World Radio

Year 12, Issue 8 February 1983 • 80¢

A special operations van, restored and equipped for use by the Coronado Police Department as a mobile communications/command post.

Revived club doing well

Jerry Boyd, WA6CUP
Chief of Police, Coronado

The Coronado (California) Amateur Radio Society (CARS) has been in existence for decades. In its heyday — according to long-time member and former president, Art Fox, W6HQL — the club had well over 150 members. During recent years, the Society dwindled in activity, despite the fact that within the six square mile city on the bay, there reside no less than 65 licensed Amateur Radio operators.

In mid-1981, Coronado amateurs began the rebuilding of their once active club. Simultaneously, there began the restoration of a 1954 REO (Regional Emergency Office) Civil Defense truck, which now serves as a fully equipped mobile command post/communications vehicle, supporting police and fire department operations. This van, one of only three mobile command posts in San Diego County, is clearly the best equipped from a communications standpoint. Under both the police and fire department mutual aid plans, it is available during emergencies to public safety agencies throughout Southern California. Its story and capabilities are worth relating.

In the mid-1950's, the city of Coronado received from the federal government's Office of Civil Defense a REO truck fully equipped with a variety of civil defense and rescue equipment. Assigned to the fire department, it spent the next 26 years as a backup rescue rig; in that time, it accrued less than 5,000 original miles. Though its paint was faded, in 1981 it was evaluated as being in excellent mechanical condition when the fire department sought to dispose of it and replace it with a newer, more versatile piece of apparatus. At that same time, the Coronado Police Department's Amateur Radio Emergency Services (ARES) group, formed consistent with the city's emergency plan, was becoming more active in support of public safety emergency and special event operation. The ARES group — under the leadership of Lloyd Beauregard, WD6CSS and John Baker, N6ATV — had as its nucleus several members of the old CARS. They vividly recalled operating on Field Days in the 1950's from the old REO Civil Defense truck. They speculated that the restoration of that truck and the outfitting of it with needed communications gear might serve to create additional interest in, and motivation toward, our developing ARES program.

The REO was obtained without cost from the fire department and was reassigned to the police department. It was clearly understood that its restoration, equipping and maintenance would be accomplished with only a minimal budget.

Coronado is a peninsula, once an island, located westerly of San Diego. It is connected to the mainland only by a narrow stretch of "fill" land, subject to flooding and — in the event of an earthquake — liquifaction. Its only other access is a large bridge which, likewise in an earthquake, could easily be rendered impassable. The city's position is that in a major disaster, it would have to survive on its own resources for at least 72 hours following a calamity of major proportions. This premise has prompted substantial community support for emergency preparedness activities. Thus, when the mobile command post project was publicized, significant resources were donated by private individuals, local businesses, service organizations and, of course, the Amateur Radio community.

The first step of the restoration project *(please turn to page 45)*

Amateurs work hard during Arkansas storm

Pat Pattee, W5POH

When tornado winds and torrential rains hit Arkansas on 2 December 1982, the radio amateurs literally "came out of the woodwork," according to Dale Temple, W5RXU, Section Communications Manager for Arkansas.

"Ham operators in Arkansas and throughout the country have been working with the Red Cross and the weather service for years," Temple said, "but never before to our knowledge has there been such a widespread communications emergency of such long duration."

Amateur Radio provided the only means of communication with such storm-devastated towns as Alexander, Rosebud, Clinton, Portia and Jacksonport. Most of the hard-hit towns extend along a line from Little Rock to the northeast. Amateurs don't go to a disaster scene until they're asked to by the Red Cross or a government agency; but once the storm hit and the requests came in, the Central Arkansas Radio Emergency Net sprang into action. State Emergency Coordinator (EC) — Joel Harrison, WB5IGF — called the nearby amateurs to help at Rosebud and Alexander. Later, some of them had to be shifted to Clinton when that town became flooded.

In the Jonesboro area, EC Glenn Bradley, K5RAG mobilized the amateurs to help flooded Portia, Newark and Jacksonport.

A National Weather Service meteorologist woke up the morning of 2 December "with an eerie feeling something was going to happen. When you feel warm weather in December, you just know something is going to bust loose." The weather service was unable to pinpoint the storm because the western weather satellite was out of operation and advance warning was not available.

"When you have a situation like this, it brings out the best in people," commented Carol Davis, information director of the Red Cross. □

Listen to W4KFC on 3 March

Attention all radio amateurs. You are invited to listen and talk to Vic Clark, W4KFC, president of ARRL, when he discusses "The Future of Amateur Radio" on the Teleconference Radio Net, Thursday, 3 March 1983, at 7:15 p.m. CST. This is your chance to hear about the future of Amateur Radio direct from the person who has played and will play a large part in making that future!

You can listen and talk with Vic via any of the repeater stations across the United States that participate in the net. Repeaters currently scheduled to participate include:

Phoenix, AZ	WB7AAC/R	147.36
Avon, CT	W1NI/R	224.78
Roswell, GA	N4CLA/R	145.47
Wichita, KS	WR0ABB	146.82
Minneapolis, MN	W0TN/R	146.64
Long Island, NY	WB2NHO/R	147.375
Beaverton, OR	W7LJN/R	147.32
San Antonio, TX	WB5FZA/R	146.70
Los Angeles, CA	W6VIO/R	224.04
Washington, DC	WD4IWG/R	147.21
Chicago, IL	W9SRO/R	147.15
Billerica, MA	WR1ABP	147.12
Cherry Hill, NJ	WB2NQV/R	147.375
Rochester, NY	WB2AQQ/R	145.11
Dallas, TX	K5JD/R	146.97
Madison, WI	WR9AVT	146.76

(please turn to page 6)

Amateurs form vital link

We had just had the Simulated Emergency Test (SET) on 16 October and thought we knew our communications' good and bad points. How little we really know until a real communications emergency exists! Hurricane Iwa (ee-vah) struck the Hawaiian Islands on Tuesday, 23 November 1982. Hardest hit were the islands of Niihau and Kauai, essentially in the hurricane's path, and the island of Oahu to a great extent. Almost no information is available from Niihau — a small, privately-owned island.

It must be stated that in events such as a major storm, all radio amateurs are not available for ARES communications duty. Some are employed at radio broadcasting stations, for example. They are doing "their thing" to keep the general public aware of what's going on.

Hawaii's four Emergency Coordinators (ECs) — Bill Baisley, KH6S (Kauai County); Bob Ferguson, KH6NP (Honolulu County); Mel Fukunaga, KH6H (Maui County); and Dave Schroeder, AH6K (Hawaii County) — responded to the call for emergency communications. Their local county ARES members — many with generator or battery power, and some with temporary makeshift antennas — spent many hours on several days and on the various frequencies on 40 through 2 meters. About 100 amateurs assisted. *(please turn to page 3)*

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

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

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

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

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

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

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Second-class postage paid at Sacramento, CA.

·Silent Keys·

Mr. DX

Jules Wenglare, W6YO
(pre-war W8DVS — W8OSL)

A title most deserving has become a memory, sadly in more ways than one. Frank Lucas, W3CRA (W8CRA, pre-war) became a "Silent Key" on 24 October 1982. Fifty years ago he was already working the world on 20 meters, when the total bona fide countries who had any active ham operators would not have added up to 100; some of the Asian and African countries were lucky to have one or two. But as they came on during the early, mid- and late 1930's, W8CRA didn't miss any.

I remember our first visit during 1931 with cohorts W8BSF and W8CXX to prove to ourselves whether this guy was really hearing and working this rare DX; none of us, who lived 25 miles away, were even hearing it.

It didn't take too many weekend visits to realize this very likeable guy had the utopia for DXing. In the following years, it was incredible to see so many QSL cards from rare countries, not only with QSA 5 R9 T9x reports, but with remarks such as, "You are my first W QSO;" not many USA stations can claim those remarks.

Frank and Clark Rodimon, W1SZ — also a top DXer and editor of **QST** at the time — formulated the DX Century Club. Soon after its announcement, W8CRA became DXCC 1. For a guy who didn't QSL that much, it was an achievement. Without a doubt, W8CRA's location near the top of one of the highest hills in western Pennsylvania, near Canonsburg, was his good fortune. His simple antenna for many years was an end-fed wire (Fuch's) 133 feet long, 33 feet high.

The first rig I remember seeing in his small shack, a new modern building about 6 by 8 feet in size, was a Colpitts using a Cunningham 210 tube. The receiver had two tubes, the quietest and smoothest regeneration action anyone could ask for, dry cells for filaments, and a Burgess 22½ volt "B" battery ran it.

Frank was a perfectionist in building and making all his equipment work extremely well. Nearly every year there were changes. MOPA followed the Colpitts then crystal control and then VFO, in the P.A. tubes like 852, HK-354 then the Eimac 250TH. Frank's big signal and his achievements prompted Eimac to use pictures of his station in one of their first ham station ads in **QST** during the late 1930's.

During this period, he put up a 70-foot three-legged Wincharger tower and a three-element homemade Yagi. After World War II, his activities ran hot and cold. He did build up a 4-1000 linear, but he still preferred CW. In my opinion, Frank was very modest; he was not one to boast of his DX worked.

An admired pre-war "big gun," Herb Becker, W6QD — if I am correct — wrote in his DX section in **Radio Magazine** of that time, "My visit to W8CRA's place was like a Moslem going to Mecca." Then in the '60s, Gus Browning, W4BPD wrote after one of his super DXpeditions, "I so well remember the S7 signal from W3CRA over in the Indian Ocean and up in the AC spots, when no other USA station was even being heard."

With those remarks by Herb and Gus, no need to add any more except it would be a tribute to consider Frank Lucas, W3CRA for the DX Hall of Fame. □

H.V. Noble

Harry Noble, N8CYS

It is with sadness that I report that my father, Harrell V. (High Voltage) Noble became a Silent Key on 6 October. I am proud of my dad's accomplishments and thought I should drop you this note.

Dad got his ham license 9CDH during college in 1927. In the early '30s, he moved to Pittsburgh, met and married mom, and got a new call — W8DGN. Companies such as Grigsby-Gruno, Westinghouse, RCA and Crosley saw his work in high-power tubes and high-voltage components. During the war, he was involved with manufacture of that hand-cranked radio for the Signal Corps.

Dad retired 10 years ago from Director of the Electronic Technology Lab at W-PAFB. There, he was primarily responsible for guiding the development of solid-state circuitry and was the first person to see the potential of integrated circuits.

The pressures of work and World War II caused dad to let his license expire. However, in retirement he quickly regained his "fist" and managed to get his old call again. Mom joined in, too.

Dad's honors included a Ph.D. from Purdue, Fellow in the IEEE, and medals for meritorious civilian service from the government.

Dad's last rig — a Kenwood 820 — was a lifetime away from his first one-tube transmitter. □

Clarification

In the December 1982 issue of **Worldradio** (page 19) was a letter from Bernie Peake, N4CR complaining about intentional interference caused by station WA9ZIE.

The licensee of WA9ZIE, Jerry Thacker, wrote to **Worldradio** and explained that he had previously sold all his radio equipment and could not have been on the air on the day mentioned. Thacker himself has been aware of someone else signing his call and has been in contact with the FCC, his congressman and senator urging some sort of action against the person using his call.

Naturally, we do regret and apologize for any embarrassment caused to Jerry Thacker of Evansville, Indiana by the letter we ran. □

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Vital link

(continued from page 1)

The major statewide frequency during the hurricane emergency was 7290 kHz as the Hawaii Emergency Net; 20, 15 and 10 meters were used to accommodate health and welfare traffic to and from Hawaii; 2-meter repeaters and simplex were heavily used for local communications.

Several hours after the hurricane struck the islands with 140 mph winds, all power on Kauai was lost. The storm had caused over $136 million worth of damage. The only communications out of Kauai was Amateur Radio station KH6JIB, operated by Robbie Reneau, at the Emergency Operations Center (EOC) located in Lihue. (Robbie is the Communications Officer for the Kauai Civil Defense.)

Robbie was able to maintain a 2-meter link with George Kanzawa, KH6JUU on Oahu, and Jolyn Groves, KH6NB, located at the Honolulu International Airport. Emergency and weather traffic was passed via the local 146.37/.97 repeater, KH6ILR, located on the Honolulu City Hall. The repeater — equipped with emergency power generators — was heavily used for inter-island communications until its fuel ran out, about 36 hours later. The repeater is sponsored by the Oahu Civil Defense.

Hand-held and mobile 2-meter rigs were used for the majority of the initial stages of the emergency, since HF antennas had been destroyed.

On the island of Oahu, 95 percent of the electrical power was lost. Only one commercial radio station managed to stay on the air. KGU, an Emergency Broadcast Station located on the island of Hawaii, became the only source of information to the general public.

At the request of the National Weather Service (NWS), the local ARES net was activated. The NWS on Oahu lost all communications into their office, so weather information was passed from various places to Oahu via 2-meter FM. Amateurs on the islands of Maui and the "Big Island" (Hawaii) did manage to set up 2- and 40-meter nets to pass local weather service traffic between the islands.

Wednesday morning, 24 November: Kauai's Civil Defense frequency link was reestablished, and the ham 2-meter link was discontinued. Two-meter nets continued to pass traffic between the islands.

Thanksgiving morning: Communications were finally established to Kauai via a QRP 40-meter station located in the town of Kalaheo. A 2-watt Argonaut, powered by a car battery, provided inter-island communication. Bill Baisley, KH6S was able to start up a 40-meter station at the EOC and provided around-the-clock inter-island communication.

Lee Wical, KH6BZF handled hundreds of messages on 15 meters. Section Communications Manager Army Curtis, AH6P and Bob Ferguson, KH6NP took care of the 40-meter traffic. On 20 meters, Wes Goodpastor, KH6ML handled the messages.

The importance of weather traffic handling by amateurs became apparent when the weather satellite GOES WEST went on the blink Thanksgiving Day. The satellite had been tracking the hurricane for the previous two days. Had the satellite gone down just two days earlier, the Hawaiian Islands would have been in even deeper trouble.

Friday, Saturday and Sunday: "Mopping up" operations continued, and messages handled were mostly of a routine nature. By Sunday, most telephone service returned to normal since the main microwave links between Kauai and Oahu had been repaired.

Until one experiences the effects of a major storm such as Hurricane Iwa, one might wonder why all radio amateurs wouldn't register their time and talent in ARES. Also, why wouldn't all ARES registrants participate in local tests, drills, and the SET in October each year? At the very least, all radio amateurs should be acquainted with proper net procedures, discipline and proper traffic handling.

— Information received from Dean Manley, KH6B, ARRL Pacific SEC, and from The ARRL Letter □

Credit given to Amateur Radio

Here is an example of the UPI press coverage given Amateur Radio after the hurricane disaster in Hawaii. (The article ran in the *New York Times.*)

"Civil defense officials on Kauai had already sounded the evacuation and take-cover sirens, and had 6,000 of the island's 40,000 people in shelters. But they had to rely on Amateur Radio operators and the Air National Guard to get information from and to Honolulu." □

Correction

On page 3 of our January issue, Harold Conover Jr., N6BRT was mentioned as being the Emergency Coordinator (EC) for western Contra Costa County. The EC is actually Dave Tyler, N6DRT. In the first sentence of that same paragraph, the EC "told how the Salvation Army division headquarters in San Francisco could talk to no one in a recent emergency drill." The last part of the sentence was in error and should read "during floods in January 1982." □

Ken Miller, K6IR/3 (right) recently had an eyeball QSO with Tim Chen, BV2B in Taipei, Taiwan.

Ruth Moser

The wife of Dr. Mert Moser, W6HS — Ruth Moser — passed away on 26 December 1982.

Mert is well known as the QSL manager for Tom Christian, VR6TC of Pitcairn Island fame. Mert has also been the coordinator of the fund appeal to purchase diesel fuel to keep VR6TC on the air.

The Mosers' son lives north of Sacramento and they have stopped in to visit **Worldradio** when they were in the area.

Mrs. Moser was of great support to her husband in his radio activities and had been on the trip to visit Pitcairn and the Christian family.

She was a gentle and kind lady, and it gave Mert great delight to call her "Ruthless Ruth." □

Aboard the *Sagafjord*, with Pitcairn Island in the background, are (left to right): Ruth Moser; Betty Christian; Tom Christian, VR6TC; Mert Moser, W6HS; Clarice Brown (Tom's niece); and the four Christian daughters.

Write for info

This letter is to inform you of a recent DX trip to Christmas Island. T32AM and T32AL were on the air 21-29 November and took part in the CQ World Wide DX Contest. As the trip was more or less a last-minute thing, no time was available to send out any PR to national publications. Quite surely, many amateurs who made a contact are unaware of QSL information and in particular, those who made contest contacts.

AL BERG, WB7SIC, QSL Manager
P.O. Box 25088
Portland, OR 97225 □

BV-land visit

Ken Miller, K6IR/3 recently had a chance to visit Taipei, Taiwan, where he had a "good 'eyeball' QSO with Tim Chen, BV2B."

Tim was born in 1914 and was first licensed in 1939. He presently operates barefoot with a Hallicrafter FPM-300 and a dipole. His operating schedule is: 1100Z-1200Z — first on CW 14.040, then calls CQ on SSB at 14.225; 1500Z-1600Z — SSB for U.S. West Coast.

Tim is now assistant manager of Columbia Films of China, Ltd., Taiwan branch. □

ATTN: Iowa

Part of being an amateur is to be of service to our fellow man. So what are you doing between 12:30 and 12:50 p.m. or 6:00 and 6:20 p.m.? Would you have time to check into the Iowa 75-Meter Net and take a message for your town or area?

It's so easy to say, "Well, someone else is doing it."

Each day except Sunday, members of the Iowa 75-Meter Net meet on 3.970 kHz to see if they can be of help to anyone. There are no dues for the net, and everything is done on a regular basis. The only way you can become a member is to check in regularly.

We are in need of people from every area of Iowa, and with the help of your radio club members, maybe the empty spots can be filled.

We will be looking forward to hearing someone from your area on 3.970.

— Des Moines RAA, IA □

5Y4ITU from 5Z4-land

Dexter Anderson, W4KM

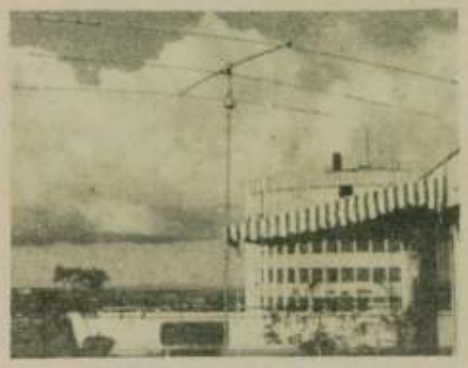
The UN agency responsible for telecommunications — the International Telecommunication Union — held its highest level of meeting, the Plenipotentiary Conference, at Nairobi, Kenya from 28 September to 6 November 1982. The conference took place in the ultra-modern Kenyatta International Conference Centre, named after the father of Kenyan independence (1963), Jomo Kenyatta. This was the 12th plenipotentiary conference held since the founding of the ITU at Paris in 1865, and the first to be held in Africa.

In conjunction with this conference, the Radio Society of Kenya, which represents Kenyan amateurs in the International Amateur Radio Union, established an amateur station near the conference site. The use of special call sign 5Y4ITU was authorized, and all Kenyan amateurs were permitted to substitute 5Y4 for the normal 5Z4 in their calls, for the duration of the conference.

The rig consisted of a Drake TR7A and a triband beam. Propagation was in general mediocre, but there were a few good openings. Conditions were good for the phone portion of the CQ WW DX contest at the end of October.

QSLs go to the Radio Society of Kenya, P.O. Box 45681, Nairobi, KENYA, accompanied by a self-addressed envelope and 3 IRCs (or a green stamp, if you prefer). Be patient, as additional QSL cards have had to be ordered due to greater activity than anticipated. □

The Kenyatta International Conference Centre, Nairobi, where the International Telecommunication Union's Plenipotentiary Conference was held in 1982. Amateur station 5Y4ITU was set up nearby for use by amateurs attending the conference.



5Y4ITU's triband antenna was installed outside its "shack", atop a 15-story downtown office building in Nairobi. ***(Photos by Dexter Anderson, W4KM)***

Inside the "shack" of 5Y4ITU, located atop a 15-story office building in downtown Nairobi. Note QSL cards of some of the operators in the frames at upper left. Shown operating is Mujo Alidzanovich, YU3TCB, who was visiting Nairobi while the special call sign was in use.

A visit to Eire

Joe Duffin, W2ORA

In late August, I enjoyed a three-week vacation in Ireland. I made application to the Irish Postal & Telegraph and was assigned the call EI2VKL (V is for Visitor).

I took my ICOM 2AT hand-held 2-meter transceiver and made over 100 contacts on 2 meters. Ireland has six repeaters on 2 meters. In general, Europe is only authorized to use 144-146 MHz. The repeaters use the same 600 kHz split we use at home, but you do need a 1875 Hz signal at the beginning of your transmission to call up the repeater (so I learned to whistle a lot). The ICOM 2AT is a very versatile unit. Most of the operation was mobile from the VW with a 5/8 vertical using a magnetic mount on the roof. I took wires with clips and an in-line fuse and attached them directly to the battery and brought the leads through the door frame to a connector that I kept on the dash. Thus, I was able to charge my ICOM battery pack (usually overnight) or operate the unit using the ICOM DC regulator. I usually left the ICOM transceiver in a depression on the dashboard and used the hand-held combination speaker/microphone. This set-up proved to be very effective, and easy to set up and remove. It was very enjoyable and the most relaxing DXpedition I have ever been on. I worked five different countries (GI, GW, GD, G and EI) on 2 meters. I worked through repeaters in GI, GW and EI. I operated from the top of Blarney Castle (about 120 feet high) from the place where you kiss the Blarney Stone. The local EI amateurs that I worked from the top of Blarney Castle told me they thought it was the first time they had ever heard of amateur operation from Blarney Castle, and they thought it should be entered in the Guinness Book of Records. I suspect that was a little bit of Blarney itself!

Ireland (like many European countries) uses a prime power of 250 volts at 50 Hz, so be advised accordingly. We (my wife and I) stayed with friends in Dublin for four days and the other times we stayed in B&B guest houses; they were great. "B&B" means "Bed & Breakfast" and that is exactly what they were. Private citizens provide an evening accommodation and a full hot breakfast for the wonderful sum of $9 per person.

We rented a car at the Shannon Airport and drove some 1,800 miles around Ireland. The car was a VW Polo (like a Rabbit, but not available in this country), and it performed fabulously. The driver sits on the right hand side of the car, shifts with his left hand and drives on the left side of the road. It took a little concentration to constantly remind myself, "drive on the left," but after awhile it became so routine, I was concerned that when I returned to New Jersey I would still drive on the left, but I reconverted A-OK.

Ireland has approximately 975 licensed amateurs. They have the "B" VHF license which requires that the amateur pass the amateur theory examination questions; the answers are written in longhand — no multiple choice exam here. If successful, the amateur is issued a call sign — EI, number and three letters ending in "B," which permits all operations on 144 MHz and up. There is a fair amount of serious VHF activity on 420 and 1296 MHz — or 70 and 23 CMs, as they prefer to call it.

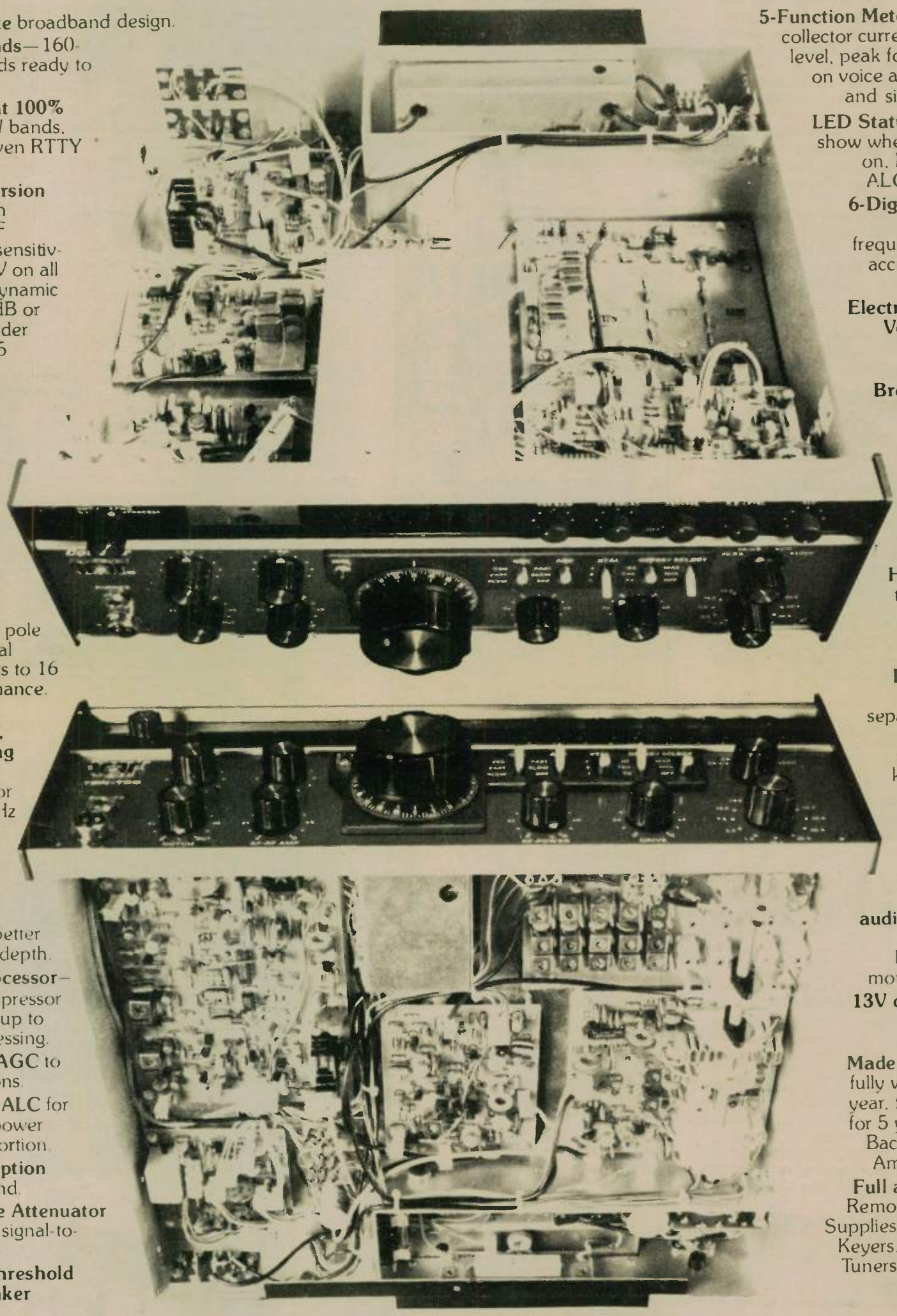
The "B" licensee can continue with his amateur VHF activity forever, if he wants to. If he has an interest in

(please turn to page 6)

Old-time radiogram

Some things you just can't throw away. James L. Smith, W7LZA of Clatskanie, Oregon has a radiogram he received 50 years ago. The message was sent 13 November 1932, 11:55 a.m. PST by Phil Olson, W7CMR. □

The inside story on TEN-TEC's CORSAIR.



All solid-state broadband design.

All 9 HF bands—160-10M. All bands ready to go.

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Triple Conversion Receiver with switchable RF Preamp. for sensitivity of 0.25 μV on all bands with dynamic range of 90 dB or better. 3rd order intercept +15 dBm.

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CW Signal Spotter—easier to use, just match tones instead of zerobeat.

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Made in the USA—fully warranted for 1 year, final transistors for 5 years, pro rata. Backed by reliable American service.

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Eire visit

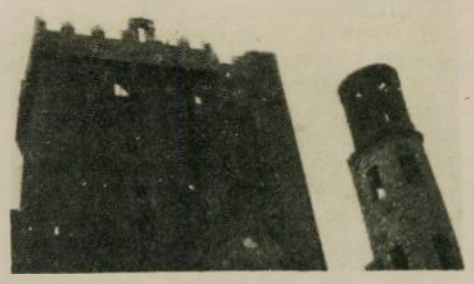
(continued from page 4)

operating on the high frequency bands, he must first pass the code test at 12 wpm. He is then assigned a new call sign — EI, number and two letters — and he can go on CW for one year on the HF bands while still retaining all his VHF bands. After the year on CW, he can apply for (no more exams) full amateur status and then use voice as well as CW.

In Ireland, the number in the call sign does not signify any particular location, as calls are just assigned in order (EI4AX, EI5AX, EI6AX, etc.). While a lot of USA amateurs are opposed to codeless exams, it seems to be working fine in Ireland, Great Britain, Germany and Japan, to state a few countries that have been using it with good success.

I had originally planned to take HF equipment with me, but due to the prime power source (250V-50 Hz), I was unable to locate a proper transceiver (perhaps on a future return trip) before I left on the trip. I did tune across 20 and 15 meters at the fine shack of EI4DC, but I did not hear any Ws at that time. I heard lots of Africa, Indian Ocean and Asia, but Pat considered them all routine. Many of the EIs that I talked to have visited the states or were going to visit in the near future. Naturally I invited them to visit me in New Jersey. EI5CL did visit me in late September, and I expect several more in the near future. I also came home with several requests for assistance, information and publications which I now am working on. Most do not receive American amateur magazines, so I am mailing over a number of QSTs, etc. to those who requested them.

Joe Duffin, EI2VKL (W2ORA) operates from the top of the fortress, using a 2-meter ICOM 2AT.



The famous Blarney Stone that visitors want to kiss is on top of a very old tower which was part of MacCarthy's fortress in the town of Blarney — five miles northwest of Cork in southern Ireland.

I certainly enjoyed my ham-vacation in Ireland. I made many interesting contacts, had a chance to meet EI2W who first made Ireland available on 6 meters, and I made a lot of new amateur friends.

If you are going on a vacation, plan to take Amateur Radio with you. You will be glad you did.

— *Harmonics, South Jersey RA, NJ* □

Listen to W4KFC

(continued from page 1)

If you are not within range of one of these repeaters, it is still possible that a repeater in your area will be tied into the net. Watch for local publicity or check the local repeaters at net time.

Also mark Thursday, 2 June 1983, 7:15 p.m. on your calendar. Joe Reisert, W1JR will be the featured speaker on the Teleconference Radio Net. Joe is a nationally recognized expert on EME communications, antennas and TVI.

The Teleconference Radio Net uses the latest multipoint teleconferencing technology to tie together repeaters across the United States. The objective is to allow amateurs to listen and talk to leaders and experts from the Amateur Radio, scientific and electronics communities. Typically, more than 2,000 amateurs are tuned into the net. All participants have an opportunity to talk to the speaker for questions and discussion.

The net is organized by the Honeywell Amateur Radio Clubs of Minneapolis, Billerica and Phoenix as a service to all amateurs. For further information contact Rick Whiting, WØTN, National Net Manager, 4749 Diane Dr., Minnetonka, MN 55343 (office phone 612/870-2071). □

Iowa club offers free Novice classes

Dave Schneider, WDØENR

The Mount Pleasant, Iowa Amateur Radio Club is offering free Novice classes, with follow-up courses to upgrade. These will be taught by Roy Lewis, WAØKLD, who has been conducting these classes for over a decade. Roy is a retired technician with Motorola, Inc.

Assisting with the classes will be retired college professor George A. Masden, WØLPW and Dave Schneider, WDØENR, who is an analyzer with Motorola, Inc.

If readers know of any likely prospects, please direct their inquiries to Dave Schneider, 507 Vine, Mount Pleasant, IA 52641. □

Are you involved in public service?

Send NEWS and PICTURES to WORLDRADIO

Westlink — news service for amateurs

This is the first article in a series of six about the history and function of Westlink Radio Network — an "on-the-air" news service started by Jim Hendershot, WA6VQP and Bill Pasternak, WA6ITF. Bill — the author of the series — is currently producer of the Los Angeles, California network.

It's the fall of 1977. You are one of a small number of amateurs in the Los Angeles metro area who operate the 220 MHz band. There is a handful of repeaters, but the majority of operation is still centered on 223.5 MHz, with the weekly 220 "Rag n' Tech" net being the local weekly on-air gathering. You are among a very small group of experimenters on the horizon of the opening up of a new band. Oh, the allocation has been around for some time, but it was still virgin territory — undeveloped by the politicos, untouched by the jammers, unnoticed by the manufacturers. That's the way it was back then.

