, "the audio input signal becomes a varying electric field in the (MPF102) and controls, within some limitations, the rate and amount of power supply energy delivered to R2 (a 4.7K ohm loading resistor). When the output is connected to something, the load becomes that something in parallel with R2, more or less."

Here at KI6SN, the AA-1 worked flawlessly the first time power was applied. Agsten's instruction sheet is clear and concise. And best of all, the beautiful audio quality of the original "Spider" suffered no noticeable degradation with the addition of the AA-1. There's more than enough punch now to make your ears ring.

Agsten said he's also producing the AAF-1, a kit that consolidates the AF-1 filter and the AA-1 amplifier onto one tidy circuit board. The kit has been tentatively priced $10, postpaid.

If you're an SP-1 "Spider" user now, and would like to have a bit more of the rig's beautiful audio at a bargain basement price, consider the AA-1. It's proof positive that good things come in *very small* packages.

Introducing the TAC 1

S&S Engineering, widely known and respected in the world of low power communications, has a newcomer to its line of QRP transceiver kits — the TAC 1. The Smithsburg, Maryland, company first made headlines with its ARK 40 CW transceiver (reviewed here in November, 1993). Many of those units are still in wide use, sporting their trademark push-button tuning.

The TAC 1 takes a different tack, though, as a knob-tuned digital display CW transceiver for 80 Meters, covering 3.500 to 3.750 MHz.

Company specifications show that the LCD digital display is micro-controller enabled, and "the 32 position, detented shaft encoder makes tuning the band a breeze. The encoder has settings to tune in 1 kHz and 100 Hz steps. The (digital) display (simultaneously) reads 100 kHz, 1 kHz and 100 Hz, respectively. The MHz are displayed on power-up."

The kit contains two printed circuit boards that are connected by ribbon cable. And there's no chassis wiring — all controls and jacks are connected directly to the circuit boards.

The boards are fully silkscreened (white component outlines on a green background), according to S&S.

The TAC 1's receiver is single signal and superhet, and the rig features full QSK.

The rig's enclosure is 2½" high, 5½" wide, and 7½" deep. It will need a power source capable of delivering 12 volts at 225 milliamperes.

The complete kit is selling for $199.95, plus $7 shipping and handling. Dick Szakonyi, KA3ZOW, is S&S chief engineer and a great friend to QRP. Company president is Kathleen Szakonyi, N3SAD, who is also responsible for kit production and gathers feedback from S&S kit builders.

If you'd like more information about the TAC 1, write S&S Engineering, 14102 Brown Rd. Smithsburg, MD 21783. By phone: (301) 416-0661. Fax: (301) 416-0963.

QRPer's mobile home antenna

In November, Tom Curtis, W8BMJ, of Hampton Bays, NY, asked for ***Worldradio*** QRP column readers' advice on a good antenna for "stealth operating" in a mobile home park he expects to be moving to soon.

Several readers offered ideas, including Ed Sastell, KE6AM, of Taylorsville, CA. He lives in a 1991 Fleetwood double wide mobile home "in a park where there are restrictions on radio transmitting. The manager is a fair person and they have no objections to my 'hamming,' as long as I don't generate any complaints for them to handle.

"I took the TS-830 out of mothballs, and like Tom Curtis, searched around for a suitable antenna. I needed something which was low profile and would not announce to the neighbors what I was up to," Ed wrote. "I settled on a Spider Multi-Band mobile antenna which I mounted on a PVC stand using a 4' x 7' piece of ½" mesh screen laid flat on the porch under the Spider vertical for a ground plane. At a distance it could almost pass for an antique hat rack!"

He says if anyone ever asks what the "thing" is, "I will reply, 'An antenna. I have a scanner.' Both comments are true; no need to lie." Ed works 80, 40, 20 and 15 Meters.

Paul DeAthos, AA8OZ, of Ferndale, Michigan suggests using motor winding wire, "very thin. On the roof of the mobile home at each corner place a vertical wood dowel or fiberglass stick about two to three feet long stuck in a two-by-four and weighted down with a brick.

"Take the wire and make a loop antenna. It's thin and won't be seen."

Paul says you will "tune the closed loop antenna with a tuner and you will work all kinds of DX."

Of course, he says, "the bigger and higher the loop the better — square, triangle or rectangle."

Jan L. Kemp, WB8VMF, of Eaton, Ohio, writes that he has a used a "Jet Stream — just like a Ham Stick — on 20 Meters on a pop-up camper with my Argonaut 515 in New Mexico" and has received good signal reports using it.

QRP 'To the Field'

The NorCal (Northern California) QRP Club — inspired by the QRP Club of New England's "QRP Afield" contest last fall — is sponsoring "Spring QRP to the Field" from 1600 to 2400 UTC, April 1.

Doug Hendricks, KI6DS, suggests that this contest will be a great pre-Field Day warm-up.

Rules: Operators may use a single transmitter on the air at one time. Once started, you must use the same power output and location categories.

Exchange: Signal report, and state/province/country.

QSO points: 1 watt or less on CW or SSB (10 points); 5 watts or less on CW or SSB (5 points); more than 5 watts on CW (2 points); more than 5 watts on SSB (1 point).

Multipliers: Field location (battery power and temporary antennas) x 3; home location (commercial power or permanent antennas) x 1; homebrew equipment x 1.5; commercial equipment x 1.

Final score: Band/mode QSO points x location x equipment = band/mode total. Add all band/mode totals for your final score.

Awards: "Top 10 Scores" certificates will be awarded to the 10 stations with the highest point totals. A "participant" certificate will be given to stations making 20 or more contacts from a field location. Include a 9 x 12-inch envelope with three units of postage.

Reporting: Send logs, station and location description along with a summary sheet and a signed declaration to: Bob Farnworth, WU7F, 6822 131 Ave. SE, Bellevue, WA 98006. Deadline for entries is May 1. All logs received after that become check logs.

Correction

The membership figure for the NorCal (Northern California) QRP Club listed in the *Worldradio* QRP Organization Survey in January 1995 was incorrect. The club has more than 1,000 members. WR

QRP homebrew in ZS2
Andre Botes, ZS2ACP, of Port Elizabeth, South Africa, holds the microphone of his homebrewed three-band SSB QRP rig, complete with digital display. The transceiver covers 80, 40 and 20 Meters and is one of several low power phone rigs Botes has constructed.

Computers & BASIC STUFF

C.H. Stewart, KD5DL
P.O. Box 181
Duncan, OK 73435

BASIC conversions

Seeking new standards

Throughout history man has used various physical standards by which to measure things accurately. Granted, some of them were not too reliable, like the "standard" Noah's cubit, king's foot or mustard seed weights. In more recent times the scientific world has settled on specific standards for such things as time, length and mass. Now it seems that every measuring standard, save one, can be easily reproduced in laboratories around the world.

The one holdout, however, is the kilogram. The one and only true kilogram resides at the International Bureau of Weights and Measures in an airtight container in Sevres, France. Every other mass that purports to be a kilogram is at least a generation or more removed from this one platinum-iridium standard.

Scientists are now trying to make the kilogram as easy to reproduce accurately in labs as time and length now are. They are shooting for an accuracy approaching a billionth of the true standard.

At least one way is to use a counter to meter exactly 6.023 x 10^{23} atoms of some pure element into the substitute kilogram. This number, called Avogadro's constant, is already rooted to the kilogram—it's the number of atoms in exactly 12 grams of carbon-12.

Here's where you can help: if you have a workable scheme for reproducing accurate kilograms, the bureau would like to hear from you. They're already studying watt-balance and volt-balance methods and X-ray crystal density methods, so whatever you come up with would have to be a bit more original.

Basic conversions

The dilemma the International Bureau has with its kilogram prompted me to devote this month's column to weights and measures conversions. Granted, there are plenty of other programs for converting one measurement to another, but unless you work with them all the time you might find them just wasting space on your hard disk.

I feel fortunate that I kept a Casio FX-310 scientific calculator I bought a number of years ago that included a small embossed conversions and standards card with the calculator's case. Yes, Avogadro's constant, along with Plank's, Boltzmann's and Faraday's are covered, along with light and sound speeds, elemental rest masses, the gravitational constant and more. Having the card was like having a miniature textbook with me all the time.

Later, when I discovered pocket computers, I found that I could program the constants and conversions I used most frequently into data files and call them up whenever I needed them. I traveled a lot with the military, so naturally the program that was really used the most was one to convert foreign currency into US dollars. It was a simple BASIC one-liner that worked the world over.

My travels also required the use of other conversions. Jet fuel, for example, is not bought by volume, like gasoline, but by weight. Whenever we rocketed off to another country and had to fuel up, we had a need to convert from pounds to kilograms, or back again. Another example, runway lengths in the US are measured in feet. Most of the rest of the world use meters. Another conversion was needed. And on it went, for temperatures, hectopascals, speeds and so forth.

Sometimes I ran into problems with using three measuring systems. The weather bureau, for instance, gives some of its measurements in statute miles, we flew distances of nautical miles and we occasionally needed to measure some distances in kilometers!

It was the same way with Amateur Radio back in the '70s. Several ham radio magazines even used metric dimensions exclusively! I remember that it created quite a turmoil among subscribers, and I suppose reader opinion forced them to drop the change. Still, the United States is one of only three holdouts in a world that has gone mostly metric.

Because I've been using so many conversion programs in my line of work I've put a lot of time into simplifying data entry and use. Remember, I'm a

```
 10  REM: CONVERT.BAS, BY KD5DL, 4/1/95
 20  SCREEN 2: KEY OFF: CLS
 30  A=165: B=170: C=50: D=620
 40  DATA 260,350,402,444,476,508,532,548,560
 50  DATA 10,20,30,40,50,60,70,80,90,100
 60  DATA 3,30,41,48,53,57,77,69,71,65,72
 70  DATA 69,82,84,90,77,69,71,65,67,89,67
 80  DATA 76,69,83,65,80,82,73,76,32,70,79,79,76
 90  LINE (C,10)-(C,B): LINE (C,B)-(D,B)
100  FOR X=1 TO 9: READ E: LINE  (E,A)-(E,B): NEXT
110  FOR X=10 TO 1 STEP -1: READ F: LOCATE (2*X-2),3: PRINT F: NEXT
120  FOR X=1 TO 6: READ G: LOCATE  23,G+2: PRINT 10*X;:NEXT
130  LOCATE 23,70: PRINT "100": CIRCLE (90,-40),500,1,4.65
140  FOR X=8 TO 16: LOCATE X,1: READ H: PRINT CHR$(H): NEXT
150  FOR X=31 TO 50 STEP 2: LOCATE 24,X: READ J: PRINT CHR$(J);: NEXT
160  FOR X=35 TO 44: READ K: LOCATE 5,X: PRINT CHR$(M): NEXT
170  LOCATE 25,1
```

big fan of pocket computers, but their memory is measured in terms of kilobytes or less. This month's program is the result of my efforts. It crams my basic conversion program into just 17 lines of high-resolution GW-BASIC graphics.

Nonetheless, it's a powerful tool for converting practically anything to anything else. Only two DATA lines (lines 70 and 80) need to be changed to change from this frequency conversion program to anything else. You can even use it to convert furlongs to light years if you want to. See the sidebar for details.

Line 20 sets the GW-BASIC (or IBM basica) screen to its high resolution mode, turns off the key prompt and clears the screen. The first four data lines and lines 100 through 150 draw the actual graphics. Lines 70 and 80 contain the conversion data and the remaining lines convert the arithmetic to graphic mode.

Save the program after it's first loaded, then type RUN. You can cycle through the various conversion factors by hitting the ENTER key, and you can revert from BASIC by typing SYSTEM. A menu program for CONVERT.BAS is now in the works, and should be ready for our next column.

That's it, and that's all the space I have for this month. If you have a particular conversion that isn't listed, or have solved one and would like to share it with others, please let me know. We'll print them next time. **WR**

Tony Tretter, WØKVO

Tony Tretter, WØKVO, joined the HANDI-HAM System as a volunteer in 1968 and has donated thousands of hours. HANDI-HAM members who cannot study for their tickets using print materials study with Tony... He reads the license manuals onto cassette tapes. Tony also teaches at Radio Camps and at Courage Center in the Twin Cities. His friendly, helping hand has opened the door to Amateur Radio for many persons with physical disabilites. In the following piece, Tony writes about the latest California Radio Camp:

Radio camp - January 8-14, 1995

"If it ain't raining, just wait 10 minutes!" That seemed to be the thread of conversation regarding the weather during the whole week of radio camp in California in January, 1995.

Nothing, even the weather, seemed to dampen the enthusiasm and dedication of the people who came to camp to learn about ham radio. For many of them, it was their first exposure to all of the information they had to learn in order to pass whatever exam they were attempting. It must have seemed like an overwhelming task at the beginning of the week, and there was a little discouragement at the end of the first day or so. However, that phase passed quickly, and the campers quickly discovered that the sun soon started to shine on their efforts, even though the rain clouds refused to allow the real sun to peek through for more than a few seconds during the entire week.

Camp was a week of intensified study with classes running for three hours in the morning, two hours in the afternoon, and another two hours in the evening–some people went even longer than that, studying during their free time and well into the night. However, it was something they enjoyed doing and wanted to do, and not something they were told or forced to do. In many cases, instructors had to say: "Hey, ease up a bit on all that cramming and relax and enjoy some of the free-time activities."

If the students could give a "thought for the day" to future campers, it would certainly be this: Study the books BEFORE you come to camp. Write down questions you may have so that the very knowledgeable instructors at camp can answer them. In particular study the section of the book dealing with FCC Rules and Regulations (those sections deal mostly with things that have to be memorized, and no instructor can help you to memorize something). Whether or not you pass the sought-after test or not you will learn a lot you will be close to passing and a little more studying on your own will get you over the hump. Most importantly you will have a GREAT time at camp!

A couple of students require special congratulations. One is Tedd Kamsler from Pasadena. He had joined Handi-Hams only a few weeks before camp started; he had not received any materials from Courage Center nor any books or study material; you could say that he came to camp "ice cold." It's amazing, but he learned enough to pass the No-Code Technician test. Exceptional!