One evening in late September, Wayne Rankin, WA6MPG drove his car to the top of Contractor's Point — overlooking the Los Angeles basin — and immediately following the afore-noted weekly net, he pushed the play button on his portable cassette recorder and issued forth the first Westlink Radio Network newscast. That was only a few years ago, but it seems like yesterday.

Actually, the story of Westlink Amateur Radio News and Westlink Radio Network starts almost a year earlier. It was an October evening in 1976. Jim Hendershot, WA6VQP had called to ask if Sharon and I would like to meet at a local Howard Johnson's for a dish of ice cream. This was something we did almost weekly back then, and it gave us a chance for some "ham small talk."

It was while eating our favorite dish that Jim brought forth the idea. Not so much an idea as a statement of fact. Something to the effect of: "I'm going to start a free news service for hams." I asked: "A newsletter like *H.R. Report?*" Jim responded that he wanted to use his ability and expertise in commercial broadcasting to produce a weekly news program for local L.A. (Los Angeles) amateurs that could be replayed over local repeaters. It would meet all requirements of Part 97 and would be classified as a "Bulletin of Interest to Amateurs," though its format would differ dramatically from that of the ARRL's W1AW. The discussion descended onto other matters, and for a few months I forgot about it. Jim didn't forget.

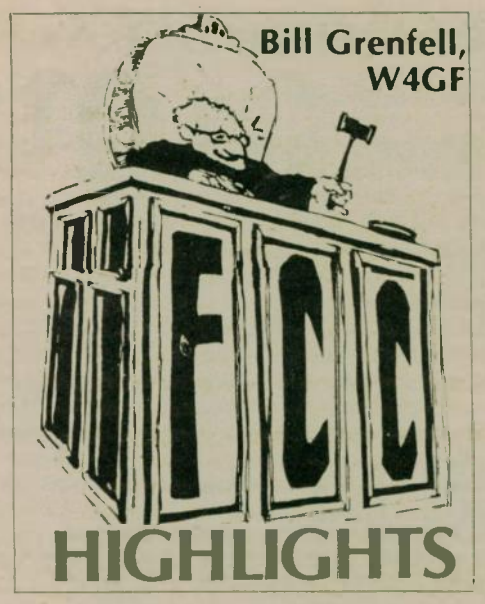
I guess it was seven or eight months later when he brought up the idea again. A lot of things were happening in Amateur Radio. All happening at once. There was the then "on again-off-again-on again" repeater deregulation, a threat looming on the horizon from a so-called lawyer who had made his public commitment to give CBers all the ham bands, and other happenings. Problem: How do you get this information to the people who need it most — the amateur community? The answer? You start a pseudo-broadcast newscast. It was this series of events which led to that September evenings in '77 when WA6MPG — who had also served as "engineer" and one of the "interviewees" for Westlink Newscast number 1 — made the trek up the hill to air our combined work.

Newscast "number 1" dealt only with two topics. The first took up the majority of time and dealt with repeater deregulation, while the rest was devoted toward a report on the illness of then ARRL Southwest Division Director John Griggs, W6KW. It was heard by a total audience of about a dozen 220 amateurs and that was it. Or so we thought, till someone called from the Mt. Wilson Repeater Association to ask if they could get the tape for replay over the WR6AMD repeater. That was the beginning, though we still did not plan to ever go outside the local L.A. area in either story content or distribution. However, time has had its effect, and these days Westlink is the only worldwide weekly Amateur Radio news service with reporters all over the globe. How did this happen? None of us are really sure. It happened, but we don't know why.

(Continued next month) □

Conventions

Arkansas State	26-27 March 1983	North Little Rock, AR
Mississippi State	23-24 April 1983	Jackson, MS
Illinois State	5 June 1983	Princeton, IL
Texas State	3-5 June 1983	Dallas, TX
Alabama State	20-21 August 1983	Huntsville, AL
Dakota Division	23-25 September 1983	Sioux Falls, SD
Southeastern Division	18-19 August 1984	Huntsville, AL
Pacific Division	1-3 September 1984	Santa Clara, CA
New England Division	29-30 September 1984	Boxboro, MA



Deleting most regular amateur station logging requirements will not diminish the licensee's responsibility for its proper operation. For example, FCC's proposal to eliminate listing control operators, other than the station licensee, states that: "In any instance where such a record did not exist, the Commission would presume that the station licensee was the control operator."

Other log requirements proposed to be deleted are: 1) dates and locations when fixed or portable operation was initiated and terminated; 2) description of third-party traffic sent and received; 3) a description of protection measures against unauthorized operation, of shut-down measures in case of control link failure, and of monitoring the transmitting frequencies for a remote-controlled amateur station. However, FCC's Docket 82-726 Notice of Proposed Rule Making (NPRM) would require a technical documentation of a station in repeater operation (proposed rule Section 97.85(g)), a system diagram (if more than one transmitter is used) (proposed Section 97.87), and certain other records and protective requirements (97.88(a), (f) (g)). See page 69, December 1982 QST for more details.

Contrary to the statement in one newsletter, there is no amateur station logging required by international treaty. Original comments on the proposal must be filed with FCC by 14 January 1983 and reply comments are due by 14 February 1983.

•

FCC proposes that the entire process of examination of amateur Novice license applicants be delegated to volunteers. The Commission would issue the license upon receipt of certification of the test results from the volunteer examiner. The volunteer examiner would give the code test, give a written examination prepared by him from an FCC outline of examination requirements, and grade the answers. A record of the examination(s) would have to be retained by the examiner for a year. The examiner must be a General, Advanced or Extra Class operator licensee of the FCC. Original comments on the Docket 82-727 NPRM are due by 15 February 1983. Reply comments are due 15 March 1983.

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ARRL's RM-4229 petition proposes that authority to accredit volunteer examiners be granted to qualifying nonprofit organizations. The League proposes that the examiners have the authority to administer and grade amateur examinations. Novice examinations are included, whereas FCC would begin with only the Novice Class examinations as a first step (see FCC's Docket 82-727 program described in the previous paragraph.)

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New rules for operation of beacon stations by amateurs became effective in January 1983. "Automatic" operation is authorized by Docket 81-823 in certain segments of the 28, 50, 144, 220 and 432 MHz bands and anywhere in the bands above 450 MHz. Manually-controlled beacons are not restricted as to frequency. Only one frequency per band per station location may be used. Beacon station power must not be more than 100 watts input. Emissions are limited to AO, FO, A1, and F1 or A2J at not more than 900 Hz shift. Identification must be once a minute with "/BCN" or "B" following the call letters. Although no frequency limits are imposed, FCC advised that it would not tolerate interference to other stations. Automatic beacons must also observe the National Radio Quiet Zone rules limiting repeaters in the zone (Western Virginia and Eastern West Virginia).

•

Rules limitations on amateur station retransmission of the space shuttle voice communications were waived by FCC for two amateur club stations. Other amateur stations were permitted to retransmit the transmissions of the two stations for which the waiver was requested but forbidden direct pickup and retransmission of Columbia communications. Section 97.113 of the Amateur Radio Service rules prohibits using an amateur station to engage in any form of broadcasting intended to be received by the public. Section 97.91(b) lists "Information bulletins consisting solely of subject matter having direct interest to the Amateur Radio service as such:" as authorized one-way communications which will not be construed as broadcasting. In its 11 November *ARRL-Letter*, the League urged ". . . the Amateur community not to engage in efforts to encourage nonamateurs to listen in. The value of any favorable press attention could be more than offset by the possibility of jeopardizing future waivers of this nature. In short, FCC will take a dim view of any amateur setting his station up for broadcasting to the public." I wonder if the effort to secure the waiver and to operate under it was worth the risk of unfortunate publicity in an activity which was so questionable as an amateur activity as to require a waiver of the rules?

•

Citizens band rule violations can cause loss of the operator's amateur license. In its 11/23/82 newsletter, ARRL wrote: "The FCC has reestablished the correctness of a legal principle that rules violations committed in one radio service, such as the Citizens Band Radio Serivce, can form the basis for revocation and suspension of a station and operator license in another radio service, such as the Amateur Radio Service."

A Technician Class licensee, WD5FPO, had his operator license suspended and his station license revoked for unidentified transmissions on an FAA frequency. He had previously been fined for violations in the CB service. The judge found that his violation of CB rules "affected his qualifications to remain a licensee." His application for a General Class amateur license was denied.

The Commission held that the Communications Act ". . . means what it says — that the Commission can suspend the license of any operator upon proof sufficient to satisfy it that the holder of that license has violated any provision of the Communications Act or any regulation made pursuant to the Act." Second, the Commission held that "the grant of a license renewal does not preclude a later revocation proceeding based upon rules violations that occurred and were known to the Commission investigators prior to license renewal."

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In November 1982, FCC dismissed petitions to authorize CB'ers to use VFOs and to expand CB SSB-type operation in the 27 MHz band and into the 220 and 900 MHz bands. In addition to stating its reasons for dismissing the petition, the

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 1 November 1982.

Radio District	Group A	Group B	Group C	Group D
0	KV0T	KC0YK	N0EHL	KA0PEK
1	KM1I	KB1EE	N1CLE	KA1JNQ
2	KX2R	KC2UJ	N2DYA	KA2QQP
3	KK3T	KC3EL	N3DDG	KA3KBD
4	WG4V	KF4KH	N4HZC	KB4CVZ
5	NC5K	KD5TS	N5FJZ	KA5PMR
6	NO6P	KF6GH	N6HQE	KA6WUF
7	KW7T	KD7CY	N7EQI	KA7OCU
8	KY8M	KD8AN	N8ELL	KA8QYU
9	KQ9Y	KC9VF	N9DPG	KA9OMH
N. Mariana Island	AH0C	AH0AB	KH0AE	WH0AAF
Canton Island	AH1A			
Guam	AH2R	AH2AS	KH2BA	WH2ADL
Johnston Island	AH3A	AH3AC	KH3AB	WH3AAC
Midway Island		AH4AA	KH4AD	WH4AAF
Hawaii	WH6D	AH6EM	KH6UU	WH6AVD
American Samoa	AH8B	AH8AB	KH8AC	WH8AAM
Wake Wilkes Peale			KH9AB	WH9AAA
Alaska	WL7Q	AL7EM	KL7XJ	WL7AXT
Virgin Islands	KP2I	KP2AO	NP2AS	WP2ADE
Puerto Rico	NP4R	KP4FU	NP4GF	WP4COI

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

FCC observed that "... the public interest plainly lies not in more channels but in more cooperation among users."

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The California Cable TV Company has requested mitigation of FCC's proposed $6,000 fine, about which I reported in last month's 'Highlights.' Their cable has been leaking excessively at 145.25 and 147.45 MHz. At the time this was written, the Commission had not responded to the mitigation request. I intend to continue reporting on the progress of this case in 'Highlights.'

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Technician Class amateur licensees will not receive 13 wpm code credit for the General Class license from FCC's proposed "no-code" license rule-making, now being prepared for early release, according to Private Radio Bureau's John Johnston.

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The first notice of apparent liability for a fine for operation in the 10.109-10.115 MHz segment of the 30-meter band by a U.S. amateur was issued by FCC early in November. Violation of Section 97.63(b) by a Richardson, Texas amateur was charged, and the fine proposed was $300.

Operation by U.S. amateurs is permitted only from 10.100 to 10.109 and 10.115 to 10.150 MHz. See last month's 'Highlights' for further details on use of the band(s). "The priority government service making daily use of this" (6 kHz) "portion of the spectrum has filed a formal complaint of interference from U.S. amateurs." (From *ARRL-Letter*, 11/23/82)

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Recent arrangements have been made for the exchange of messages on behalf of third parties by U.S. amateurs and amateurs of St. Vincent and the Grenadines. FCC's 19 November 1982 list is modified from the previous list by adding "and Barbuda" after "Antigua". The previous list was in 'Highlights' in the November issue of **Worldradio** and in the October issue of *Auto-Call*.

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FCC's provision for permits for alien licensed amateurs to operate in the USA is limited to only citizens of a country with which a reciprocal arrangement with the USA has been made. (A U.S. citizen is not eligible for a reciprocal operating permit in the United States under these arrangements.) FCC has consistently dismissed requests that alien reciprocal permittees be limited to U.S. privileges no greater than their own country's examination requirements would match.

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Publication of FCC's WARC-79 Notice Of Proposed Rule-Making document was expected by at least early January 1983. As this was written prior to publication, its impact on the Amateur Radio Service could not be reported.

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There has been a recent flurry of requests to FCC for issuance of amateur station calls with the applicant's choice of letters. In dismissing these requests, the Commission is advising they cannot do it because they do not have the resources (money and manpower) to spare for it. □

Base/mobile station

Jay Mead, KL7IEN

This article is meant for those amateurs just getting into 2 meters who can't afford two VHF rigs. I'm also assuming they don't have a junkbox full of spare parts. My suggestions will demonstrate how an amateur may operate his rig mobile and then take it inside when he returns home and be able to monitor his favorite repeater. I've found the ICOM IC2A to best fit the bill. Here's what I've done. I've purchased the following items:

ICOM IC2A for about	$225.00
ICOM DC-1 regulator pack	15.00
Heathkit HWA-7-1 AC power supply	23.00
(1) UG-255/U connector	2.00
(2) Connectors for the DC-1	1.00
(1) Cigarette lighter w/fuse, adaptor	2.00
	$268.00

Once the Heathkit HWA-7-1 AC power supply is built, install one of the connectors to the positive/negative leads. Remember, the center post of the connector is the positive. The Heathkit AC power supply supplies about 600mA; the IC2A requires only 550mA. After you've tested the Heathkit AC power supply out, plug it into the DC-1 pack on the IC2A, connect an exterior antenna or the rubber duck antenna, depending on your location, dial up your favorite repeater, and lo and behold, you have a base station with no batteries to drain.

Here are some more incentives I've add-

(*please turn to page 11*)

Special Events...

Happy Birthday Pennsylvania!

Dick Levy, WB3EVY

Near the end of October there were some strange doings on Amateur Radio. Heard on various frequencies were phrases like, "Happy Birthday Philadelphia," or "Happy Birthday William Penn." It is easily explained. On the weekend of 23-24 October 1982, the Holmesburg Amateur Radio Club (HARC) — along with the University of Pennsylvania Radio Club — put station W3WP on the air from the Port of History Museum at Penn's Landing in Philadelphia, Pennsylvania as part of Philadelphia's Century IV celebration. Operating for 24 hours, starting at 0001 GMT on the night of the 23rd, we logged 1,235 valid contacts with other amateurs around the world. All 50 states checked in, as well as our friends in Australia, England, Germany, Israel, South America and many others.

It was a heck of a birthday party for all who participated. 1982 marked the 300th anniversary of the founding of the city of Philadelphia and the 338th birthday of our founder — William Penn, on 24 October. Hence, a twofold purpose in the special commemorative station W3WP.

The end result was super. Sunday afternoon, the mayor of Philadelphia — William J. Green — visited the station to present his proclamation, Amateur Radio Week in Philadelphia, to HARC president Tony Musero, K3UKW, and in turn received a plaque giving the mayor honorary membership in HARC. We had a great time and offered a nice commemorative QSL card for those stations making contact with W3WP.

Looking back on the planning stages, it sometimes seemed as if it wouldn't come off. Tony K3UKW, Herb Marder, K3RLE and this writer were shouldering the responsibility for getting the project off the ground and operating. Pushing and shoving and even backing people into corners gave us the location at Penn's Landing for the station that was perfect.

Volunteers for equipment came through, and three antennas were erected on the roof of the building that is situated on the Philadelphia side of the Delaware River.

The plan of operation was for one 2-meter FM rig and two HF rigs. Early ideas of a rotable beam went down the drain when the mast and rotor wouldn't match and other problems came up. Time was running out, so two vertical antennas were put up for HF and a Ringo Ranger for 2 meters. The run of cable from the roof to the office, where the station was to be set up, required three 200-foot runs of coax. To compound the problem, the museum building was displaying a priceless art exhibit from our Sister City of Florence, Italy. The problem was solved by dropping a total of 600 feet of cable down the elevator shaft.

Mayor of Philadelphia, William J. Green (left) presents his proclamation making the week of 24-31 October Amateur Radio Week in Philadelphia to Holmesburg Amateur Radio Club president, Tony Musero, K3UKW and Howard "Gil" Gilpin, W3SRU of the Philmont Amateur Radio Club. ***(Photo by Ed Levy, WB3EVY)***

By Saturday morning, we were ready to load up and make any final adjustments, but most had already been done when we put up the antennas earlier so we were about ready to go when it became "show time." One of my fears was in having enough operators to cover the station for 24 hours and especially the late night tours of duty. A coupon had been placed in our newsletter for volunteer operators to send in and the response had not been overwhelming. Tony did have a roster, and I was surprised and elated to see all the names listed for the full 24-hour operation. The members came through like gangbusters.

Many novel contacts were made that should be mentioned. One of our operators — Bernie Heinze, WA2BAK — made contact on 15 meters with a station in Germany, and before I knew it he slipped into fluent German, much to the delight of the DA station. One British operator, after being told why we were running this commemorative station, wished a very happy birthday to the Colonies. Jay Kuperman, WA3IFY also spoke German and later got a chance to practice his Spanish on some of his South American contacts.

Everyone in radio knows about Murphy's Law and we had our share. But what event doesn't have its problems? A power failure at 0113 GMT put us off the air for a bit, but thanks to some fancy footwork by Harry White, N3HW, we got right back on.

One of the goals of this birthday station was to provide our members with a worthwhile project that would supply an endeavor for the club that was fun. Tony, Herb and I are very satisfied. Everyone had a good time. Overheard on our repeater (146.085/.685) was a comment by Charley Zeager, WA3OQR that when the volunteer operators came to the station at the designated times as listed on the roster, they had to almost drag the earlier operators away from the rigs. Once they got on the air they wouldn't quit and it was wonderful. It must be true that time goes quickly when you're having fun.

Mary Lou Bretz — "chief logger" for the Canisteo Living Sign special event station — keeps busy while Dennis Smith, WA2TVW (center) and John S. Babbitt, WB2SQX operate. (See story next page.)

The University of Pennsylvania was beautiful in not only supplying equipment but also great personnel to operate for the event. Many thanks to Steve KI3Q, Dave KC3EA and the rest of the UP radio club. The Philmont Mobile Radio Club stationed their van outside the site for the public to visit and pick up information about Amateur Radio. Our thanks to Gil Gilpin, W3SRU and Ed Masarsky, KB3IV.

We would like to give special thanks to Walt Powis for use of his call, W3WP, also known to us as Whiskey Three William Penn. Thanks, Walt. And thanks to all of you who worked at making this birthday event a success. We include the many stations that made contact with W3WP to wish us a "Happy Birthday." □

Georgia's birthday

Area amateurs will operate a special event station in honor of the state of Georgia's and historical Savannah's 250th birthday. Operation will be 12-13 February, 1500-2000Z on upper 25 KC, all General phone and 21.130 to 21.170 kHz Novice. QSOs on 2 meters 146.52 only.

For special certificiate, send QSL card with QSO number and large SASE to call of contact operator. □

St. Vincent

St. Vincent, J87LTA — operated by Bill O'Kain, K4LTA, Charles Stone, KØOSN and others from Oak Ridge, Tennessee — will be active during the ARRL DX contest on CW, 19-20 February 1983 and all bands CW and SSB the following 10 days. K4LTA and crew will then join other Oak Ridge DX group members Grady O'Kain, KR4C and Mitchell Ivey, WA4CDH on Antigua, 4 March, where they will operate a multi-single effort in the ARRL DX contest on SSB, plus a few days afterward, all bands SSB and CW with a V2 call sign. □

Living sign's 50th anniversary

John Babbitt, WB2SQX

Saturday, 11 September 1982 was a very special day in the Canisteo Valley, New York for local amateurs. Early that morning, they gathered to erect antennas and set up equipment which would be used for the day's activities. (See page 7, September Worldradio.)

At 9:00 a.m., transmitters were fired up on 40 meters and 20 meters, signaling the start of the day's activities. After solving a few minor problems, operations continued smoothly throughout the day.

It was a beautiful fall day, so the special event station was set up on the deck of WB2SQX, overlooking the beautiful Canisteo Valley. During the day, 262 contacts were made in over 30 states in the United States. The highlight of the day was a contact with A22SM in Botswana, Africa on 10 meters.

Everyone who responded by mail received an aerial postcard of the sign, specially imprinted for the special occasion.

Manning the special event station throughout the day were: John Stanton, KO21; Phil Bretz, K2IUT; Dennis Smith, WA2TVW; Jack Aber, K2IZA; and John Babbitt, WB2SQX. Mary Lou Bretz served as "official logger" for the day's event. The XYLs provided a great deal of assistance in the form of coffee, doughnuts and sandwiches.

The Canisteo Living Sign is made up of 260 Scotch Pine trees — an average of 9 to 10 feet in height — and forms the "world-famous living sign" on the hillside behind the Canisteo Elementary School in Canisteo, New York. (Canisteo is 65 miles south of Rochester, with a population of 2,800.) The area which contains the letters is approximately 300 by 90 feet, with each letter about 30 feet wide and 70 feet long.

It was designed and planted by the late Harry Smith and Ed Childs of Canisteo in the fall of 1932 and early spring of 1933. The sign was believed to be of aid to pilots at that time.

The "world's largest living sign" was reported in the famous "Believe It Or Not" column by Ripley several years ago.

Base/mobile

(continued from page 9)

ed to enhance my ICOM IC2A. Since I live in Knik, Alaska, which is about 50 miles from Anchorage where most of the popular repeaters are located, I have an 11-element, 2-meter directional antenna about four feet above my ATB-34 Cushcraft. I simply hook the RG-58 coax with the B & C adapter to my IC2A, hook up my Heathkit AC power supply, and I'm able to hit all the repeaters.

While mobile, I hook the IC2A up to an outside 5/8's whip, plug the cigarette lighter adapter wire into the DC-1 pack, and I'm able to have a steady ragchew without draining my batteries. For emergencies, I do keep the IC2A battery pack charged up and carry it and the rubber duck in my coat pocket in case I have to operate away from the vehicle.

One last comment regarding a power supply at home. Yes, you could have an in-line fuse with the DC-1 pack, going to a 12-volt battery. However, the cost of the battery and the charger to keep the battery up to snuff far exceeds the cost of the Heathkit AC power supply. My theory is — keep it simple and keep it neat. I've operated this way for about a year now and have had no problems. The bottom line is this: I have a base station and a mobile station for only $270 that's very efficient. □

Still going strong after 53 years

Following is an article sent to us by Bill Goggin, KC8OF, who knew Paul Woodland and his wife (nee Vera Bradford) from pre-high school days in Michigan, nearly 60 years ago.

Paul has always had an ingenious ability to make things work, either mechanically or electrically. His enthusiasm for these "projects" among other things led us to get our first amateur licenses in 1929 — W8EEY for him, W8ECQ for me. Obviously our rigs had to be homebrewed. His always worked; mine needed his deft craftmanship.

During the early years, Paul wanted to improve his antenna and since he was a bit allergic to altitudes, I volunteered to climb the city water tower near his home, after city fathers' approval, and mount the far end of his antenna. The result: a several hundred-foot-long wire antenna with the high end up 160 feet! He had no trouble in contacting Australia with less than 5 watts input to a 171A single tube oscillator.

Not long after that, we designed and built an early mobile transmitter and receiver that attracted a lot of attention. Even though it worked well, we abandoned it since we found it illegal.

Eventually our paths separated. Paul continued his "ham" activities, keeping abreast of the "state of the art" and continuing to upgrade his license at every opportunity. He has always been active in Amateur Radio clubs — from the first in 1930 until the present time, as a leader and participant in Field Days, emergency programs and all other amateur activities.

As Class A licenses became available, he expanded his DX activities and at one time commented "I wish they would hurry up and liberate more African countries. I've worked all that exist now!"

Paul was always an eager teacher and is responsible for interesting many neophytes in becoming confirmed amateurs. His younger brother Hugh is a typical example — he became W8KIQ.

Several years ago his brother, after working during intense labor negotiations, suffered a severely disabling stroke. The resulting paralysis left him almost totally unable to speak and thoroughly discouraged. Paul, now in Texas, continually urged Hugh in Michigan to get back on SSB phone. Hugh did so reluctantly, embarrassed by his slurring, almost unintelligible speech. Secretly Paul made recordings of Hugh's radio speaking progress. When Hugh audited them his attitude changed to one of challenge and encouragement. Now Hugh, still unable to work, has become a distinct radio personality with loyal and enthusiastic friends statewide, nationally and internationally.

Paul is very active in Quarter Century Clubs. If there were Half Century Clubs, he would be equally active in them!

For years Paul has been teaching Amateur Radio — indeed, three of his earliest students were his wife, Vera, and two sons. Shortly afterward, they became WD5BOW, WD5BOY and WD5BOX. Vera now operates with an Advanced license and is very active in XYL nets and programs.

Since getting her license, Vera has helped Paul annually teach new enthusiastic potential amateurs. Their classes in Arlington, Texas usually have 20-25 students with over 75 percent passing the Novice exams and range in age from youngest teenagers to elderly grandparents.

Not only are Paul and Vera responsible for scores of amateurs receiving their Novice licenses, they have a way of encouraging and helping those Novices upgrade. Many have gone on to become Technician, General and more than a few Advanced licensees. Indeed, so enthused are some upgraders that they call Paul or Vera via 2 meters or landline as soon as they pass the test!

During the winter of 1981-82, Paul was hospitalized for several weeks in the middle of his class program, so Vera took over and taught 10 of the 12 sessions while Paul recovered. Again, a high percentage of the class graduated with licenses. One of the pupils was a 10-year-old boy who passed both code and the written test — with almost perfect results.

Paul and Vera go nowhere without their radio. When one is away, he or she is in contact with the other on 2-meter HT. Their RV is radio-equipped, as is their car.

With over half a century of enthusiastic amateur experience, Paul and Vera are responsible for many amateurs enjoying this stimulating hobby — including me!

(ED: Paul Woodland passed away suddenly the morning of 26 December, while operating on 40 meters.) □

Honey Sunday

Reynolds Davis, K0GND

Working with the Capitol Association for Retarded Citizens, the Lincoln (Nebraska) Amateur Radio Club provided communications for the annual Honey Sunday fund-raiser, held 7 November.

The primary responsibility of the club was to provide inventory control throughout the city. In addition, officials for the event were linked through club members. A total of 23 amateurs assisted during the event. □

NTS plays Cupid

Don Simon, NI6A

February brings us all an opportunity to be friendly and communicate with those we love. After the Christmas-New Year's holiday traffic slows down, the National Traffic System (NTS) would suffer severe withdrawal symptoms after being put into high gear if it were not for Valentine's Day. For this, every NTS operator dresses up with wings and bows and arrows and delivers thousands of Valentine messages for the public and fellow amateurs.

To get in on this valuable yearly drama, all you need to do is renew your acquaintance with your local or section traffic net and reestablish your ties with our national traffic system that links the nation both in fair winds and times of disaster.

Include a message number, station of origin and word count, followed by place of origin, time in UTC and date. The addressee should have a first and last name, as complete an address as possible and telephone number. The text should be as short as possible. Use ARRL numbered radiograms where possible. ARL sixty reads: Wishing you the best of everything on.... The last word is added by the originator. In this case, the text would look like this: "ARL SIXTY VALENTINES DAY." Please spell out ARL numbers so that mistakes can be avoided on both CW and voice. Notice that fifty seven is counted as two words, while 57 counts as one. Add a signature of your choice and the message is complete.

This February, check into your NTS nets and brush up on your communications skills. We never know when such skilled radio communicators will be needed, and the NTS is always auditioning for budding Cupids and smart operators. So brush off your wings and bows and warm up your rig to some of that good old-fashioned traffic handling, maintaining your connection with both the NTS and old friends on 14 February.

Example message:

1 r NI6A arl 6 El Cerrito Ca 0300Z Feb 4

Joan Baxter
599 Waverly St.
Woodpecker, Ca. 94569
408-123-4567

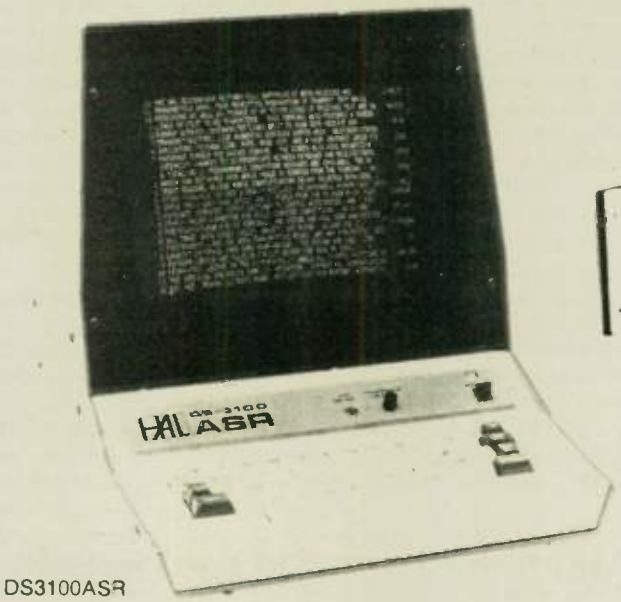
arl sixty Valentines day x 88
Don □

'Jingle Bells'

Emil Rusin, WA2JBV of Lancaster, New York sent us an article which told about the project some local amateurs undertook this Christmas season. "Operation Jingle Bells" took place at Thruway Mall in Cheektowaga, New York, for the purpose of sending Christmas messages to military bases and locations in 28 countries, at the request of individuals in western New York.

Among those who took part in "Operation Jingle Bells" were Peg Osswald, KA2JJI; Lula Wuichlac, KC2UC; and Tom Cimato, KB2NW. Approximately 100 amateurs belong to the Southtowns Amateur Radio Club, which — along with the Thruway Mall Merchants Association and WKBW-TV — made the whole thing possible.

A 50-foot-high antenna on the roof assisted with communications. The program "promises to be repeated" said Paul Sciandra, mall marketing manager. "We do it every year, and may do it at other times in addition to Christmas." □



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CIRCLE 90 ON READER SERVICE CARD

Stars, Santa and hams

Lenore Jensen, W6NAZ

Five hundred thousand spectators lining the famed Hollywood and Sunset Boulevards, plus millions watching by TV, recently enjoyed a smoothly-run 51st Annual Hollywood Santa Claus Parade which had professional-type help by 65 Amateur Radio operators.

Because there were announcers with loudspeakers at 15 key points along the route, there was great need for special communication. The announcers told the crowds on the street vital facts about the 200 TV and film celebrities riding in floats or antique cars during the two-hour event. In spite of elaborate planning and logistics in handling star arrivals in the midst of jammed streets, inevitable last-minute changes occurred in the "line of march." It was essential the announcers be advised.

Thus, each announcer (either on a rooftop or at streetside surrounded by barricades) was accompanied by two amateurs with 2-meter hand-helds. Word of change was received from other operators at the start of the parade. The amateurs along the route were quick to pass on tips regarding breakdowns, disturbances, lost children or the need for Red Cross first aid.

At the Los Angeles Police Command Post, officers were highly impressed with the color TV pictures sent and received by Jim Williams, WA6PXP and Bob Busch, KA6RIE, from their ATV operating on a Cushman vehicle roaming the parade route. Clear pictures were most helpful to those in charge.

Several 2-meter frequencies were used for various circuits. A general Amateur Command Post had been in operation from early morning; a net of stations at the 16 street points was controlled from the "ham headquarters" — space generously offered by Les Harrison's Hollywood Sound Company, including roof space for myriad antennas. Another frequency was used for the point-of-origin information.

Plans for the event had been carefully worked out by Frank Pettinato, WB6ELR, the Los Angeles Police Department officer who regularly works with volunteer Amateur Surveillance teams in the West Los Angeles area. He was assisted by Bob Burns, N6ZH (a reserve officer). The large contingent of volunteer operators cheerfully attended a briefing meeting the week before — a precaution which helped in the eventual success of the huge operation.

The parade itself was produced by Johnny Grant, WB6MJV — popular Hollywood TV and radio personality.

Volunteers included Bob Bright, WA6AQQ; Art Hammill, KA6BQW; Chuck Carpenter, N6CFQ; Ben Cotey, WD6CHO; Tracy Lusk, WB6CJW; John Hiltabiddle, K6CTT; Ray Davis, NB6D; Bob Reitzel, KD6DA; John Benka, WA6DUB; Roger Davies, N6DVZ; Gene Ford, N6ERJ; Paul Schou, KE6ET; Don Barton, WD6FAB; Ken Saunders, N6FAE; Dave Tucker, WB6FAK; Richard Ravich, WD6FIE.

Judith Teeter, WD6FWZ; Alvin Teeter, WD6FXG; Chuck Linsley, N6GAL; Dennis Smith, KA6GSE; John Shaffer, W6GVR; Randy Post, KA6HCK; Phil Vinokur, WA6HVI; Jerry Forrest, K6JJJ; Allan Westersten, NB6K; Len Drayton, WA6LAU; Scott Adams, KA6LOW; Archie Willis, W6LPJ; Lenore Jensen, W6NAZ; Jeff Stine, KA6OGR; Norm Friedman, W6ORD; Marshall Sevin, WB6OXA; Bill English, KA6OXO; Bud Clark, W6OYV; Gerry Gross, WA6POZ; Jim Williams, WA6PXP; Dan Sherwood, WA6PZK; Ken Teeter, KA6QHE; John English, WB6QKF.

Don Rubin, KA6QOV; Bob Busch, KA6RIE; Lee Craner, WB6SSW; Kathie Christopher, KA6SZA; Ray Dragovich, WA6TNS; Gary Andary, N6UU; Dick Groll, NE6V; Rene Tidwell, WA6VAW; Bob Jensen, W6VGQ; Bob Zamalin, WA6VIP; Jordie Saunders, WA6VIQ; Heather Olip, KA6VJK; Mark Dimant, KA6VPK; Kit Carson, WB6VPV; Adrienne Sherwood, WA6YEO; Jerry Fire, WB6YEQ; John Olip, WB6YQT; Eva Gordon, WA6YQT; Fred Fichman, WA6YVA; Bob Burns, N6ZH; and Dick Martin, N6ZQ. □

Bicyclists raise funds for ALA

Reynolds Davis, KØGND

Communications for the third annual "Octobertrek," a 100-mile bicycle fund-raiser for the American Lung Association, was provided by 14 members of the Lincoln (Nebraska) Amateur Radio Club, 9-10 October.

The major responsibility for communications was to observe and report progress of the cyclists. The two-day event — which included overnight camping near Louisville, Nebraska — raised, though pledges, $7,200 for the American Lung Association. Two club members — John Hauner, WAØYPY and Mike Drabant, NØDMX operated motorcycle mobile. □

Diabetes fund-raiser

Reynolds Davis, KØGND

Inventory movement and management for the annual fund-raiser of the Juvenile Diabetes Foundation was again provided by the Lincoln (Nebraska) Amateur Radio Club, on 23 October. The Foundation — through hundreds of volunteers — sells balloons throughout the city, preceding a University of Nebraska football game.

The club provides communications necessary to move the balloon inventory as well as the proceeds to and from the central location. This year's event raised nearly $20,000. Sixteen amateurs participated during the event. □

Amateurs support Seattle Marathon

William Bingham, WA7VEH

Puget Sound radio amateurs, for the sixth consecutive year, provided complete communication coverage for the Seattle Marathon, held 27 November. The 26-mile 385-yard course was laid out as a double excursion along the western shore of Lake Washington, extending from the historic floating bridge at the north to a loop around the Seward Park peninsula at the south.

Communication support was provided by 14 licensed amateurs under the direction of M.L. "Gib" Gibson, W7JIE. Radio operators were assigned to doctors at the four remote first aid locations and to the doctor-in-charge at the central medical tent. Shadows were also assigned to the race director and the race coordinator. In order to provide complete course coverage between the checkpoints, three "bicycle mobile" units swept the track. Finally, a net control station was placed at an optimum location for global coverage.

The race started at 10 a.m., with 2,200 runners. Intermittent rain showers dampened everything but the spirits of all participants. The winner of the race was Bill McClement of Kirkland, Washington, who completed the run in two hours, 20 minutes and two seconds. The distaff winner was Wendy Robinson O'Donnell of Portland, Oregon who clocked in at 2:45:52 to easily win for the third time.

The race directors were once again pleased with the public service provided by the Amateur Radio operators. Not only was instantaneous visibility to the progress of the race available, but also immediate response to the few emergency situations which arose. □

Amateurs help 'D-Feet Diabetes'

James Wilmerding, WB2SKA

On 7 November 1982, a dozen amateurs participated in a 10-mile walk-a-thon organized by the local chapter of the American Diabetes Association. Jimmy Wilmerding, WB2SKA — who is diabetic and vice president of the Middle Tennessee Chapter — was asked to provide the communications network for the event. Dr. John Pleas from Vanderbilt Medical Center acted as the overall coordinator of the walk.

Radio operators were placed at all aid stations and checkpoints. The 10-mile course was laid out in and around downtown Nashville. Through the generosity of Ed Lagan, WA4PCD, his 147.780-147.180 machine was used.

As many amateurs were members of the Radio and Transmitting Society, the club call of W4PQP was utilized. Numerous compliments were paid to the group for their efficient and necessary communications link. By 3:00 p.m., over $1,000 had been pledged for a worthy cause.

The following amateurs graciously gave of their time to make this undertaking safe and productive: Richard Hall, WB4TNH; Andy Hughes, WB4HCK; Jim Sweeney, WB4RAB; Phil Brown, WA4CGD; Don Greve, WD4SGS; Ralph George, W4CJY; Al Creel, WB4FQW; Carleen Dodson, N4FTG; Bill Cowan, N4DJY; Dave Huffaker, WD4LSK; Fred Ryan, K4YEH; and Jimmy Wilmerding, WB2SKA. □

Message gets through

Paul Kilzer, W8GAX

On Thanksgiving Day, several Marion Amateur Radio Club members found themselves involved with priority traffic on behalf of the Morrow County, Ohio Sheriff's Office. Because of the holiday, the normal police communications proved ineffective in reaching a Morrow County resident who was visiting in Puerto Rico. There had been a death in his family and it was vital that he call home.

Morrow County Sheriff's Deputy — Dave Holland, K8YLL — called George Waldie, W8JRL for assistance. The message went to Wirt Robinson, W8NEC via Phil Ferdinand, N8CLI, and to Bob Cope, W8MOK. Bob was able to raise Carlos CE3AQI/KP4 on the Inter-American Traffic Net on 21.390 MHz. The addressee was at an unlisted telephone number, but Carlos was able to get the telephone supervisor to pass the message along. Carlos reported back to Bob W8MOK. About three hours after the amateurs started to work, the sheriff reported that a telephone call from Puerto Rico had been received by the family. □

Thanks from KNBR and City Sports

28 September 1982

Greg McCartney
San Francisco Radio Club

Dear Greg,

On behalf of all of us at KNBR and City Sports, our grateful thanks for all the cooperation given us on the Bridge to Bridge Run.

With the excellent cooperation, expertise and efficiency we always get from you, we are able to spot problems immediately and take care of them.

I think the smooth running of the race over the past several years has much to do with your total coverage of the course.

This year, we had the potential for a disaster when a runner had cardiac arrest near the finish. Had the radio club not been on the spot and responded immediately, calling in the ambulance and paramedics, that runner would probably not have survived. But because assistance was given to him immediately, he is now resting and in good condition. And in fact, expressed his regret that he was not able to finish.

When the paramedics returned to make a report after taking him to the hospital, they too were delighted that assistance was given to him immediately. I echo their sentiments: "If we can save one person, our being here is worth it."

Thank you.

Cordially,
ISABELLE LEMON
Manager, Advertising and Promotion
—San Francisco RC, CA □

Keep your eyes on the sky

Wayne Johnson, K9MIF

With the severe weather season upon us again, we will find that the local emergency weather nets will be activated more often. I would like to comment on what is expected of you as a spotter.

Of course, your safety is primary when out in the field working as a spotter. *Do not* take chances! Check into your area net and be governed by the net control's instructions, unless you have been previously assigned an area to monitor. When you are on station, report your location to the net control (NCS). After making this report, keep quiet and do not make any transmissions unless they are severe weather-related, such as extremely heavy rain and wind, and — of primary importance — half inch or bigger hail.

Do not report such things as light rain or dark skies. These are normal under most pre-storm conditions. If a funnel cloud is spotted, keep your cool. Call NCS and report that you see a funnel cloud hanging from a cloud or on the ground and its location. If it is safe to stay at your location, give the direction of movement and whether it is staying on the ground or lifting into the sky.

It is of the utmost importance to keep transmissions short so that NCS can question you if needed. If you leave your station to track it, let NCS know.

Remember, upon a report like the above, your Civil Defense Director will activate the emergency warning devices throughout the county.

We also must be careful what we are reporting. The number of scanners that are programmed for 2-meter repeaters is unbelievable. Be *PROFESSIONAL!* This will keep the image of Amateur Radio a superb tool in reporting severe weather. Remember, we are there to save lives. With the great group of amateurs, we will accomplish this when the need arises. And, of course, none of this can happen with dead batteries in your HT's. Be sure they are fully charged at all times.

— Central Wisconsin Radio Amateurs □

Amateurs assist VIP program

P.A. Reed, K6DMF

Amateur Radio operators of Yuba, Nevada and Placer Counties have formed a cohesive group to assist the California Department of Forestry with their Volunteers in Prevention (VIP) program. There are approximately 25 amateurs from the three counties that provide help in the many aspects of the program. Making a big hit in the classroom education program by using Smokey the Bear costumes have been Ron Menet, N6AUB, Phillip Cleveland, KC7IW and Gary Watt, KD6GY. Bill Walker, K6CYB has also put in many hours in the school rooms educating the students.

Another facet of the program are the Fire Information Officers (FIO's), who collect all the information from the dispatchers and other sources and dispense it to the news media. They spend many hours on the phones during the fire season. Bill Walker has put in many hours as an FIO. Those amateurs who attended the FIO training session were K6GYB; Bob Nordberg, W6ARO; John Tiernan, KA6LNC; KD6GY; N6AUB; Mary Ann Simmons, N6HJA; and P.A. Reed, K6DMF.

Then there are the Hot Shots — KC7IW and N6AUB, serving Nevada/Yuba County; Dave Percival, WB6GOM in Foresthill; Jim Standley, KA6GZI covering Colfax; and Frank Law, WB6CCT, who takes care of Western Placer County. When there is a fire in any of their areas, they jump into their four-wheel mobiles, go to the fire scene and contact the fire boss. With their fire-fighting gear and a handful of ham gear, they relay information to the district headquarters where it is received by either N6HJA, W6ARO, or K6DMF. These people bring their radio equipment into the headquarters. set up and pass the information received to the FIO's.

When there is a Red Flag Alert, and on request from district headquarters, available amateurs take their mobile rigs and head out to the boondocks looking for fire situations that may cause fires, with signs on their vehicles and red flags flying from antennas to act as a deterrent to arsonists. Those amateurs taking part in the past red flag alert were KD6GY, KA6LNC and K6DMF. Manning the base station at her home was N6HJA.

Other amateurs who stand ready to assist are Clifford Fish, WA6KYA; Herb Jefferies, KB6ZN; Ed Gould, W6AUZ; Martin Watt, WA6GUT; Morry Sayre, W6TSS; Jim Matessino, N6EKA; Craig Bledso, K4TXK; Floyd Worth, W6ZOH; and Morry Warner, K6IGH. □

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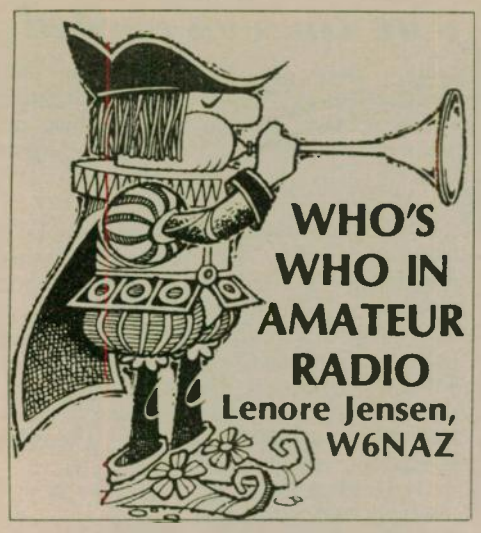
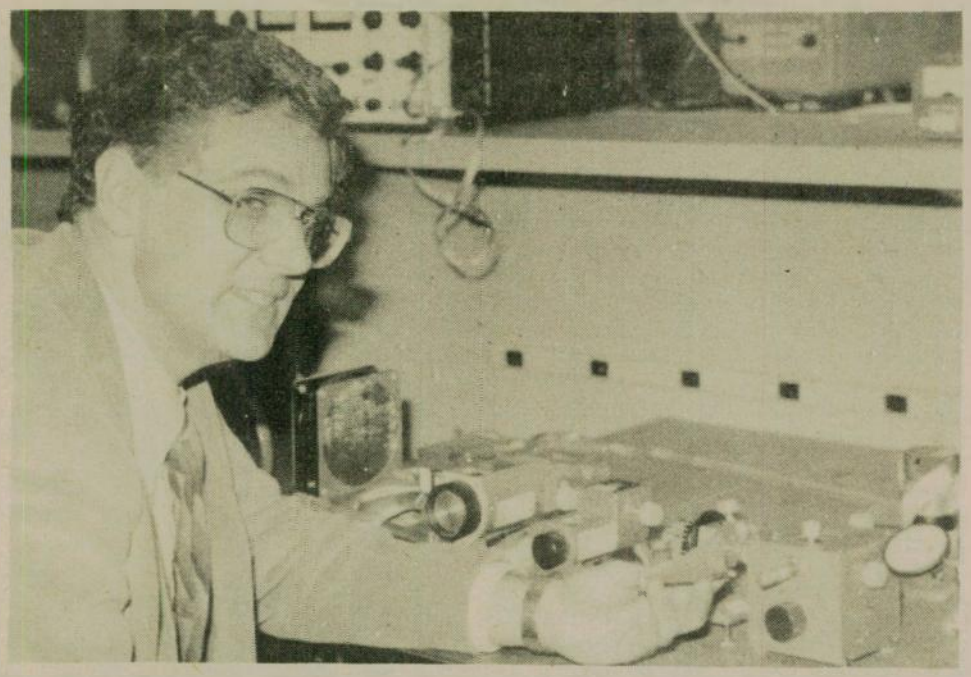




Dr. William Bridges, W6FA — at a student's experiment — holds a 100 gigahertz, 20dB gain wave guide antenna in the shape of a tiny horn. ***(Photo by Bob Jensen, W6VGQ)***

Modern eye surgery using lasers for retinal attachment, so effective today, is one of the advantages made possible by an earlier discovery of Dr. William Bridges, W6FA — formerly W6GEB.

Now, Bill works in the unique atmosphere which has produced 19 Nobel and 16 National Medal of Sciences winners: the California Institute of Technology in Pasadena, California. He is professor of two departments -- Electrical Engineering and Applied Physics, where instruction and research of the very highest rank is accomplished.

When he was a teenager, Amateur Radio was the motivation that pointed him to a scienfific and technical path.

Bill earned his Ph.D. at the University of California, Berkeley, where he had also taught. "I believe strongly that if you are going to teach engineering, you must have practical experience!" he says. So he went on to Hughes Research Laboratories in Malibu, for what turned out to be a total of 17 years.

Originally steeped in microwave devices and their wonders, he arrived "when the first demonstration of a laser was still reverberating through the hallways." The first had been a ruby crystal solid-state device "and it was then the beginning of research into *gas* lasers; in 1964, I stumbled onto a new kind."

It was to be of enormous importance. His patent, the Ionized Noble Gas Laser, describes it as "capable of radiating electromagnetic energy throughout the visible and invisible light spectrum."

Today, argon gas lasers are used in a $30 million industry and in scientific fields. "Most are used as pumps," he explains, "as power sources for tunable dye lasers. Photochemists and all sorts of research activities use them. The laser I worked on is really a power source for another laser."

For the average citizen, argon and krypton gas lasers are seen in Laserium programs at observatories and in dramatic lighting effects at rock concerts. High-speed printing, such as for newspaper photo matts, is another use.

He has five other patents on lasers and applications, has published more than 30 papers, co-authored *Electron Dynamics of Diode Regions* and contributed to many other books. The EE honor society, Eta Kappa Nu, named him "'The Outstanding Young Electrical Engineer for 1966," and he belongs to Phi Beta Kappa and Tau Beta Pi, the engineering honor society. He has the rare honor of being elected to both the National Academy of Sciences and the National Academy of Engineering. His other credits are far too numerous to list!

Except for one: He took a year off from Hughes to attend Caltech in '74/75 as a Sherman Fairchild Distinguished Scholar, again enjoying working in the academic life. He returned in '77 and took up his present work.

Earlier, he had done work on an interesting "adaptive optical antenna system," a way of formng a beam "as you would phase an antenna, but you do it *adaptively* so the antenna sort of phases itself in real time."

In answer to a puzzled look, he continued, "The application in optics is — if you have a turbulent atmosphere which would scatter light in all directions and you'd like to put a nicely focused beam *through* that atmosphere, you just distort that beam before you send it, so when it passes through the atmospheric distortion, it all comes back together again!" (Oh.)

This apparently led to one of the first adaptive optical systems with a self-phasing property.

At Caltech, in addition to his courses and work with students' projects and experiments, he serves in various ways — particularly in chairing the EE Search Committee for new faculty. Competition between universities is keen for highly qualified faculty members. There are not enough developed talents to go around in engineering, computer sciences and applied physics.

What about the opportunities for young people? "There's no end to the need for highly skilled, technically-trained individuals — those who are able to do research and, I certainly hope, willing to go into academic careers as well."

Only one of five applicants can be admitted to such courses at Caltech. "We look for that rare breed of cat, someone who is curious and has demonstrated his/her ability, not only with straight A's. We like people who say, 'I am not going to be satisfied with textbook answers. I really want to understand how it works!' "

"Personally, I like people who repair their own cars or hi-fi's and who enjoy working with their hands."

(Of the less than 2,000 students privileged to attend Caltech, half do graduate work. The average SAT scores for entering freshmen: Verbal 670, Math 760.)

Bill is concerned that nearly all graduate students around the country are going right to industry and its high salaries rather than into the academic world to pursue Ph.D.'s The importance of research and training to the nation and industry itself can not be over-emphasized.

Is he where he wants to be? You bet! He's able to work with a comparatively small group of students, frequently on a one-to-one basis, hopefully helping them develop into superior scientists.

Visiting the labs, we found fascinating experiments in progress. Bill showed us one in particular. "Here, we are trying to make the equivalent of an optical fiber for millimeter waves, an interesting hybrid between radio and optics."

He picked up a long, slender glass tube containing orange "fibers." "It's an exotic material extruded into a fiber form with a very high dialectric constant. We want to transmit millimeter waves down these individual fibers." He then picked up a tiny horn. "This antenna is used as a launcher for our millimeter fibers, in the 100 gigahertz range. The wavelength across the guide is but 1½ millimeter."

To him, light wave technology (electro-optics) is exciting. "You see, the time has come for development and application of lasers, in addition to research." Such fibers will be used in telecommunications, long lines, cable TV — perhaps even our phones. They're cheaper than wire.

Dr. William Bridges enjoys the challenges of longer-term, in-depth research and "the freedom to explore the twisty roads and dark alleys" possible only in such an Institute.

Humor, as a relief from the concentration in advanced studies, has always been associated with students at Caltech. Football fans have never forgotten the classic tampering with cards at a Rose Bowl game which brought the name of their school to the attention of the national TV audience.

One tradition of Senior Ditch Day is the sealing off of a friend's dormitory room and door, to be opened only after solving unbelievably clever arrangements. (Concrete, steel plates, cherry pickers and enzymes are but a few of the necessities.)

To show a certain prof their secret admiration, they once completely eradicated his office door. It had been removed, the space sealed and beautifully refinished to match the hallway. His photo was even hung to match the others along the way, indicating he had been a former professor! Problem-solving is a way of life. Hi.

Amateur Radio came into Bill's life while he was in the 8th grade but home sick. His grandmother brought him a copy of QST and that did it. He earned his first ticket, W6GEB, in 1949 and enjoyed meeting his elders at the Inglewood Radio Club.

"The great thing about ham radio," he feels, "is that people of different backgrounds can share a common interest, solve problems and work together. As a 14-year-old, I could come and talk with a man of 60 almost as an equal."

In 1970, he helped start the Conejo Valley Amateur Radio Club. As an operator, he is "hooked on CW" and thoroughly likes contests. He has most of the prized certificates of hamdom.

He's now trustee of W6UE, club station of the Caltech Amateur Radio Club, which has 40 members of faculty, alums and students. (One member is the renown Dr. William Pickering.) The club's president is Sam Sjogren, WB6RJB, and the secretary/treasurer is Dave Ritchie, N6DLU — an alum of Caltech and present law student.

Does Amateur Radio of 1983 provide motivation to bring youngsters into engineering? Bill finds it "too good, too packaged, demanding too little tinkering and rarely asks the intellectual question, 'How does this thing work?' " But it — and the interfacing of computer boards with one another — still have the value of stimulating the imagination.

His main worry is that engineers are becoming "invisible" to the general public.

(*please turn to page 21*)

OFF THE AIR

H.R. 3239 may help handicapped

The passage of H.R. 3239 has the potential of helping some of the handicapped beyond what is already being done.

We are all familiar with the small tape player with a built-in speaker, used by the FCC. My best friend wears an aid in both ears and required repeated attempts to get his General before he was able to sit close enough to the player to hear well enough — and pass!

It is logical to assume that a volunteer examiner would be less reluctant to make a pair of earphones available, where required.

It is also confusing, from comments in your publication, that the no-code category may be a reality. On the one hand, the FCC is cutting back services because they don't have enough funds. No more special call signs and too expensive to reissue vacant K or W calls.

Now we understand that a no-code license would *not* tax these departments. A new class of calls to keep track of, new examinations to give, etc. No more work? Maybe!

How about a vote for a no-theory license! Thousands of us, trained during WWII and after, could have become instant hams without the theory requirement. We were skilled in code, procedure, antennas, regulations, equipment set-up and everything else required for being good radio operators. But the only "theory" some of us had was changing tubes and fuses.

A no-theory license would have as much justification as a no-code license. Anyone who can hum a tune shows aptitude for learning code. It does however, require a little desire and effort. So does theory.

Somewhere, there is another reason behind the backing of a no-code license. If a person has a Ph.D. in physics, he or she can pass 5 wpm if they are really motivated to become an amateur Technician. Our HANDI-HAMS could show them how to enjoy the hobby without excuses.

GENE THOMAS, NN6G
Byron, California □

Don't cry 'Wolf'

As a certificate hunter, I believe the letter from Doc AF2Y on page 18 of December **Worldradio** needs a reply. Doc's letter was a warning on applying for Cuba's awards. Doc made application for a certain Cuban award in February of 1982. That's about 10 months ago and as of this time, he hasn't received the award. I personally would rather believe Doc is crying wolf a bit early than believe it's a Castro ripoff. You see, I applied for this same award last week.

I don't know how much paper Doc has hung, but I know after 90 or so awards you develop some patience. I remember my P-6-K was in the mail for 11 months, W/100/U more than a year, Romanian YO-45-P also more than a year, and WAVE was returned in 10 months. With several other awards, the return time was nine and 10 months.

I would hate to think a premature cry of wolf would keep others from applying for this award. As for Doc's letter to FRC, you don't find many awards managers answering mail.

Don't hold your breath waiting on a certain award; just keep hunting, at least until all the cracks in the shack's walls are covered.

LEE ALLEN, W5VJT
Denton, Texas □

Cuban award mystery solved

Either at the tail end of 1981 or the early part of '82, **Worldradio** provided ink concerning the Cuban FRC's desire to issue certain awards, one of which I applied for — namely, Worked All Caribbean. In accordance to their rules, I submitted a certified list of confirmed contacts plus $2.

After an excessive delay, I wrote you questioning the credibility of that specific organization. In turn, you gave my inquiry space for which I belatedly say thanks. Subsequent to the blurb, I began receiving many letters from equally disgruntled North American amateurs who very much resented being "ripped off." Apparently, it seemed that no applicant had received anything.

The general feeling was that no award would ever be received based upon politics (i.e., very poor relations between Cuba and the United States). Furthermore, the amateurs said they should have known better than to get involved with awards being issued from a communist nation. I, too, felt that politics did play a role, but the willingness of Cuban amateurs to courteously work North America and vice versa seemed to contradict this theory. At any rate, since no awards were being issued, obviously there was being formed unfriendliness toward the FRC by us.

Very recently, on 10 meters, I met up with "Rey" Marrero, CO2HQ from Havana. I felt compelled to vent my annoyance as well as that of the amateurs who had written me. I asked him point blank, "Why the FRC ripoff?" Rey was taken aback by the problem, not knowing anything about it until now. Being a fine gentleman, patriot and a person deeply interested in fostering good will among hams, he called the president of the club, Reynaldo Leon, CM2RG. Here is the explanation for the delay.

The initial run of awards came back unsatisfactorily from the printer. Rather than send out slipshod work, the FRC demanded a second run — one of perfection. The printing was to be completed on 1 January 1983, and the awards were to be mailed on or about 15 January 1983. Reynaldo asked that we allow 30-60 days for actual receipt. He also expressed apologies for any aggravation caused by the delay and thanked all the North American amateurs who applied.

As we now see, no ripoff was perpetrated by the FRC since they have every intention of honoring their award program. I'm most gratified knowing that the delay had no political overtones whatsoever, since politics should be divorced from the hobby/service of Amateur Radio. In fact, it would behoove the nations of the world to act toward each other as exemplified by the courtesy shown by amateurs towards one another. Perhaps it truly is our job to rebuild what governments tear down.

"DOC" SCHWARTZBARD, AF2Y
Clifton, New Jersey □

Rare counties needed

Here is a list of counties needed. Perhaps some of your readers operating CW from their mobile rigs can help me out with some rare counties. They are as follows:

Hawaii — Kauai, Kalawao, *Kentucky* — Clinton, Scott; *Montana* — Blaine; *Mississippi* — Greene, Perry, Noxubee; *Nevada* — Eureka; *North Carolina* — Clay; *North Dakota* — Benson, Burke, Dickey, Emmons, Nelson, Towner; *Oklahoma* — Choctaw, Harmon; *Oregon* — Crook, Lake, Morrow, Tillamook; *Utah* — Box Elder, Morgan, Summit; *Wyoming* — Hot Springs, Uinta.

My total so far is 3,047, all on CW.

ED SZUDY, W9VEN
Berwyn, Illinois □

WANTED: CB radios for modification

I'm attempting to compile a list of 23 and 40-channel AM/AM-SSB CB's convertible to 10 meters for possible publication in **Worldradio.**

Please include manufacturer, model number, AM-only or AM-SSB, tube or transistorized, and necessary modification(s). Also, please note that I *don't do mods* myself; I'm only attempting to make a list of those radios that can be modified.

GARY PAYNE, KE6CZ
1347 East Dakota
Fresno, CA 93704 □

Are Novices equal?

After teaching 10 different Novice classes and seeing most of these new hams upgrade, I am wondering why those that don't upgrade are treated as second class amateurs. The thought in general seems to be the Novice license is only a point from which to upgrade. It's about time we realize many of these Novices are doing their thing and will never upgrade. After all, the Novice license is a full-term license, the same as any other class license.

About one-third of my time is spent on the Novice bands. I find most of these people who have been Novices for several years have become top CW operators. They will tell you they would like more band space, but their time is spent operating, not studying to upgrade.

Yes, I am very proud of the many Extras that come out of a class in which I took part, but I am equally proud of those that are still Novices doing the impossible and doing it on the overcrowded Novice bands.

I believe had there been such a thing as a Novice license when I first became a ham, then I would probably still be a Novice. After all, there has been a lot of water over the dam and I'm still a General — a General who has learned to hate the word upgrade. My hat is off to the Novice brass pounder, but a word of advice: When working some of the Extras, you should QRS. After all, many of these Extras only use their code skill every few years.

LEE ALLEN, W5VJT
Denton, Texas □

Please send **NEWS** and **PICTURES** to *Worldradio*

She appreciates Bash and others

RE: FCC Highlights

I very much resent the article in the December 1982 issue. This article was written by Bill Grenfell, W4GF, in regard to Dick Bash and his seminars and publications. It is apparent that Mr. Grenfell doesn't want anyone else to enter his closed society. He must believe that one should be able to build a tube set, and is against YLs in Amateur Radio.

Since January 1981, I have spent hundreds of dollars on tapes, books and ARRL publications, and found for the most part they were all terrible. Mr. Bash's publications were full of information that one could understand, and of things that were needed to pass the test. I also attended his crash course and found it was an excellent day spent. They also informed our group what the FCC was pulling. Who is trying to trick who? You still have to have some knowledge or you cannot pass, and one day won't do it. For the formulas, if you know them it doesn't make any difference what they change. I passed both tests the same day and found the people at the Long Beach office very supportive. After one has been there so many times, they do get to know you.

Mr. Grenfell is being unfair to the people who really want to become good ham operators, and to people like Dick Bash, and I might also include Gordon West and his helper, Loraine McCarthy, and the many others who are doing a good job helping people like myself to get a license. I worked long and hard, and I am proud of myself for what I have accomplished. Being an appliance operator, I do not intend to build a set or fix one — just talk, and do a little CW, *ALL OVER THE WORLD.*

DARLENE MILLS, NO6G
Chino, California

(Editor's Note: Judging from Bill Grenfell's past 'FCC Highlights' columns and from our acquaintance with him over the years, we have never noticed any prejudice on his part toward YLs, nor were we aware of such an implication in his December column.) □

Malaga *sails for warmer waters*

The coffee grounds were high under *Malaga*, to use an old cruiser's expression for a boat that's been at anchor in one place a long time. Our year and a half at Mission Bay Marina in San Diego was very enjoyable. We did a lot of visiting with family and friends, both on land and on the boat. Carl was best man for a good friend in Livermore this past winter. We attended reunions of Leona's high school class, the Maritime Mobile Amateur Radio Club and the Seven Seas Cruising Association. Spanish classes in junior college and on the TV, along with some tutoring, helped us improve our skills with that language. Leona passed the exams for her Advanced "ham" license. She helped the Committee for Legal Maritime Mobile Amateur Radio Operations. She and Carl held classes on *Malaga* in Amateur Radio for other boaters. (See May 1982 **Worldradio**, page 30).

Carl's work in developing an excimer laser for Helionetics was very successful. They were able to have it lase at greater efficiency than the contract called for. The people he worked with have become good friends. The money that he made is being put to good use adding things to *Malaga* which will greatly add to our comfort and safety. Satellite navigation was the first thing added; others are a solar panel, wind generator, a self-lighting propane stove, (kerosene is a fuel of the past and not available outside the United States), refrigeration, lexan storm windows, an ICOM 730 and new 20-meter antenna.

Early in August 1982, we hauled the boat out of the water, sanded and scraped the bottom, checked all the fittings, added a salt water intake to the galley, put on another coat of anti-fouling paint, slid her back in the water and set off for a shakedown cruise to the Channel Islands off Santa Barbara. There we met friends from Livermore on their boat, *Syrenity*. Captain and much of the crew on *Syrenity* were divers, so we enjoyed many abalone and scallop dinners with them.

Early in January we plan to shove off to continue our cruise of the South Pacific. January address will be: yate de E.U., Malaga, Carl & Leona Wallace, Capitania de puerto, Cabo San Lucas, Baja California, del sur. After that, write us c/o Bob & Linny Diamond, 1037B Alta Mira Dr., Santa Clara, CA 95051. Please do write. Mail is much appreciated by cruising people. We want to keep in touch with you.

CARL & LEONA WALLACE,
K6YEO/WA6OHB
La Jolla, California □

Strong feelings on anti-BY letter

I usually do not express my views about editorials or letters which may appear in your publication, but an answer to Wayne Gingerich's (W6EUF) letter is really in order. (See "He's against BY going on the air," **Worldradio**, December 1982, page 19.)

I am certainly not an "old-timer" on the Amateur Radio scene, but it has always been my understanding that we, as amateurs, are members of a very special fraternity . . . a brotherhood which knows no political boundaries.