Another is Tom Karnes from San Francisco. He did have some background in electronics, but he spent most of the week in the Novice-Technician class. He passed Novice, Technician, and five words per minute code to become a Technician Plus. But he didn't stop there. He went on to pass the General, the Advanced, and the Extra Class Theory. Unbelievable! (They certainly breed outstanding people in California.)

No recap of any Handi-Ham Radio Camp would be complete without a special mention of the real heroes of the camp, the counselors and staff. Words are inadequate to try to describe the tremendous job they did in all areas.

To the few who didn't pass the exam they wanted, keep studying right now. You are closer than you realize to passing. Do it while all this information is fresh in your minds, and take the test again as soon as possible.

Well, another radio camp is history. A lot of tired, happy people left sunny(?) Malibu just about a week before the next big rainstorm was scheduled to hit Southern California. All of them left with a great sense of accomplishment, they knew they had gained considerable knowledge, and they had a unique experience which will be remembered for a long time. **WR**

Visit Your Local RADIO CLUB

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

ALASKA

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 146.97(-) PL 103.5 Hz.

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 15 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879.

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(+). Packet Cluster nodes (S): 145.09, 144.93, 145.03. Info: (800) 283-4319 or (602) 876-2718.

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr.

Scottsdale Amateur Club. Meets 1st Wed./monthly, 7:00 p.m., Scottsdale Sr. Cntr., 7375 E. 2nd St., Scottsdale, AZ. Net Tues., 7 p.m., 147.18(+) rptr. Info: Barbara Myers, KB7UKD, (602) 837-6492.

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. 146.82(-), 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. 224.08(-). PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info: (619) 697-2700.

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, KA6OFR, (707) 996-0962.

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m.

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.

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Emie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-).

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(-). Info: Bob Hastings, K6PHE (714) 990-9203.

Gabilan Amateur Radio Club, (GARC). P.O. Box 2178, Gilroy, CA 95021-2178. Meets odd months, 2nd Thurs., 7:30 p.m., First Interstate Bank, First St., Gilroy and even months for brkfst., 3rd Sat., 8:30 a.m. (408) 623-2462.

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). 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.

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.

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, 1695 E. Lincoln Ave., Orange at Lincoln & 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(+) 100Hz PL. Info: George, KI6YK, (510) 837-9316.

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.

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Ms. Marti Brutcher, N6XDS, (310) 376-1861 or (310) 377-6342. Rptr. 145.38(-) PL 100.

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 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Gary E. Bryant KB6KZZ, (916) 646-1171.

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.

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.

Shasta Cascade Amateur Radio Society, (SCARS). 2955 Shasta St., Redding, CA 96001. 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(-).

So. Sierra ARS. Meets 2nd Thurs./monthly, 7 p.m., Veteran's Mem. Hall, 125 East F St., Tehachapi, CA. Contact: C. Parsons, KD6KMN, (805) 822-5995. 147.06/224.42.

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). 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. Net Sun., 10 a.m. 50.40.

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin. Bldg. 145.39(-) (PL 136.5), 224.14, 440.225 (PL 136.5).

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.

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, CD Hall in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4.

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., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) 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 Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426.

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100.

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.

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430.

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

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry 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(-) & 145.33(-), serving Pasco Cnty.

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.

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Wes Sammis, W2YRW, (407) 878-4739. Call in 146.955(-).

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly nets 6:30 p.m., 147.06(+), 224.66(-). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: R. Russell, N4ZMQ, (813) 896-2518.

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

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64.

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets 2nd Tue./monthly, 7 p.m., Army Reserve Armory, 470 Lanikaula St., Hilo. Talk-in on 146.88(-).

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(-), 146.80(-), 146.88), 146.96(-) 146.94(-). Info: (808) 595-6245.

IDAHO

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

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). 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 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+) (114.8PL), 224.68(-).

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. 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, 28.410 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: 146.85(-) & 147.075(+).

Schaumburg ARC, (SARC). Meets: 3rd Thurs./monthly, 7:30 p.m., Schaum-burg Park Dist. Community Rec. Ctr. at Bode & Springinsguth Rds. Schaumburg, IL. Net 145.23(-), 9 p.m. Thurs. Info: (708) 213-0910.

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+).

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. RTTY Net Sun. 9:30 p.m. 145.31(-).

IOWA

Scoland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-)

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME.

MASSACHUSETTS

Quennapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fr.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098.

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Gerber Hall, Babson College Forest St., Wellesley, MA (Sept.-June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686.

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Blue Flame Rm., Citizens Gas., N. Winter St. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568.

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

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Wayne/Monroe Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 9 p.m. on 145.33(-) and 442.80(+) rptrs.

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesse Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077.

Hazel Park Amateur Radio Club. Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. Meets 2nd Wed./monthly, 7:30 p.m. Sept. thru May. 146.64(-) Call-in. W8JXU Club Call. Net Sun., 9 p.m., 146.64(-).

Hiawatha Amateur Radio Club (H.A.R.A.) P.O. Box 1183, Marquette, MI 49855. Meets 1st Thurs./monthly, 7:30 p.m., Jacobetti Veterans Facility, Marquette. 146.70.

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.

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 28954, Kansas City, MO 65202. Meets 2nd Tues./monthly, 7 p.m., Boone Electric Coop, 1413 Rangeline Rd., Columbia, MO. Talk-in 146.76(-).

Lebanon Amateur Radio Klub, Inc. P.O. Box 2034, Lebanon, MO 65536-2034. Meets 1st Mon./monthy, 7 p.m., Bell Restaurant, City Rt. 66 East Lebanon. Call in 146.700(-).

PHD Amateur Radio Assn., Inc. P.O. Box 28954, Kansas City, MO 64188. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Mon./monthly, 7 p.m., Cioppino's Restaurant (between Vegas Valley Dr. & Desert Inn), 3125 S. Nellis Blvd., Las Vegas, NV. Net Mon. 7:30 p.m., 145.39(-) Rptr. on Black Mountain. Club info: Jim Frye, NW70, (702) 456-5396.

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Penny's Kountry Kitchen, 337 E. Plumb Ln., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz.

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330.

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.: 146.70(-), 224.84(-), 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.

Cape May County Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Human Resource Bldg., Rts. #9 & #47 in Rio Grande, NJ. Talk-in on 146.61(-). Weekly net, 8 p.m. every Thurs. except 3rd.

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 MEXICO

Albuquerque Amateur Radio Club. P.O. Box 11853, Albuquerque, NM 87192. Meets 1st Sat./monthly, 7:30 a.m., Golden Corral Restaurant, 8505 Montgomery NE.

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(-) 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, (516) 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., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz.

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, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 962-9666 for details. Talk-in WB2ZIV/R 147.06(+) PL 114.8/2A.

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(-), 440.15(+).

NORTH CAROLINA

Cabarrus Amateur Radio Society, (CARS). Meets 3rd Mon./monthly, 7 p.m., Forest Hills United Methodist Church in Concord, NC. Net on Mon., 9 p.m., 146.65(-).

North Carolina Alligator Group, (NAGs). Meets Mondays, 28.350 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240. "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, NC

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 43410. NF8E rptr. 146.85(-) 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(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839.

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 (513) 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.

Sandusky Valley Amateur Radio Club. Meets 1st Sat./monthly, 9 a.m., Sheriffs Bldg. in the D.S.A. office, 2323 Country Side Dr., Fremont, OH.

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. and Sat. 6 p.m. on 7240. Rptrs. 146.91(-), 146.715(-). P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 E. Ridge Rd., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-).

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) 385-1156.

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.

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 147.36(+). Net 10:10 p.m. nightly.

Fort Venango Mike & Key Club. Meets 2nd Tues./monthly, 7:30 p.m., Vo-Tech, Oil City, PA. 145.230, 145.190, 147.120, 444.125.

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.

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE pt.bbs.

TEXAS

Brazos Valley Amateur Radio Club, (BVARC). 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 146.73(-), 449.55(-). 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 Inland Northwest Hamfest Assoc. (Club). Meets 2nd Tues./monthly, 7 p.m., St. Ann Parish Hall, E. 2120 First Ave., Spokane, WA. Info: KJ7BB, (509) 534-8443.

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(-) WD8JNU/R.

WYOMING

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

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention Plans

Plans for the 1995 10-10 Convention to be held in Tuscaloosca, Alabama on June 17-18, are being finalized with a full program of events. Registration begins on Thursday, June 16th at 5:00 p.m. and again at 8:00 a.m. on Friday, June 17th. Friday, June 17th will be devoted to social time all day with chapter tables and eye-ball QSOs taking place in the meeting hall. The non-ham spouses will enjoy a shopping tour and lunch. A 10-10 net will be held on Friday evening from 1700-1800 local time. The evening hours will be devoted to social time. Saturday, June 18th has a full schedule of forums lasting from early morning to late afternoon with the last being a 10-10 Forum with the Officers and Board of Directors answering questions. Saturday evening will host the banquet followed by entertainment. A special appearance will be made by the famous auctioneer "Colonel Ed" who will not only entertain all but will auction off some very nice items.

The highlight will be the awarding of a Kenwood TS-50S as the pre-registration prize and the drawing for an ICOM 725 for on-site ticket donations. Other surprise gifts and prizes are a definite possibility.

This all takes place at the Capstone Sheraton Inn and Convention Center in Tuscaloosa, Alabama on June 17-18, 1995. The Capstone Sheraton is located on the campus of the University of Alabama and directly next door to the Bear Bryant Museum which will be open to 10-10 members attending the convention.

For more details and a pre-registration package, send an SASE (#10 business size) to Tom Henderson, K4CIH #33233, 4901 15th Place East, Tuscaloosa, AL 35404-4522.

New VP Manager announced

The Operations Committee, under the Chairmanship of Ed Redwine, K5ERJ #11843, has announced the appointment of Carl Fisher, WØHIK, #40678, as the new 10-10 VP Manager.

Carl is an active, full member of 10-10 having joined in 1986. He is currently serving as the Certificate Manager (CM) for the Air Capital Chapter basic certificate. His 10-10 activities include paper chasing, and working on the various 10-10 awards, BARS, VP numbers and counties. Many will remember meeting Carl on the air or at our conventions in Arlington, Texas and Wichita, Kansas.

Licensed since 1948 with the same call and an advanced class license, Carl has spent his adult career in electronics. Starting as an electronics technician with the Navy in 1953, Carl joined the Kansas Turnpike team in 1957, and recently retired from that organization as the Communications Manager. His leadership and guidance in electronics has resulted in state-of-the-art communications for the Kansas Turnpike Authority. He has computer "savvy" and just recently upgraded his own system to a 486 DX2 with bubble jet printer. Carl is very aware that his new volunteer "job" with 10-10 is time sensitive and should have no problem in keeping the VP Awards "on track."

VP Awards should be sent to Carl Fisher, WØHIK #40678, 5 Angelina Drive, Augusta, KS 67010-2262.

Wanted

The Colorado Bighorn Museum of Amateur Radio, operated by Don Zielinski, KØPVI #9902, needs Amateur radio call sign license plates from the following states to complete a Worked All States display in the museum. This is your chance to have your state (and your call) represented in The Museum for posterity. States needed to complete the WAS exhibit are:

AZ	AR	CT	DE	GA
ID	LA	MS	NV	NM
OK	PA	RI	SC	SD
UT	WA	WV	WI	

Plates of any year, call or condition will be acceptable. You do not have to be a 10-10 member to have your plates accepted by the museum. If you have an old call sign license plate from any of the above states, send them to The Bighorn Museum, PO Box 229, Byers, CO 80103-0229.

The Hill Country 10-10 gathering

The 7th annual Hill Country 10-10 gathering will be held on June 11, 1995, at the home of Jack Moore, K4NF #50708. Everyone is welcome. For details contact Jack at: Rt. 12 - Box 378, New Braunfels, TX 78123. Phone is 210/885-2194 or packet K4NF@K3WGF.#SAT.TX.USA. NA.

New director appointed

As a result of director Tom Henderson, K4CIH, moving up to president on January 1, 1995, an opening was created for one director. We are pleased to announce that L.B. Cebik, W4RNL #41159, has been approved by the Board of Directors to fill the opening. L.B. is well known to 10-10 members and filled the position of secretary for the previous term. He has been assigned to the Operations Committee and will assist director Ed Redwine, K5ERJ #11843 on this important committee.

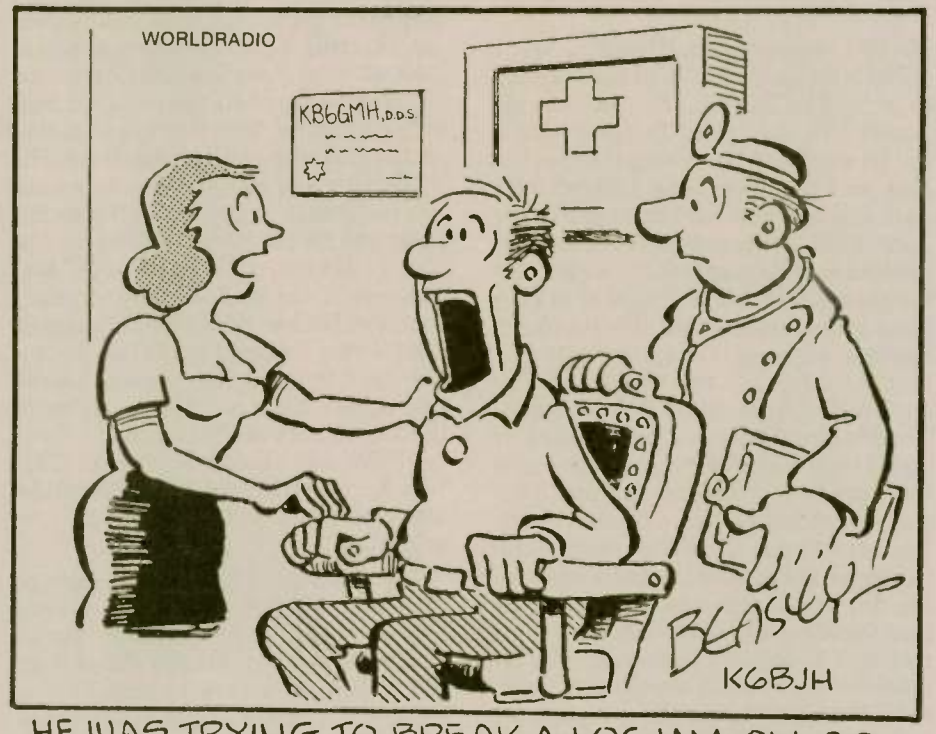
Next 10-10 contest

10-10 holds four contests each year, two SSB and two CW. The next contest is the Spring CW Contest which will be held on the weekend of 22-23 April, 1995. Everyone, 10-10 member or not, can participate in 10-10 contests. They are a great way to accumulate contacts for membership (only 10 contacts required) and to accumulate contacts for BARS and awards. Mark the weekend of 22-23April on your calendar and join in the fun. If you haven't been on CW lately, here is a way to get back in the CW mode! Detailed contest rules and a contest "dupe sheet" can be had for an SASE (one first class stamp) to: Harry Arsenault, K1PLR #28160, 10-10 Contest Manager, 48 Crane Road North, Stamford, CT 06902.