If one tunes around the bands, they will hear QSOs between the people of *all* countries.... They are communicating. Amateurs have always done this, but when *people* stop talking, especially governments, trouble begins.

Through talk, one gains understanding. Wayne does not seem to want to talk or to understand why the BYs should be on the air or the fact that Amateur Radio, as one of its reasons for existing, is a medium for enhancing international good will.

I wonder if Wayne refuses to work the United Kingdom because of a minor problem we had with England back in 1776. Does Wayne refuse to work Germany, Japan and the Soviet Union because of their political past and present? Maybe Wayne should not work the Vatican because of what happened during the Inquisition. Come on, Wayne, you've got to be putting us on.

If Wayne is for real, I am sure that the rest of the amateur community, or the great majority, feels the same way as I do about the BYs or any individual or group of people who wish to enter the amateur fraternity. Offer your hand in friendship.

JAY MUSIKAR, AF2C
Putnam Valley, New York □

STATION APPEARANCE

Our Station Appearance winner for this month is Charles N. Mack, W0KVZ of Omaha, Nebraska. Licensed since September 1932, Charles is now 70 years old. He's a retired Union Pacific Railroad locomotive engineer.

The description of W0KVZ's station follows.

On the panel (left to right): SP820 speaker cabinet; SM220 monitor scope; TS820 transceiver; VFO 820 external VFO — all Kenwood.

On top shelf (left to right): 7625 2-meter rig and KPS7 power supply — both Kenwood; Henry 1 K5 Linear; Nye Viking 3kW antenna tuner; a rotator control for 10, 15, 20 beam; also control for 2-meter beam.

Thanks, Charles, for your submission. You'll be receiving a free year's extension of your subscription to Worldradio. □

Real issue — PRC's donation request

The headline above W6EUF's letter to Worldradio — page 19, December 1982 — stating "He's against BY going on the air" is *not* a true representation of the contents of his printed letter.

Wayne *did not* say he was against BY being on the air; Wayne *did* say he was against the donations necessary to finance an Amateur Radio station in the People's Republic of China. Doesn't the PRC have one-two-three thousand to finance their *own* Amateur Radio station? Why must we do it?

Technical help, how to operate, when to operate, etc. — yes; monetary solicitations — no!

If the People's Republic of China — the world's most populous country — cannot find, within itself, the financial wherewithal to buy, build or somehow obtain Amateur Radio equipment on their own, the world should wait for that great event. Meanwhile, charity begins at *home* — and elsewhere, as your magazine often points out.

PETE K6JG & JESSIE BILLON, WA6OET
Arroyo Grande, California □

Don't hinder hams sharing good will

RE: "He's Against BY Going On The Air" (December 1982 issue)

You would think that after being an amateur for 43 years, Mr. Wayne Gingerich, W6EUF would have learned the basis and purpose of Amateur Radio as defined by the FCC. For Wayne's benefit, this includes, "Continuation and extension of the amateur's unique ability to enhance international good will."

Mr. Gingerich speaks of China as our political and military enemy, Vietnam, and "The lousy Reds . . .". In our short country's history we have experienced military and "cold war" conflict with numerous countries including Great Britain, Germany, Spain, Japan, Russia, Cuba and others. Should we remove these from the list, Wayne?

Having proudly served two tours in Southeast Asia from 1968-1970, I'm not pro-communist. However, national politics should not supersede the sharing of good will among amateurs worldwide. Let's continue to exchange our skills, experiences and a helping hand for the global advancement of our art and stop peering behind the mic for "lousy Reds." Before long, Wayne, it could be those "lousy Rebs" or "lousy Yanks."

MARK KOUNZ, KA7EQO
Medford, Oregon □

Comments

I agree partly with W6EUF who criticized the pleas for help in setting up BY stations. (December Worldradio, page 19) If the PRC is pro Amateur Radio, they can certainly find ways to pay their own way and get on the air without donations from us capitalists. We should be willing to help train them and offer advice, but not provide free equipment.

I disagree with Wayne on another point. I don't believe that they should stay off. For 25 years I have heard that DXers in some small way contribute to international good will. By denying the PRC an open welcome on the ham bands, we are saying that DXing is simply for our own personal pleasure and amusement. Following W6EUF's logic, we shouldn't be talking to any Soviet bloc nations, parts of Latin America, much of Asia, and most of the Middle East. That would certainly change the ranking on the honor roll.

I know it is hard to see how the unruly, mad, hysterical mob called a DX pileup can contribute much to detente, but any communication is better than none.

ERIC JORGENSEN, KE6US
Sherman Oaks, California □

Has W6EUF lost vision for Radio?

I have to comment on Mr. Gingerich's (W6EUF) editorial in the December issue (page 19) of your FB paper.

I think he has lost the vision for Amateur Radio. It has always been a means of exchanging technical and non-technical ideas, or just learning about culture in other countries. I read somewhere that amateurs are ambassadors representing their countries.

I doubt if any country supplies their amateurs with gear. Looking at the economy of our foreign neighbors, it can be seen that the middle or low-income class people can't even afford such luxuries of buying gear. To get on the air, many rely on used parts or gear donated by clubs, churches, etc., to give us a rare DX contact or pass vital information (medical, disaster, etc.).

Let it be known I'm definitely against communism. With some good will toward the foreign amateur, we in the USA can promote what freedom really is.

NEIL ZIMMERMAN, W7MAF
Great Falls, Montana □

American Radio Relay League

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

January 1983 will mark the official beginning of implementation of the League's new section structure which was proposed by the ARRL Long-Range Planning Committee (LRPC) and adopted by the Board of Directors.

The transition to the new section structure will be over a two-year period, and only some of the sections will start the transition on 1 January.

One of the main purposes of the new structure is to attempt to involve more of the membership in section activities, and thus, in general League affairs.

The Office of Section Communication Manager (SCM), to be called Section Manager (SM) under the new structure, will hopefully be upgraded in the eyes of the membership by having the new SM involved with activities other than traffic and emergency communications. The office of SM will have duties that cover the broad spectrum of amateur activities.

In commenting on the new section structure in this column, I have appeared to some to be rather negative toward the new plan, and to some extent this is true.

Involving the League's membership in section activities, and thus in other ARRL affairs, is certainly a noble goal. I do want to see more involvement. Of course, I must admit that I would like to see more League membership involvement in public service activities because I feel strongly that it is through public service we build the support we need for keeping our frequencies.

Any negative feelings I have toward the new section plan come from an apprehension I have about the new structure's chances for "complete" success. By that I mean that I strongly suspect the plan will work well in some sections, but it is probably doomed to complete failure in others. Since the plan seems to be aimed at just one kind of section — the kind found mostly on the East Coast and in the Midwest, I question whether the LRPC had any members from the western United States who had any experience at all in section affairs.

There are two basic problems with the plan, as I see it from my viewpoint of over 35 years experience with ARRL section administration and League leadership.

The first problem is that ARRL sections vary in size, membership, geographic features and distribution of population. Many sections in the East are small in size, with populations generally concentrated within the center of the section. Sections in the West are often larger and have more scattered populations. Sections on the East Coast — and to a large extent in the Midwest — comprise an entire state. Where sections are only part of a state, the population is often concentrated within the center of the section. In addition, there is higher concentration of membership per square mile in most sections in the East — and in many sections in the Midwest — than in the West.

To illustrate, let's talk about California and Nevada. Conditions are obviously going to be different in Nevada than, say, Connecticut. Nevada is a very sparsely populated state. One wonders if there will ever be enough League members to fill all the offices of the section structure located in Nevada. Certainly the Nevada section has had enough problems just getting an SCM, a Section Emergency Coordinator and a Section Traffic Manager. Consider also the fact that the state has two geographical areas of population concentration and these are some 300 miles apart.

Have two sections in Nevada? Then the new section structure would have no chance of success at all. There is no way there would be enough League members to have much of any kind of section structure.

Now look at California. Yes, there is a high population of amateurs, but they are centered in two metropolitan areas some 350 miles apart, with another area at the far south of the state. The rest of the state is very sparsely populated, especially in the desert regions.

Radio amateurs in the San Francisco Bay area have long been bothered by the problems caused by population distribution. The three sections involved are centered near San Francisco, so the main population and membership concentration is neatly split into three parts.

Some League members have suggested there be a "Bay Area" section in this population concentration, but it would be a section of perhaps 4-5,000 members. The resulting outlying sections would have a membership of perhaps only 2-300 each. These would hardly be able to maintain any kind of effective organization.

Amateurs in the San Francisco Bay area work as though it *is* one League section, whether or not the League says it is. As an example, amateurs in San Francisco are active with amateurs in South San Francisco, even though each is in a different ARRL section.

Those who don't know about the geographic structure of the Bay Area should know that South San Francisco is *not* part of San Francisco and is in a different county. And while these two cities work together, amateurs in South San Francisco don't want to be controlled by San Francisco amateurs. In addition, the San Francisco section is such that the northern population center of the section is 300 miles away and the amateurs in the north don't want to be controlled by amateurs in San Francisco.

This situation is not unique in California. The state has 10 sections, which brings up another area of confusion. What happens to the state liaison position in each section? Does the Sacramento section handle this function since the capital is in that section? Or do we make a statewide liaison council? And how does one handle the state liaison when California is split between two divisions?

There is another problem in this same area. Should we have one Division Council for all of California with two Division Directors involved? Fortunately, Northern and Southern California don't always "talk" to each other, so it does comprise two independent administrative areas.

This brings us to a second major fault of the new SM structure, which has to do with the "status" of the SM.

Status is, of course, dependent upon how much power one has. In the case of the new structure, the SMs are still only "advisory." They do meet with their section leaders and perhaps club reps, and then take what they find to the Director. But the SMs have no real authority, since they cannot out-vote the director in any way. It is still the Director who has *all* of the authority to take matters to and vote at board meetings. Thus, the SMs have no power. They also isolate the Director from the members.

Members want to present their feelings, ideas and opinions to the Director, himself. They don't want someone in between acting as a "filter." In fact, many amateurs do not become involved with the League because they feel they are not really heard at all.

When it comes to communications, I must say — in defense of the Directors — that no matter what they do, they are wrong in the eyes of some members (and non-members, as well). This may be the heart of the problem regarding membership involvement in League activities.

It is in the area of traffic and emergency communications that one needs organization. In almost all other Amateur Radio activities — DX, contests, experimentation, etc., one can take part without any organizational structure other than that used to "push" your particular interest. So why do we need a section structure for these other areas?

Amateurs, like any other part of the population, want to feel they have communicated to their leaders and that they are really heard. Unfortunately, most of us think of communications as being successful only when we see results. In other words, if you tell someone to do something and he listens and doesn't do it, we feel no communications took place.

Of course, when you are in the minority in a democratic organization, what you want may not come about. The tendency is then to say you won't be involved because no one listens to what you have to say.

It's kind of like, "If you don't play my way, I'll take my ball and go home." Unfortunately, this happens all too often in Amateur Radio, which leads to weak participation on the part of many of the members. How do we solve this? I wish I knew.

I suspect that changing the section structure isn't going to have much effect.

Talk about coincidences!

What are the odds that three people traveling in different directions, not knowing each other, would meet and discover that they had shared a common bond some 36 years before?

Well, it happened in Perry, Florida on 30 September 1981, via Amateur Radio on the 37/97 repeater. Winona Sullivan, KA4MEW and her OM, Ed, were in QSO with Dan Barnes, WA4GHE when they mentioned they were enroute to a reunion of the 94th Bomb Group of the 8th Air Force. Then Al Lankford, N4BIT broke the repeater and said he was also with the 94th Bomb Group. As if that wasn't enough, Floyd Youninger, WB4LCA of Lakeland, Florida broke and said, he, too, had been with the 94th Bomb Group. All were traveling through Perry in different directions but did manage an "eyeball QSO" and a small reunion of their own.

— 94th Bomb Group "Echoes" written by Mike Nola, Perry, FL □

●

Check your license expiration date.

Who's Who

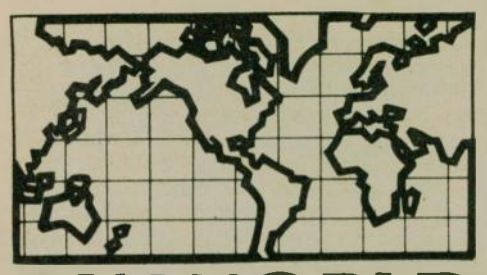
(continued from page 17)

They don't appear as characters in television shows or novels. "The fruits of modern technology are wonderful but so complex that children can no longer understand them or identify with the engineer who made them."

Bill hopes we'll find ways to bring technical personalities to the public awareness, to provide youngsters with heroes to emulate.

Bill's wife, Carol, is busy, too — as Executive Director of the Camp Fire Council of the Foothills. Their daughter Ann is a medical student, son Bruce a mechanical engineer, and Michael is going to be a chemical engineer. (It's obvious *they* have been inspired!)

Isn't it interesting that a man who daily dwells in the rarified atmosphere of extremely advanced research finds equal joy in operating W6FA — "Friendly Amateur"? □



DX WORLD

John F.W. Minke III, N6JM
6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

28-30 January	CQ World Wide 160-Meter Contest (CW)
12-13 February	VERON PACC Contest
19-20 February	ARRL International DX Contest (CW)
19-20 February	YL ISSB QSO Party (SSB)
05-06 March	ARRL International DX Contest (SSB)
12-13 March	YL ISSB QSO Party (CW)
26-27 March	CQ World Wide WPX Contest (SSB)
26-27 March	PPC Rio QSO Party (CW)

Details of the annual ARRL International DX Contests are on page 88 of the December issue of QST. Refer to CQ for details on the other contests.

W-100-N

188. KA6QPL Larry L. Minihan

Larry is our applicant for this month. An interesting note on this application is that all contacts were made during 1982 with the first contact made on 7 March with Gibraltar. The latest contact was on 6 November with Malaysia.

What does this prove? The important thing is that those countries can be worked in a short period of time. It is an indication of good DXing by the deserving. Congratulations, Larry. Oh, yes — all contacts were on SSB.

North Cook Islands (ZK1)

Tuatai Tupou, ZK1CY was reported to have been active from Manihiki during the CW World Wide DX Contest the end of November, and was scheduled to sign as ZK1BM up to the middle of December. QSL cards for either call go to Clyde Schoenfeld Jr., W6KNH.

Beginning in January, ZL3AHF was to begin operating from Penrhyn Island for about six months. No call has been assigned at this time and this will be a CW-only operation. Both Manihiki and Penrhyn are part of the North Cook Islands.

Tunisia (3V8)

A good time and frequency to find 3V8AA would be near 28.745 MHz from 1400 UTC. This seems to be a favorite spot with him as it is in several reports continuing for a couple of hours. This station has also been reported on CW on 21.031 MHz at 1600 UTC.

Also from Tunisia is 3V8AL, who has been reported on 7.002 MHz around 0200 UTC, and on 14.211 MHz from 1500 UTC.

Heard Island (VK0HI)

The International DX Foundation reports "Anchors aweigh on January 1st." The WIA-IDXF-NCDXF DXpedition to Heard Island has all the necessary documentation, licenses, landing permits, etc. The seagoing yacht, *Anaconda II*, has been chartered, outfitted and readied for the voyage. All equipment is on hand and the team is ready to go.

The route will avoid the stormy direct path and will, instead, proceed from Freemantle North (Perth) to the Amsterdam and St. Paul Islands, then south to Kerguelen Island, and then the final 200 nautical mile trip to Heard Island. The original plans included stops at these islands, but these have been eliminated in favor of at least six weeks of intensive effort during January and February to work everyone who needs Heard Island.

The DXpedition team is to include Dave VK3DHF (ex-VK9ZD), who will be the leader of the team. Dave is a technical instructor with the Australian Bureau of Meteorology. With Dave will be Alan Fischer, K8CW — a mechanical engineer by profession and a widely known DXer, and Chuck Brady, N4BQW — formerly chief of sports medicine and team physician at Iowa State University. Alan and Chuck also hold the calls VK0CW and VK0MD.

A very considerable cost is being shared on a pro-rata basis with an Australian mountain-climbing group that will attempt to scale the formidable Big Ben. The IDXF and the NCDXF have each contributed $10,000 and John Ackley, KP2A has added a personal gift of $7,000. A number of individuals and clubs have added to the money needed. All DXers are urged to become members of the IDXF and support this and future *needed* DXpeditions. Membership in the NCDXF is also welcomed.

Jim Smith, VK9NS and his XYL, Kirsti VK9NL still plan their DXpedition to Heard Island, where the call VK0JS will be used. VK0NL will be used by Kirsti for YL contacts. Smith's group has chartered the *Cheynes II* and was scheduled to depart from Hobart, Tasmania the first week in January. The trip should take about 25 days, and as of this writing, the group is looking for donations to pay for the fuel. Fuel costs are estimated at $250 per ton with 150 tons required to make the trip. Donations for this account go to HIDXA (Fuel Account), c/o Commonwealth Banking Corporation, Burnt Pine, Norfolk Island, AUSTRALIA 2899.

As to which DXpedition team to contribute to, that is your choice. One wonders why the groups don't merge and pool their resources. Evidently, this is unacceptable, and I'm sure they have their reasons. VK0HI is backed by strong foundations, if that means anything to you. The Heard Island DX Association (Jim Smith) has withdrawn its "money back" guarantee, as they have signed the contract with the owners of the *Cheynes II* — the vessel that will transport the team to the island. However, Smith is very confident the DXpedition will take place on schedule.

Pitcairn Island (VR6)

Jim Hall, W4BLX submitted a news item that appeared in the 28 November issue of **The New York Times** concerning possible tours to Pitcairn Island. As ships pass by the island and don't stop there very often, Richard A. Goodman — who runs GoodTravel Tours — has teamed up with a Mary Crowley — an expert in sailing ventures at Ocean Voyages in Sausalito, California — to create "Voyage to Pitcairn Island." This is a six-week package deal and is priced at $4,999.

Those of you with a few thousand dollars to spend, who have been thinking of trying a hand at a DXpedition, might take a look into this. Stay on the island will be for two weeks living in private homes with the islanders. There are no hotels on Pitcairn Island — a little country of 50 or so islanders. For further information, contact Richard A. Goodman, GoodTravel Tours, 5332 College Ave., Oakland, CA 94618, or telephone (415) 658-2060.

China (BY)

Peter Onnigian, W6QEU reports on a recent contact with Tom Wong, VE7BC, who is planning for another trip to Beijing in the People's Republic of China this April. Tom is reported to be the only licensed foreign, English-speaking Amateur Radio operator in China. Tom is a Post Telecommunications advisor as one of his dealings with the country and travels there quite often from his suburban Vancouver residence. Tom says he misses the taste of fishhead and fishtail soup, so he is looking forward to his April trip.

The BY1PK station is soon to be moved to a new six-story building, with the tri-band beam on the roof. The move should help eliminate the present TVI problems the station is experiencing.

● *Pass it on . . . WORLDRADIO* ●

If you haven't found BY1PK yet, try listening near 21.150 MHz around 0100 UTC. Notice that that frequency is in the American Novice band. Or you might want to take a crack at the new BY8AA, who has been found near 21.050 MHz from 0100 UTC. This station has also been worked on the West Coast, around 1500 UTC on 40 meters near 7.019 MHz.

BY8AA is located in Chengdu, in southwestern China. The chirp is still present on the signal, which may be due to poor power line regulation.

Morocco (CN8)

CN8CY appears in several reports as working the deserving DXers. Look for this one on several bands as he has been reported on 21.033 MHz around 1800 UTC, 7.006 MHz at 2025 UTC and 3.504 MHz at 2200 UTC. Some of those frequencies do favor all parts of the country at those times. This station also works 10 meters and has been reported in Europe at 1000 UTC on 28.024 MHz.

Other stations include CN8CX, who has been found on 3.792 MHz at 2230 UTC and 7.014 MHz from 0100 UTC; CN8CV on 28.024 MHz from 1600 UTC; CN8EA on 28.744 MHz from 1200 UTC.

Look for CN2AQ, who has been found on 3.503 MHz from 0100 UTC and 14.028 MHz from 0300 UTC, and for CN2OR, found on 10.103 MHz around 0400 UTC.

Ceuta (EA9)

EA9GK has been active down on 40-meter CW near 7.033 from 0200 UTC, handing out Ceuta contacts. Keeping him company is EA9HG, who has been worked in the Midwest on 14.019 MHz at 2130 UTC, and EA9IE has been reported on the high end of 10 meters on 29.754 MHz at 1300 UTC. I would not advise working him on that frequency as it is out of the band.

Kuwait (9K2)

There seem to be a few active stations signing from Kuwait. Look for 9K2DX, who has been reported on 14.022 MHz around 1300 UTC and 21.026 MHz two hours later. On 10 meters SSB, 9K2BE has been found on 28.755 MHz around 1300 UTC and later on 40 meters CW on 7.003 MHz from 1930 UTC. 9K2KA likes SSB on 20 meters and has been reported on 14.226 MHz from 1300 UTC.

Algeria (7X2)

If you need this one, look for 7X4AN on 3.501 MHz around 2400 UTC or 7X2LS on 28.556 MHz from 1600 UTC. Work both stations and you will get both modes for your DXCC. On 30 meters, 7X2BB has been reported on 10.103 MHz at 0100 UTC.

Rwanda (9X5)

The Long Island DX Bulletin reports lots of 9X5 activity at 0400 to 0600 and 1800 to 2000 UTC between 21.340 and 21.400 and 14.335 to 14.345 MHz by 9X5KE, 9X5SL, 9X5WB and 9X5WP.

9X5SL can be found elsewhere as he has been found on 7.046 MHz at 2030 UTC working Europeans or on 28.732 MHz at 1300 UTC working the East Coast.

Also, look for 9X5PP, who has been worked on 21.291 MHz at 2000 UTC.

Netherlands Antilles (PJ2)

John Thompson, W1BIH reports that he will again operate from Curacao, Netherlands Antilles during January, February, March and part of April, with the call W1BIH/PJ2. John will also be using the special call of P42J in the ARRL DX Contests and the CQ World Wide WPX Contest.

All cards for contacts with P42J should be send to Peter Chamalian, W1RM, P.O.

Box 1188, Burlington, CT 06013. Please include SASE. Cards for W1BIH/PJ2 should be sent to John at his home address at P.O. Box 1, Torrington, CT 06790. Do not send your card to John before 1 May, and include an SASE if you wish a direct reply. Do not send any cards for W1BIH/PJ2 or P42J to the Netherlands Antilles QSL Bureau.

Please note that neither W1BIH nor W1RM serve as QSL manager for any other calls. An erroneous report was published last year that QSL cards for P41E be sent to W1BIH, and as a result many DXers wasted postage.

Another active contest call this year is P42E. QSL cards for this call are handled by Joseph Krone, WA2SPL.

Karl K4YT

Karl Renz, K4YT has returned from another one of his African tours and will be home until mid-January. Karl reports that the IDXF is in the process of printing multiple QSLs for the past trip for calls TYA11, K4YT/5N0, TJ1BB, 9Q5VT, 5Z4RK and 5Y4RK. He hopes to have all requests answered by mid-January.

He had the pleasure of meeting Girma ET3PG while he was in Addis Ababee. He assured Karl that he would try to get the authorities to reopen and reapprove ET3PG's license. Also, he had no idea where the QSL cards have gone while he was away. Karl is trying to work out a new QSL route for ET3PG.

In January, Karl was scheduled to leave on another tour that would include Iraq (YI), Pakistan (AP), India (VU2), Sri Lanka (4S7), Nepal (9N1), Thailand (HS), Laos (XW8), Singapore (9V1), Indonesia (YB), Philippines (DU), China (BY) and Japan (JA). The tour should take three to four months and then he will be going back to Africa. Karl hopes to have a license to operate in Uganda (5X5) by then and has been assured he will be issued such a call.

Jeff Craig, K4DDA is a new man in Karl's group, and is going to the Middle East. Jeff hopes to be able to operate from some of the places he will be visiting, which include JY, HZ, A9, A7, A4, A6, 9K2, ST, SU and 4W1.

160 meters

Reports of 160-meter DX is scarce, with all reports from the European scene. British amateurs have reported stations on this band during the CW World Wide DX Contest the end of November to include EA8AK, EA9EU, GU3TXF, HZ1AB, LX1YZ, NP4A, OY7ML, SP1ADM, UH8DC, UM8MAZ, UO5ODB. ZB2EO, 4U1ITU, 4X4NJ and 5N8ARY.

During the non-contest periods, HI8DAF was found on 1806 at 0300 UTC, with other stations such as ZS5LB on 1833 at 2100 UTC, 4Z4DX on 1833 at 2300 UTC, 4X4NJ on 1848 UTC, and EA8QO on 1852 at 0030 UTC — all frequencies kilohertz, of course.

Other stations reported on this band include FC9VN on 1835 at 2315 UTC, LX1YZ on 1835 at 2100 UTC, ZB2EO on 1846 at 2330 UTC, 5N8ARY on 1835 at 2300 UTC, and one of those Soviet Novices, RI8DAA on 1863 at 0130 UTC.

Prefixes

Amateur Radio stations in Jordan again had the chance to use the special JY7 prefix to celebrate King Hussein's birthday. This was for one week only during the month of November.

During the latter part of December, the special prefix of 6C35 from Syria was used to celebrate 35 years of Amateur Radio in that country, SSB only. Rasheed Jalal, YK1AA was the first native to be licensed there in 1947.

More on PY0SP

The recent St. Peter and St. Paul Rocks DXpedition had many problems, from both ends, as you probably have already read. The most familiar problem was one of the operators requesting calling stations to spread themselves out over the entire 20-meter band. This caused much bitterness, to DXers and non-DXers alike. Perhaps you will have a little sympathy for the DXpedition after you read the following. This is from a condensed letter from Stuart Greene, WA2MOE and was printed in the *DX News Sheet*.

"When PY2PE chartered the vessel, she was assured by the master that a dinghy and food were included in the charter price. In fact, the operators bought the dinghy, and food, when provided, was inedible. The first two days of operation were without food at all. . . . A practical joker cancelled the airline reservations of N4BQW (Chuck Brady) and WA3MOE. . . . The vessel's owner, without the consent of the operators, signed them on as crew with the naval police. They, not the master, worked the boat from Recife to the rocks, stood watch and were exhausted, before the master, who ate and slept well, announced he was lost. WA2MOE, a navigator in WWII and Korea, had to assist with the navigation and, with PY2BZD, stay on watch for the entire night before sighting the island to avoid running aground. . . . The mooring took about eight hours and consisted of tie-ups to five difference rocks, performed, not by the master, but by K8CW (Fred Fischer) and N4BQW. All five ops spent the next day and a half bringing equipment ashore to an operating site which was under water at high tide. . . . Due to obdurate behavior by the master, the main stations had been badly stowed and failed after a few hours. Only K8CW and PY2BZD's personal stations remained in good order. . . . Deliberate QRM, particularly on 20, caused many problems and the operators had to resort to rapid QSY's between bands and modes. . . . Living conditions on the rocks were terrible: bird droppings, sharp rocks, salt spray, equatorial run, etc. . . . (Over 14,000 QSOs were made, a remarkable total for any five-man operation, let alone one faced with all the aforementioned problems).

It is easy to sit back in one's comfortable, warm ham shack and criticize the operation. Spreading the stations over the entire band was the wrong thing to do, but perhaps from the ordeals those operators were faced with and being extremely exhausted, they thought they were doing the right thing. Regardless, they should be congratulated for the effort in pulling off that DXpedition.

YASME DXpedition

The Colvins fired up from J20DU in Djibouti, East Africa on 17 October 1982, operating all bands, 10 through 80 meters. After shutting down on 8 November, Lloyd and Iris had made approximately 7,000 contacts in 155 countries. The countries-worked was an all-time high for them in that three-week period. Participation in the CQ World Wide DX Contest helped them with that country total.

In early December, they were scheduled to operate from Abu Ail for a 48-hour period signing G5ACI/AA. This, Lloyd claims, was to be one of the most difficult, most dangerous and most expensive YASME DXpeditions ever.

If you worked either (or both), send your QSL requests to the YASME Foundation, P.O. Box 2025, Castro Valley, CA 94546. Do not send your requests through the bureaus.

Market Reef (OJ0)

QSL cards are now ready for this past summer's DXpedition to Market Reef. This particular DXpedition included Kee Eriksson, OH0NA; Lars Nikko, OH0RJ; Sam Granholm, OH0NC; and George Wagner, K5KG. Operation was on all bands — CW, SSB and RTTY. Over 8,000 contacts were made during the period 2-13 August. The group reports that it was the first-ever operation to include RTTY from the reef.

The calls used were OJ0MA and K5KG/OH0/OJ0, with the latter presumably being the longest call ever issued anywhere!

All QSL cards for OJ0MA should go direct to Kee Eriksson, OH0NA, SF-22430, Saltvik, FINLAND. Cards for K5KG/OH0/OJ0 should go to George I. Wagner, K5KG, 11502 Quail Creek Dr., Houston, TX 77070. The QSL card is in full color, and we have attempted to reproduce the card below — in black and white, of course. Now you know what Market Reef looks like.

Erik SM0AGD

Erik Sjolund, SM0AGD recently visited Sacramento, California, at the invitation of Jay O'Brien, W6GO and Adam Mentes, N6QR. Northern California DX Club members living in the area got together with him at the Big Yellow House for slides of his last DXpedition to the Pacific, followed by a typical Big Yellow House dinner. In all, the group consisted of about 18 DXers with some of the wives along for the action.

Erik left San Francisco last April, following the Visalia DX Convention, for Hawaii and Samoa. Part of his travels was with the *Marathon AQ*, a 50-foot ketch with crew from Sweden which included Anders Fogeus, SM0MAQ, who was not a DXer.

Erik operated as ZK1AF on the uninhabited island of Suvaro in the Cook Islands. Erik was the only one who slept on the island and reported that the rats ran over him all night long. Erik says that helped him get going in the morning again and make contacts.

On Manahiki, Erik learned how to climb coconut trees. Manahiki is the old DXCC name for the North Cook Islands. From Manahiki they went to Puku Puka, which means Danger Island.

During the trip they did encounter a heavy storm, and unfortunately some of the sea washed through one of the ports and dampened his ZK1AF logs. Not letting a little wet weather discourage them, they continued on to the Fiji Islands, where Erik signed 3D2DX.

In August they landed at Niue Island, where Erik operated at C21NI for three days, (2-4 August). Other locations of interest that Erik operated included T2AGD on Tuvalu. Ten minutes after his arrival, Erik had his license to operate. T30BY was his call while at West Kiribati (Gilbert Islands).

Erik's ZM7AG operation from Tokelau was cut down to do a search for a missing woman. From there they continued on to Wallis Island to sign FW0AG, and then back to Samoa again.

Erik finally made it to Canton Island, where he used two calls: T31AE and SM0AGD/KH1. Erik reported that there were 18 people living on the island. Erik was fascinated by this unfriendly crab there that wanted neither to operate his keyer or drink the beer offered him. At least, that's what the slides indicated.

Erik left the crew at Christmas Island (T32AJ), where he relaxed at the Captain Cook Hotel prior to catching a flight into Honolulu.

Where does Erik go from here? Home to Sweden with no plans right now for a future DXpedition. As he was a technical consultant with a communications company in Sweden involved with the foreign ministry, he has had a chance to go all over the world. Erik was unemployed during this last DXpedition of his own choosing.

Erik Sjolund, SM0AGD's recent visit to Sacramento, California was a treat for several local amateurs, who got a chance to see Erik's slides of his last DXpedition to the Pacific. In the center is Adam Mentes, N6QR, who — along with Jay O'Brien. W6GO — arranged for Erik's visit. On the right is Adam's XYL, Ida.

DXCC

In October, the team of DK6XR and DK7XL operated from Rotuma Island, signing 3D2XR. The group applied for DXCC status under Rule 2b, the separation of at least 500 miles of open water between the two areas in question. As Rotuma Island is separated from the Fiji Islands by only 260 miles, it does not meet the criteria of Rule 2b. Therefore, Rotuma Island will not be accepted for separate country status toward DXCC. All 3D2XR contacts will count only as Fiji Islands.

Bob Thompson, K6SSJ, the Pacific Division representative to the DX Advisory Committee, has provided some miscellaneous statistics concerning the DXCC program as of 1 October 1982. Although DXCC certificates were issued prior to World War II, the figures apply to post-war certificates only. The first certificates were issued in 1947. The totals are as follows:

Mixed	23,537
Phone	13,377
CW (Since 1975)	2,377

The following figures are for the year 1981:

Mixed	1,518
Phone	1,212
CW	598
RTTY	9
160 Meters	3
5-Band DXCC	187
Endorsements	7,159

Five amateurs were disqualified for submitting altered, phony or counterfeit QSL cards. One European member, who was almost on the Honor Roll, was disqualified for altering cards and submitting them for CW, Phone, WAS, etc. He had altered the same cards for different categories.

The total number of cards handled by the DXCC desk was between 600,000 and 700,000. The total applications received for DXCC in 1981 were 8,429. And, as of the October 1982 date, 6,100 applications had been received.

If a member is disqualified from the DXCC program, the individual may start all over again in five years by submitting all new cards.

Five-Band WAZ

The Five-Band Worked All Zones program sponsored by **CQ Magazine** is a major interest by many DXers. As of 1 September, there were 42 amateurs who had worked all 200 zones and had them confirmed (the 40 CQ Zones on each of five bands).

It is interesting to note that three of the above DXers are members of the Kansas DX Association, a relatively new DX club in the Midwest. This includes Ed Gray, W0SD #12; Gary Knutson, K0ZZ #13; and George McKercher, W0MLY #33. Not far behind these gentlemen are Bill Tippett, W0ZV and Roger Hoffman, N4RR/0, both with 198 worked and confirmed. I wonder how many other DX clubs can make that claim? The DX club that I belong to (387 members) has no one who has worked the 200 required zones. But then again, working 200 zones from Northern California is a lot harder than from the Midwest.

Worked All Scottish Districts

The Scottish Tourist Board is to encourage radio amateurs throughout the world to make contact with Scotland in a new scheme effective 25 November 1982. Certificates will be awarded to overseas radio amateurs who can confirm two-way radio communications with other amateurs located in Scottish districts.

The award, "Worked All Scottish Districts," is available in three classes as follows: Gold — all 56 districts; Silver — 45 districts; Bronze — 30 districts.

Endorsements are available for all bands, single band and all mobile. QSL cards need not be sent, but your cards must be certified by two General Class or higher licensees. Application forms and record books are obtainable from: A.G. Anderson, GM3BCL; West Balfour House; Durris, Banchory; Kincardineshire, AB3 3BJ; SCOTLAND.

In addition, a special plaque will be awarded to the first station in each country and in each U.S. and Canadian call area to qualify for having worked all 56 Scottish districts.

It did not state as such, but it is assumed that all contacts must have been made after 25 November 1982. Thanks to the *DX News Sheet* for the above information.

Clubs

Two additional clubs not included in last month's listing are the Carolina DX Club and the Southeast Michigan DX Association. The Carolina group is open for new members. The club is two years old, with 30 members and a fine repeater located near Gastonia (144.88/145.48). Local DXers interested in learning more about the Carolina DX Club should contact Ted Goldthorpe, WA4VCC at (803) 547-6980.

The Southeast Michigan DX Association is a newly formed club that met for the first time last September. Monthly dinner and program meetings are held in Southfield, Michigan the second Friday of each month. For further program and membership information, contact Cornell Varsogea, KM8Y.

The Western Pennsylvania DX Association is also a newly formed club for DXers in the Pittsburgh area and adjacent states. Already consisting of almost 70 members, the club features a bimonthly newsletter with DX tips. Contact the club president, Alan K. Lefcort, WB3GPR, 661 Blue Ridge Rd., Pittsburgh, PA 15239 for further details. Alan's telephone number is (412) 325-2421.

The DX Bulletin reports that the new Twin City DX Association has a limited membership of 45 and a screening process to ensure quality. Wow! I wonder what that means? Honor Roll members only? Maybe professional status in their community. Obviously, they are not interested in the novice DXer.

The same applies to the Northern Illinois DX Association in the Chicago area. The membership is deliberately kept at a small number, and the average amateur probably would not ever meet their strict requirements. At least, that is what one local Chicago radio club newsletter reports.

Perhaps the negative comments on the above two clubs is out of place here. Both clubs were listed last month with a suggestion that DXers living near those clubs might contact them regarding membership. I don't think these clubs are looking for new memberships.

Comments from a DXer

Denny Burgess, K8DB expresses his views on the Honor Roll as it now stands. They were printed in a recent newsletter of the Northern Ohio Amateur Radio Society, of which Denny is a member. We have condensed the article and have printed it below.

Since the late '70s, many more DXCC countries are going off the air than are being reactivated. Of the 24 countries listed, only four have a chance of being activated soon (St. Peter and St. Paul Rocks, Heard Island, Canton Island and Central Kiribati). This leaves 20 inactive countries, not including China.

Honor Roll status is attained by working all current DXCC countries less 10. The current list is at 315, so 305 of *the countries on the current list* must be worked. Thus, because of deletions, it is possible for someone to have a DXCC total of 320 (±) and still not be on the Honor Roll.

I fully realize that proposing a review of the requirements to attain Honor Roll will meet strong resistance from those already enrolled, but I feel the Honor Roll should not be considered a final state for a few who effectively control its entry. The Honor Roll should recognize DXers for operating competence with as little detrimental effects of the world's political situation as reasonably possible. This is not now the case. In short, anyone who started DXCC in the late '70s cannot nor will not ever earn Honor Roll unless major positive changes occur in certain of the world's governments' attitudes toward Amateur Radio. Unfortunately, the reverse is occurring as more and more Third World countries are squelching Amateur Radio each year.

Yes, I have heard the argument about keeping the way it is "pure" so that attaining Honor Roll status will mean the same as it always has. But there is a very incorrect assumption behind that feeling. The DXCC program is replete with inconsistencies and

Propagation

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

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

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

MARCH 1983

UTC	AFRI	ASIA	OCEA	EURO	SOAM
0100	25.7	32.6	35.3	13.6	28.3
0200	20.0	30.2	35.7	13.0	25.1
0300	15.4	27.2	32.4	11.7	21.7
0400	17.3	24.0	29.0	10.6	19.4
0500	15.3	20.8	25.9	10.6	18.6
0600	14.1	17.9	23.6	12.3	18.5
0700	13.6	16.0	22.2	14.0	18.2
0800	13.1	15.1	21.2	13.1	15.6
0900	12.2	14.9	20.1	12.8	14.3
1000	11.2	15.2	19.1	13.0	17.1
1100	10.9	15.3	18.3	11.6	15.2
1200	11.7	14.7	16.9	11.7	14.6
1300	14.0	13.8	14.9	13.2	17.5
1400	17.4	14.4	14.8	16.3	22.7
1500	20.8	17.5	18.9	20.2	27.5
1600	23.6	17.9	20.8	23.5	30.2
1700	25.5	17.5	18.9	24.6	31.5
1800	26.9	16.9	17.4	22.4	32.4
1900	28.2	17.4	18.8	21.5	33.4
2000	29.0	20.6	23.6	18.9	33.8
2100	29.4	26.0	28.8	16.7	33.6
2200	29.6	31.5	31.9	15.1	32.8
2300	29.5	33.5	33.2	14.2	31.2
2400	28.5	33.5	34.3	13.8	29.1

changes over the years. A prime example is the counting of many XV (Viet-Nam) cards as valid, when in fact they were pirate operations from military bases with no permission (or adequate documentation) from the Vietnamese government.

My proposal is to make the Honor Roll an operating award again. This can be done very easily by adjusting the trigger point reduction (currently 10 — an arbitrary number in and of itself), establishing the required countries to obtain Honor Roll status. This number should be variable and, in fact, be established as the number of countries that have been inactive for a period of, let's say, five full years as of the end of each calendar year. The number would be the same all year. For example, by the end of 1982, the number of inactive countries for over five full calendar years will be (approximately) 12. With 315 current countries, the trigger point would be 303 for 1983. If in fact these countries do come back up, they must be worked or one could drop off of the Honor Roll. Now we have an Honor Roll program which is easy to administer and much more realistic as it relates to the dynamics of our DXCC world.

Denny would appreciate receiving your thoughts. We have printed 20 countries below that Denny refers to as a "Remote Possibility of Operation." The date is the year of the last operation.

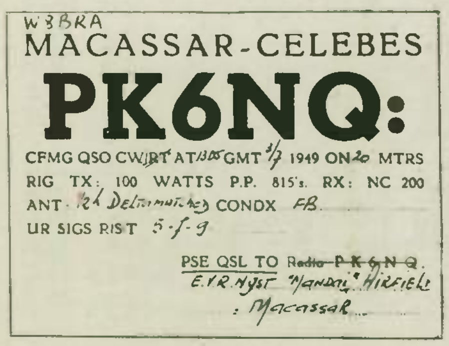
XZ	Burma	1965
7O	South Yemen	1970
VU7	Laccadives	1971
CE0X	San Felix	1972
YA	Afghanistan	1974
XU	Khmer Republic	1975
XV	Vietnam	1975
4W	North Yemen	1975
C9	Mozambique	1976
HK0	Malpolo	1977
5A	Libya	1977
ZL/K	Kermadec	1977
VU7	Andaman	1978
FO0	Clipperton	1978
A6	United Arab	1979
1S	Spratley	1979
D2A	Angola	1979
YV0	Aves Island	1980
TT8	Chad	1980
3Y	Bouvet	1980

There are others that could be added to a "Very Remote Possibility," which would include Palmyra Island. The personal opinion of this DX Editor is that Spratley Islands would also be on the "Very Remote" list, especially after the welcome the last DXpedition received by some of the local residents.

Antique QSL Department

This is more of a rarity than an antique, as it is for a contact made 25 years ago. Dave Kennedy, N4SU submitted the ZA2ACB QSL card for a contact he made in June 1957, operating as W8BRA. The card states that it is the "first and only licensed station — June 12 to 15, 1957". The operator was Heinz Stiehm, DM2ACB. DM2ACB was still listed in the 1980 Callbook, and it is assumed with the prefix change that he is now Y21CB.

Dave also submitted the second card shown below. The station PK6NQ was located in Macassar, Celebes, in the old Netherlands Indies. The card counted as Celebes and Molucca Islands for DXCC purposes. Macassar was situated at the bottom of the southwest leg of the island of Celebes. This country was added to the deleted list in 1963. Any contacts with amateurs on the island now count as part of Indonesia. At one time, all these PK calls were on the banned list.



QSL information

Gary Mitchell, KH8AC reports that there is no QSL bureau for the U.S. Virgin Islands, and most likely any QSL cards sent via such a bureau have been lost. Gary has been in correspondence with an amateur there and has been informed that there is no amateur there willing to take on the chore of QSL manager, nor has ARRL headquarters assigned one.

As Gary has held calls for the U.S. Virgin Islands — including NP2AI, NP2AF and WP2ABZ — he is concerned about any cards sent there since he has not received any. If you are looking for a QSL from one of those three calls, try sending another card to Gary at P.O. Box 1003, Fairfield, CT 06430.

If you are having problems with other cards sent to the U.S. Virgin Islands, it is suggested you send the cards direct. Besides, as it is a U.S. possession, regular stateside postage rates apply.

Last month, the new mailing address for Rick Dorsch was listed. Rick had operated for a few years as HC8MD and has now returned to Michigan, where he is signing WB8ABN. As I had not received my HC8MD card for a contact a year ago, I sent a follow-up card to Rick at his Michigan address. Within a very short time, my HC3MD card came with a note indicating that the first card was never received. Rick also says that he still has IRCs available at 40 cents each, minimum order of 100.

QSL routes

A4XYF	—GM3ITN	YT4I	—YU4EBL
AH0AB	—JA2VUP	H5AFU	—G4KLF
AH0B	—JA2VUP	HB0BHA	—DK6NN
C31XO	—F6GOW	HD8GI	—W3HNK
CE5DSQ	—CE5SG	HH2CQ	—K4JPD
CN8CY	—GW3IEQ	HH5CB	—K9WJU
CQ5UW	—CT4UW	HP1XEK	—DL1HH
CQ6OF	—WA3HUP	HS4REL	—OE2REL
CQ0LN	—CT1LN	HZ1SS	—WD5BQM
CR9T	—WA4IKZ	J4OBE	—KL7IUW
CT2DL	—G4KJF	J6LIR	—WB6FCR
DF1MM/C6A	—DJ2BW	J20LN	—N2KK
DK7PE/4S7	—DK7PE	J28DS	—F6DZQ
DL5DAB/3X	—DL3FAE	J88AB	—W2MIG
EA4LH/CE3	—EA4JF	J88AQ	—W2MIG
ED9CM	—EA9JV	JT0GM	—UK3DAU
EK9C/0	—UK9CAE	JW1UW	—LA1UW
FH8OM	—DJ1TC	K1XA/6Y5	—AB1U
G5ACI/AA	—Yasme	K4IIF/KV4	—W4KA
GD5BLG	—DL4FF	K5NA/KP2	—W4JVN
GD5EOO	—DK9ZL	KC6LQ	—KD6LQ
M1Y	—I0MWI	LX2FT	—OZ4FT
OA8CW	—N4CQ	YZ1E	—YU1EXY
OH0W	—OH2BAZ	Z21GN	—KA4ROR
OK7AA	—OK3JW	ZC4CS	—JI1VLV
P42E	—WA2SPL	ZD9BX	—KA1DE
P47N	—W5NUT	ZF2GI	—W4OWY
PJ0II	—N8II	ZK1CY	—W6KNH
PY0APS	—PY1APS	ZL4QL/A	—ZL2AJH
T32AK	—W9RCJ	ZS3E	—K8EFS
T30DB	—G8LGB	ZS4PB	—N7RO
TR8CR	—F6AQO	3D6BS	—N7RO
TU2HJ	—W3HNK	4N1R	—YU1DZ
U8H	—UA9OBA	4N1U	—YU1EXY
V3MS	—W0CP	4N5G	—YU5GBC
V3ZZ	—N6MM	4U1VIC	—OE3 Bureau
VK0AP	—VK3FR	5B4LY	—OE2PAL
VK0DX	—VK7LJ	5N0RFA	—DL8UZ
VP2EH	—KC5EA	5Z4DD	—KA1RR
VP2MIX	—W0IJN	5Z4JR	—OH2BAH
VP5B	—N4KE	5Z4RK	—W2TK
VP5KP	—W6SZN	6E5MX	—N6ND
VP8AIC	—WA4TWS	6T1YP	—DF3NZ
VP8SB	—G4DMA	7P8CL	—SM5GOJ
	(See Note 1)	8P6J	—N6TJ
VQ9CM	—WB9ZDS	8P6KX	—K2QIE
VQ9VO	—KB6VO	8P6MI	—VE3FCU
W1DV/DU2	—WA2RKX	8P6OR	—K5MHZ
WB4OSN/C6A	—WB4OSN	9Y4LL	—K2QIE
XQ8EEE	—CE8AA	9Y4VT	—WA6KZI
XT2BM	—WD4RHL	9Y4W	—N2MM
YS1X	—DJ9ZB	9Y50JW	—K2QIE

A71AD	—P.O. Box 4747, Doha, QATAR
BY1PK	—P.O. Box 6101, Beijing, PEOPLE'S REPUBLIC OF CHINA
BY8AA	—P.O. Box 6101, Beijing, PEOPLE'S REPUBLIC OF CHINA
J88AR	—P.O. Box 106, ST. VINCENT
JT1AO	—P.O. Box 844, Ulan Bator, MONGOLIA
JT0LAJ	—P.O. Box 180, Ulan Bator, MONGOLIA
JY7US	—P.O. Box 146, Amman, JORDAN
L8D/X	—GACW, Carlos Diehl 2025, 1854 Longchamps, Buenos Aires, ARGENTINA
M1V	—P.O. Box 1, SAN MARINO
VP2KBU	—Mike Fatchett KC0FW, P.O. Box 719, Parker, CO 80134
VP8APK	—P.O. Box 102, Port Stanley, FALKLAND ISLANDS
VP8APV	—P.O. Box 146, Cambridge, ENGLAND
YB9VA	—Hal Howard KD7EC, P.O. Box 1051, Safford, AZ 85546 *(See Note 2)*
ZK2RS	—R. Sutton, P.O. Box 37, Niue Island, SOUTH PACIFIC *(See Note 3)*
6W8CC	—P.O. Box 1258, Dakar, SENEGAL

Notes:

1. Cards for VP8SB sent via G4DMA are to go direct only. Do not use the bureau.
2. Hal Howard, who is the QSL manager for YB9VA, has moved to Arizona. Previous call was W5GZI.
3. All cards for ZK2RS should be sent direct to Niue Island. Be sure to include a return envelope and IRC(s).

Our contributors this month include K5KG, N4SU, N6WR, VP9IX, KH0AC, K4YT, W1BIH, W5VJT, W0CUB, KH8AC, WB8ABN, W6KG, W6QL, W4BLX, W6QEU, K6YEO, WA6OHB, AL7Z, International DX Foundation, Northern Ohio Amateur Radio Society, Stark DX Association, Northern California DX Club, Kansas DX Association, *The Long Island DX Bulletin*, *The DX Bulletin* and the *DX News Sheet*.

Probably by now, all antennas are on Heard Island. As they will be there for six weeks or so, this should give everyone a chance to work the DXpedition. As there are two groups heading there, (VK0HI and VK0JS/VK0NL), this should make your chances even better. Unfortunately, there will be the "sickies" on the air trying to jam the operation from throwing carriers on the DXpedition's frequency to pirating the call. This is too bad, as there will be DXers who will think they have worked the DXpedition and QSY to let someone else have a chance. Then there will be those nerds with lopsided egos who will have to work the DXpedition team every day just to tell them they are still coming in loud and clear at Podunk Hollow. Good luck with your Heard Island contact. 73! de John, N6JM. □

He's pleased

Hi John,

Thank you very much for the excellent article in December **Worldradio** concerning my QRP presentation at the ARRL Pacific Division Convention. I think you expressed it better than I did.

I have been pleasantly surprised by the response to the article, both on the ham bands and through cards and letters I have received. One fellow wrote me, "Congratulations, you brought equal time to QRP along with DX and the contest articles."

It is a thrill for this QRPer to be around to witness the emergence of QRP from the "tuna tin" era to be recognized as a vital part of Amateur Radio. As I said, there are QRPers around with 2 watts and a dipole, but I think there has been a broad-based misconception that QRP is synonymous with "cheap". T'aint so. There are many QRPers with elaborate gear, computers, keyboards, the works — everything but the KW final. I think there are many like myself who enjoy mixing the tailor-made gear with the "homebrew". I am on my second Ten-Tec QRP rig. I now have the Argonaut 515 and looking forward to an Argosy in the near future. At the same time I have my 2-watter, homebrew, circuit board and all. I am in the process of putting together Circuit Board Specialist's version of the W7EL "Optimized QRP Transceiver."

I am very glad to see Fred Bonavita, W5QJM's QRP column running in **Worldradio**. I am passing the word to all my QRP friends and hope the QRP column is a long-running success. We are having good response to the QRP ARCI ad. Fred sends monthly lists of the ad response to all club officers and NCS. We in turn contact those in our area and invite them to join in the QRP activities. I was amazed to see how widespread the response to the ad has been. I had thought of you folks as a regional organ, but you truly are **Worldradio**.

Thanks again for the FB publicity you are giving QRP.

JIM HOLMES, W6RCP
Santa Cruz, California □

IC-740

Extensive Versatility for the Serious Operator

The ICOM IC-740 offers features found only on the best amateur equipment and performance second to none.

Dynamic Range. The IC-740 is built to withstand strong adjacent signals and still maintain sensitivity and distortion-free output of the desired signal in its passband. With a dynamic range of over **100 dBm** and an intercept point of **+18dBm,** the IC-740 receiver is a true performer. The IC-740 receiver is also **crunch proof,** and unlike many receivers that have good receiver specifications, it does not collapse under the presence of an RF field.

Other outstanding features that are a must for a modern, high-performance amateur receiver are included in the IC-740:

Passband Tuning, adding an additional filtering element to the receiver passband plus giving control of the actual width of the IF stages of the receiver... variable from 2.4 kHz to 700 kHz in SSB, CW or RTTY.

Variable AGC, a two speed AGC with an OFF position allows proper selection of AGC speed **regardless** of mode, VOX or CW breakin. The OFF position makes the IC-740 easily adaptable to frequency converters.

A **Noise Blanker** that really works with both wide and narrow pulse widths and a threshold control to give the optiumum blanking with minimum of signal distortion.

And...the IC-740 has an optional **Internal Power Supply** giving 160-10 meter transceive coverage in **one** package.

These and other fine receiver features plus ICOM's renowned transmitter audio make the IC-740 the **finest amateur transceiver** around today.

$50 Cash Rebate

$50.00 for the purchase of an IC-740.

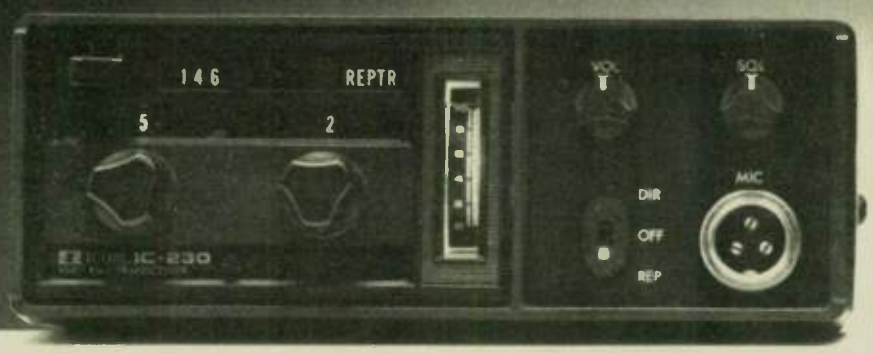
Begins Dec. 15, 1982
Expires Mar. 31, 1983

ICOM

The World System

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

1975 1983



IC-230

- ☐ 67 Channels
- ☐ 10 Watts
- ☐ Crystal Synthesized

IC-25A

- ☐ 800 Channels
- ☐ 25 Watt Hi/1 Watt Lo
- ☐ PLL Synthesized
- ☐ Touchtone Microphone
- ☐ 5 Memories
- ☐ Priority Channel
- ☐ Programmable Band Scan
- ☐ Full Bandscan
- ☐ Dual VFO's
- ☐ Memory Scan
- ☐ Nor/Rev Switch
- ☐ Resume Scan
- ☐ Digital Readout
- ☐ Smallest 2 Meter Mobile Available Today

In 1975, ICOM came out with the IC-230 — the first synthesized 67 channel, 2 meter mobile in history. It became one of the most popular mobiles ever.

Now, eight years later, ICOM reverses inflation with another potential blockbuster, the IC-25A .....and look at the price!

$489 (In 1975 dollars)

$349 (Includes Touchtone™ Mic)

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The World System

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

AWARDS

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

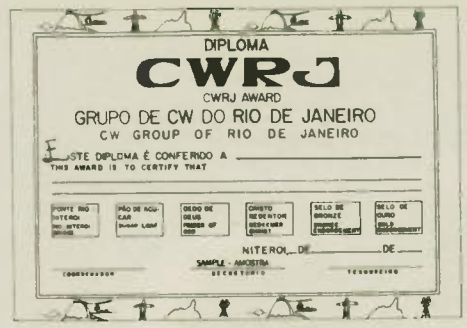
In this month's column we would like to start off by presenting the extensive awards program offered by CWRJ — the CW Group of Rio de Janeiro. As the name specifies, these are CW-only awards, and no mixed applications are accepted.

CWRJ Award

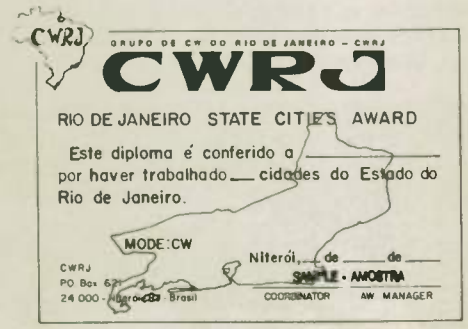
This award is available to any licensed amateur for confirmed CW contact with 20 different PY1 stations which must include at least five CWRJ members. Send your log extract "GCR", along with the award fee of 6 IRCs to: PY1EWN, P.O. Box 621, 24000 Niteroi, RJ, Brasil. Only contacts made after 16 December 1982 are considered valid toward your application.

Brazilian Stations Award (BSAW)

This award is available to any licensed



amateur for confirmed CW contact with 75 different Brazilian stations which should include at least 10 federation units (states/territories) and two CWRJ members. Each state has a different prefix — PY1, PT1, etc. Endorsements are available for an additional 50 stations, and a second endorsement for the next 25. Send your log extract "GCR", along with the award fee of 6 IRCs to: PY1EWN (see above). Only contacts made after 1 January 1982 are considered valid toward your application.



Rio de Janeiro State Cities Award (RJCAW)

This award is available to any licensed amateur for confirmed CW contact with 10 cities of Rio de Janeiro State (RJ), PY1. Your application should include at least two CWRJ members. Send your log extract "GCR", along with the award fee of 6 IRCs, to: PY1DWM, P.O. Box 24039, 20522 Rio de Janeiro, RJ, Brasil. Only contacts made after 1 January 1982 are considered valid toward your application.

Diploma Brasil Geografico (BGAW)

This award is available to any licensed amateur for confirmed CW contact with three stations in each of the five states of Brasil for a total of 15 contacts. Your application should include 1 S.E. region CWRJ member. Send your log extract "GCR", along with the award fee of 6 IRCs to: PY1DFF, P.O. Box 1045, 24000 Niteroi, RJ, Brasil. Only contacts made after 1 January 1982 are considered valid toward your application.

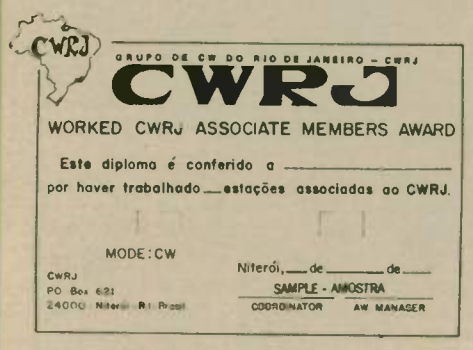
Brasil's Frontiers Award (BFAW)

This award is available to any licensed amateur for confirmed CW contact with five countries whose borders align with Brasil (FY, PZ, 8R, YV, HK, OA, CP, ZP, LU, CX). Send your log extract "GCR", along with the award fee of 6 IRCs, to: PY1DFF (see BGAW). Only contacts made after 1 January 1982 are considered valid toward your application.

Worked CWRJ Associate Members Award (WAMAW)

This award is available to any licensed amateur for confirmed CW contact with

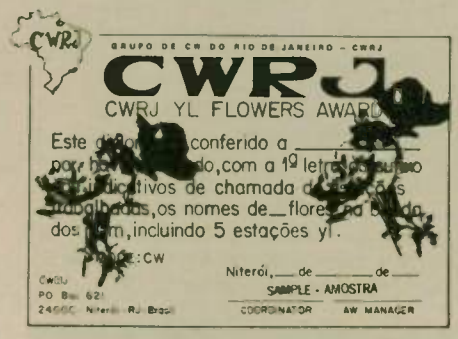
10 CWRJ members. Send your log extract "GCR", along with the award fee of 6 IRCs, to: PY1EWN (see CWRJ). Only contacts made after 1 January 1982 are considered valid toward your application.



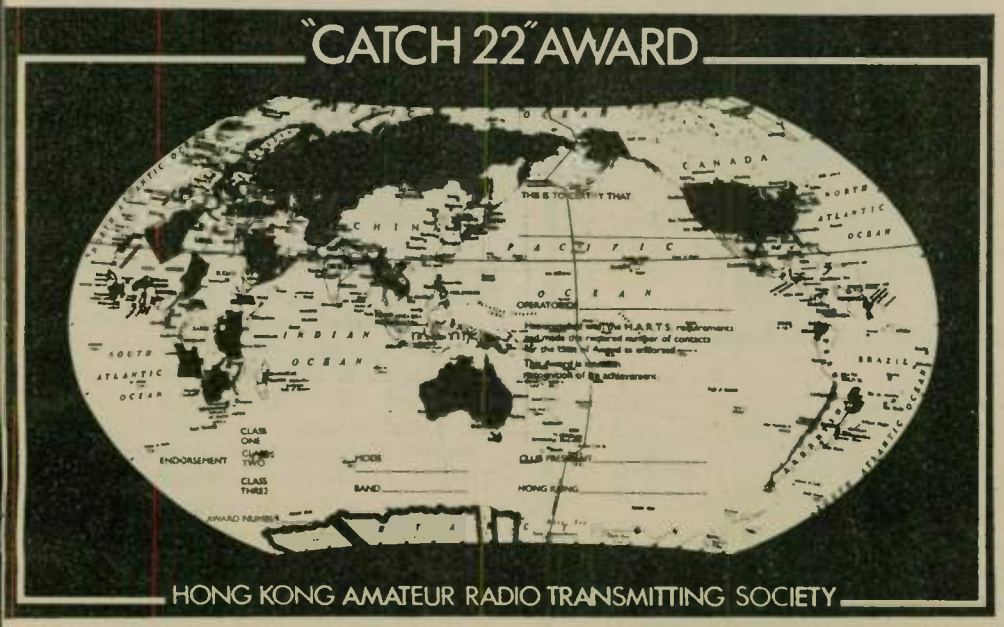
Worked CWRJ Awards (WRJA)

This award is available to any licensed amateur for achieving at least CWRJ and five other awards from the CWRJ program. Send your list (including the award numbers) to: PY1DFF (see BGAW) with the award fee of 6 IRCs.

Should you have any questions regarding the award program described here, do not hesitate to contact their USA representative, Bob Wheaton, W5XW, 16015 White Fawn Dr., San Antonio, TX 78255.



Now let's take a look at the HARTS (Hong Kong Amateur Radio Transmitting Societies) awards program.



Catch "22" Award

This award is available to any licensed amateur able to submit proof of two-way contact with amateur stations located along the 22 parallel of latitude north as per the list which follows: VS6, CR9, BY, BV, XV, XW, XZ, S2, VU2, A4X, A6X, HZ, ST, SU, 5A, TT8, 5U7, 7X, TZ, 5T5, CN, C6, CO, XE, KH6. The award is available in three classes. Class 3 for contact with at least 15 countries , Class 2 for at least 20 countries, and Class 1 for all 25 (good luck!). Send your log extract "GCR", along with the award fee of $7, to: Awards Manager, HARTS, GPO Box 541, HONG KONG. Only contacts made after 1 January 1980 are considered valid toward your application.

Nine Dragons Award

This award is available to any licensed amateur able to submit proof of two-way contact with a country in each of the following CQ zones: 18, 19, 24, 25, 26, 27, 28, 29, 30. Your zone 24 contact must be with a VS6 station. Only contacts made after 1 January 1979 are considered valid toward your application. Send your log extract "GCR", along with the award fee of $3, to: Awards Manager, HARTS, GPO Box 541, HONG KONG.

Firecracker Award

This award is available to any licensed amateur able to submit proof of two-way contact with six different VS6 stations. Only contacts made after 1 January 1964 are considered valid toward your application. Send your log extract "GCR", along with the award fee of $2, to: Awards Manager, HARTS GPO Box 541, HONG KONG.

Well, that should keep you busy until next month. I hope that your holidays brought a new "goodie" into your shack and that propagation will be good enough for you to make use of it. Best 73, Scott □

Chicago Extras

I understand that you are making note of Extra Class husband-and-wife teams. We would be happy to join the ranks. OM Bob Hotz, W9CA as of 16 October 1968 and XYL Wanda Hotz, N9AIB as of 19 November 1982. (The Hotz' live in Chicago, Illinois.) □

Extra couple

If you haven't already heard, a very active OM/XYL team of Extra Class operators is Patrick KN7B and XYL Laryl Berry, KM7Z of Mulino, Oregon. □

Four-ham family

The Paynes of New Orleans, Louisiana have four call signs to their credit: KB5VC (Sam K, Jr.), KB5XZ (Mary), KB5XF (Cora), and KA5PKA (Julia). □

The ART of Contesting

Why contesting?

Very few people are born contesters. Contesting is a learned skill! Many amateurs cannot fathom why someone should sit for 36 hours (with minimum breaks) working a contest. Sounds too much like work. We will concede that to be good at something takes a personal commitment, and serious or not, contest operation can be good for you and for our hobby.