Information about 10-10?

If you would like information about 10-10 and how you can become a member and receive your very own unique 10-10 number, send $1.00 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ #54625, 9832 Gurdon Court, Boise, ID 83704. No SASE please, as the information package requires a 9 x 12 envelope. You will receive a copy of the 10-10 Information Manual which contains everything you want to know about the 10-10 organization and a copy of the latest issue of the *10-10 International News*, the 32 page 10-10 quarterly magazine.

If you have lost, or forgotten, your 10-10 number, the same as above to Mike will get you the information package along with your original 10-10 number. **WR**



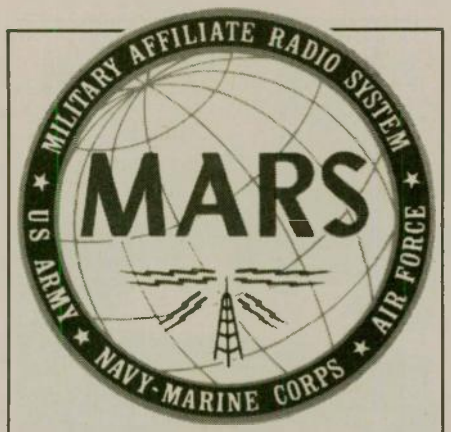
HE WAS TRYING TO BREAK A LOGJAM ON 20 METER PHONE AND IT JUST STUCK THAT WAY!

Oklahoma City ham elected to board

Dr. Tim Mauldin, WA5LTM, has been reelected to the Board of Directors for the Oklahoma Business Health Institute of the Oklahoma Health System. Professor Mauldin teaches Public Administration, State and Local Government, American Government and American History at Oklahoma City University.

The Business Health Institute develops and conducts health care education, prevention and awareness programs for central Oklahoma. The Oklahoma Health System operates Southwest Medical Center, the Jim Thorpe Rehabilitation Hospital, and Baptist Medical Center.

Tim Mauldin is a life member of ***Worldradio***, ARRL and Ten-Ten International. **WR**



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

Like 1994, 1995 has continued to be a most active year for Army MARS. The continuing emergence of the new Army MARS will be very evident at both the Dayton Hamvention and the I.P.R. (In Progress Review) meetings which will follow.

The Dayton Hamvention, this year, is scheduled to be held at the Dayton Hara Arena and Convention Center beginning at 8:00 a.m. Friday, April 28, and closing for the Hamvention goers at 2:00 p.m. Sunday, April 30.

Army MARS is the host of the MARS activities at the Hamvention this year. The MARS booth and the joint MARS meeting will reflect this responsibility and the fact that Army MARS prides itself on working closely and amicably with the other service MARS organizations. At this writing, the Army keynote speaker for the joint MARS meeting has not been announced. I can assure you that this speaker will carry with him/her much important and interesting information.

While thousands of happy hams go home with newly acquired treasures or simply another great experience, Army MARS leadership, Area directors, State MARS Directors, staff, and interested members will look forward to several days of intensive work in shaping the Army MARS program for months, perhaps years, to come. Many of the decisions made during these meetings will be included in the operating procedures and policies to be followed until amended at some time in the future. These meetings explore a multitude of topics and are vital to every Army MARS member no matter where he/she is located.

The preliminary topics that will be explored follow the goals that have been set for 1995 as well as those continued from 1994. Other topics will explore new areas for which goals have not yet been formulated.

Formalizing memoranda of understanding (MOUs) in order to better align the emergency communications support given by Army MARS to primary customers will be an important consideration. We already support DOMS, FEMA, SHARES, and others through practice exercises and through the system-wide adaptation of their protocols when any one of these federal agencies needs that type of assistance. Many times Army MARS has proved its flexibility in meeting the needs of its users. 1995 will be no different in that resolve...to serve and to serve well. There will be a marked increase in the joint exercises in which Army MARS will participate with other agencies so that each entity knows the capabilities of the other and so that meaningful relationships can be established.

Some discussion will include the development of a military contingency deployment guide. With the continual increase in the ability of the Army to rapidly deploy troops to places all over the world, many of them very obscure in terms of communications, it has become vitally important that guidelines and training in Army MARS communications be given as a standard operating procedure. In this way, the deployed soldier does not find himself/herself faced with a totally unfamiliar situation in the communications arena. With a well developed and published plan, both Army MARS and the deploying units will be better prepared to meet future commitments.

New technology will certainly be a topic of great interest. Over the years, Army MARS has adopted new technologies which have greatly improved its capabilities. 1994 was no exception with the formal adoption of E-mail, in particular. 1995 will continue this trend with additional interfacing of the new technologies with each other and with the radio modes that are in standard use. Satellite connects into Army MARS global networks will continue to be developed and discussed. Technical teams are already being set up to keep abreast of the rapidly increasing opportunities in technology today.

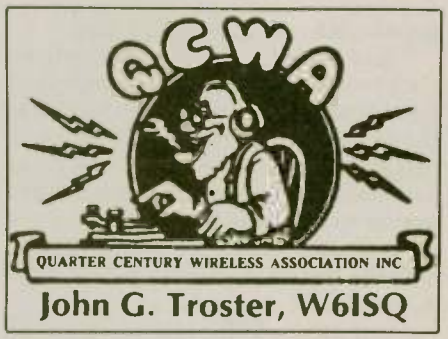
Chief Sutton is looking at special staff reorganization. He has said, "The volunteer special staff concept of the past few years has provided a remarkable benefit to me personally and to the overall MARS program as well. There are no words in my vocabulary that can describe the success of this program and the dedicated efforts of this team of experts."

The special staff is composed of 30 unique individuals, and Chief Sutton feels that better coordination can be developed if the 30 were subdivided into 5 or 6 teams of staff members with related responsibilities. It may also lessen the work load of some of the individual staff members. This, too will be discussed.

No one ever knows with any certainty what other topics and issues will emerge for discussion and resolution. That's what makes the I.P.R. so exciting. We each get to work with vital, talented, dedicated people. We each get to participate in the work at hand and to feel a part of the decision making process. Above all, we get to better know each other and to know the heart and soul of Army MARS. I, personally, have had very few experiences that were as exhilarating as last year's I.P.R. at Dayton. I am looking forward to the I.P.R. of 1995 as well. This may be one of the most crucial meetings that Army MARS has had in a long time. Many factors are currently at work as I write this column that will certainly impact what is done at Dayton this year. 1995 is the year to be there.

I was to have met Mr. Stan Shultz, AAA9HM, newly appointed E-Mail Host Manager for Army MARS at Dayton this year. He and I worked quite closely via E-mail and I enjoyed his friendship. I will not be meeting Stan after all. Army MARS Chief Sutton had the unhappy duty to announce that Stan became a silent key on January 6, 1995. Stan had been a long time member of Army MARS and was one of its staunchest supporters. Army MARS will miss him; Ohio Army MARS will miss him; I will miss him. Godspeed, Stan.

1995...Army MARS remains proud...professional...ready. WR



John G. Troster, W6ISQ

Crisis at QCWA HQ

Methinks there must be a crisis at our HQ in Eugene, Oregon. There are so many applications coming through the door that Jan and GM Old BJ Walsh, W7LVN, have had to give up their two hour coffee break in the mornings to register the rowdy partisans who are demanding membership! Giving up his morning coffee is a real problem for the Old Swab Jockey, but for QCWA he says (and I quote), "I'll also give up my two hour afternoon coffee break if the YOGS (Young Old Goats) and SOGs (Senior Old Goats) keep crashing the door."

Here's a small sampling of the inspired amateurs who have enquired over the last months how to upgrade into QCWA: WA9OFM, KØCYH, KD4ZPA, N1RLQ, KC5APX, W3RI, WA6DTU, KL7TG, N3HKT, WA2NHA, — I'll list a few more next time. Thanks to all for asking, and welcome aboard. If you haven't joined us yet, keep BJ busy. Find the QCWA ad in this mag and write. Be One Of Us, the Proud, the Elite, the QCWA.

Roy Neal, K6DUE, one of us

"Roy Neal, NBC News, Cape Canaveral." QCWAer's have heard that sign off many times watching any one of the missle launches on TV. Roy's broadcasts were always from the inside track. He was well known amongst the astronauts, and friendly with them as individuals. This gave him credible insight and background to enrich the information he gave to viewers. This move into the dramatic post of outer space broadcasting began, as you can believe, with Amateur Radio.

Roy was born in Wayne, Pennsylvania, outside Philadelphia, and as many of us were,was introduced to Amateur Radio as a young teenager. When he was 13, Roy acquired a broadcast receiver. He listened to DX on the BC band, the police calls, and, in those days, you'll remember, down into the amateur 160 Meter band. One day he really got blasted by a fellow calling CQ on 160. It had to be local, so Roy walked around the neighborhood and found some aerials only three blocks away. He knocked on the door and was greeted by Harold Blackstone, W3DLF. In Harold's shack, Roy got his first glimpse of those fantastic mercury vapor 866 rectifiers flashing blue against the walls and the big, bright tubes you could see on the rack! (Gee, why don't they have those 866s any more that made a visit to an old ham shack a video experience?)

He was hooked and W3DLF became his Elmer. At 14, Roy got his license, W3GIB, and went on 80 CW and 160 phone. He also began a life-time of building equipment and experimenting. His first big rig was the old tried and true 47 xtal osc — 46 buffer/doubler and pair of 46s final modulated by a pair of 46s. Sound familiar? His high school years saw him in intensive Amateur Radio building, operating and experimenting. When he went off to the University of Pennsylvania for college, it would seem natural for a major in EE to follow. But nay, Roy became an English major, big time, and didn't continue his ham radio interests in college. Instead, he wrote plays and stories and got into commercial broadcasting.

Out of Penn, Roy went to work at AM radio station WIBG in Philadelphia and worked from dawn to dusk as the news writer and record player, disc jockey we call 'em now. About the same time, he made friends with a young broadcaster working at radio station WPEN across the street named Ed McMahon.

When the war started Roy was in the thick of news broadcasting and for a time had a draft deferment to broadcast news. During that period he developed a reporting technique that was copied and adopted all across the country and is still common today—the five minute news summary. Uncle Sam ultimately called and, Roy went off to basic training, then to OCS infantry school at Fort Benning, Georgia. He was handed Second Lieutenant's bars and overseas orders at the same time, and thence to the 71st Infantry Division of Patton's Third Army and the Battle of the Bulge.

Roy Neal, K6DUE, "at the Cape" during the Mercury Program (1962).

After the war, his broadcast experience was recognized and he was assigned to the Armed Forces Radio Service in Frankfurt as Program Manager. (Incidentally, this scribe was stationed at AFRS, Hollywood at the same time). When the amateur bands opened, Roy got the call D4ACA and went on 10 Meters with a BC-610 and SX-28. Bring back memories?

Roy saw his first TV at a friend's home in Philadelphia. and immediately realized that was the way he wanted to go. He went to work at NBC TV, station WPTZ, where he became news director and special events manager. At that time NBC had three stations, New York, Philadelphia, and Washington, D.C. where, incidently, another newcomer to TV, named of David Brinkley, received daily film deliveries from Roy.

On the way to work on his very first day, Roy spotted a fire in a church across the street from the station. He grabbed a camera man and rushed back to do the first, live-event TV reporting in the industry. About that time too, at the station, there was another new announcer,Ernie Kovacs. He and Roy teamed up to do live programming in a restaurant. Ernie's humor ultimately attracted the attention of the comedy people in Hollywood, but not before Roy introduced Ernie to Edie Adams, his future wife.

In 1952, Roy was transferred to Los

Angeles as Supervisor of News at NBC, covering the Western States and Korea. Shortly thereafter he received the call K6DUE.

Soon Roy was doing live coverage of special events such as the nuclear testing in the Nevada desert, where, during one blast, he was in a trench one half mile from ground zero! He also worked with the USAF Association and even wrote a book on the Minuteman Missle, *Ace in the Hole*. He moved on into aerospace by covering the early experimental work at Edwards Air Force Base in California.

Roy was present at the beginning of the space effort and watched the emergence of the Thor, Atlas, Jupiter and Redstone programs. When it was time for Alan Shephard's "first man in space" flight, Roy was the producer of the live coverage. Then he became NBC anchor for the flights of Mercury, Gemeni and Apollo and on into the space shuttle era.

In addition, and of notable interest to us, Roy is responsible for putting "hams in space." One day at Houston headquarters, he gave the Amateur Radio pitch to Lt. Gen. James Abrahamson who replied, "give me a proposition and I'll approve it." Roy did and in 1984, Owen Garriot, W5LFL, put Amateur Radio on the air from space. Next, Tony England, WØORE, flew and put amateur slow scan on the air from outer space. After the first two missions, the space program ran out of licensed astronauts. But when the no-code license became available, the astronauts took the exam and, as you have read, most mission crews now have licensed amateurs aboard. Russian cosmonauts flying with the US space program, and who are licensed in Russia, receive reciprocal licenses. Roy began the Shuttle Amateur Radio Experiment, SAREX, program with an assist from ARRL and AMSAT. The program is designed to get Amateur Radio on board the shuttle, secure and qualify the equipment, select and set up schools worldwide to speak to astronauts, establish a control room and publicize the event. On each space flight various schools around the world are designated to speak to the astronauts.

One flight addressed 100,000 kids in Moscow and 200-300,000 kids around the world. It was an exciting, first-hand experience for youngsters all over the world to learn and become interested in science and the attending marvels. A door into the future. So far, there have been 16 missions which have carried Amateur Radio.

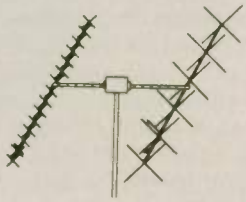
At various times Roy has participated with others including Dave Bell, W6AQ, (QCWA), Bill Pasternak, WA6ITF, (QCWA), and Frosty Oden, N6ENV, narrating and producing several videos promoting Amateur Radio. In 1980 they did "Moving Up to Amateur Radio" which was directed to CBers. Then, "World of Amateur Radio" and "New World of Amateur Radio" and several others. They're still being shown at radio club meetings and conventions.

What was the biggest thrill in Roy's many years of TV broadcasting? Unhesitatingly he will tell you it was the flight of Apollo 13 during which an oxygen tank blew up and forced three astronauts into the lunar module designed for two people. Pool reporters were usually not allowed into Mission Control, but an exception was made for Roy and he spent 36 wide-awake hours reporting the real-life rescue adventure which had a happy ending.

Roy now lives in his wife Pat's hometown, High Point, North Carolina. After a lifetime in the big cities, he is completely happy to be in a more rural setting where he can put up towers and build an antenna farm. His two sons, Mark and David, are both in TV production. At the moment Roy has a TS-930, TL-922 combination, plus a second station TS-440 and Collins 30L1. On the tower he has a KLM KT34XA at 75 feet plus an inverted V for 40 and 75. He is still building and experimenting and very active on the band. You can find him on whatever band is open to High Point. We're proud to claim Roy Neal, K6DUE, as One of Us, The Proud, The Many, The Elite, The QCWA.

73 + 25 Jack, W6ISQ **WR**

AMATEUR SATELLITES



WB8CKI
Terry Douds
344 E. Fifth Avenue · Lancaster, OH · 43130

Hello! Let me begin by taking a moment to introduce myself. My name is Terry Douds, and my call is WB8CKI. I was first licensed in 1968 as WN8CKI, and I hold an Extra Class license. I became interested in amateur satellite operation in 1990 after some prodding by one of the hams in my community, who had become active on one of the easy-to-use Low Earth Orbit (LEO) satellites. At that time I began my work in what I consider to be the future of Amateur Radio.

Let it be said that I love satellite operation — I am mystified by the concept of talking to someone thousands of miles away through a small piece of metal hundreds or thousands of miles from Earth. Even though I understand the basics behind how it all works — every time I fire up the rig I get an incredible sense of wonderment that we can even do this!

I am an active satellite operator (SATOP), most often found on Oscars 10 and 13, as well as the RS satellites. Do these names and numbers sound funny to you? They did to me once, too. One of my primary goals in writing this column is to continue what RichArland started during his stint as the author. We need more newcomers in the satellite ranks, and if I can get even one of you to try satellite operating, I will have done what I have set out to do. I will attempt to explain things in detail, so that you will begin to understand the "lingo" of the satop. Once that is accomplished, we will begin to delve into the exciting world of amateur satellite operation. However, I do not want to leave the experienced satop out of the picture either. I hope to bring you pertinent information to help you out as well.

If you have made it this far, great! I know that many of you may have preconceived notions concerning satellite operation. Most of you have probably never experienced a satellite QSO, or been around a satop. You may not even know of the capabilities of today's amateur satellites. Perhaps you have spoken with an old-timer who told you "it's really hard to do — you need big antennas, funny rotors, and expensive rigs — and then you can't hardly hear anything anyway!" If this has happened to you, PLEASE stay with me. I am pretty good at dispelling rumors!

Today's amateur satellite "fleet" consists of 20 satellites that do a variety of things. They can be broken into two basic types — analog and digital. Analog satellites are used primarily for SSB and CW operation, although there is one available that does use FM. Some of them are even available for RTTY and slow scan TV as well. Digital satellites are used as orbiting packet "BBSs," storing and forwarding data, messages, and programs around the world.

Another way of categorizing today's satellites is by their types of orbits. All orbits are elliptical in shape — the highest point of the orbit above the Earth is known as APOGEE, and the lowest (or closest) point to the Earth is called PERIGEE. There are two different types of orbits used in the amateur satellite service — Low Earth Orbit (LEO) and Molniya Orbit (DX).

LEO satellites vary in height, usually flying between 800 and 1400 kilometers above the planet — nearly circular in their orbits. Due to this closeness, the satellite's "FOOTPRINT," or area of coverage (what the satellite "sees" below as it flies overhead) is not too large — it can generally cover about ¾ of the U.S. at one time, as an example. One new one that was just launched has a higher orbit (of about 2000 kilometers above the Earth) which allows a much larger footprint. A single "pass" of the satellite, or the time it takes to go from Acquisition of Signal (AOS) to Loss of Signal (LOS) is usually between 10 and 30 minutes.

Molniya orbit birds are considerably different! Molniya is a Russian term that describes a highly elliptical orbit, where it goes closely by the Earth and then whips around out into space, where it reaches 35-40,000 kilometers

from Earth at apogee! As you can tell, this would allow a huge footprint, covering basically ½ the Earth at one time. These satellites are usually known as "DX" birds, since you can easily work satops in other countries using them. These birds also allow longer use — the time fromAOS to LOS is usually about 10 hours! Since the Earth turns underneath constantly during this period, different parts of the world become visible throughout the pass.

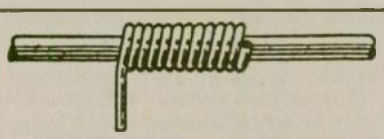
Another question that often arises is one of "on what frequencies does the operation occur?" The amateur satellite service operates on many different bands, from 15 Meters up to the limits of our spectrum! There are lots of opportunities to operate in many different ways. Satops usually discuss this information in terms of "modes" of satellites. In this case, MODE does not refer to SSB, CW, RTTY, or another "mode of operation;" it refers to the combination of frequencies the satellite hears ("UPLINK") and the ones on which it transmits back to Earth ("DOWNLINK"). For example, RS-12/13, which for many is the first satellite they use, has an uplink on 15 Meters, and retransmits the signals on 10 Meters. This combination of frequencies is known as Mode K. Other letters you will run into are Mode A (2 Meters up/10 Meters down), Mode B (435 MHz up/145 MHz down — soon to be called Mode U/V for UHF up/VHF down), Mode J (145 MHz up/436 MHz down —soon to be called Mode V/U), Mode L (1.2 GHz up/435 MHz down) and Mode S (436 MHz up/2.4 GHz down).

Many think of a satellite's transmitter and receiver (TRANSPONDER) as a repeater station, but it really is much more; it utilizes a linear transponder to retransmit an entire band segment. Think of it as a repeater that takes, for example, 21.210 MHz to 21.250 MHz and retransmits it on 10 Meters from 29.410 MHz to 29.450 MHz. This is exactly what happens on RS-12/13, an LEO satellite that is usable by most anyone with a modern HF rig. Many QSOs can occur simultaneously throughout the "PASSBAND," or across the various downlink frequencies.

For most operators, the easiest way to get a taste of satellite operation is by listening to the RS satellite downlinks on 10 Meters. The "RS," or Radio Sputnik series of satellites were put together by the Russians, with some help from our friends in Germany. They are actually government navigational satellites on which hams were able to "stow away" equipment on board. They have very nice signals, are easy to find and easy to work!

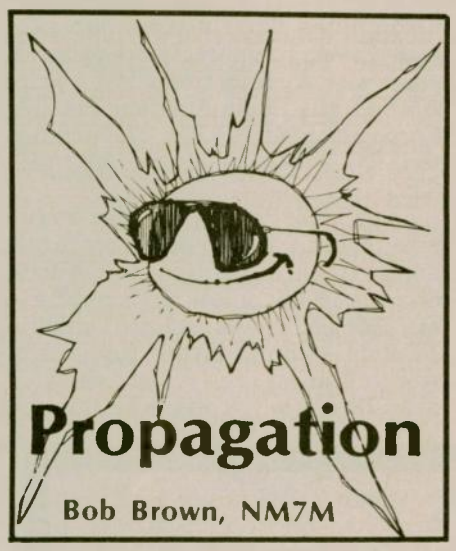
Besides finding the downlinks for the satellites, you need to know when they can be found overhead! This is done by using a satellite tracking program for a computer. They are available for nearly every computer in use today. An easy way to find them is to write AMSAT, the Radio Amateur Satellite Corporation, at P.O.Box 27, Washington, DC 20044, or phone (301) 589-6062.

I hope this leaves you wanting to hear more, for there is lots more to talk about. If you'd like to ask questions, drop me a letter or look on CompuServe at 72366,3573 — onAmerica Online at TDouds — and via the Internet at wb8cki@amsat.org — just take your pick! 73, es see you on the birds.... WR



A RIGHT-ANGLE SPLICE

—1927 *ARRL Handbook* as reprinted in the *W5PFC Report*, Jackson, Mississippi.



The TV programming seems to be full of economists these days, holding forth on subjects of interest to all of us. And there's always the commentator who adds, at one time or another, that economics is "the dismal science." I'm sure its practitioners must wince at that and they'd be the first to say the field is very complicated, with significant variables all over the landscape.

The same is true for HF radio propagation but its practicing forecasters are usually on a short leash for their own reasons or because of limited needs by the service which employs them. But there are many variables out there, complete with wide-ranging magnitudes, frequent variations and timescales. But as one who's interested in the ionosphere, I think we're better off in this field than the economists in theirs. Not that I'm going to dwell on their problems, more like survey ours. So sit a spell and listen.

Life on earth, and within the ionosphere too, depends on energy from the sun. Did you ever think about the quantities and magnitudes involved? Probably not; we just take them for granted and complain when they seem to change. But people have worried about those things for quite a spell, well over a century for the overall radiation from the sun and more than fifty years for the part which affects the ionosphere.

When it comes to the total radiation reaching the top of our atmosphere, I'll bet you know the answer, at least if you had a high school course in physics or chemistry: 2 calories per square centimeter per minute. That's called the "Solar Constant" and is brought up when the sun is considered as a source of energy.

Historically, that quantity goes back at least to the 19th century. In fact, it was in 1838 when a Frenchman, Pouillet, came up with the idea of heating water with sunlight and finding the rate of temperature rise. With his device, called a "pyroheliometer," he made measurements at different locations, ranging from sea level to high mountains.

The idea was to take measurements at different altitudes and then try to extrapolate to the top of the atmosphere to get the true solar input, free of any absorption or scattering of sunlight by the residual atmosphere. Now the top of the atmosphere is out there at Infinity and that's more than one can put on a piece of graph paper. But in reality, linear distance wasn't what was needed, more like the amount of air overhead, so many grams per unit area.

That idea goes back to the 17th Century when Tbricelli was busy wandering around Europe with his column of mercury, finding its height at different locations. At sea level, the average height was 76 cm and by going to various mountains in the Alps, he found that the height of the column was less, down to lengths like 60 cm when at 2,000 meters altitude. Using ideas due to Archimedes, the atmospheric pressure at sea level could support a 76 cm column of mercury having 1060 grams of mass per square cm and at 2,000 meters altitude, the 60 cm column had only 816 grams of mass per square cm.

When Fouillet made his measurements, say at such altitudes, he found the solar radiation reaching sea level was less than that at 2,000 km altitude due to the effect of the 244 grams of air per square cm between those two locations. That being the case, one can plot up some data points from observations on clear days at different altitudes and then extrapolate to the top of the atmosphere (ZERO grams of mass per square cm) to get the solar constant, 2 calories per square centimeter per minute. Voilà!

Now you've been very patient up to this point and I'll try to bring all this back to Amateur Radio so you won't doze or squirm in your seat. And to do that, I have to get into a more sensible system of units, stop using calories (note the small "c") and go over to Calories (note the capital "C"). The lowercase "c" is appropriate to the old c.g.s. system of units and involves heating one gram of water by one degree Centigrade. The upper-case "C" is for the M.K.S. system and involves one kilogram of water instead; thus, the "kilocalorie" is 1,000 calories.

After that diversion, we have to replace square centimeters by square meters and minutes by 60 seconds. Now it turns out that one Calorie is equivalent to 4186 Joules and since one watt is one Joule per second, abra cadabra, the Solar Constant turns out to be about 1,370 watts per square meter. Okay? Of course, the early experiments only dealt with the radiation in the visible portion of the spectrum, violet to red, that came through the "atmospheric window" and reached the ground; the other portions of the spectrum, the ultraviolet and X-ray region or the infrared, were totally unknown at the time. Nowadays, instead of relying on such crude methods within the atmosphere, satellites are used to find what has come to be called the "Solar Irradiance," even its variations with time. But more about that later.

Now very little of the visible radiation is absorbed by the gases in the atmosphere so the energy that is not reflected upward goes to heat the earth's surface and evaporate water from its surface. That makes the earth's surface a heat source and with infrared radiation being absorbed in the lower atmosphere, we have the makings of the science of meteorology.

At the other extreme, solar ultra-violet and X-ray radiation are absorbed at high altitudes, well beyond our reach even from mountain tops. With the development of atomic physics, both in theory and experiment, it soon became apparent that the chemical composition and state of ionization of the upper atmosphere would be affected by that radiation.