First, contest operation improves operating efficiency. Leisurely ragchewing is certainly fun, but it does not help the speed and accuracy of operation. If you are ever called upon to operate under emergency conditions, you will need both speed and accuracy. In some situations, you might get only one chance to copy a piece of information that is of vital importance.

Contesting allows you to determine how good an operator you are. By participating you learn crisp operation, no wasted words, no wasted motion. You learn how to listen and how to organize your thinking. These are keys to success in an emergency. Even if you increase your operating efficiently slightly, you've helped yourself.

The second reason contesting will benefit you is that you will learn the capabilities of your station. Most equipment is never used to its full capacity, and operating a contest will pinpoint the weak links in your gear. If you get into contesting, you will begin experimenting with ways to make your station more effective and will learn something technical in the process. A secondary benefit is that you can earn your DXCC awards, etc.

The main benefit is the overall improvement in the skill level of the population; in an emergency, that is of overwhelming importance. Add to this the fun and keen edge of excitement provided by competition and that is "contesting."

— *The Canadian Amateur Radio Teletype Group, VE3RTT* □

Jennifer Carol Waller, KB4AQJ (11) received her Novice Class license and upgraded to Technician this summer.

11-year-old Technician

Jimmie Burousas, NO4V

Jennifer Carol Waller received her Novice ham license in June 1982, making her one of the youngest Amateur Radio operators in the country. Jennifer was 10 years old at the time. In July, just after passing her 11th birthday, she upgraded to Technician.

Jennifer comes from an Amateur Radio family. Her grandfather — Jimmie Burousas, NO4V — is an Extra Class operator, as is her father, Buddy Waller, NO4U. Her uncle, Buzz Burousas, WD4PHQ, is an Advanced Class operator and her mother, Bobbie Carol Waller, KA4DXU, is a Technician.

Jennifer's call is KB4AQJ and she is usually on the air from Rome, Georgia. □

AMSAT OSCAR

Dr. Norman L. Chalfin, K6PGX

Phase III AMSAT/OSCAR

The Phase III AMSAT launch date is 22 April 1983, according to Skip Reymann, W6PAJ. He said he may confuse it with his wife's birthday one day earlier. In any event, the launch will be on *Ariane* LO 6, the European Space Agency Rocket.

SYNCART

While work was progressing on several fronts on the SYNCART — a joint effort of the Project OSCAR/AMSAT and AMSAT Canada — we have had no specific reports recently on the Synchronous Amateur Radio Transponder. An RF unit was sent by Project OSCAR to the Canadian group, and work in Southern California on the data processing parts of the system is continuing. The IF portions of the system are being worked on in Canada. Some 23cm tests have been conducted from mountain tops in California's San Francisco Bay area by Project OSCAR. A possible launch opportunity for the SYNCART project may occur in the 1984 time frame on a synchronous satellite launch, on which the SYNCART may hitch a ride as part of the mission payload.

UOSAT

Testing continues on OSCAR-9, The UOSAT. Codestore of UOSAT/OSCAR-9 was scheduled to be loaded on weekends with test messages running ASCII at 300 baud, or 45.5 baud. You can monitor the Codestore on 145.825 MHz narrow-band FM which you should be able to receive with any hand-held 2-meter transceiver. If you receive the codestore of the UOSAT/OSCAR-9, send your reports to AMSAT/UK Secretary, G3AAJ, 94 Herongate Rd., Wanstead Park, London, ENGLAND E12, 5EQ. Surrey will be interested in the quality of reception.

The satellite spin down procedure is still in progress. The objective is to bring the spin rate down to less than one revolution per minute. By the time you read this it may have been accomplished. When listening to UOSAT, you can observe the spin very clearly as a change in noise level as you receive it. The deployment of the gravity gradient boom and the turning on of the HF beacon experiments will follow.

The deployment of the boom will depend upon the correction of the Z-axis spin and reorientation of the Z-Axis so that it can point to the subsatellite point for the CCD camera experiment. At last report, the nutation angle was 15.2 degrees.

If you have access to a good library, you may want to look into the August/September 1982 issue of **The Radio and Electronic Engineer**, published by the British IERE. The entire issue is devoted to articles concerning UOSAT. (The issue is Vol. 52, No. 8/9.) A copy of the entire issue is available from AMSAT, P.O. Box 27, Washington, D.C. 20044 at a cost of $15. Make checks payable to AMSAT.

Orbit calendar

The Project OSCAR Orbit calender is available for $10 from Project OSCAR, 280 Manfre Rd., Watsonville, CA 95076. It covers the orbital predictions for the OSCAR-8, UOSAT/OSCAR-9, and the RS Satellites for the entire year of 1983. □

'Big Dish' used to save satellite

(ED: On page 31 of our December 1982 issue, we ran a picture of members of the Stanford Research Institute team standing in front of a large antenna dish. There was a story behind the photo, which we did not run, and some of our readers have asked about it. So, here it is, as printed in the November issue of ***The SRI Journal.)***

Jim Kloss

A group of SRI (Stanford Research Institute) scientists who are Amateur Radio operators have salvaged the mission of an amateur-made scientific satellite that was stuck in orbit, unable to respond to commands for more than five months.

The SRI team used the 150-foot parabolic dish antenna located on Stanford University land in nearby foothills to beam a radio signal powerful enough to command the small UOSAT/OSCAR-9 satellite to correct a malfunction that had been blocking regular ground station signals.

The successful effort on 20 September ended a saga followed by thousands of Amateur Radio and satellite enthusiasts throughout the world. The satellite project was coordinated by members of the Radio Amateur Satellite Organization (AMSAT-UK) at the University of Surrey in England.

UOSAT was launched last October, courtesy of the National Aeronautics and Space Administration in the United States, which allowed it to piggyback into orbit on a NASA launch from Vandenberg Air Force Base in California.

On-board error

In mid-April, an error caused one of the satellite's on-board computers to switch on a backup transmitting beacon while the main beacon was functioning. The dual signal was strong enough to jam the UOSAT receivers. Ground controllers were unable to break through the interference to correct the error and enable the satellite to carry out a number of scientific experiments.

"In effect, the satellite was stuck in orbit listening to itself," said Robert Leonard, Director of SRI's Radio Physics Laboratory and a member of SRI's Amateur Radio Society. "The only hope was to send a signal strong enough to break through the interference."

Leonard, who heard about the plight of the UOSAT on a ham radio in June, offered to help project leaders at the University of Surrey try to save the mission. Eventually, about 10 persons at SRI — most of them scientists in the Radio Physics Laboratory — became involved in a rescue effort that centered on the "big dish," a local landmark.

The huge antenna is one of four built by SRI International for the U.S. government in the early 1960s. It was designed to study electromagnetic effects in the upper atmosphere and has been used to transmit signals for several NASA deep-space probes. At the UHF frequency used, the antenna magnifies the transmitted signal by 20,000 times, according to Leonard.

The antenna had not been used for satellite tracking for some time, however, and SRI volunteers had to spend several weeks reprogramming and readying the dish for that task, Leonard said.

Equipment from England

After receiving a special piece of equipment from England that would enable the big dish to transmit the proper commands to the stranded satellite, the SRI team began trying in July to correct the malfunction — without success.

"It was only recently that I realized the

problem was with the equipment from England — it had been damaged in shipment," said Roy A. Long, Associate Director of the Radio Physics Laboratory and a key member of the rescue effort team.

Long said he and three other volunteers corrected the defect and successfully turned off the UOSAT beacon signals.

"According to the project director in England, the complex satellite has not deteriorated significantly during its five months of communication blackout, and should have a couple years of life left in it," said Leonard.

Designed for science

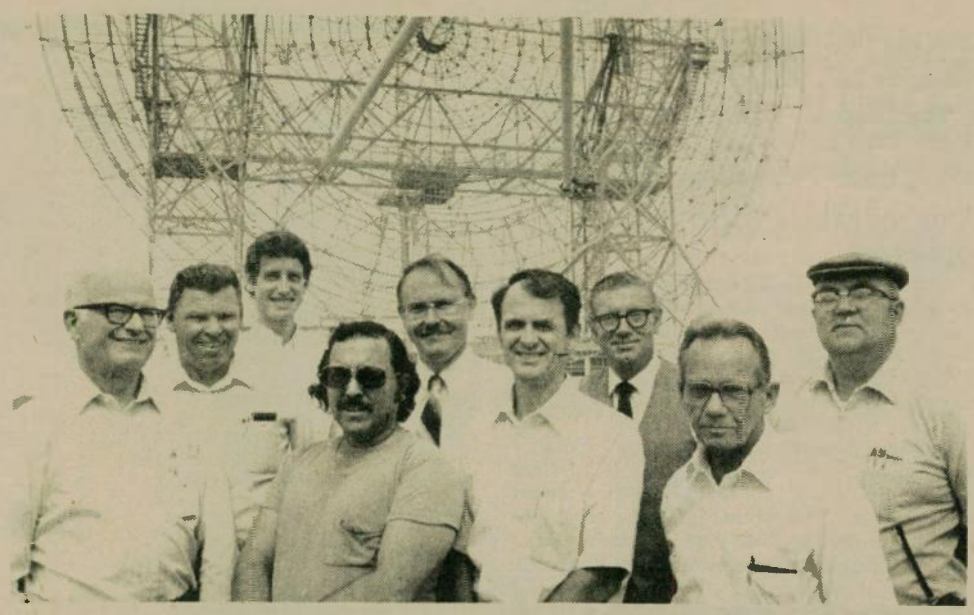
Unlike previous amateur satellites, OSCAR-9 was designed for scientific and educational purposes rather than radio communications, according to project leaders in England.

One of the primary objectives of the OSCAR-9 mission is to stimulate interest in space science in schools and universities by making data transmitted from the satellite readily available to students and scientists.

The satellite will conduct studies of the near-Earth electromagnetic environment and the relationship between solar and geomagnetic disturbances and their effect on radiowave propagation.

Members of amateur satellite organizations in the United Kingdom, the United States and Europe helped to construct the UOSAT educational satellite, and manufacturers and government agencies donated equipment and test faciiities.

An equivalent satellite would be worth "millions of dollars" if it were constructed on a commercial basis, according to Long. ☐



Members of the SRI team that rescued a malfunctioning space satellite gathered in the shadow of the "Big Dish" antenna in the foothills outside Stanford University to celebrate their success. From left: Roy A. Long, W6YBL; Robert S. Leonard, KD6DG; Robert C. Livingston, KB6LZ; Gilbert M. Roach, W6MXI; Douglas D. Lee, K6TDR; Gary H. Price, W6IRA: Karl E. Lind, KE6D; Howard M. Zeidler, W6WMC; and Henry D. Olson, W6GXN. Except for Lind — who is with Instrumentation Services, and Lee — of the Remote Measurements Lab, all are members of the Radio Physics Lab. Ziedler was formerly with the Advanced Computer Systems Department.

Historic EME contact

The first ever single Yagi 220 MHz EME contact took place on 6 December 1982, between Lee Fish, K5FF of Edgewood, New Mexico and Dave Olean, K1WHS of Lebanon, Maine.

K5FF used her home-built 30-foot dish with polarity rotation, while K1WHS used a single Cushcraft 220B Boomer Yagi vertically polarized on the side of his tower.

Signals were quite good in both directions and the contact was completed in a minimum length of time. ☐

A General at 13

Rose Ellen Bills, N2RE

Trisha C. Donnell obtained her General ticket at age 13. She is KA2ONA.

Congratulations are in order to this young girl, who went along with her mom and dad to radio classes held by the Delaware Amateur Radio Club in Wilmington. It was not long before she, too, became interested, and under the direction of her teachers — Robbie McCray, WA3QLS and Joe Gribb, KI3B — she received her Novice ticket on 5 February 1982. Just 13 days later, she went up to FCC and passed her Technician test. Then on the big day of 27 April 1982, she passed and received her General ticket.

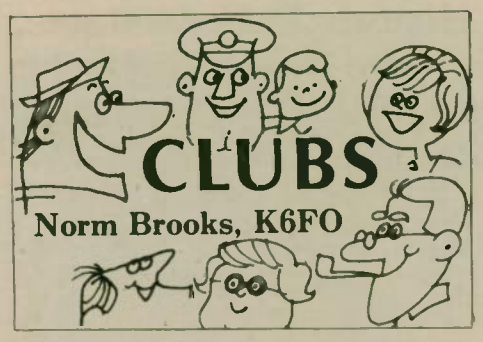
Trisha says her biggest influence and help came from her dad, Bill KR2U ex-WB2JGP (now a Silent Key since 27 April of last year). Dad helped her with the study and know-how regarding her hobby. Also in the family is Trisha's mom, Elaine KC2LD, who holds her Advanced Class ticket and who has passed the code portion of the Extra Class. A true ham family.

Young Trisha says she is still undecided as to what she likes most about Amateur Radio — she likes phone much better than CW. Her dad got her a 2-meter handitalkie (HT) for passing her Tech Class and teacher, Robbie WA3QLS gave her a 220 HT for passing her General Class and he calls her his prize student.

A member of the Delaware Amateur Radio Club and AWARE Radio Club — both in Wilmington — as well as a member of Salem County Amateur Radio Club, Inc. and also the YLRL, Trisha is kept busy with her ham friends.

Imagine getting your General at age 13! Trisha had a birthday on 23 May, when she became 14. She graduated from Penns Grove Middle School (8th grade) this year, where she has been on the honor roll three times during the past year as well as being cheerleader for the past two years. Trisha enjoys camping, roller skating, swimming and is also an avid collector of smurfs. She is a very pretty girl. She also wishes to share her QSL card with you.

Congratulations to Trisha KA2ONA — the youngest gal holding her General Class in Salem County, New Jersey and Delaware areas. All the best to happy hamming, Trisha. 73 — Rose Ellen, N2RE, YL Page Editor ☐



What the clubs are doing

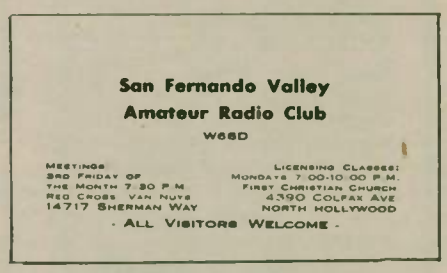
The Gloucester County Amateur Radio Club of Pitman, New Jersey hosts an annual hamfest on the last Sunday in August. Last year it was held at the Gloucester County Community College in Sewell, New Jersey. Rose Ellen Bills, N2RE politely chides the **Worldradio** staff for consistently misspelling the club name. Typesetter please note: It's G-l-o-u-c-e-s-t-e-r. Our congratulations to the co-editors Doug Gehring, WA2NPD and Rose Ellen Bills, N2RE for the Special Hamfest edition of the club paper *Crosstalk*.

The Mount Diablo Radio Club of Pleasant Hill, California prepared a fact sheet about their club, which can be given prospective members. The opening paragraph is impressive.

"The MDARC is a general interest ham club serving amateurs in the Central Contra Costa County area. Started in 1947, the membership is approximately 300 strong. Members come from all walks of life, some professionally into the age of electronics, and others not. There is a good exchange of technical know-how between members. There is a range in age from about 10 to 85 years. The club has a diverse range of programs and activities — all optional — in the operating, educational, public service, emergency service and social areas."

It then goes on with a paragraph each on meetings, public service, educational programs, *The Carrier* (the monthly bulletin), repeaters, emergency service and fun events. For additional information, the reader is given the list of club officers with telephone numbers.

The San Fernando Valley Amateur Radio Club has a good supply of the cards shown below. Members are urged to give them to prospective class members or club members. We learned all this from the club's paper *W6SD Carrier*.



The Central Wisconsin Radio Amateurs, Ltd. of Stevens Point, Wisconsin fielded 25 amateurs to provide communications for the Wisconsin Special Olympics. They received the following letter from the Overall Program Director:

"I would like to take this opportunity to express my sincere thanks to you and the Central WI Radio Amateurs for your tremendous support this year in coordinating the communications at the 1982 Summer Games. Everything went so smoothly, thanks to the conscientious efforts of your team.

"We truly appreciate your involvement and hope you will continue your outstanding support in the years to come! Sincerely, Judy Gustafson"

If your club has not already done so, you will find it very worthwhile to work with these fine handicapped youngsters.

The Oregon Tualatin Valley Amateur Radio Club of Beaverton, Oregon reports the following in its paper, *The OTVARC*:

Our sightless Field Day operator

Before Field Day, I had given some thought to bringing another ham along in our party. I had to think about it because to bring her would mean extra care and work for others. Colleen Utter is a fairly new ham and sightless. She attended Dennis AI7G's Novice class the previous winter and passed nicely.

Colleen has no radio gear nor the capability to buy any. She has been legally blind since birth and was left as a toddler with her infant sister in the care of her grandparents. She observed, more or less, a ham station when I was putting up a dipole for 40M while on vacation at Fort Stevens State Park one summer. I felt that Amateur Radio would open up her world into areas otherwise closed. She was amazed that any sense could be made of all those dots and dashes and I told her that she, above all people, should be able to comprehend the principle.

When the class started in September and she was asked if she would like to take it, she literally jumped up and down with excitement. Some of the license manual and other information was put on a tape for her to study and Dennis spent extra time tutoring her. As a result, she received her call as KA7MDC but, unfortunately, has had very little operating time. She had spent two Sunday afternoons on my station and that was the extent of it until Field Day 1982. Because of unforseen circumstances, the intended call for the Novice station could not be used, so Colleen's call was used. She got in quite a few hours of operating time, and I was very proud of her. She remembered her code but did need a little help on operating procedures. It was obvious, just by being close to her, how much fun she was having. Colleen was so excited that, after going to bed Saturday night she couldn't sleep, so she got up and went over to the Novice station and operated until 3:00 a.m.

Somehow, I am going to get Colleen on the air. We have a pair of dipoles for 40 and 80M made up and a mast to hang them. They need to be insulated, though. We are going to loan her the HW-8, power supply and Ten-Tec keyer. We are still trying to find how to keep her in the band.

I would like to take the opportunity to thank all of you in OTVARC who helped to make Field Day the experience it was. There was so much help and concern from you. Colleen told me on the way home that she has never had so much fun. I intend to bring her to some of the club meetings. Thanks again. — Randy Cobb, KA7HJT.

The Utah Amateur Radio Club of Salt Lake City, Utah in its paper, *The Microvolt*, reports having a "Home Brew" Contest as a club program. They showed photos of last year's winning projects. Here are the rules they use.

"There will be four prizes awarded:

"1. To the grand prize winner (selected by those present),

"2. To the builder demonstrating the best construction techniques.

"3. To the builder demonstrating the most originality, and

"4. To the builder of the best beginner's project.

"The awards for construction and originality are based on the premise that there are basically two kinds of homebrew projects — those that look good and those that work. If your project falls in both categories, you should stand a particularly good chance of winning in some area or another.

"Here are the rules for the 1982 contest:

"1. Entrants must be members of the Utah Amateur Radio Club.

"2. Entries must be items constructed for use in Amateur Radio and built by the entrant. Kits are not eligible.

"3. There is no limit on the number of entries that may be submitted by each entrant. However, each entrant will be allowed no more than

YOUR LOCAL RADIO CLUB

ALASKA

Arctic Amateur Radio Club
Geophysical Institute West Ridge U of A
PO Box 81389
College, AK 99708
1st Friday/monthly - 7:30 p.m.

ARIZONA

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

CALIFORNIA

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

Antelope Valley Amateur Radio Club, K6OX
Lancaster School Board
44711 N. Cedar Ave., Lancaster, CA 93534
4th Wed/monthly-7:00 p.m.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CONNECTICUT

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

FLORIDA

Fort Myers Amateur Radio Club, Inc. W4LX
Jeff Beals, WB2OUK, President, (813) 334-4004
Meets 1st Wednesday/monthly-7:30 p.m.
First Federal Savings and Loan of Ft. Myers
121 Pondella Rd., North Fort Myers, FL

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

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

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

GEORGIA

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

HAWAII

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

ILLINOIS

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

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

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

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

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

INDIANA

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

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

IOWA

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

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

MARYLAND

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

MASSACHUSETTS

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

MICHIGAN

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

NEW JERSEY

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

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

NEW YORK

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

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

Long Island Mobile Amateur Radio Club (LIMARC)
146.25/85, 147.975/375, 223.22/.224 .82, 444.125/449.125
Membership: Jerry Kamen, K2QXH, 44 Robin Lane, Levittown, 11756 Net every Mon. 8:30 p.m. 146.25/85
Meets 1st Tues/8 p.m., H.B. Thompson, JHS, Syosset

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

NEW HAMPSHIRE

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

NORTH CAROLINA

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

OHIO

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

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

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

OREGON

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

TENNESSEE

Lakeway Amateur Radio Club
Rancy Hall, Activities Mgr.
Box 1636, Morristown, TN 37814
State Area Vocational School
Last Thursday/monthly - 7:30 p.m.

TEXAS

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

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

UTAH

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

VIRGINIA

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

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

WISCONSIN

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

WEST VIRGINIA

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

1,169 years in Amateur Radio were recognized by the Chicago Suburban Radio Association (CSRA) at its Annual Old-Timers Night, held on 14 July 1982. Special Diamond Award Certificates were presented to 24 club members, each having a minimum of 25 years as a licensed Amateur Radio operator. The CSRA has been affiliated with the ARRL for over 50 years. Jim Troyer, N9GI — one of the founding members of CSRA and still an active member — took second place with 58 years. Standing, left to right: Don Harris, W9GUM; Howard Goode, W9DYP; Irwin Mellman, W9TXT; Jim Troyer, N9GI; Bob Cresap, W9LRI; Leo Gizynski, W9AHK; Harold May, N9BAT: John Matazel, W9USJ; Stan Hails, W9ZGV. Front row, left to right: Bob Drapeau, K9AJW; Allan Marco, W9OMC; Doug Henning, W9PBJ; Stan Carlson, WA9UWG: Joe Harant, W9FLA and Bob Orwin, W9YKA. Nine members were unable to personally attend the meeting.

five minutes to describe all his entries.

"4. No entrant will receive more than one prize.

"5. Entries such as antennas that cannot conveniently be brought to the meeting may still be entered. Such an entry must be described thoroughly to the group through pictures, diagrams, test results, etc.

"6. Selection of the grand prize winner will be accomplished by vote of the UARC members present at the meeting. Other prizewinners will be selected by a panel of judges."

From *Linear Lines*, the publication of the Trident Amateur Radio Club, Charleston Heights, South Carolina:

The club president

If he begins on time,
He is a tyrant.
If he waits for late-comers,
He is too tolerant.
If he requires constant attention,
He is a despot.
If he does not care,
He makes himself foolish.
If he assumes the spokesman's role,
He becomes a bore.
If he yields,
He becomes unnecessary.
If he calls for silence,
It is an abuse of power.
If he permits disorder,
He fails in authority.
If he is firm,
He takes himself too seriously.
If he is good natured,
He does not maintain his rank.
If he expounds his own ideas,
People are perforce against him.
If he asks for a choice,
He is irresolute.
If he is dynamic,
He is worked up.
If he remains cautious,
He is inefficient.
If he does everything on his own,
He is conceited.
If he delegates,
He is lazy.
If he is attentive to the ladies,
He is obsequious.
If he is not,
He is a snob.

From the McHenry County Wireless Association's newsletter comes the following:

"Dr. Tom Clark (W3IWI), AMSAT president, has announced the completion of a 'Porta-J Terminal.' The Porta-J terminal is a completely portable Mode J (2 meters up, 435 MHz downlink) satellite earth station put together through amateur equipment donations from various sources. Included will be power supplies antennas, preamps, converters, amplifiers, transceivers ... everything you need!

"The station will be used to provide demonstrations of satellite operation at public events like hamfests, school science fairs, etc. As the new Phase III satellite goes into orbit, which is expected early next year, the package will be augmented for Mode B (435 MHz up, 2 meters down) and Mode L (1269 MHz up and 435 MHz down). Watch this newsletter in the future for contact info for securing the use of the 'Porta-J Terminal.' — de W5YI" □

Olympia Radio Amateur Club

Sam DeDonatis, WB2BWL

The Olympia Radio Amateur Club (ORAC) meets aboard the United States Naval Shrine — Admiral Dewey's Flagship of 1898, the *USS Olympia* — at Penns Landing, Philadelphia, Pennsylvania.

A recent club activity consisted of Amateur Radio communications aboard the *USS Iowa* (BB-61) while berthed at the Philadelphia Naval Yard. Operating time was confined to four hours from 1300 to 1700 hours EDST. Equipment and antennas were erected from the aft turret of the 16-inch guns. Contacts were made on 40-20-2 meters, and a beautiful picture certificate of the *USS Iowa* was issued for two-way contacts. Stations who made radio contact and requested a "QSL" should have received their certificates at this time.

The *USS Iowa* departed Philadelphia on 3 September 1982 after spending her years mothballed, to be overhauled and recommissioned to join our fleet. The ORAC would like to express its appreciation to the Navy Department for the approval and privilege to operate aboard this most prestigious craft. □

Cable comments

One of the most common questions I receive is what type of cable to run for your new Amateur Radio marine installation. This is a good question, and there are several variables. Let's briefly examine your alternatives.

VHF

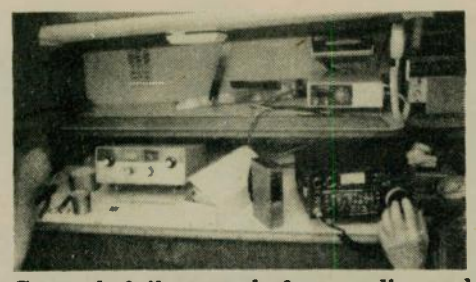
If you plan to use your new 2-meter mobile or portable set on your marine VHF antenna system, everything you need is already there. Although the antenna may not be resonant at 146 MHz, the 156 MHz marine antenna should work out nicely. I have yet to see one that didn't!

Hopefully, your marine VHF antenna is fed with the large RG-8 cable or just slightly smaller RG-8X cable. This is 52 ohm line, and will match the antenna as well as your ham transceiver.

If your marine antenna is fed with RG-58 cable, do expect some line loss at VHF frequencies. This little cable should only be used for mobile runs under 20 feet on any frequency.

If you decide to run your marine antenna into a coaxial cable switch, choose a good switch. Don't chintz out and buy one of those CB-type switches — they are very lousy at 146 and 156 MHz. The better coaxial cable switches for Amateur Radio VHF work also ground out the unused antenna port to protect your other radio from RF overload. Transmitting on the other radio into a short rarely does any harm — modern ham rigs have VSWR protection against shorted antenna circuits. I suppose if you kept the key down for 10 minutes, something might go splat, but it's doubtful that a quick transmission on a shorted coaxial cable switch in the wrong position will damage your unit.

Most hand-helds use a BNC connector. The end of your coaxial cable most likely has a PL-259 plug on it. This means



Ground foil seen before radio and tuner are installed.

you're going to need the common coaxial cable plug adapter, "UG-255/U." These little devils run about $5, but do the trick nicely to match a PL-259 to the BNC plug on your HT.

I don't recommend running this adapter on the stiff RG-8U cable directly to your hand-held. That heavy cable could work your antenna connector on your HT loose after awhile. Use RG-58U jumpers no longer than 3 feet to terminate into your HT.

The photos this month show Mark Sheppard, KA6TMD installing a typical HF system aboard a sailboat.

High frequency

You need to make a decision on whether you are going to run coax or single-wire on your HF installation. Coaxial cable is the preferred way to go in feeding your maritime mobile antenna. However, coaxial cable can only be used when the terminating impedance is near 50 ohms.

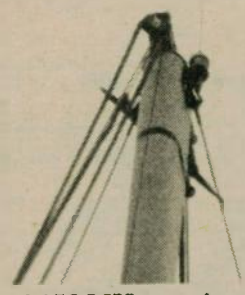
If you are running mobile whips on the stern, coaxial cable is fine. Remember, stern-mounted mobile whips will only work and resonate when there is a sizeable groundplane directly below them. Mobile whips on the stern connected to a ground at midships with a small covered wire won't load worth a darn. If you can't load your whips, you have no groundplane directly beneath them.

Dipoles and inverted vees hoisted aloft are easily fed with coaxial cable. As always, try and use the larger cable whenever possible. Always use a balun on your inverted vee or dipole. Providing you measured your dipole or inverted vee carefully, you should find that this type of system will tune up well.

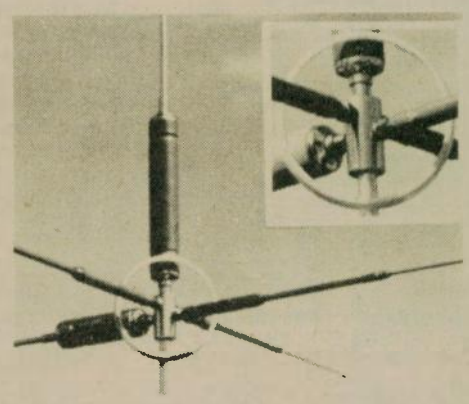
My trick of using a metal mast as the ground portion for a sloper antenna works well. If you have no keel bolt as a ground source, the metal mast trick works nicely. Again, run large coaxial cable up the mast. Ground the braid to the metal mast at the top. The center conductor goes to any length of wire or backstay that runs down from the masthead at a 45 degree angle. Thirty to 40 feet seems to tune up nice.

Now let's talk about those hard-to-work backstay installations. Your backstay insulated. The bottom insulator is high enough that your crew members won't hang on to your transmitting antenna while doing business on the stern transom in a storm.

I found out the hard way while sailing to Hawaii. You may imagine the pain when holding on to the live backstay antenna while in direct connection to the sea water. Enough said here!



Masthead 156 MHz marine antenna is fine for 2-meter ham sets.

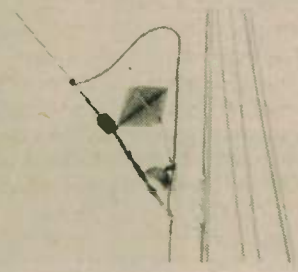


Multiband mobile whip assembly, for maritime mobile, works well.

You can feed your backstay antenna with coaxial cable only if you have a large groundplane below the feedpoint. You cannot feed a backstay if you do not have a tremendous amount of ground directly off the stern. It just won't work.

If you do have copper foil and screen to the chain plate that holds the entire backstay assembly together, ground your coax braid to the chain plate. The hot goes to the insulated backstay. If enough ground is present, you will find that a healthy tuner will match your transceiver to the backstay on any frequency between 1 and 30 MHz. It takes a good tuner to make this type of set-up fly. The impedance on this type of match is generally well below 20 ohms. Only the biggest of antenna tuners will properly transfer your radio energy into a backstay antenna with a good potential directly beneath it.

Trying to tune up a backstay antenna with the major groundplane back at the transceiver simply won't work. The chassis of the radio will become hot, and a lead pencil will easily draw a giant spark while transmitting a Ø. You cannot run coax to any kind of an antenna without a sizeable groundplane connected to the braid of the coax. Running coaxial cable back to your backstay and only connecting up the center conductor is absolutely unacceptable. That entire feedline will become red hot, and if you don't toast your boat, you will probably burn your lips off when it touches the metal mike.



Sloper fed with coax

High voltage single wire is recommended to feed a backstay when only a radio groundplane is available. The best type of single wire to use is neon cable "GTO-15." This cable is capable of handling several thousand volts and won't arc through. The cable run cannot be near any other wires or any other ground source. Remember, this is part of the actual transmitting antenna. Run the cable at least two feet away from any other wire bunches.

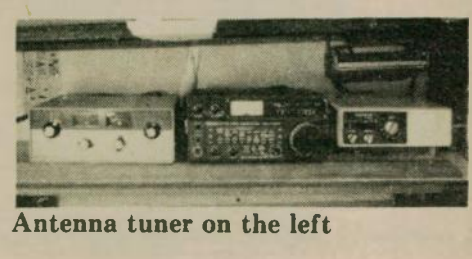
This cable is brought out on deck and again, run well away from any grounded lifeline or grounded chain plate. Also keep it away from the bottom end of your backstay that is grounded to the chain plate. Connect it to the hot part of your backstay with Kourney Nuts, and seal it with electrical coating.

The single-wire antenna system may only be used with an antenna tuner that has a single-wire output. Look on the back of your present antenna tuner. If all you see are coaxial cable connectors, it won't work.