For example, ultra-violet radiation would break up oxygen molecules, producing oxygen atoms and ozone, and ionize the other constituents. Even before all that was known, with the advent of radio, Kennelly and Heaviside proposed in 1902 that an ionized layer was created at high altitudes by the absorption of solar radiation and in 1931, Sydney Chapman, a British astronomer, went on to develop the first theory for the formation of the ionosphere.

However, it was not until rockets became available after WWII that the details were gradually filled in from measurements of the solar UV and X-ray spectrum. For our purposes, dealing with HF radio propagation, the amazing thing that came forth from

those studies was that only a tiny fraction, about .001%, of the solar radiation incident on the earth's atmosphere is the source of energy for ionospheric processes. Ponder that for a moment or two! One-thousandth of one percent; simply amazing!

While you savor that tidbit of knowledge, let me digress for a bit to point out the obvious: this is a complicated world we live in and there is a coupling between all the systems we depend on for our environment, between the biosphere as well as the atmosphere and the oceans. In that regard, one question that worries scientists in those areas is whether the couplings are loose ones or tight, even non-linear. Put another way, they wonder if small fluctuations in the energy input from the sun, almost a "tickle," can trigger instabilities which lead to large responses, say effects on our climate of long duration.

When it comes to the question of "tickling" by ionizing solar radiation, we have the clever means to observe and follow the state of the ionosphere. In a qualitative way, we do see significant changes in HF propagation in a solar cycle. And quantitatively, we know there are changes in the critical frequencies of the ionosphere for the different levels of activity or sunspot numbers in the course of a solar cycle.

But the interesting thing about the ionosphere that I note is that large responses, perhaps even non-linear reactions, are of our own making by our dependence on the ionosphere for HF communication. As a simple example, it's possible to shut down an HF radio link on the sunlit side of the earth by the "tickle" from a burst of solar radiation in the X-ray range (SID). But that lasts only tens of minutes and the ionosphere returns to its earlier state. Aside from that modest disruption, the world does not seem any different when it's all over. On the other hand, we're a bit upset for what happened.

There are other types of "tickles" that may be associated in time with a burst of X-rays. Here, I'm thinking of another problem, the disruption of communications across high latitudes when a solar proton outburst occurs at the time of a flare. Those energetic particles may penetrate deep into the ionosphere, causing ionospheric absorption on polar paths for a day or more.

And then there are world-wide geomagnetic storms which can have serious effects on communications too, lasting for several days. They're the result of the impact of low-energy protons and electrons, solar plasma, on the earth's magnetic field. In terms of energy input, that's still at the "tickle" level when compared to the total e.m. radiation incident on the top of the atmosphere. But magnetic storms may reach beyond HF paths, also disrupting telephone communication and power distribution systems.

All of these problems, one compounding the other, are of our own making, the price of scientific progress and relying on systems where a mere "tickle" can cause havoc. That's our story; at the other extreme, the cave man may have marveled at aurora on rare occasions but it's not clear that life in those days was otherwise affected by "tickles" of ionizing radiation at the top of the atmosphere.

But what about variations in the main energy channel, the total solar irradiance? That is a subject of current investigation and there are interesting results. For example, satellite observations have shown that the irradiance declined by 0.1% between the solar maximum in '81 and the subsequent solar minimum in '86. Moreover, it appears to have risen again with the growth of sunspot cycle 22.

Most of the brightening of the active sun is attributed to magnetic structures at photospheric heights called faculae. Those areas increase at times of high sunspot number. But working against that effect is the dimming by sunspots, cooler and darker than the surrounding surface. Thus, a paper by Foukal and Lean in 1990 showed that by using sunspot data it was possible to follow the variations of the total solar irradiance for over 100 years, from 1874 to 1988. That study showed small, noisy fluctuations about 1,367 watts per square meter until about 1945, and then increases with the various cycles, reaching a peak of 1,368 watts per square meter at the peak of solar cycle 21.

With all the interest in ecology these days, that information has been used with atmospheric energy-balance models but it appears to be too small in magnitude to contribute to global warming. Thus, our attention is still focused on modifications of the atmosphere at low altitudes, say changes in atmospheric transmissivity because of sporadic volcanic eruptions, the long-term use of fossil fuels and the introduction of fluorocarbons into the atmosphere. The eruption of Krakatoa in 1883 is a case in point, the debris thrust into the atmosphere circling the globe and causing unusual sunsets for years. The effects of the Mt. Pinatubo eruption in the Phillipines remain to be determined.

Going from the neutral atmosphere back to the ionosphere, at low altitudes it may undergo changes at D-region heights by increasing concentrations of carbon dioxide and the use of nitrogen-based fertilizers. Both those cases involve atmospheric diffusion and would be long-term in nature and hardly in the "tickle" category.

Another man-made modification of the ionosphere involves the use of nuclear weapons. Here, I refer to the electromagnetic pulse (EMP) which results from the high-altitude detonation of a nuclear weapon. Thus, X-rays and gamma rays from the explosion could increase the levels of ionization in the D-, E- and F-regions along the line of site from the explosion. The ionization in those regions would also be augmented by the effects of beta particles, energetic electrons from fission fragments which would be guided by lines of force of the geomagnetic field and ionize the lower atmosphere. Such effects were observed when the US was conducting atmospheric tests out in the Pacific during the '60s.

A Technical Information Bulletin discussing the vulnerability of equipment used by amateur/MARS radio operators in the US was published by the National Communications System in 1985. Not only did that publication (TIB 85-10) outline how an EMP would produce to a sudden loss in the ability to communicate, in both extent and duration, but it also treated lightning voltage surges having similar characteristics. While the Cold War tensions have lessened, lightning surges will always be with us. Since the electromagnetic signals they produce rattle around between the earth and the ionosphere, we'll never really be free of their effects. Indeed, their effects from within the ionosphere, essentially a continuing irritation, are probably worse than those sporadic tickles which come from above. WR

The Spring DX Contest season continues this month with the Japan International High Band CW Contest, the Helvetia (Swiss) Contest and the Polish Contest. The following mini-rules give you the basic information to jump in and make some contacts.

DX Contest Calendar and Mini-rules

Contest: *Polish*, CW only, 1500 UTC, 1 April to 2400 UTC, 2 April. Exchange: RST + 3 digit serial number, i.e. 599001. SP stations will add a 2 letter province abbreviation.

Contest: *Japan International High Band* CW DX, 2300 UTC 8 April to 2300 UTC 9 April. Exchange: RST + 3 digit serial number except that JA stations will send 2 digit perfective number.

Contest: *Helvetia* (Swiss), 1300 UTC 22 April to 1300 UTC 23 April. RST + 3 digit serial number. Swiss stations will include a 2 digit canton abbreviation.

Copies of official rules and application blanks for these contests may be obtained by sending a self-addressed, stamped envelope to K4IIF. Copies will be available at the Visalia DX Convention.

Send your photos to *Worldradio!*

Results of the 15th annual (1994) Keyman's Club of Japan Contest

The Annual KCJ Contest was held 20-21 August, 1994, with CW enthusiasts from both Japan and overseas taking part. The DX Contest Column congratulates D. A. Pilley, VK2AYD, for his high overseas score based on 256 QSOs, and Larry Tyree, N6TR, for his high North America score based on 210 QSOs. The top score for Europe was recorded by DLØHSC. The top ten overseas participants in order of score were: VK2AYD, N6TR, N6AA, VK4TT, DLØHSC, K2MM, DL3RD, SP5YQ, OK1TW, and SP8BAB. The highest scoring JA stations in each category were:

Multiband	JA6GCE
1.9 MHz	JL1EUP
3.5 MHz	JQ3ØZY
7 MHz	JK2XXK/5
14 MHz	JHØOTM
21 MHz	JR8AVT
28 MHz	JA7GAX

The 1995 KCJ Contest will be held 19-20 August, 1995. Rules will appear in a later edition of ***Worldradio.***

Results of the 1994 Helvetia Contest

Niklaus (Nick) Zinsstay, HB9DDZ, has replaced Walter Schmutz, HB9AGA, as HF Manager for U.S.K.A. Nick reports the North American entries as follows in order of score:

KR4AN	VE1VCT
WZ9B	W8DA
KA1DWX	VE3ST
K8JLF	K6XO
WCØY	VE4MF
XE1CYY	

The 5 highest scoring Swiss stations in the single operator, CW category were HB9BXE, HB9CRV, HB9CKF, HB9DX, and HB9FMD. Tops in the single operator SSB category were HB9IQP, HB9BCK, HB9CNY, HB9BQU, and HB9APF.

The leading stations in a sampling of other countries were:

Belgium - ON6CW	Israel - 4Z4TA
Bulgaria - LZ6R	Italy - 1T9DEC
England - G4IQM	Japan - JA6GCE
Finland - ØH6SW	Netherlands -PA3AYF
France - F3LY	Poland - SP5YQ
Germany - DLØKB	Russia - RA3XO
Greece - SV2BFN	Spain - EA7BY
Hungary - HA5LZ	Ukraine - US9QA

Contesting from the DX end

We continue to be gratified by the willingness of the DX Contest fraternity to share hard won information on operation from rare and semirare countries during DX contests. This month we have an excellent letter from Eddie Schneider, W6/GØAZT/8R1TT on operation from 8R, GUY-ANA. Eddie writes:

"Having just returned from a very successful RTTY trip down to Georgetown, I can give you some dope for your readers on future trips to 8R."

"First, to apply for a license, obtain a form, which has to be filled out in triplicate, from the National Frequency Management Unit (NFMU), P.O. Box 2174, Georgetown, Guyana. Apply in writing for the forms. Phone: 011-592-2-58692, Fax: 011-592-2-67661 Don't expect to get a return Fax! Use the Fax # to send copy of USA license and the three applications, then back-up with a phone call a few weeks later. Try to talk to 8R1Z, Lennox Smith, he works for NFMU and is most helpful. Processing takes about six weeks. the license lasts for three years and costs G$2200 per annum, which is 17 bucks per year, depending on the exchange rate, which fluctuates daily, if not hourly HI.

"Where to stay: There is no club station as yet. I stayed at the best QTH in town as far as height is concerned, the Pegasus Hotel, (Forte Crest), Seawall Road, Georgetown. Manager and staff are extremely helpful to amateur radio people, and will provide the 20ft.

poles and manpower to erect stuff on the roof of the hotel, which is about 650ft. high, overlooking the Demarara River and Atlantic Ocean. Great shot to Europe, Africa, and USA.

"The general manager is Mr. Chandana Jayawardena, everyone calls him Mr. Chandi. Tel: 011-592-2-52853 Fax: 011-592-2-60532 Make sure that you ask for room 709! Room 709 is on the top floor, with easy access to the roof and the 3 sets of wall brackets left by the Brits who operated from there in March 1992, providing communications for the Camel Trophy Race. Room rates are rather high, US $150 per night! The hotel is octagonal, which doesn't give much room for stringing wires for the low bands. We could not stretch out a 105ft. G5RV without making it into a VEE. However, one could always run a long wire from the roof, sloping down to the North, from the roof to the ground. I will leave the math involved in calculating the length of wire required from 700ft. at an angle of 45° to reach the ground, to someone else. HI. Line voltage at the moment, is both 220V with British type "square" three pin plugs, AND 110V, using normal USA type plugs. However, the hotel is in the process of going 110V only, so best to check.

"TVI: The TV system leaves a lot to be desired. They have a satellite dish for CNN etc., but local TV is via outside antennas, so running high power would present problems with TV and also with the hotel's internal phone and radio systems. We ran about 500W input to a 3 element tribander and G5RV on RTTY without any station ground, low pass filters etc., and caused no damage. However caution in the power department would be prudent, so as not to upset the Staff and Hotel guests and spoil a good QTH for future users! Incidently, according to their license, MAX input is 500W 10-40m and 10w input on 80m. WARC bands are also permitted.

"Customs: Once a rapport with 8R1Z has been established, it is advisable to make a list of all equipment, giving brand name, model and serial number and Fax a copy to Lennox. Customs inspected all our gear and checked off each item as they came to it. Bit of a hassle in 90°F and 85% Humidity, but worth while as we did not have to pay any import duty. Customs threatened to check the gear outbound, but 8R1Z covered that problem without any hassle.

"Travel advice: If one plans to go into the "interior", a course of anti-malarial tablets is recommended. In G'town, there is no need as the sea breezes keep the bugs and mosquitos away. No visa needed for U.S. citizens. BWIA has flights from Miami and New York, to G'town, via Port of Spain, Trinidad. I would recommend using BWIA in preference to an American airline because one does not have to change planes and collect baggage in Port of Spain. I know of no US airline which flies to Guyana. P.O.S. is obviously not the place to have ones baggage move from plane to plane!!"

Hope the above epistle will be some use. John WR

THE WESTERN UNION SPLICE

—1927 *ARRL Handbook* as reprinted in the *W5PFC Report*, Jackson, Mississippi.

AERIALS

Kurt N. Sterba

What you are about to read is not an April Fool joke but it may resemble a Rod Serling trip into another dimension.

My comments about a vertical antenna in the February issue triggered a most interesting set of events. It seems that three antenna companies were so incensed that they called up one of this magazine's other columnists to vent their ire.

That they should call about antennas someone who, in print, has stated that an SWR of 3 to 1 means you lose 25% of your power does have an amusement factor all of its own. I devoted a whole column of mine to correcting that one. It is interesting that they never challenged my statements on technical grounds but just that they didn't like the tone of it.

The three companies, will be called "Digger," "Hero" and "Hamlet" and are obviously represented by Larry, Moe and Curly. Shemp is the other columnist.

Let us first examine the high moral platform of the Hamlet company. This is a company that was advertising a dipole that had 5dB gain over a dipole.

This 10M antenna was named the Gold Band Big Stick III. Certainly a snappy name you must agree. The magazine that reviewed the antenna said it was a "half-wave vertical antenna," "center-fed dipole," "vertical half-wave antenna" and (tah-dah) "omni-directional antenna."

There are probably a lot of IEEE members staring at their post-graduate degree sheepskins and wondering how they could have missed out in designing a dipole with 5dB gain over itself — and, an omni-directional one at that.

Well, sit a little closer and I'll tell you all about it and how it is accomplished (?).The real antenna folks talk about antennas and use the term (for gain) of dBd. That is, dB gain over the reference which is a "d" for dipole. This comparison is done, scientifically and mathematically in "free space."

Along come some manufacturers and stick a figure such as 5dBd on their literature and, if pressed, say that such is a real world figure because of the ground reflection gain. There are folks who swallow that.

Ground reflection gain (alas, must I tell small children that there is no Easter Bunny?) depends on the conductivity of the ground under the antenna and it will vary massively from the North Carolina bog to the cracked desert of Arizona that hasn't seen a drop of water since can't remember when.

Real antenna people settled on the theoretical "free space" so as to have everyone starting from the same place. There was one HF antenna company that used the inflated figures and eventually left the Yagi business but there is still one other company pulling the wool over.

Allow me to digress for a moment. In the February issue of *Amateur Radio Action* (Australia) Christopher Davis, VK1DO, said, "the published data from some manufacturers defies the proven limits determined by scientific research." So, it isn't just Kantankerous Kurt saying that.

VK1DO went on to say that a three-element Yagi is capable of but slightly more than 6dB of gain over a dipole. Quite true.

And you would have to double the boom length (adding appropriate elements) to almost gain 3dB over the three-element Yagi. Thus, you can see than some of the gain figures bandied about are but flights of fancy. It is your judgment whether some of the antenna merchants have their pants on fire.

But then came a letter from the other columnist and I quote, "Maybe Sterba should tear into one of his own monster mobile antennas and analyze how ridiculous it may look...."

Huh? Then it says, "Spend less time blasting the competition to his own antenna design...."

Huh? "The blasts in his column are only to divert attention from other antennas to his own unique design..."etc.

"Hope he keeps the toilet bowl float on the top properly polished, It goes along with his style of writing."

Yep, I told you it would be out in space didn't I?

Then there is a reference to "...his Sterba-type screwdriver antenna."

And, some convoluted paragraph talks about "mobile antenna manufacturers...." less than favorable comments about the tactics this writer uses in blasting away at antenna manufacturers who may promote their antennas in excess of what Sterba feels should be put into print."

Oh, the utter anguish I feel being admonished by the "dipole with a gain of 5dB over a dipole" crowd. I am in pain. Allow me to again digress. Is there anyone here who doesn't know why *QST* does NOT accept gain figures in their antenna ads? For someone who may have just received their license last week I'll explain. When the tri-band Yagi came into being, the manufacturers claimed a certain amount of gain. In the next month's ad, one of them raised it. So a month later the other one raised it even more, then it kept spiraling upward. Creeping upward, ever upward, it was the dB race. The ARRL said they would not be a party to this and halted all dB claims in ads to appear in the membership journal. And, good for them. For, if they had not taken that position, the numbers would probably be astronomical by now.

I will now address my remarks to the inhabitants of Planet Nine. There has never been, contrary to the letter received by ***Worldradio*** a "Sterba screwdriver antenna." I have not mentioned one ever. I have no "monster mobile antenna," ridiculous or not. There is no "antenna design" of mine on the mar-

ket, anywhere. I am not "blasting the competition." Etc. and etc. I do not design for, counsel or advise any amateur antenna company.

If I had been guilty of such it would be such a massive conflict of interest that it would have made even a politician have second thoughts.

I feel I deserve an apology from the other columnist and the manufacturers who probably planted that seed in his head. And I am serious about receiving it!

Plus, the ethics of the screwdriver antenna man have been impugned. He deserves a sincere and contrite apology sent directly to him. And maybe a little begging forgiveness for such a preposterous conclusion wouldn't be a bad start. I will check through the ***Worldradio*** office to find out if he has received his due apology in a reasonable amount of time.

As a start, here is what would be a very interesting club project. Take one model of every mobile antenna. Put them on a car, one antenna at a time. Measure the power into the antenna, keeping it exactly the same for each antenna. At some distance away measure the results with a Field Strength Meter. The farther away the measurement is made, the more accurate it is. The reason for using the same car for each measurement is that different cars will radiate differently. For, you see, the car itself is the other half of the antenna. The whip is half the dipole and the car is the other half.

The broadcast antenna engineers measure millivolts per meter. The hams should measure dBs per dollar.

Which antenna will produce the biggest signal compared against the cost of the antenna? I know the answer. But you won't be really sure until you do it yourself. I also know which one will be on the bottom. But I want you to do it yourself. See it with your own eyes. It will be a real surprise to many.

Send in your results, I'll print them here. Oh, this is going to be FUN! But, they brought it on themselves.

You can have a two-car shootout. Two mobiles park near each other. Contact a station and ask the other station which of the two is louder. Then swap antennas and repeat the tests to even up other factors.

I now close with The American Tragedy. In a recent issue I said that if you had a 50-ohm transmitter, a 50-ohm line and a 50-ohm load the SWR would be 1.0 to 1.

A letter came to the offices with "Are you for real? Where do you get these writers?" In black grease pencil my 1.0 to 1 was circled and a giant 1.1 to 1 was written.

We wrote a letter back to him. He again wrote; this, from an Extra Class ham licensed since 1951, a senior chief ET USN with a 1st class FCC license and a radar endorsement, was again insisting upon the 1.1 to 1. And that is The American Tragedy. It is not a sin not to know something. We are all dumb as rocks in fields away from ours. What is terribly sad is to be in a field and have it so terribly wrong and to feel so right about misinformation.

(Kurt N. Sterba goes by his nifty monicker so as to avoid the "you'ze zed I was a dumb guy, duuuh" crowd.) WR

Kurt N. Sterba

In care of ***Worldradio.***
Dear Kurt,

I have been enjoying your column AERIALS since I received the very first issue of ***Worldradio***. Your approach to telling the truth about antennas is laudable, and why I read your column.

...Antenna advertisers are foolish to believe that we are stupid and cannot recognize falsehood and error in their ads. I would rather see honesty in columns such as yours, than to wonder if the glowing claims are just a ploy to sell some manufacturer's gimmick. For this reason I read with some doubts the product reviews in radio magazines, and other publications.

To antennas now.

Antennas claims are only good when compared with a known standard. Many antenna manufacturers don't follow that plan and dupe the buying public with fake and false claims of the gain and other parameters of their particular antenna.

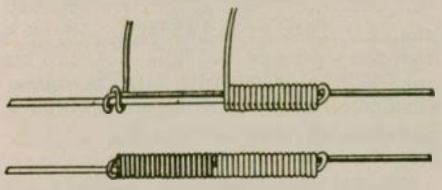
There is going to be much difference in the operation of any antenna due to the conductivity of the earth under the antenna, and also the nearness of objects that absorb or distort the antenna pattern.

But then the example you mentioned in your column in the March 1995 issue is typical of what the general population is faced with when selecting some apparently desirable item, such as the "telescopic cellular antenna" that, it is claimed, will give you 1 dB gain (more?) and keep one from missing calls. What malarky! Yet the gullible public will fall for such advertising, due to a lack of knowledge by the consumer about antennas and what the dB means. Especially the little antennas for 800 MHz with the little curlicue in the middle. Could this antenna be a status symbol?

My suggestion: contact the BETTER BUSINESS BUREAU in the area where this company is located and give them details.

Keep up the good work; debunk without fear; we are with you 100%.

BERT TINKER, KJ6NK
Yucaipa, California



ANOTHER METHOD OF SPLICING WIRES

—1927 *ARRL Handbook* as reprinted in the *W5PFC Report*, Jackson, Mississippi.

hamfests April

California

The LIVERMORE ARK is sponsoring an Amateur Radio/Electronic/Computer swapmeet 1 April, 7 a.m. to 12 noon at Las Positas College. No setup until 7 a.m. 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(+) PL 94.8 from the west and 145.350(-) PL 100 Hz from the east. Contact Noel Anklam, KC6QAK, at 510/447-3857 eves. or leave message days at 510/783-2803.

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The KINGS AMATEUR RADIO CLUB will hold a hams and hackers swap meet 1 April, from 8 a.m. at the Hanford Fraternal Hall, 10th Avenue at Flornida, Hanford. Features include electronic items, computers, ham gear, door prizes, barbecue, refreshments. Admission is free for buyers; $5 seller fee. Talk-in on 145.11(-), 147.33(+) PL 100. For reservations, contact Doug, KG6BGQ at 209/582-0940 or 209/584-5414.

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The STUDENT AMATEUR RADIO CLUB of California State University Sacramento will hold a swapmeet, 30 April, 7 a.m. to 12 p.m. on the campus. Buyers are free, sellers, $10. Parking is free. Setup and refreshments available at 6 a.m. Talk-in on 145.23(-), PL 162.2. For information, contact Gary, KC6URB, 916/381-6602 evenings.

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The VALLEY OF THE MOON ARC, will hold a hamfest 29 April, 8 a.m. to 4 p.m. at the Sonoma Veteran's Memorial Building in Sonoma. The event will include a walk-in VE exam at 10 a.m. Vendor setup 7 a.m. with 10' spaces, $10. A breakfast will be served at 8 a.m. for $5. Admission is free. For information, contact Darrel Jones, WD6BOR, 707/996-4494.

Connecticut

The SOUTHINGTON AMATEUR RADIO ASSOC., will hold a fleamarket 2 April, 9 a.m. to 1 p.m. (vendor setup 7 a.m.) at the DePaolo Jr. High School in Southington. Six foot tables are $12 in advance and $18 at the door. Talk-in on 147.34(+). Exams for all classes will be preregistered only, send SASE to Southington ARA, P.O. Box 873, Southington, CT 06489. For information, contact Steve, N1GCV, at 203/621-6191.

The RADIO AMATEUR SOCIETY of Norwich will hold a ham radio auction 1 April, 10 a.m (setup at 9 a.m.) at the Waterford Senior Center, Rte 85. Bring your gear to sell (10% commission to RASON). Talk-in on 146.73(-). Free admission, free parking. For information, contact Tony, M1JN, 203/859-0162 or Mike, N1HFX, 203/546-9498.

Georgia

The SOUTHEASTERN DX CLUB will hold a ham radio '95 hamfest 7 April (1 p.m. to 7 p.m.), 8 April (9 a.m. to 5 p.m.), and 9 April (8 a.m. to 1 p.m.) at the North Atlanta Trade Center in Atlanta. Admission $8 (valid all 3 days). For more information, call 404/518-7376.

Illinois

The ROCKFORD AMATEUR RADIO ASSOCIATION will hold an electronics expo and hamfest 9 April, 8 a.m. to 1:30 p.m. (setup 5 a.m) at the Rockford Metro Centre, 300 Elm St. Features include ham gear, computers, electronics and commercial booths; VE testing. Free parking, all indoor event and handicapped accessible. Door prizes with food and beverages available. Admission $5, tables $10/$12.50. Talk-in on 146.61(-). For information, write to RARA, P.O. Box 8465, Rockford, IL 61126, or call Wayne/Fay at 815/397-6027.

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The MOULTRIE AMATEUR RADIO KLUB will hold a hamfest 23 April, 8 a.m. (setup from 12 p.m. to 4 p.m. on the 22nd and 6 a.m. to 8 a.m. on the 23rd) at the Moultrie/Douglas County fairgrounds in Arthur. Admission is $4 over the age of 14 years old. Tables will be $8 per 8' table. Tables will only be reserved if payment is received in advance. Preregistration required for exams before 18 April. Talk-in on 146.65(-) and 444.275(+). For information, call Ralph, WC9V, at 217/873-5287 evenings/weekends; or send reservations to MARK, P.O. Box 91, Lovington, IL 61937.

Indiana

The COLUMBUS AMATEUR RADIO CLUB will hold a hamfest 1 April, 8 a.m. to 2 p.m. (setup from 6 p.m. to 10 p.m. on the 31st and 6 a.m. on the 1st) at the Bartholomew County 4-H Fairgrounds Family Arts Building in Columbus. Admission is $4 ($3.50 in advance). 8' Tables $6, 6' $4.50. Talk-in on 146.79(-). Make reservations through Marion Winterberg, WD8HTN, 11941 W. Sawmill Road, Columbus, IN 47201; 812/342-4670.

Maine

The PORTLAND AMATEUR WIRELESS ASSOCIATION will hold a hamfest 8 April, 8 a.m. to 1 p.m. (setup from 6:30 a.m. to 8 a.m.) at the University of Southern Maine, Sullivan Gymnasium, Portland, ME. Admission is $4/$6. Door prizes will include a 2 Meter handi-talkie. There is no charge for tables and food will be available. Talk-in on 146.73(-). For information, contact Marty, K1OYB, 207/772-1682.

Massachusetts

The MIT ELECTRONICS RESEARCH SOCIETY, MIT Radio Society and the Harvard Wireless Club will hold a tailgate flea market 16 April, 9 a.m. to 2 p.m. at Albany and Main Street, Cambridge, MA. Tailgate room for 600 sellers ($10 per space at the gate, $8 in advance, setup 7 a.m.). Admission $2. Mail advance reservations before 5 April to W1GSL, P.O. Box 397082 MIT BR., Cambridge MA 02139-7082. Talk-in on 146.52(S) & 449.725 (PL2A) W1XM repeater.

Michigan

The MUSKEGON COUNTY ARES and RACES organization will a hamfest 1 April, 8 a.m. to 2 p.m. at the Pulaski Lodge, Muskegon. Admission is $4 at door and $3 in advance. Tables $8. Talk-in on 146.82(-). For tickets and information, contact Greg Hoffman, N8RXB, at P.O. Box 5313, North Muskegon, MI. 49445; 616/759-8786.