The single-wire antenna must be connected to one of the porcelain-insulated screw terminals.

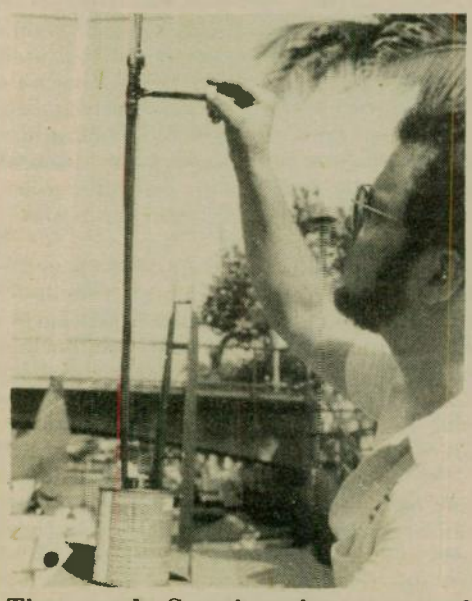
Copper foil must then ground your antenna tuner to your transceiver, and then ground your entire set-up to the central keel bolt or screen beneath the water line.

Coax feeding a backstay before sealant is added to top



Antenna tuner on the left

First, seal with coax seal putty.



Then, apply Scotch sealant — one of the best.

Conclusions

It's far easier to run coaxial cable than open wire. However, coaxial cable feed systems only work when there is a sizeable groundplane beneath the antenna.

You are relegated to running high-voltage cable which radiates as part of the antenna when there is no groundplane directly beneath the long-wire antenna.

Mobile whips off the stern are a nice way of getting out a decent signal throughout the world. However, for a real range boost, consider using an antenna tuner with a long-wire, backstay, sloper, or any other type of antenna that gives you greater radiation. Let's face it — any time you compact an antenna by adding a loading coil, radiation resistance gets higher and performance gets lower. Little antennas might work good, but big, long antennas work best.

Next month we take a closer look at coaxial cable. Good cruising! □

See you in *Worldradio*

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

Change of address?
If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

Check your cable

Bill Welsh, W6DDB, Lockheed Employees Rec. Club

Amateur Radio Operators should be well aware that coaxial cables such as RG-58 A/U, RG-58/U, RG-58C/U, RG-59/U, RG-59A/U, and RG-59B/U have too much loss to be suitable as transmission lines between the station equipment and antenna. To a lesser extent, this also holds true for the various versions of RG-8/U coax.

If you know someone who is installing a new (or replacement) 50-ohm coaxial transmission line, advice that person to use RG-213/U, since it will serve well for more than a decade. One should make certain that the coax and/or reel are marked RG-213/U. Do not accept a salesperson's assurance that any coax is a direct equivalent to RG-213/U; if the coax meets the Military Standard MIL-C-17 (sheet 74B) requirements for RG-213/U, it is clearly identified as such to allow it to be sold to military users.

The following table shows typical attenuation levels of 100-foot lengths of new coaxial cable at frequencies from 1 to 100 MHz, inclusive. Just RG-58/U and RG-213/U are shown, but RG-59/U and RG-8/U attenuation figures are about the same as the ones shown, respectively.

Amateurs waste a lot of money on poor performance coaxial cable. Usually, one can stand relatively high transmission line losses of transmitter output but when a very weak signal is fed from an antenna to the receiver through a lossy transmission, the unfortunate result is often not enough signal input to the receiver to produce a useful output.

Frequency	RG-58C/U Losses	RG-213/U Losses
MHz	*(Decibels)*	*(Decibels)*
1	0.33	0.15
10	1.25	0.55
50	3.13	1.33
100	6.0	2.0
200	—	3.5

NOTE: A 3-decibel power loss is a reduction to half power.

—*Nuts & Volts, Inc. San Francisco, CA* □

Operating practices continued

Last month we discussed some of the practices of operating on VHF and UHF FM. We had a dual purpose — to provide some thoughts for New Year's resolutions, and to pave the way for thoughts on alleviating some of our jamming problems. If you did not read my column in the January issue of **Worldradio**, it would be helpful if you would do so before continuing with this article.

Without covering the same ground again, it is fair to speculate that improper and/or rude operating practices have contributed to our present jamming problems. It is easy to understand that when someone is treated in a fashion that seems unfair to them, they could easily have their feelings hurt. When this happens to some people, they will just "go away" and not be heard from again. This can be very sad, as we may have lost some very fine people over the years for no good reason. As explained last month, you might not have been acknowledged when you tried to break in because you were not heard — or didn't make it! We would encourage those who tend to go away, to give others a chance. Try to correct your problems first by discussing them with someone who might be able to help.

Unfortunately, some who are offended will not just go away. Their personality is such that they feel the necessity to "get even." This is especially true when they have really been wronged, but nonetheless valid in their own eyes no matter what the cause. Few of us would intentionally hurt another person, but throughout our lives we will occasionally hurt others' feelings inadvertently. It is this type of accidental injury we speak of in our attempt to improve our operating techniques and practices. Let's all give some thought to some of the practices used on the air to see if we have drifted into any practices that could be improved.

How to handle jammer problems

Last year I attended my share of meetings sponsored by repeater trustees and users, in their attempts to alleviate and end the jamming problems. There is no way we can adequately cover this subject in this short column, but would like to share some food for thought with you.

Frankly, I believe that the same steps important to keeping jamming from starting in the first place, are almost identical to those necessary to alleviate jamming that already exists on a given frequency. Correcting that which made someone unhappy in the first place, might cause a few of them to stop. Those of us who are deeply involved in the direction-finding field know how easy it is to locate and identify the jammers. However, if those who use a repeater, or a frequency, continue to create new ones by their practices, the problem will never end.

We have previously covered the subject, "The anatomy of a jammer," as have a number of others with degrees in psychoanalysis. I will not attempt a proper explanation in this article — only to share some pertinent facts and observations. It is fair to assume that all of them have a "reason" it is right for them to jam. I have been involved in the location and disposition of many of them. They came from all walks of life and were all ages. They were male, female, hams, non-hams, club members, individuals, club presidents, members of jammer apprehension teams, etc. Some were just friends of others who felt they had a reason (and right) to jam; some were alone in their activities. Some only jammed certain individuals (or groups) because they "deserved it" others jammed everyone (even obvious emergency traffic).

Almost without exception, all share at least one thing in common. Without this one commonly shared goal, intentional jamming would rapidly become a thing of the past. No matter the original reason(s), every jammer does what he/she does in order to get a reaction from someone else. It is nearly impossible for a jammer to receive any pleasure at all, unless that person feels their activities are causing some reaction in someone else. Obviously, the jammer usually does not have the opportunity to be told personally by the person jammed, that they have achieved minimum or maximum level of anger or disruption. The jammer can usually enjoy jamming, knowing that the natural reaction is anger, disgust, disruption, etc. However, we have found that if a jammer must rely solely on his/her imagination as the only evidence of success in annoying an individual (or group), the pleasure is diminished. Our nearly four years of travel around the United States, Canada and New Zealand have shown that in most areas, when jammers have been completely ignored by *everyone* on a repeater, they will move to another repeater where they can be acknowledged.

Ignore, ignore, ignore, ignore!

Almost every group that has been successful in handling their jammer problems will tell you that the number one step is to *totally ignore all jamming attempts or signals of unknown origin.* This is not too difficult when only an occasional jammer appears on a repeater that is not normally bothered. It might be easier to achieve cooperation of your members and users if they realize that an organized jammer group is looking for a new repeater to bother.

Jammers need recognition for them to exist! It follows, then, that one of the first things you will have to do to end jamming is to deprive them of the thing they want most. This can be easier than you think, although it may require some careful thinking and some radio lifestyle changes. If you just hide your feelings, the jammer can still find pleasure in his/her imagination of your anger and disgust.

The first step is for everyone to act as if the jammer does not exist. If someone is attempting to pass traffic to you and is jammed, *no one* should let the jammer know he/she has succeeded. If the traffic is important, try the phone. If mobile, head for the nearest phone booth. If it is not that important, don't worry about it until later. If you hear someone being jammed when traffic is being passed, see if you can hear the traffic on the input to the repeater. If you do, you can come on the air and say: "Janie was in a bad area, but I heard her on the input and the message was . . . ." *Never* break in and say: "I heard the jammer on the input," or "The jammer is in the —— area," or "I have a bearing of 272 degrees from my place," etc. If you are truly involved in jammer location, you should *never* talk about any of it on the air. If you think someone is truly interested in your information, give it to proper parties *off the air!* Also, no one should ever say they are going out to DF this #@$%¢ person, or that they are going to call so and so, who will find them. If someone is going to attempt a DF, nothing should be said at all about it, for various reasons.

Another big no-no is the practice of encouraging a jammer to stay on the air in order to give more time to a DF team. In the first place, it is illegal for you to talk to amateurs unless they have identified themselves as a licensed Amateur Radio operator by stating their call as required by law. In the second place, entrapment is not legal. You could make prosecution of an offender much more difficult by encouraging a jammer to continue.

We could go on and on, but space requirements force an end for now. Remember, we have not covered everything, but if you learn anything from all this and can begin to actually *ignore all jamming activities completely*, this has been worthwhile. Turn to another frequency or band if you cannot listen without becoming angry. Our tremendous band privileges are but one of the advantages of being an amateur. You too can rob jammers of their pleasure, and by so doing learn to enjoy knowing you are ruining their fun. They know they cannot inflict further displeasure if you are not listening. However, it is imperative that you give no indication you went away because of their jamming activities. I often say I have arrived at a destination and am "clear," even when I haven't. Remember, an obscene phone caller enjoys it when a person responds and/or slams the phone down in disgust. When we quietly hang up, they are robbed of even the slightest pleasure! □

Solar power in La Crescenta

The La Crescenta, California solar-powered Amateur Radio station, W6HCS is the first solar-powered Amateur Radio station designed and assembled by SPECS Inc., a non-profit corporation whose main purpose is to provide a public service function during times of great disasters.

Twenty-two Sensor Technology photovoltaic (PV) modules granted by the U.S. Department of Energy are used to provide power for the station and produce stored energy for the station during non-sunlight periods. The modules are assembled in a 40-square-foot array and produce a useable 150 watts of power at the radio room during high sun periods. The PV modules, each containing 44 silicon solar cells, convert the sun's radiation directly into electricity.

During the time that the station is not using any or all of the electricity produced by the PV array, the electrical energy is stored in 390 pounds of special lead-acid batteries provided by the Exide Corporation. This battery pack stores over 500 amp-hours of charge capacity and can maintain the station with enough energy for approximately 72 continuous hours of operation under no sunlight conditions.

The station is located about 20 miles north of Los Angeles, 2,000 feet above sea level on a branch of the San Gabriel Mountains. Communications can be maintained on 2 meters between Santa Barbara 125 miles to the north; through most of Ventura, Los Angeles and Orange Counties; and over most of San Diego County and the city of San Diego 145 miles to the south. At the same time, communications can be maintained over most of the remaining portion of California and the United States on the lower frequencies of 3.5 to 29 MHz. The station equipment can be operated on 12 volts DC, 117 volts AC or combinations of both modes.

The station is expected to be used during times of great disaster such as a great quake in the Southern California area. It will be used in conjunction with other portable powered Amateur Radio stations and mobile Amateur Radio stations to provide a public service immediately following such a disaster.

During non-emergency periods, the PV system is used to obtain useful scientific and solar engineering data as a result of complete system metering provided by Simpson Electric. Station operators are available to give lectures and educational seminars and provide consultation on the design, construction and use of solar-powered communications systems. □

Vern Hansen, AAA9W WB6UWQ

The following article appeared in the December 1981 edition of the Western Area Army MARS Bulletin, and was written and prepared by Jim Haley, AAR9HN/W6NH.

George W. Beynen, AAR9FI/WA6JKB

Many of you have encountered George in his role of NCS (net control station) of the AAA9USA/Q and the AAA9USA/R nets, both of which are open CW traffic nets. George, who is blind, recently felt compelled by the press of circumstances to give up this role. George had been the NCS of these nets, off and on, for over 10 years. Even for a determined sighted person, controlling the operations of these two key Western Gateway MARS nets would be a demanding undertaking. The nets operate daily and handle a large volume of traffic. During the Viet-Nam war, the traffic on these nets built up to such a high level that George was spending nearly his entire waking day, seven days per week, on MARS operations. Through these long hours of sweat and toil, George has certainly proved his dedication to the program. It must be said that he has honestly earned the citations he has received from MARS. These include a number of letters of appreciation and nomination as Operator of the Month.

George's current MARS activity focuses mainly on the AAA9CC/B 2-meter open traffic net, of which he is assistant NCS. This daily net, which uses both the Mt. Vaca and the Berkeley Hills repeaters, has a very wide area of coverage and handles a heavy traffic volume. In the usual day-to-day situation that prevails, George — as ANCS — actually performs as the net control station.

On HF and VHF, George uses crystals for transmitter frequency control. He tunes up his transmitter by means of a bridge with an audio readout. He is able to tune his Collins R390-A and his Drake R4C HF receivers to within a few hundred hertz of the desired frequency by the use of calibration points and knowing the number of kilohertz per revolution of the tuning knob.

George was born in 1926 in the Netherlands, near historic Arnhem on the Rhine River. He attended elementary and high school in Holland before migrating to the United States. He was studying civil engineering at the University of Idaho when failing eyesight prevented him from finishing his formal education. But George is one of those people whose education continues throughout this lifetime. He has a remarkable depth and breadth of knowledge in both technical and non-technical subjects. His command of the English language (not his mother tongue, of course) is exceptional.

The Beynens live in Berkeley, California. George and his wife, Marjorie, celebrated the 28th anniversary of their marriage in December. He does the maintenance on his home, and he has become sufficiently adept to do the plumbing and electrical work on the apartments which his family owns. As for the construction of Amateur Radio gear, George's main undertaking has been the successful construction of a 1kW class-C final amplifier, which handles a full gallon with ease.

A lot of George's time is now going toward training his dog, Charlie, as a guide dog. George formerly had a professionally trained seeing-eye dog from San Rafael, but that dog proved unreliable around other animals, so he decided to turn the animal back and train his own guide dog. Charlie is 9 months old and weighs 90 pounds. He is one-half St. Bernard, one-quarter Great Dane and one-quarter German Shepherd. For breakfast he consumes six cups of kibbles and a hard-boiled egg, and as much again for supper. George expects Charlie to top out at 180 pounds when he is full-grown. Charlie's training is progressing satisfactorily. Goerge reports that Charlie now successfully guides him across busy Shattuck Avenue in Berkeley.

George confines his ham-band activities mainly to CW ragchewing on the low end of the 40-meter band. In addition to his Drake R4-C, he has a Drake T4X. He has horizontal dipoles on 80, 40 and 20 meters. For his 2-meter MARS work, he uses a 3-element beam and a 2-element collinear. □

Recruiting MARS members

Allen Mills, AFF6D

Concentrate on personnel who have HF equipment — but not a limited capability of only the amateur bands and a few kHz either side. A prospective member with a "Ham Band Only" plus minor dial excursions capability cannot provide the HF support MARS needs.

If the individuals want to join and indicate they have HF equipment, they should be asked whether their radios are capable of tuning to — with possible slight modification — the Region frequencies. This does not mean "major surgery." There is some commercial HF equipment that just will not function on the Region HF frequencies without changing components.

AFR 100-15, PARA 3-2 A (4) states: "Have an operational HF station capable of operating on, or can be modified on, MARS frequencies assigned by MARS officials."

It is unfair to individuals to tell them they are eligible to join MARS only to find that they cannot get their equipment to operate on the Region frequencies. □

MARS frequencies

Allen Mills, AFF6D

Depending upon the radio equipment you have, it may be difficult to come "up on" MARS frequencies. MARS spends every effort to obtain frequencies near Amateur Radio bands. Spectrum allocations and the severe crowding in the high frequency and very high frequency bands often make it impossible to obtain frequencies near ham bands. As a result, most of the USAF MARS frequencies at Region level are somewhat removed from the amateur bands.

The mainstream operations in USAF MARS is high frequency single sideband voice operations. Personnel joining MARS are expected to participate in their respective Region HF Net. As the solar cycle, seasonal cycle and day-night cycle occurs, it may require a little effort to modify or adjust your equipment to "come up" on the MARS frequencies. □

Best birthday ever

Jennifer Roe, WA6OHX

How does a half century-plus Amateur Radio veteran and former Southwest Division Director celebrate his 75th birthday? Well, John Griggs, W6KW had — in his words — "the best birthday ever." John's oldest son, Art, planned and carried out — with the help of several Valley Good Guy Amateur Radio Club members — the surprise of the year. Preparation for the birthday gift began five months prior to the event. A license was his goal; many members helped get him over the rough spots. I was honored to have been a part of that project.

Within a month's time, Art completed step one — the code test. Six weeks later, the theory test arrived; within two days, it was in the return mail.

The timing was perfect, though some might suggest that it was a little close. The Novice license (KA6UEW) arrived within eight weeks, but the trip to the FCC for Art's upgrade was postponed a couple of times. Finally, the date was set for the day before John's birthday. The final cram session was concluded with a ceremonious installation of a borrowed 220 radio in Art's car. We all assumed that he would pass the test, and we wanted him to announce the results in the best way . . . via Amateur Radio.

The morning passed all too slowly while we waited by our HT's for word. It was 12:10 when a familiar voice with an unfamiliar call slowly and cautiously spoke, "WA6-O-H-X, this is K..A..6..U..E.. W...interim L.B." Art didn't need to say any more; the planning, studying and waiting was over. The birthday present would arrive on schedule!

Art presented his "gift" with Amateur Radio style, on the air. Art's mother, Roxie K6ELO, checked into the 147.60-147.00 N6ZF repeater to meet our sked. The first part of the conversation was routine; I confirmed the fact that John was sitting within earshot. Shannon, my daughter, and I sent along our birthday wishes. Upon conclusion of the QSO, an opening was left for any other well-wishers. Art grasped the microphone, took a deep breath, keyed the mike while trying to control a smile and called, "K6ELO and K6KW, this is KA6UEW, interim L.B. Happy Birthday, John." The first two calls rolled off his tongue with ease, but his own new, unfamiliar call slowed him down.

Roxie returned the greeting and apologized for missing the call. At this point, exactly what was said eludes me; by the end of the second transmission, it was obvious that she suspected that this ham was more than just a "new kid" on the frequency. Finally Art said, "I just wanted to wish my dad a Happy Birthday." It was evident by the tone of her voice that Roxie and John (in the background) were caught unprepared. A short while later, John came on to the radio to speak with his son. He told Art, "This is my best birthday ever."

John and Roxie had a "new experience" a month later. At the annual Santa Maria Swapfest, I introduced them to several Good Guy members. (Art was not in attendance.) In each case, the club member responded to the introduction with, "Oh, you're Art's parents." John chuckled and told me, "I never thought I'd be introduced at a ham gathering as Art's dad." There was a special gleam of fatherly pride in his eye . . . or was it a tear? □

● **Help a friend become a ham!** ●

A variety of QRP nets is available throughout the week, both on a regional and transcontinental basis.

Most operate on an informal, round-table format, with check-ins welcome regardless of affiliation or power output, although most prefer participants to stay within the 5 watts *output* recognized as the CW level for QRP.

Emphasis is heavy on the side of CW operation, with only one sideband net — the Tuesday night session sponsored by the Michigan QRP Club — still active. The 15-meter SSB net sponsored by QRP Amateur Radio Club International was discontinued more than a year ago because of a lack of interest, band conditions and interference.

The chart printed here lists domestic U.S. low-power nets sponsored by the two organizations, although there may be others unknown to this writer. No attempt was made to exclude any truly QRP net from this list, however.

Red Reynolds, K5VOL — net director for QRP ARCI — said he is trying to expand the group's regional nets and needs volunteers to serve as net managers and/or net control stations.

Areas targeted for early attention are the Northwest and the Midwest. Most other areas of the nation are covered by the other regional nets and, in some cases, there is an overlap.

The only Novice QRP net still functioning is the California-based Southwest Novice Net (SWNN), of which the net manager is Hamilton Clark, KG6JII.

For early risers on Sundays, there is the informal QRP Roundtable (QRP R/T), organized by Ralph Sadler, KC7IG of Phoenix, Arizona. It is aimed at those living in the Southwest and Southern California, conditions permitting. Alternate NCS for the R/T is John Sullivan, KQ7T.

Ralph Burch, W8LCU — president of the Michigan club — says his group's SSB net has no official NCS. "It's a potluck toss-up. Whoever is there first (is NCS)," he says, adding that check-ins have come from as far away as Hawaii and Maine.

The only major transcontinental net is QRP ARCI's TCN on Sunday nights, and it also regularly attracts check-ins from around the nation. NCS rotates among members.

Other regional nets and the areas they serve are:

Northeast Net (NEN) serving New England, the Northeast and part of the Mid-Atlantic states. NCS is in New York State.

Southeast Net (SEN), which serves part of the Middle-Atlantic and most of the southern states. NCS is in North Carolina or Florida.

Gulf States Net (GSN), whose area takes in most of the Fifth Call District. NCS is in Texas.

Cactus Country Net (CCN), which covers an area from West Texas, across the Southwest and into parts of Southern California. NCS is in Cottonwood, Arizona.

Southwestern Net (SWN), which takes in most of California and some of adjacent states, depending on condition. NCS is in Santa Cruz, California.

Both organizations offer certificates for check-ins. □

Following is a list of known QRP nets meeting regularly. See story for explanation of net names and areas served. The list shows the day of the week in the continental United States that the net meets; the time in UTC, with the corresponding day in parentheses; the frequency (all are ± QRM); the net designation; the net manager and/or net control station; and the sponsor. Note that some nets change times and frequencies twice yearly with the shift between Standard Time and Daylight Time.

Day	Time	Freq.	Net	Mgr./NCS	Sponsor
Sun.	1400Z	7045	R/T	KC7IG	KC7IG
	0001Z (Mon.)	14060	TCN	WA9WZV/4	QRP ARCI
Tues.	0100Z (Wed.)	7270	MI SSB	(none)	MI QRP Club
	0100Z (Wed.)	7030	SEN	WD4LOO	QRP ARCI
	0200Z (Wed.)	3535	MI CW	W8LCU	MI QRP Club
Wed.	0130Z (Thu.)	7040	CCN	KQ7T	QRP ARCI
	0200Z (Thu.)	3560**	GLN	K5VOL	QRP ARCI
	0200Z (Thu.)	7040*	GLN	K5VOL	QRP ARCI
	0200Z (Thu.)	3560**	GSN	K5BOT	QRP ARCI
	0200Z (Thu.)	7040*	GSN	K5BOT	QRP ARCI
	0400Z (Thu.)	3710**	SWNN	KG6JII	QRP ARCI
Sat.	1200Z	7040*	NEN	WB2IVX	QRP ARCI
	1300Z	7040**	NEN	WB2IVX	QRP ARCI
	1500Z	3560	GLN	N8CDP	QRP ARCI
	1600Z	7040	SWN	W6RCP	QRP ARCI
	1600Z	7110**	SWNN	KG6JII	QRP ARCI

* Daylight Time months
** Standard Time months

He feels challenged, not handicapped

Patty Carpenter
Submitted by Marilyn Hazelton, N8BFI

Ernest Mullinax, WB8VQQ (now KX8L) recently passed an FCC exam which earned him an Extra Class license. The 56-year-old Kalamazoo Township, Michigan resident studied for the test with the aid of a special correspondence course for the blind. It wasn't easy.

"The biggest problem is you can't read anything." Ernest said. Ernest listened to 14 lessons on cassette tapes obtained through a school for the blind in Illinois. He earned his Novice license in 1975. His Technical license followed in 1977, General in 1978, Advanced in 1979 and, finally, the Extra.

An upholsterer who works in his home, Ernest was blinded by two accidents while growing up. The first, which left him with an artificial right eye, happened when he was playing with a dynamite cap at the age of 11. He thought he had removed all of the explosive from it, he said. Then, on a high school basketball court, an opponent's palm hit Ernest on the left eye and damaged the retina.

His remaining eyesight deteriorated, Ernest said, and he was legally blind by the 1950s, although he can still make out shadows and sense light with the help of thick glasses. Rather than view his blindness as a total hindrance, Ernest considers it an "inconvenience."

"Many blind people, they sit back and say 'I can't do anything,' " he said. "I have to figure out ways to do them."

Although he had to give up maintaining his radio equipment since the introduction of small, complex circuits, Ernest helped put together his own antenna. He works his machines by touch, sound and counting clicks as he turns dials. Special accessories — some of which were donated — also assist him in his hobby. A new piece actually tells him, in a robot-like voice, which frequency he is on.

A member of the Kalamazoo Amateur Radio Club and the Oshtemo Amateur Radio Repeaters Club, WB8VQQ enjoys being able to volunteer his communication services during emergencies and keeping families in touch. He sets up a "phone patch" to Honduras now and then, so two Kalamazoo families can talk to their son and daughter — a married missionary couple.

Ernest said he is aware of five other blind ham operators in the Kalamazoo area but, as far as he knows, he is the first to achieve the Extra rating. His enthusiasm for radio, he added, isn't shared by his wife of 29 years, Betty or their two sons — David, 25, and Mark, 21.
— *Kalamazoo Gazette, MI* □

Computers for disabled

A publication from Apple Computers called *Personal Computers for the Physically Handicapped* shows how people with disabilities are using computing equipment and computer programs for personal needs. The 10-page booklet includes examples of persons who have mobility, speech and hearing impairments. With relatively simple and easy-to-control equipment, these people operate appliances, answer the telephone, play electronic games, type letters, produce speech and take educational courses.

The booklet is available from Apple Computers, Inc., 10260 Bandly Drive, Cupertino, CA 95014.
— *HANDI-HAM World* □

Jim Fischer, KA8GXC of Owasso, Michigan stopped by HANDI-HAM headquarters at Courage Center recently to operate the station and chat with staff. Jim, who has post-polio complications and recently underwent open heart surgery, found out about the HANDI-HAM System through his contact with the Lansing Amateur Club. Earlier ths year, System Student Services Coordinator Maureen Pranghofer found out that Jim was having transmitter problems and arranged for some local help. "The results were immediate," he said. "Three members of the local ARRL association contacted me and spent their own time fixing my used transceiver, which I found out had been badly handled by the previous owner." Jim participates in his local radio association and says that he'll have lots of good help in his upgrading efforts.

Jack Olsen, K7EGL (standing) and Ralph Rasmussen, K7EGM had their first eyeball QSO in 22 years on 29 October 1982.

Twenty-two years later

Jack Olsen, K7EGL

Twenty-four years ago, Jack Olsen and Ralph Rasmussen decided to study together and get their Amateur Radio licenses. They were issued consecutive call signs: K7EGL for Jack and K7EGM for Ralph, and each was the other's very first contact as "hams" on 29 June 1958. Their last contact occurred on 25 April 1960 before they went their separate ways.

Then K7EGL heard about the International Handicap Net on 20 meters. It seems that Ralph K7EGM is a regular check-in member. So after 22 years, Jack K7EGL — who resides in Georgia — managed to contact Ralph K7EGM in Montana on 7 October 1982. Because of that contact, they were able to schedule an eyeball QSO this past fall. Now they're using the Handicap Net on 20 meters to keep a regular schedule.

Thanks to Amateur Radio and the swell bunch of guys on the Handicap Net, an old friendship was renewed. □

The sunny side of the street

Speaking to service clubs about disability has its unexpected rewards. Ask Harold Leming, KA8PUP of Orrville, Ohio, who recently made a contact during such a speaking engagement that resulted in brand new Amateur Radio equipment.

Leming joined the HANDI-HAM System last year. He had been blind for less than a year and was looking for something to do with his time since he was no longer able to work as an electronics technician. He was eager to get on the air and could hardly wait until he received his call and got a station of his own.

After being on a waiting list for a short time, he received a Century 21 from the Courage HANDI-HAM System. When it arrived, his code was sufficient to easily copy most of the Novices. He received his call and was excited as ever to be on the air, but he still wanted his own station.

While speaking to a local Rotary club about blindness and some of his personal experiences, a local lawyer approached him and informed him that a trust fund had been set up in his township for people who were blind. Few people knew about the fund, and no one else in the township except Leming was blind, so the fund had never been used. He checked out the fund and as a result, he is now the owner of a new Argosy, dummy load, antenna, talking readout and SWR bridge, microphone and key.

Leming was overjoyed and said that the funny thing was that if he had lived across the street from his present residence, he would have been out of the township and thereby ineligible for the monies.

— *HANDI-HAM World* □

Seeing double?

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

Packet radio in NJ

Bob McGarvey, WB2EVF

New Jersey is in the forefront of the development of packet radio in the amateur service. Packet radio is the receipt and transmission of computerized messages.

The Amateur Radio Research and Development affiliate of the ARRL has appointed committees to establish a nationwide network on VHF and UHF and, possibly, even HF. This is an effort to insure compatibility during any emergency use. The system involves linking repeaters over great distances and a computer terminal at each is the means of making the process work.

One plus is frequency economy. Radio repeaters normally use two frequencies — an input and an output. Digi-peaters, as the packet units are known, use only one frequency for receiving and transmitting.

In previous net operations, Cherryville repeaters (near Flemington) have been linked with both Phoenix and Tucson, Arizona, and California is the next stop.

— *The Home News, NJ* □

Serving relief agencies

Continuing the discussion of emergency traffic begun last month, let's look at an important aspect of our Amateur Radio's public service, providing communications for relief agencies, civil authorities and other groups engaged in responding to the emergency.

One local civil defense official in our area told an emergency coordinator, "We don't want to see or hear you during an emergency unless we already know you and what you can do." If you were a police chief or a Red Cross disaster chairman, sitting in the hot seat as requests for aid, transportation problems to untangle, personality clashes, incompetence of people in critical jobs, sudden changes in the situation, and all the other frustrations of your position piling up on you faster than you can handle them, then someone you don't know comes in and says, "Our Amateur Radio Service is at your disposal to handle any of your communication problems," how would you react? Probably defensively: "I don't know anything about Amateur Radio, and I'm too busy just now to find out. I've already got more than I can handle so why would I want to add this?" You would probably tell your assistant that you don't have any time to talk about that just now.

So it's up to Emergency Coordinators to make their contacts during quiet times, when the officials will have time to listen to your presentation. In addition, arrange for the agency to work with amateurs, occasionally providing them with opportunities to use our facilities for non-emergency communication, so that they will be familiar with our service and will know what we can do. A good Emergency Coordinator will be on a first-name basis with the top people of all the important agencies that can use the help of Amateur Radio, perhaps even involved in other ways with one or another of them, such as by membership in the local Chapter of the American Red Cross.

Opportunities for us to supply non-emergency communications abound. Parades, road races (foot or bicycle) and fairs are only a few. Some amateurs have shown themselves useful allies to their local police by acting as additional eyes and ears during a stakeout, sometimes so effectively that the hoodlums decide they had better shift to some other less risky activity. And the National Weather Service is looking for contacts with amateurs to supply communication and to act as reliable and responsible observers who can report local weather conditions.

Amateurs involved in emergency preparedness advise, however, that it may be well not to offer to handle traffic for these agencies as a part of the Simulated Emergency Test (SET). Unless you are sure you have outlets available and can deliver it promptly, the message may show how poorly our system sometimes works instead of demonstrating its potential. Officals are not impressed by messages that take longer to reach their destination by Amateur Radio than they would by mail.

One even wonders about the wisdom of making a heavy loading of the National Traffic System (NTS) a part of SET. It's frustrating to have routine traffic delayed by less important test priority stuff that has been generated merely for practice. About the only justification for bringing the NTS into the act is that SET brings amateurs out of the woodwork who otherwise would get no training at all in emergency communication. It also makes it more realistic for all of us, as in a real emergency we have to expect to have to make use of inexperienced personnel. For giving the system a workout, however, the annual December traffic rush and the occasional heavy loads from special event stations are much more effective.

Emergency calls

Relatively few of us will actually be responsible for giving assistance in an emergency, but all of us should know what to do should that happen. What follows is from my limited experience, plus what can be found in the International General Radio Regulations, the FCC's Regulations, various ARRL books and other operating manuals.

First, treat all distress calls as genuine. Second, the primary responsibility of any operator hearing a distress call is to take whatever action will be most effective in aiding whomever is in distress. Often the most effective action is to shut up and listen.