Minnesota

The ROCHESTER AMATEUR RADIO CLUB will hold a hamfest 1 April, 8 a.m. at the John Adams Jr. High School, Rochester, MN. Features include dealers, flea market, speakers and programs, VE exams. Vendor cost is $9 in advance, $11 at the door (setup time 6 a.m.). Talk-in on 146.82(-). Contact Frank Ingram, NØMXN, 1627 5th Ave. SE, Rochester, MN 55904; 507/288-6569.

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The LAKE REGION AMATEUR CLUB will hold a hamfest on 8 April, 8 a.m. to 3 p.m. at the Hockey Arena, Otter Tail County Fairgrounds, in Fergus Falls. Features include VE testing, ARRL forum, packet meeting, State Army MARS meeting, camping areas, concession stand and security will be provided. Doors will open at 4 p.m. on the 7th for setups only, drive right to your tables and unload. Contact William, AAOAX at 218/736-4448 for number of tables needed. Talk-in on 146.64(S).

Mississippi

The OLD NATCHEZ ARC will hold a hamfest 21 April (7 p.m. to 10 p.m.) and 22 April (8 a.m. to 3 p.m.) at the Natchez

Convention Center on Liberty road. Features include free parking, forums, MARS meeting, VE session, and RV parking. Vendor setup from 1 p.m. 21 April. Admission is $3 at the door. Tables are $10. Reservation deadline 17 April. Talk-in on 146.91(-). Contact Billy Berry, KI5WP, 601/446-8572 or Grege Smith, WW5P, 601/442-3818. Mail request to ONARC Hamfest, P.O. Box 2008, Natchez, MS 39120.

Missouri

The JOPLIN AMATEUR RADIO CLUB will hold a hamfest 8 April, 8 a.m. to 3 p.m. at the John Q. Hammons Trade and Convention Center in Joplin. Admission is 2/$10 in advance (by mail) or $6 at the door. Children under 12 are free. Tables $7.50 each, setup at 6:30 a.m. ARRL exams 10:30 a.m.; pre-reg. not required. For reservations or information, call Larry Hendrix, WBØYU, 417/782-5848 evenings; or Andy Gabbert, KAØTUD, 417/673-8371. Address mail order requests for tickets to ATTN: Hamfest '95, Joplin Amateur Radio Club, P.O. Box 2983, Joplin, MO 64803. Must be received by April 1st. Talk-in on 147.21(+).

New Jersey

The DELAWARE VALLEY RADIO ASSOCIATION will hold a hamfest 2 April, 7:30 a.m. (vendor setup 6:30 a.m.) to 1 p.m. at Trenton State College. Outdoor tailgating spaces are available for $12 which includes one admission. Space in a large indoor area is available for $20 which includes an 8' table and one admission. Admission is $5 with plenty of free parking. Refreshments will be available. Talk-in on 146.67(-) and 442.650(+). For information, write HAMCOMP '95, P.O. Box 7024, West Trenton, NJ 08628, or call 609/882-2240.

New York

The AUBURN AMATEUR RADIO ASSOCIATION will hold its hamfest 8 April, 8 a.m. (vendors 7 a.m.) at the Senneth Fire house in Auburn. Vendor tables 8' for $8 (electricity add $1). Admission $5 in advance, $6 at the door. VE testing by preregistration only. Reply by 25 March for testing/tickets/tables, AARA Hamfest, P.O. Box 427, Auburn NY 13021.

North Carolina

The RALEIGH AMATEUR RADIO SOCIETY will hold a hamfest and computer fair 9 April, 8 a.m. to 4 p.m. at the NC State Fairgrounds, Raleigh in the Jim Graham Building. This is a non-smoking event. Parking is free, overnight camper/RV parking for $15. Full service food concession. Vendor setup from Noon to 10 p.m. the 8th or the 9th 6 a.m. to 7:30 a.m. Admission is $5 in advance or $6 at the door. One 8' table w/2 chairs $10; five or more tables $9 each. For information, contact Rollin Ransom, NF4P, 1421 Parks Village Road, Zebulon, NC 27957. Talk-in on 146.88(-).

Oklahoma

The LAWTON FT. SILL ARC will hold a hamfest 8 April, 8 a.m. to 5 p.m., at the Comanche County Fair grounds in Lawton. Admission is $5 at the door. Tables will be $1 each plus admission. Pre-registration is $4 for admission and $8 for tables. Prizes will be given throughout the day; the grand prize will be a YAESU HF rig. Talk-in on 146.91(-). Contact Bob Morford, KA5YED, 1415 N.W. 33rd St. Lawton, OK 73505; 405/355-6120.

Pennsylvania

The APPALACHIAN AMATEUR RADIO GROUP will hold a hamfest and computer show 1 April, 8 a.m. at the Lebanon Fairgrounds, Lebanon, PA. Admission is $4, tailgating $4, indoor tables, $14. Vendor setup 6:00 a.m. VE tests at 9 a.m. (prereg. required); food available. Reservations for tables must be prepaid. Send check to AARG, 105 Walnut St., Pine Grove, PA 17963; 717/345-3780. Talk-in on 146.64(S) or 147.17(-).

Texas

The KEY CITY AMATEUR RADIO CLUB is sponsoring the ARRL West Texas Section Convention and hamfest 6 May, 8 a.m. to 5 p.m., and 7 May, 9 a.m. to 2 p.m. Free parking; VE exams; wheelchair accessible. Tables $5 each. Pre-registration $7 (must be received by May 2nd), $8 at the door. For reservations and information, Peg Richard, KA4UPA, 1442 Lake-side Drive, Abilene, TX 79602; 915/672-8889. Talk-in on 146.76(-); 915/672-8889

Washington

The INLAND NORTHWEST HAMFEST ASSOC., will hold a hamfest and computer show 1 April, 9 a.m. to 5 p.m. (vendor setup on the 31st from 9 a.m. to 6 p.m.), at the Spokane Interstate Fairgrounds. Features include dealers, factory reps., ARRL VE testing (9 a.m. to 12 p.m. on site), seminars, swappers and RV parking. All tables $13. Admission $6 in advance, $7 at the door. Children under 12 free. For information and flyer, contact Warren, KJ7BBG, S. 1405 Crestline St., Spokane, WA 99203, 509/534-8443.

Wisconsin

The MADISON AREA REPEATER ASSOCIATION, INC. will hold a swapfest 2 April, 8 a.m. (7 a.m. for sellers) at the Dane County Exposition Center Forum Building in Madison. Features include new/used electronics gear from computers to communications equipment. Admission is $4 per person in advance and $5 at the door. Tables are $1 each in advance, plus admission. The deadline for mail orders of admission tickets and table reservations is 20 March. Talk-in on the MARA repeater, WB9AER, 147.15(+). For admission tickets, table reservations or information on commercial exhibit space write to: M.A.R.A. P.O. Box 8890, Madison, WI 53708-8890.

HAM-IT-UP PUZZLE

Bill Sawders, K7ZM © 1995

Locate each word below in the puzzle. Words can be horizontal, vertical, diagonal, and backwards.

G	P	I	H	W	R	E	N	N	I	G	E	B	B
T	O	D	E	X	A	M	S	X	T	U	B	E	S
E	W	C	N	C	D	O	X	U	Q	R	A	A	E
S	E	M	R	O	I	D	N	G	S	T	T	M	G
T	R	G	Y	D	A	E	M	E	T	E	R	S	E
Q	R	N	P	E	L	O	P	I	D	D	I	L	L
L	S	I	E	B	S	G	M	R	T	U	P	N	I
A	D	L	P	D	U	S	Y	A	Y	E	T	D	V
C	A	L	L	N	N	O	V	E	R	I	S	E	I
I	S	A	W	A	S	S	B	I	K	S	E	C	R
T	H	C	R	B	E	B	W	Q	X	O	T	O	P
R	O	T	A	R	Y	L	S	F	M	A	N	D	V
E	S	N	A	H	L	Y	I	A	C	Q	O	E	H
V	E	C	E	F	O	X	H	U	N	T	C	C	F

AC
ARES
ARRL
BAND
BEAM
BEAT
BEGINNER
CALL
CALLING
COAX
CODE
CONTEST
CQ
DECODE
DASH
DC
DIAL
DIP
DIPOLE
DOT
DX
EXAMS
FCC
FIX
FOXHUNT
FM
GUN
GMT
HAM
HENRY
INPUT
KEY
KIT
LID
MARS
METERS
MODE
OVER
OP
PEP
POWER
PRIVILEGES
QRM
QRN
QSL
QSY
RADIALS
ROTARY
SET
SOS
SSB
TEST
TONE
TRANSMIT
TUBES
TUNE
VEC
VERTICAL
VHF
WAS
WHIP
WIRE
WX
XYL

QRP to the field

Get ready for Field Day by testing equipment on the "Spring — QRP to the Field" — open to all radio amateurs and all bands 1600Z to 2400Z on 1 April, 1995. Sponsored by the Northern California QRP Club.

Single transmitter on the air at one time. Once started, you must use the same power output and location categories.

Exchange: CW — RST, state, province, or country. SSB - RS, state, province or country.

QSO points: 1 watt or less; CW - 10 points; SSB - 10 points. 5 watts or less — CW - 5 points; SSB - 5 points. 100 watts or less — CW - 2 points; SSB - 1 point.

Multipliers: Field location - 3.0 x multiplier (field = battery power and temporary antennas). Home location - 1.0 x multiplier (home = commercial power and permanent antennas). Home brew equipment - 1.5 x multiplier. Commercial equipment - 1.0 x multiplier

Final score: Band/mode QSP points x location mult. x equipment mult = band/mode total. Add the band/mode totals for the final score. Example:

(15) 20M/SSB QSOs x 5(5W) x 3(field) x 1(comm) = 225 points plus

(35) 40M/CW QSOs x 5(5W) x 3(field) x 1.5(H.B.) = 788 points. Final score 1013 points.

Award: "Top ten" scores certificate (the ten stations with the highest point totals). Participant certificate for 20 or more contacts from a field location (include a 9 x 12 manila envelope with 3 units of postage).

Send logs, station and location description along with a summary sheet and the usual signed declaration to: Bob Farnworth, WU7F, 6822 131 Ave. SE, Bellevue, WA 98006-4038

Mail before 1 May. Include a #10 SASE if you want the results. All contest committee decisions are final.

MARAC county hunters

The Mobile Amateur Radio Awards Club is pleased to sponsor the 24th Annual County Hunter's SSB Contest to be held from 0000Z Saturday, 8 April, to 2400Z Sunday, 9 April 1995. Mobile and fixed operation from every county in the US is welcomed and operation from less active counties is encouraged.

Rules: Fixed stations may be worked only once on each band. Mobiles may be worked each time they change counties or band. Mobiles operating on county lines count as one contact, but the receiving station may count each county as 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: MARAC Contest Certificates to winning stations as follows:

Fixed station in each state, province, and country.

Mobile in each state. 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 Mobile plaque to 1st and 2nd place mobile in the US, 1st and 2nd place US fixed station, highest scoring North American fixed station other than US, and high scoring DX station other than US/North American. 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 8 May 1995, 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 two units of postage.

DX-YL to North America YL contest

CW: 1400 UTC 12April 1995 to 0200 UTC 14 April 1995

SSB: 1400 UTC 26 April 1995 to 0200 UTC 28 April 1995.

Eligibility: All licensed women operators worldwide are invited to participate.

Procedure: DX-YLs call "CQ North America YL" and NA-YLs call "CQ DX-YL."

Operation: All bands may be used. Contacts with OMs do not count. No cross band operating. No net contacts or repeater contacts.

Exchange: Station worked; QSO number; RST; ARRL Section/VE province/country; entries in your log must also show: time, band, date, and transmitter power.

Scoring:

1) Phone and CW will be scored as separate contests. Submit separate logs for each contest.

2) DX-YLs, including Alaska and Hawaii, may contact all the North American continent which includes the 48 contiguous states and all Canadian provinces.

3) Contestants on the North American Continent (includes the 48 contiguous states and all Canadian provinces) may contact DX-YL stations, including Alaska and Hawaii.

4) A station may be counted once on each band for credit, and one point is earned for each station worked on each band.

5) Multiply the number of QSOs by the number of different ARRL sections/VE provinces/countries worked. A multiplier is counted only once in the contest.

6) Contestants running 150 watts or less on CW and 300 watts PEP on SSB at all times may multiply the results of #5 by 1.5, the low power multiplier.

Logs: All logs must show your ARRL section/VE province/country to qualify for rewards. For each QSO, logs must show: the station worked; QSO number sent and received; RST sent and received; ARRL section/VE province/country of station worked, band, and date. Logs must state the power used. If you have over 200 QSOs, submit a separate log for each band and submit a dupe sheet. Log photo copies are OK, but no carbon copies. Please type or print logs. Logs must be signed and must show score claimed. No logs will be returned

All logs must be postmarked no later than 30 days after each contest ends.

Mail all logs to Carla Watson, WO6X, 473 Palo Verde Dr., Sunnyvale, CA 94086.

Awards:

Cup to first place DX-phone. Cup to first place NA-phone. Cup to first place DX-CW. Cup to first place NA-CW. Plaque to highest combined CW and phone NA-score. Plaque to highest combined CW and phone DX-score. The second and third place DX and NA winners in each contest will receive certificates.

Suggested frequencies:

CW: 80 Meters 3.540 to 3.570; 40 Meters 7.040 to 7.0700, 20 Meters 14.040 to 14.070; 15 Meters 21.120 to 21.150, 10 Meters 28.180 to 28. 210.

SSB: 80 Meters 3.940 to 3.970, 40 Meters 7.240 to 7.290, 20 Meters 14.250 to 14. 280; 15 Meters 21.380 to 21.410, 10 Meters 28.280 to 28.410.

Note: Country band allocations differ. YLs should select appropriate frequencies for transmitting and receiving; especially on 40 and 80 Meters. WR

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

See your group in print and help your fellow amateurs with shared experiences. Your story may help others be better prepared.

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Field Day Program and Interface

Electrosoft has released a Field Day program for IBM compatible MS DOS computers that logs contacts and sends and receives CW. The program is so easy to use that a first time user can operate immediately without reading instructions. The user logs contacts, changes the band or mode, finds help, and sends CW from a split screen display by simply selecting one of 5 windows. The CW speed can be adjusted from 5-100 wpm and the weighting can be adjusted from 21% to 45%. When Field Day is over the program produces a log to report results to ARRL.

The required interface circuit can either be built from the schematic included in the program documentation or ordered in kit form. The battery-operated kit takes approximately 1 hour to build and includes all parts and cables.

This program and interface has been tested by the Loveland Repeater Association using laptop computers during their 1993 and 1994 Field Day operations.

The program is available for $30 without the interface and for $50 with the interface from ELECTROSOFT, P.O. Box 1462, Loveland, CO 80539. Specify 3.5" or 5.25" disk when ordering. You risk nothing with Electrosoft's iron-clad guarantee. If the program is not what you expected, simply return it for a full refund — no questions asked.

W9GR DSP-3 kit

Quantics has introduced a new low cost digital signal processor (DSP) kit for amateur use: the DSP-3. This kit incorporates many suggestions and requests made by users of the original W9GR DSP-1 kit. The eminently popular DSP-1 was the subject of a feature article in September, 1992, *QST* and was built by thousands of amateurs.

The new DSP-3 kit has 18 DSP functions selected by a rotary switch, including various combinations of noise (QRN) reduction and heterodyne removal (automatic notch filtering), a DTMF tone decoder with memory, a CTCSS tone decoder with memory, seven tunable CW filters, and various filters for FSK, SSTV, and narrow SSB. A 13 bit converter chip provides the wide dynamic range necessary to filter out weak signals amidst strong QRM. An LED display indicates audio level, or in the tone decoder modes, it indicates DTMF and CTCSS tones. The kit operates from 12 volt DC power source (not included) and connects between your rig and speaker. A custom metal cabinet is also available.

The DSP-3 kit is priced at $149, and the optional metal cabinet is $19. California residents must add 7.25% sales tax. Shipping and handling is $7 in the USA and Canada.

Quantics deals by mail order only. For further information, write to Quantics, P. O. Box 2163, Nevada City, California 95959-2163.

Ham Radio T-shirts

Amateur Radio provides communities with a valuable public service. Support from our local communities is critical to our hobby and positive publicity is the key. Now available are Amateur Radio T-shirts and sweat shirts, in full color, with the "WHEN ALL ELSE FAILS" design on the back, which shows that Amateur Radio provides an essential public service when disaster strikes. There is also a circular 2-color logo on the left breast of the T-shirts. This logo reads "Amateur Radio — Dedicated to Public Safety."

In an effort to help Amateur Radio Clubs, a special fund-raising program

has been developed. ARCs can also have their club name or logo placed on each shirt. Please write or call for details.

All T-shirts are white, 100% cotton and pre-shrunk. The sweat shirts are ash, and made with a cotton/polyester blend that will not shrink. All of the shirts come with a 30-day "no questions asked" guarantee.

T-shirts are $14.95, sweat shirts are $26.95 plus s/h., California residents add 7.75% sales tax. When ordering by credit card, call our 24 hour order line 800/413-1129. If you have any questions, please call 909/987-1020 or write: Raymond Sarrio, WB6SIV, 6147 Via Serena St., Rancho Cucamonga, CA 91701.

IC-Z1A

Icom introduces a new generation of handheld, the first removable remote control panel dual-band handheld (2M/440MHz).

Simply detach the control panel from the body of the radio. Clip the main body to your belt or put it in a pocket or purse. The remote control panel comes with an extension cable and lapel clip. It provides a full functional display of all operations, including bands and frequencies, plus complete control of operation modes, volume, tuning, scanning, band selection, ON/OFF and PTT. It is also backlit for night operation.

Program a six-character channel identification into each memory. A total of 104 memories (46 regular and six scan edge per band) may be displayed by memory channel and either the frequency or alpha ID name (does not reduce the total number of memories available). If the battery runs low an EEPROM prevents memory loss.

Use the alphanumeric display to transmit and receive up to six characters (using DTMF codes) as simple message pager, etc.

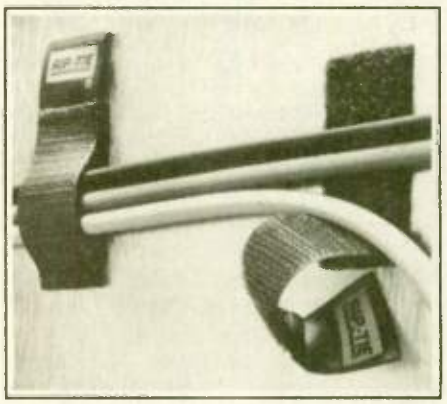
The IC-Z1A also features independent tuning knobs and simultaneous receive on both bands. Multiple power-saving functions and three-level adjustable power output allow you to conserve battery life (700 mAh nicad battery included). Or operate the Icom IC-Z1A with a 4.5V to 16V external power supply.

Options include a new HS-85 headset and UT-93 tone decoder and tone scanner (CTCSS encode standard).

The suggested retail price for the IC-Z1A is $600. For information on availability, please contact your local Amateur Radio dealer or Icom America, Inc., 2380-116th Avenue N.E., Bellevue, WA 98004, 206/454-8155.

RIP-TIE® CableCatch

The Rip-Tie Company is introducing the new **CableCatch™** Velcro fastener which anchors cords, cables and wires along surfaces, out of the way. The **CableCatch** securely adheres to equipment racks, desks, or walls. The **CableCatch** is safe even for assembling long cable runs. They are convenient and reusable. The durable little fasteners will firmly hold cables in a neat group. Yet with one quick pull of the tab, you can release the bundle for quick and easy reorganization — over and over again.



For information or to order the new Rip-Tie **CableCatch** please call or write: The Rip-Tie Company, P.O. Box 77394, San Francisco, CA 94107; 800/348-7600 or FAX 415/777-9868. WR

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.

p/r = pre-register

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.

w/i = walk-in

Date	City	Contact	Notes
Arizona			
5/13/95	Tucson	Joe, K7OPX 602/886-7217	w/i only
5/20/95	Tucson	Micki, AA7RR 602/883-8305	p/r req
Arkansas			
5/20/95	Mt. Home	Gerald, WM5W 501/430-5123	p/r req
5/13/95	Siloam Sp.	Ward, WA5NRT 918/326-4631	w/i OK
California			
5/21/95	Berkeley	Gary, N6YBD 408/255-9000	w/i only
5/13/95	Carlsbad	Rusty, AA6OM 619/747-5872	p/r pref.
5/27/95	Chula Vista	Jim, KK6KZ 619/428-8418	p/r pref.
5/25/95	Colton	Harold, AB6RN 909/825-7136 days 909/685-6073 eves	w/i OK
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Book Review

Stan Gulich, SM7WT, devoted over 3,000 hours to his 323-page book, *Thanks to Amateur Radio*. It's packed with photos and stories of well-known and not-so-well-known Amateur Radio operators, who have been active from more than 170 countries.

In addition, there's a 7-page summation of *A Hostage in Saddam's Game*, a book which was written by Paul Justnaes, LA5PN, after he and his wife were caught in Kuwait when Iraq invaded that country in 1990. There's a 10-page "Diary from the 1993 DXpedition to Kingman Reef," by Jesper Lauritsen, OZ1LGF, as well as first-hand experiences of how Amateur Radio has helped in several natural disasters, such as forest fires and earthquakes.

But most of the book is devoted to what Stan terms "Some of the most interesting Radio Amateurs in the world." Beginning with AA5BJ and ending with 9N1KY, there are fascinating stories on every page. Stan closes the book with highlights of Amateur Radio through the years, from 1901 when Marconi copied signals in Newfoundland through 1994 and the forest fires in New South Wales, Australia, and the Peter I Island DXpedition.

Stan also has a concise explanation for all facets of this great hobby, and everyone can enjoy this book, whether or not they're licensed. It's a great public relations tool, as well, as he stresses the many contributions made by Amateur Radio operators.

The book is available in paperback for $20.00 U. S. from the author, Stan Gulich, SM7WT, or Kurt Bindschedler, HB9MX. WR

NOTE: If you need addresses — Stan Gulich, SM7WT, M. Skrivares vag 7, S-240 10 Dalby, Sweden, and Kurt Bindshedler, HB9MX, Strahleggweg 28, 8400 Winterthur, Switzerland. WR

1995 Special Olympics World Games — volunteers needed

Brian Battles, WS1O

The US Congress authorized a large appropriation to help fund the 1995 Special Olympics World Games, the biggest sporting event in the world in 1995, and the biggest event ever held in southern New England. More than 7000 Special Athletes from 140 countries will participate in 25 events at the Yale Bowl and elsewhere, and organizers expect more than 2000 coaches, 15,000 family and friends, 1500 media representatives, 700,000 spectators, and many celebrities, honored guests, heads of state and other VIPs to be on hand. There will also be many hours of national network TV coverage and enormous amounts of other media publicity.

All Amateur Radio operators are invited to volunteer their time and effort to take part in communication support for this enormous public service activity.

I have agreed to serve as volunteer Amateur Radio Liaison to the 1995 Special Olympics World Games and we are planning several Amateur Radio activities. Clubs and individual amateurs are asked to assist by getting involved NOW, as the Games are drawing near and coordination is well underway.

We have been asked to participate with each of the Host Communities throughout the state that are each hosting Special Athletes' delegations from a particular country.

We are also going to establish message centers in the Olympic Town Complex to let the Special Athletes and delegations originate NTS radiograms to send to their homes, in the US and overseas.

Hams will also support the bicycle races and foot races.

The Special Olympics Committee has also requested hams to provide ATV coverage for live video of certain outdoor events, such as the road races and sailing events. Some of this will be done by stationing hams on boats and military helicopters. ATVers who want to help should call me.

All hams who assist must be officially registered in advance so that they may be placed on the volunteer rosters and issued the proper clearance, access credentials, passes, etc. Don't wait until June — that will be TOO LATE.

This will be the largest public service event most of us will ever see in southern New England and it's an opportunity to exemplify the powerful capabilities that make the Amateur Radio service a vital national and international resource.

Connecticut ARES members will be asked to stand by for general communication support.

The NTS Project Manager Jim Ritterbusch, KD1YV or his daughter Michelle, N1PNT, may be reached at (203) 790-7041.

To assist in ARES operations, contact ARRL CT Section Emergency Coordinator Clark Magness, NI1U, at (203) 457-1892.

Volunteers for the special event should contact Neil Salowitz, WA1CBW, at (203) 228-4922.

To assist with bicycle and foot race coverage, call Dick Phelps, K1SW, at (203) 875-0151, or Don Izzo, N1HAX, at (203) 466-0435.

Other inquiries may be directed to me during the week at (203) 666-7531 or FAX me at (203) 665-7531. WR

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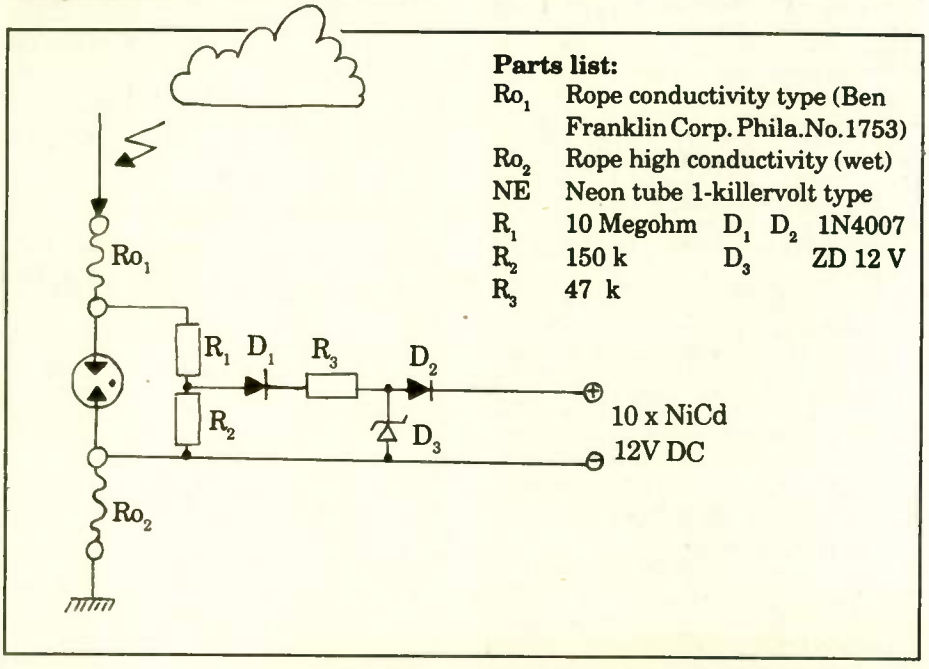

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Ro_1	Rope conductivity type (Ben Franklin Corp. Phila.No.1753)		
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R_2	150 k	D_3	ZD 12 V
R_3	47 k		

Lightning Energy Production Circuit

Rudi Mangold, HB9DU

During a recent thunderstorm I suddenly had a brainstorm. I remembered good old Benjamin Franklin with his key-gap lightning-spark model and designed the following LEPC (Lightning Energy Production Circuit).

If the parts do not correspond to the regulations of the IAEC-standard (International Atmospheric Electricity Commission) we recommend using an Indoor Lightning Rod! WR

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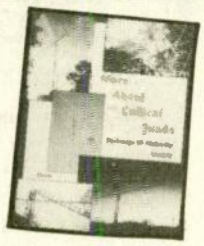


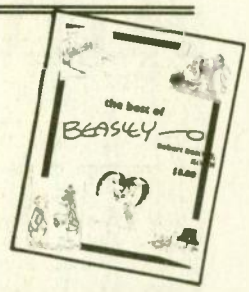

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Students from the Schoolyouth Hobby-center in Tallinn, Estonia. Mel and Andy (below) are the center's most active operators.

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