First action to be taken is for someone to acknowledge the distress call, so that the one making it knows someone has heard it. Then the pertinent information should be sent by the fastest way to anyone who can assist in relieving the one in distress.

If the operator who sent the distress call is a well-trained and experienced person, the distress message will contain all the needed information. Otherwise the operator answering the call must obtain it by asking. What is needed is: identification of person or vehicle in distress — anything that will help rescuers recognize it readily (boat: size, color, type; auto: make, model, color, body type; aircraft: category, class, type, color, registration number; persons not in vehicle: description, clothing, equipment such as packs, skis); location (whatever way is best under the circumstances — often the reason for distress may be the fact that the person involved is lost, but try to get as much as possible); number of persons involved, and assistance needed. Then communicate the information to the proper persons who can help — the Coast Guard, Highway Patrol, Emergency Medical Service, etc.

In emergencies, always remember that the important thing is to secure help as rapidly as possible. If Amateur Radio is the fastest way to go in a given situation, use it. Most of the time, however, the station best situated will use the telephone to contact rescuers. As soon as the rescue agency has acknowledged your message, tell the people in distress. Then remain in contact to be ready to handle any additional needs. Don't worry about procedures. Training in procedures is a great help in time of emergency, but an emergency is no time to teach procedures. Get help as soon as you can.

Other stations who hear the communications render their greatest service by listening. The station in distress is the one in control of the distress traffic, but usually will ask the operator who acknowledged the call to act as the control station, or the Coast Guard in case of a maritime emergency when the Coast Guard operates on an amateur frequency. In most cases, the operator in distress will already have enough to do without also acting as net control station.

Net control should designate one or several stations, if needed, to help keep the frequency clear. Keeping the frequency clear should be done briefly; otherwise, you only add to the problem. In CW the accepted signal is QRT SOS; the International Regulations give SILENCE, MAYDAY (pronounced in the French mode, SEELONCE) as the proword to be used on phone. Don't argue with operators who refuse to cooperate; just take down their calls. Don't threaten; they are supposed to know.

Stations listening but not needed at the moment should record all that happens in their logs as completely as possible, noting times, call signs and frequencies. While not mandatory in the Amateur Radio Service, it is the rule in other services and is a good guide for us. Such records should be preserved, and in some cases may be valuable in evaluating and improving our operation in emergencies.

False alarms

There are people who get their thrills from seeing a fire engine race through the streets with its lights blazing and siren screaming, answering false alarms. And there are some who seek their excitement by causing the Coast Guard to risk lives and waste thousands of taxpayers' hard-earned dollars by sending false distress calls. As noted above, one should always presume that a distress call is genuine. The Coast Guard does. On the other hand, when one has reason to be suspicious, one may wish to alert the authorities, ordinarily the FCC.

The FCC has monitoring stations throughout the country equipped with direction-finding equipment that can locate a radio transmitter regardless of frequency. Often this equipment is used at the request of the Coast Guard or other agencies to locate people in distress who are unable to give their location. It is also used to locate illegal operation and can be quite effective.

About five years ago, the FCC found that a distress call claiming to come from someone in Lake Erie was actually coming from Zanesville, Ohio, 200 miles to the south. Still, the Coast Guard went and braved the winter ice in the lake, on the outside chance that some freak propagation phenomenon was responsible for an incorrect location. Unfortunately, to trace a signal to an individual building takes too long for the FCC to catch the person responsible, who will usually have finished transmitting before the law can catch up — at least with equipment currently in use. But watch out! New gear is being developed that promises to solve that problem in many cases.

Direction-finding

One side interest of many amateurs is direction-finding, often in connection with hidden transmitter hunts. Amateurs have frequently put their skills in this field to work in locating jammers, finding stolen 2-meter rigs and the like. But few of us have high-frequency direction-finding capability, as accurate direction-finding is particularly difficult when sky waves are involved. Yet we could often use this capability on the high-frequency bands. We have our share of jammers on these bands, too — tuner-uppers, CQ callers and such. And sometimes we could perform a valuable public service in helping lost persons determine their location, particularly if a group of amateurs in a given area were to team up with REACT.

One note to be added to what was said above about responding to a distress call: Any amateur who has direction-finding gear should automatically use it as soon as such a call is heard, record the bearing, and be ready to communicate it should it appear to be useful. Get it at once; the station in distress may lose power at any moment. To be of greatest value, it is well to know your own position in latitude and longitude, so that you can advise anyone to whom you give your bearings the exact point on the map from which to measure.

Procedures

Lest what was said above be misunderstood, procedures are important in emergency communication, but it is by using proper procedures in routine operation that one develops the habit. When the emergency develops, the problem is to get help. If proper procedures are followed, things go smoother and there is less chance of a foul-up. But it's not the time to insist that all messages be in proper ARRL form.

Actually, when it's a question of a single incident of distress, formal messages are usually not needed. When it's a widespread disaster, however, with large volumes of traffic to be handled from many originators to many destinations, not to use proper forms is to invite trouble. That is where one must insist on formal messages. One procedure that *does* apply to any emergency, large or small, is to stay off the air unless there is a specific contribution you can make. □

USQS sponsors Explorer Post

Laryl Berry, KM7Z

U.S. QSL Service, Inc. is pleased to be the sponsor for Explorer Post #836, which was chartered on 1 December 1982. USQS is the domestic QSL bureau that handles all QSLing for amateurs within the United States. USQS is a *FREE* independent bureau, operated since its beginning in 1980 by Pat KN7B and XYL Laryl Berry, KM7Z.

Explorer Post #836 is an affiliate of the Boy Scouts of America. The Post is organized in the fields of Amateur Radio, electronics and computers. The members of the post are from local high schools — young boys and girls who are interested in possible careers in the electronics/computer fields and who will be studying for their Novice ham licenses. Pat and Laryl are two of the key advisers who will help with the studies and the fun events the group will plan for the next year. Watch for future news from these young and upcoming amateurs!

USQS is proud to be able to be involved with this opportunity to offer our young people the chance not only to learn about electronics and computers, but also to be able to introduce them to the joys of Amateur Radio. The Explorers elect their own officers and are in charge of their own planning for special activities, with the advisers acting as a support team. The young people must raise all the funds needed for equipment and any activities, and are always appreciative of donations. Any donations made to the Post #836 are tax deductible.

Do you know of any other Explorer Posts in your area that have similar interests? Our Post would like to hear from any Explorer Posts who are actively enjoying Amateur Radio and computer/electronics interests so that we may exchange ideas and learning experiences.

USQS has set goals to get all unclaimed QSLs delivered, get advertising in the leading ham publications, and improve the turn-around time of QSLs on file. This is a big job that we hope to accomplish in the present quarter, and we need your help. USQS runs totally on donations and all donations received go toward delivering unclaimed cards. Please help by supporting the USQS bureau with your donations and by keeping SASEs on file, and send out your USA-bound QSLs via USQS/KM7Z.

USQS, KM7Z, KN7B, and the hopeful Novices of Explorer Post #836 hope your holidays were merry and send best wishes for the New Year.

Please remember us during the 1983 year; put our name and address on your new calendar! Thank you for your support. USQS/KM7Z and Post #836, P.O. Box 814 Mulino, OR 97042. 73, Laryl Berry □

The Phantom Voice of Falkland fame

Simon Winchester
Submitted by Martin Iorns, N6AON

Throughout the 73 days of the Argentine occupation of the Falklands, a secret daily radio link was maintained between Port Stanley and — improbable though it may sound — the resort of Bridlington-on-Sea, Yorkshire (England), via the good offices of one of the principal unsung heroes of the South Atlantic war.

Reginald Silvey, assistant keeper in the Imperial Lighthouse Service, can now be revealed as The Phantom Voice of Radio Port Stanley, the Man With The Plastic Shopping-Bag, The Man The Argies Never Found.

Silvey, who came to the Falklands 10 years ago as junior keeper of the Cape Pembroke light, is a ruminative, taciturn bachelor of 43, whose main interests are fishing and Amateur Radio. He set himself up on the islands — as he had done when he worked in the British Antarctic bases — as station VP8QE, broadcasting to whoever in the world would listen on 21.325 MHz in the 15-metre band.

When the Argentine commandos stormed ashore at dawn on 2 April, he saw — as he now puts it — "No particular reason why I should close down."

His first messages, picked up all around the world, relayed some of the awful drama of the first hours of the invasion. But later on that first Friday, a ham operator in Bridlington — Bob North, G4KHR — made firm contact with Silvey, whereupon someone, as yet unidentified, realised the value of retaining a link between the two operators for as long as possible.

"I realised by Monday morning that Bob North had been taken over by Ministry of Defence," Silvey says now. "He would come on each evening around 4:00 p.m., saying: 'This is G4KHR, waiting for traffic from the South Atlantic,' and I could tell from his manner there was a ministry man breathing down his neck.

"I had to decide whether it was worth the risk, my talking to him any more. I thought about it a lot, and then decided I had to do my bit. So we would talk almost every day. He would pass on their questions, and I would pass back the answers."

Silvey is well known in the Falklands as a ham operator. His equipment was listed in the Post Office register in Stanley, and it was only a few days before the Argentine occupation forces arrived at his front door to confiscate it. But he then managed to borrow an unregistered transmitter — an American Atlas 210-X, with the paltry output of 100 watts.

"But the advantage of this set was that it was so small that it fitted neatly into a plastic shopping bag. I was able to carry it around from house to house without any of the Argies noticing," Silvey explains.

And so, every tea-time, he would move into a house, string up a crude aerial, plug in his set, lie on the floor, tune in to the 15-metre band and listen for Bridlington. "Bob used to ask how I was, where our new friends were, what they were doing, what movements there had been in the harbour, and that sort of thing. We would talk for five minutes or so, and then I'd close down. It was too risky. They were always looking for me."

They knew someone was operating a clandestine set. Each day a detector van would roam the streets of Stanley, waiting for the transmission. "Sometimes they got pretty close. A neighbor once told me thay had broken into her house while I was on the air. They searched her place from top to bottom, convinced I was there.

"Once in a while, they got so close that I got really nervous, and I did think about giving it up. They put the word around that they would do all sorts of nasty things if they ever found me. But it was so exciting, really, being able to hear England calling, and being able to talk back. It's difficult to explain if you're not mad on radio."

Silvey's mischievous enthusiasm was not limited merely to sending Argentine military secrets to Bridlington. He spent some weeks rigging up a transmitter to jam the Argentines' 2-metre local radio network, and, according to other islanders, caused havoc.

"He would jam them for a while, and then stop jamming and start sending false messages to various army units. He had great fun. Best of all was that the Argies knew that someone in Stanley was doing it, but they could never find out who. It was great for our morale. We called him the Phantom Voice, a sort of Lord Haw-Haw in reverse."

Silvey, sadly, no longer has a paying job. The Cape Pembroke lighthouse — one of only two in the world still run by the once great Imperial Lighthouse Service — is unworkable, surrounded by Argentine minefields.

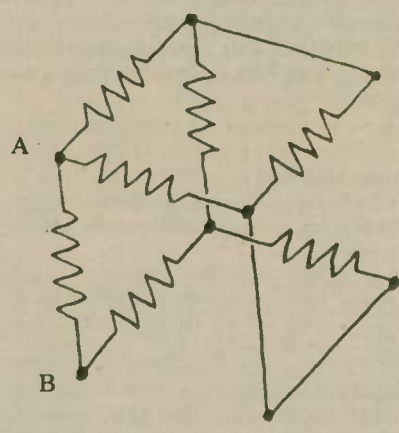
— *The Sunday Times, London, ENGLAND* □

Circuit Quiz

All this takes is a little basic electronics. Any Novice should be able to solve this.

What is the equivalent resistance between points A and B? All resistors are identical and rated at 6 ohms.

—*The Ham, Bill Gremillion Memorial RC, GA* □



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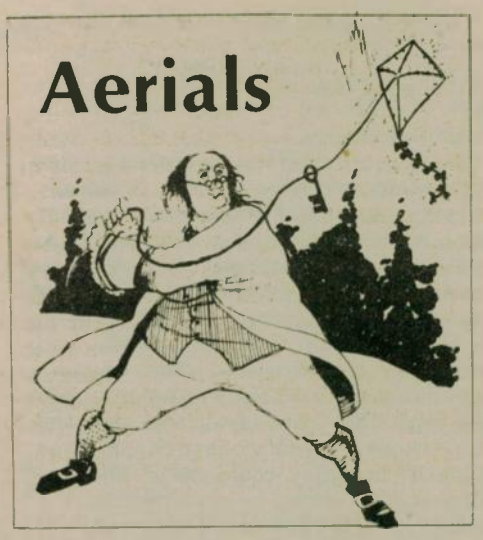


Dear Kurt and Lil fans:

Mr. and Mrs. Sterba dashed off to Europe on a delayed vacation and honeymoon. I'm Kurt's administrative assistant and you can call me Miss Beverage. Kurt phoned me from London right after coming out of Bush House, which reminded him that he hadn't sent in his column. (Their trip was unplanned up to the last minute.)

He felt very bad about it, and since it was locked up in his safe, there was nothing I could do about it. So he told me to answer the letters that would come in, which I shall do.

Kurt and Lil have rented a house in Hendon near some of her family. A trip to the continent is planned, where Kurt will talk to some of the leading antenna lights. Lil got on the phone and said I should warn readers about a recent ad appearing in the ham magazines claiming 12dB gain for a 5-element Yagi. Normally she is such a genteel lady, but this time she said that such a claim was bull bleep. Possibly the Bristol Cream Sherry got to her.

I shall do my best with the questions.

Hello Mr. & Mrs. Sterba!

Cheers for the marriage of two brains! I like it better when two give us such valuable antenna information.

I know you two to be old-timers for I just happen to agree with you and I'm not such of an OT. Only 57 and got my first ticket in 1940.

There are some things that have bothered me throughout the years for which I have not been able to come up with satisfactory answers. And there are varied opinions, even with some questionable theory to back some ideas or reasons.

First, I will start with the English-bred "Joy Stick" antenna. After reading the ads for years, years ago, I finally bit. What a disappointment!

That little plastic box of an antenna tuner got warm with just 100 watts into it, and its range was quite limited.

Now for the big question. The ad claimed that it was a non-resonant antenna! How can that be? Then, when I saw a coil in the middle of a few feet of metal tubing, I was flabbergasted. That thing has to be resonant at some fundamental frequency. All kinds of claims of DX with that antenna. I even wrote to an English acquaintance and he said that antenna at the same height as his 3-element 20-meter beam was as good, if not better, than the beam! Suffice it to say, the "Joy Stick" never did very well for me any place I put it.

But at that time, W6TYP, a neighbor of mine in San Francisco, was making record distances with milliwatts of power to a "Joy Stick." I wonder how he would have done with a good antenna? We were stuck in apartment buildings downtown with little or no space for antennas.

Please explain that antenna to me pro and con.

Now for the quad loop. Most articles have the loop in the vertical configuration. I understand this loop will work superbly in the horizontal. I experimented with it at one time, indoors and on the perimeter of the eaves of the house for 40 meters. I worked Europe, Africa and the Far East with it indoors and about the same outside! How come this single quad loop in the horizontal is not written up? And what is your opinion on this loop in various configurations?

Now for the ZL Special. In almost every instance in which I have come across this antenna, they treat it as though it were a driven element and a parasitic element. They make one element longer than the other. It just does not make sense, and I have had some big guns give all kinds of reasons and answers. As I understand driven arrays, the elements should be symmetrical and are! This should apply to the ZL Special, too, and that is the way one article has it, and the way I have always built it, and it is a great performer.

Now for the Mor-Gain antenna which I have used for years and which is a superb performer in small space. Please explain how it works on 80 and 40 meters. No one seems to have an answer, and the manufacturers keep it a secret.

And at last, now for the controversial quarter-wave vertical. This was the antenna I used for many years while trapped in apartment buildings in downtown San Francisco. I used it mostly on 40 meters. I used old Army MS copper sections about 3 feet long that screwed into each other. I used around 21 to 24 feet, base-loaded with a 3-inch air-wound coil. I used it with one radial most of the time. It seemed to have a bit of directional push in the direction of the radial. The radial was pointed to the Pacific Ocean at ZL land. I had no trouble working the Far East, and EU and AF when conditions were good. SA was easy, too. I could see little difference when I added another radial or two.

In later years I used the Mor-Gain as a base-loaded vertical and also as a top-loaded vertical. I found that when I oriented it horizontally with a 95-degree angle bend, it worked the best and still gave me the omni-directional performance of the vertical.

One thing I forgot to say about my San Francisco vertical use was that I was usually about seven or eight stories above ground with the antenna, in the hills of that city. So it seems that if you can get a vertical way up in the sky you just do not need the extensive radial systems so many authorities say are so necessary. Maybe that was the reason the "Joy Stick" could do so well when compared with the man's Yagi beam at the same height. The "Joy Stick" could be nothing more than a long-wire vertical. Right?

A few years back I had a 2-element Yagi up about 20 feet which did yeoman duty on 20 and 15 meters. I experimented with a half-wave vertical (a coaxial dipole, center-fed with coax) against the beam. That antenna was great even at ground level, and at 20 feet (even with the beam), it was better than the beam at times. Even at ground level, it was better than the beam on some signals. Distance at the time had significance on this, of course. This was all on 15 meters.

So you can see, I am a firm believer in the vertical antenna. One radial for the quarter-wave. And a half-wave vertical is terrific with no radials.

The last few years, because of space limitations, I have been using a steel billboard shunt-fed as a 35-foot vertical, on 80, 40 and 20. Really need the tuner on 20, but get along without on 80 and 40 even though I have high SWR. I am not a purist. If it works I am happy!

Thank you for reading, and I will appreciate your opinions and answers.

C.J. CASEBEER, K6CE
San Carlos, California

P.S. Here I go again. When I get wound up, I never know when to stop. Hi

I appreciate your educating the readers in Worldradio about the 5/8s — 3/4-wave verticals, especially on VHF where they are used so much. You do get an increase in gain just as you did with the old extended double Zepp! Half of the same principle. Ha! And as you say, there are more than one or two good ways to feed it. Some simpler than others and some more practical than others, but I have not seen them write up the extended double Zepp vertical! I have not done it yet, but intend to sometime when I have the time and space. It should somewhat outdo the vertical half-wave. Right? And it should be practical for the higher frequencies. Feeding it will take some thinking. I have ideas! Trying to use coax instead of open-wire feeders.

Regarding the conical or biconical vertical which is also the so-called "fat vertical," which gives broadbanding. What is the best way to feed this? The military used extensive radial system for this and fed the radials (shield) and center conductor to the tower wires at the base. I have seen others say to connect the center conductor to the base of the tower which is insulated from ground. I doubt there would be any difference here. Why not both? Is there a better way, some way to feed at the top? Say, to connect the center conductor to the top wires and tower and the shield to the radials, but leave the shield floating at the top. Seems to me getting that RF (current) up there at the top is the thing to do. If the tower is grounded, then I suppose shunt feed of the wires *or* tower are in order. Any way to top-load this?

One thing I would like to emphasize is that any time a good ground is needed for an antenna, use a counterpoise in place of the ground and you will do away with ground resistance losses so common in trying to get a good ground. In other words, get the other half of the antenna as wire instead of ground!

Jack asks several interesting questions. First he asks about the Joy Stick antenna. This is a physically small antenna. It brings up one of my basic axioms. The radiation efficiency of an antenna is directly proportional to its electrical size. Electrical size, of course is expressed in wavelengths. And the reference is back to a half-wavelength.

An electrically small antenna, regardless of its configuration, has small efficiency compared to a half-wave dipole. So how come the Joy Stick radiates? Any electrical conductor will radiate *some* energy depending on its electrical size in wavelengths and the amount of power put into it! So the Joy Stick is matched to your transmitter and *some* current is made to flow through it. Therefore, it radiates. How good is it? Compared to what? To a well-located dipole, it is quite inefficient, but it does radiate and we know QRP does work DX!

Another question asked by Jack concerns quad loops. He has tried a quad loop parallel to the ground and wonders why this has not been written up. A full-wave loop is a broadside radiator, just like a dipole. The quad loop may be placed horizontally and it will radiate most of its energy upward, perpendicular to the ground much like a low dipole. Sure it will work, but not very well. The recommended position is to have the loop's center at least a quarter-wavelength above ground. At HF, this normally requires four supports if mounted parallel to the ground. Mounting it vertically is physically easier. This broadside radiation of the quad loop also tends to lower the angle of radiation from a conventionally mounted quad antenna, although the ground reflection factor is the stronger factor in the antenna's elevation pattern calculation.

Jack asks about the ZL special and other center-fed wire antennas. Yes, for the best feeder operation, the elements on each side of the feedpoint should be electrically identical. This causes the feedline (usually 300 to 600 ohms open wire) to have equal amplitude but opposite phase currents. This action causes feedline cancellation, which is highly desired. All open-wire line-fed antennas should be symmetrical around the feed location. A special exception is the end-fed Zepp. But that's another story.

Jack asks about the advisability of adding additional floating radials that are not in contact with the soil. A single radial may be used, insulated from ground about 18 inches, but if desired to walk under, then 6 or 7 feet. In the '30s and '40s, this single radial was called a counterpoise. A vertical quarter-wave with a single floating radial works very well. It has some directivity toward the radial end directions. The radial/counterpoise should be a quarter-wavelength long, but may be loaded if space dictates.

Increasing the number of radials makes the vertical more omni in the azimuth directions. It also increases the efficiency a bit, perhaps 2dB. Remember, it takes a 6dB improvement to move the receiver's S meter one notch!

Dear Kurt:

I enjoy your antenna feature in Worldradio. I find it very helpful in many ways, and it is appreciated at this QTH.

This letter is for an antenna problem I am not familiar with, and I would appreciate your advice in reference to it, so here goes Kurt:

In **Worldradio** there was a nice write-up on page 42, September 1982 for a 4-element Delta-Quad, made entirely by stringing up some wires — a perfect idea for simple-effective DX-peditioner, or a Field-Day set-up; also good for any amateur interested in beaming to a fixed area.

What I would like to know is why did the author use ⅛-wave spacing for directors and reflectors? All the same spacing? Also, why ⅛-wave?

Now, this could be connected with wide-spaced beam theory; I know very little about it.

I noticed also that in **Worldradio** for March 1978, page 8, there was an article by Keith Machin, K6WG: "Optimum gain element spacing found for the Quad Antenna." It gave spacing theory. I don't know that one either; then again, that was five years ago and maybe theories have changed since then?

Would appreciate your opinion concerning the quad spacing problem or confusion here.

HARVEY COLUMBINE, W2MLO
Lynbrook, New York

Well, Harv, the spacing between parasitic elements varies for many reasons — some electrical and some physical. Electrically, the spacing determines the forward gain, which spacing is different for maximum rear rejection. The spacing also affects the impedance of the driven element, and thus the VSWR and feedline matching. The physical spacing is largely limited by the supporting structure, wind and icing considerations.

So, Harv, if you want the maximum forward gain for your design, in a 2-element quad, the spacing turns out to be 0.12-wavelengths — which is also expressed as ⅛-wavelength. Bill Orr, in his book *All About Cubical Quads*, shows this on a graph, as gain vs. spacing. Keith Machin, K6WG also confirmed this in his March 1978 **Worldradio** article. The feed impedance varies from 50 to 150 ohms when the element spacing is varied from 0.07 to 0.25-wavelengths and is somewhat conditioned by the height above ground. The front-to-back ratio also varies with the change in spacing from about 3dB to over 20dB.

So you see, the spacing — while not critical — does in fact determine the electrical performance of a 2-element quad, whether a director or reflector is used.

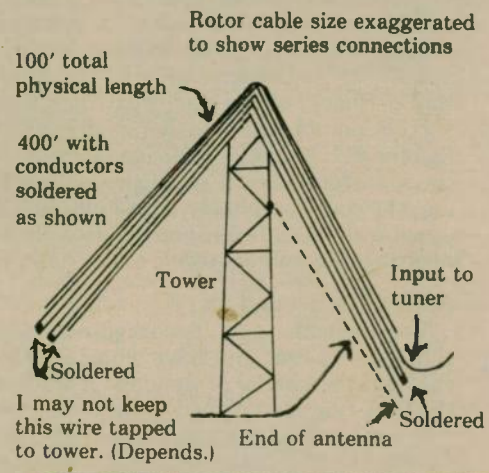
Dear Kurt,

I would like you to explain what kind of antenna I have here for the 40/80-meter bands.

I live on a 100-foot lot and have a 45-foot tower with my TH3JR on top of it, but I needed an antenna for the low bands. I noticed about 100 feet of 4-conductor rotor cable lying around collecting dust and realized that I would need a good 400 feet to use in conjunction with my tuner. I soldered all conductors in series and have, in effect, a 400-foot long wire with more capture area. It loads beautifully (with tuner) on all bands, and I've worked DX (Europe, Japan, South America) as well as checked into local nets on 75 meters with consistently good signals. I draped this 100-foot configuration over my 45-foot high tower. The input to the total length is on the same side as the end of the antenna.

Now that I finally got upgraded to Extra Class, I found that my so-called long wire is in competition with wire beams, phased verticals, and KW's. So I decided to run a length of wire from the end of this antenna to my tower and tapped it down about six feet from the top. Now am waiting for sunset to work some DX. Please, if you can, explain what kind of lash-up I have here. I was told by rights it shouldn't work at all, according to antenna design.

RODGER RUNYAN, WB0GOG
Columbus, Nebraska



Well, I would suspect that this is a rare version of a sloper. The four conductors of this rotator cable have some inductance, which makes the 100-foot run electrically longer than its physical length. I also believe that he would get similar results if he put a loading coil in series with a single wire, running 100 feet, starting near his house up the tower and back down near the ground at the far end. Remember, a 100-foot long wire on 40 and 80 meters presents a considerable portion of a wavelength and should be fairly efficient, compared to a half-wave dipole at the same height.

(Kurt, now in the land of Tanqueray and Schweppes, missed Sweepstakes for the first time in many a year, possibly for the better, as the fight over who would operate the rig may have split asunder a happy home. Lady Di-Pole, once a "G", once again gets to drive on the wrong side of the street.) □

Antenna Quiz

Do you really know antennas?

William Goswick, K5WG

1. T F For a given antenna length, the gain is practically independent of the number of directors, provided the director-to-director spacing does not exceed 0.4 wavelength.
2. T F Collinear arrays are always operated with the elements in phase.
3. How high must a vertical antenna be placed above ground to function as a true ground-plane?
4. T F Radials for a ground-mounted vertical radiator must be at least one-quarter wavelength each to be effective.
5. T F A good ground radial system under a horizontally polarized Yagi will improve the performance of the array.
6. T F Doubling the number of ground radials on a ground-mounted vertical will double the radiation efficiency.
7. T F When used for receiving, an antenna re-radiates half of the total power received back into space.
8. T F A 40-meter half-wave antenna picks more energy than a 2-meter half-wave antenna if the field strength is the same in both cases.
9. T F The radiation resistance of an antenna is affected by the height above ground.
10. T F The log periodic dipole array consists of a system of driven elements, all of which are active on a given frequency of operation. □

(Answers on page 44)

Product Review

Vibroflex Brass Racers

Norm Brooks, K6FO

If you've been a reader of **Worldradio** very long, you may have learned that I *love* CW. If you look in my logbook, you'll see that I operate 10 times as much CW as phone. With this preference, I'm always looking for the best in CW operating aids.

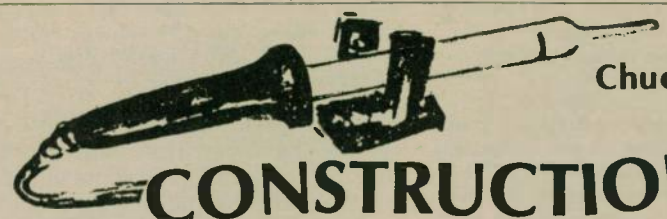
For the first time, I'm at a loss for words to describe the latest CW goodies I've tried. I'm speaking of the two new Vibroflex keyers — the "Brass Racer Iambic" and the "Brass Racer EK-1."

I'll have to borrow the words of Vibroflex's advertising department, because they say it better than I can. "The Brass Racer — a truly distinctive new design of iambic paddle, crafted from solid brass and mounted on a base of polished hardwood. Beautiful to look at, beautiful to operate. The paddle tension is adjustable to the operator's likes with a simple twist of our unique tensioning system. Just set it and forget it. A lifetime of smooth, easy operation."

The EK-1 is the Brass Racer Iambic with an electronic keyer built into the base of the paddle. The only way you can tell them apart is to note the speed control wheel peeking out of one corner. It is a fully iambic, dot-dash insertion, and adjustable speed control keyer using the Curtis 8044 chip.

I used them both in the recent CQ World Wide CW DX test and have fallen in love with them.

If you don't have an electronic keyer, do yourself a favor and get the EK-1. Use it in a contest. You'll be surprised how much it will improve your CW operating skill. If you have an electronic keyer and need just the paddles, you won't go wrong with the Brass Racer Iambic. □



CONSTRUCTION

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Making printed circuits

There are styles in the electronic industry as there are in the automotive or the clothing industry. You might find a pair of spats in a thrift shop, a car with a rumble seat in a collection of antique autos, and a mercury-vapor rectifier in a surplus store, but nobody makes them any more.

Construction practices in electronics have gone from haywire through breadboard and metal chassis to the technique used almost universally in manufacturing today, the printed circuit. While printed circuits are not ideal for the experimentally minded, most components manufactured today are designed to be inserted in a printed circuit, and may be difficult to use in other types of construction.

If you simply copy a design worked out by someone else, you will not have the problem that faces the experimenter. Even in the engineering departments of the big firms, development of prototypes involves cut and try. Much more will an amateur builder who also designs circuits need to change, rearrange, substitute, determine values by trial and error; and printed circuits are about the worst type of construction, except perhaps circuits potted in epoxy, for making changes. So it is necessary to assemble a prototype first in some way that makes it easy to modify.

Here are a few techniques that can be used. You can screw a number of terminal strips to a piece of plywood and solder the components to the terminal lugs, in the point-to-point type of construction that was used in the early days of electronics. In this type of construction, integrated circuits in the dual-in-line package (DIP) can be fastened to the board by a drop of glue with the leads sticking up — a method often referred to as "dead-bug wiring."

A second way to wire a prototype is to use perforated sheets of phenolic (perfboard, Vectorboard), pushing the leads of the components through the board and soldering them together on the side opposite the components. Boards with holes on 0.1 inch centers are the most useful, as this spacing has become standard for most components. The smaller DIPs, for example, have two rows of four to nine terminals spaced 0.1 inch, with the rows 0.3 inches apart.

Most convenient, and most expensive, is the "universal breadboard" — a piece of plastic with holes on 0.1-inch centers, with jacks behind the holes. To install a device, you simply push the wires into the holes. No soldering, no wire rapping. Radio Shack offers one with 550 connection points tied together in groups of five for $11.95, and a half-sized version of the same for $6.95. If you do little designing, the cost is probably a bit high. But if you are a real tinkerer, you will find these boards quite valuable.

Materials needed

You have the circuit worked out. The thing works fine, you have eliminated all the bugs (or wonder of wonders, it worked the first time you turned it on!), and now you want to do a permanent and neat job. Or you found a design in a magazine that you want to duplicate. What do you need?

You can buy yourself a complete kit of supplies for making circuit boards. That is the most expensive way, but it may be best for a beginner. Or you can assemble what you need and save some money by judicious shopping around. You will need a plastic tray or bowl large enough to hold the largest board you plan to etch, ferric chloride etchant (you can buy this in any radio parts store), a small drill (1/16-inch is best), a center punch (a small nail will do). The work goes faster if you have some way to warm the etchant, and rubber gloves are recommended to protect your skin. Some kind of resist is needed — something to protect the copper that is not to be removed. There are various kinds of paints, pens, decals — adhesive patches that you can buy for the purpose. I use pieces of vinyl plastic electrician's tape and have found it gives consistently good results.

And, of course, you need the board material itself. It comes in two types — phenolic and epoxy-glass. The phenolic costs less; the glass gives better performance as the frequency goes higher. Both types are available in either single or double-clad board, with copper foil applied to one or to both sides. Single-sided board is easier to use, but two-sided board has advantages for some circuits, allowing the overall size to be reduced considerably in more complicated devices, and permitting the foil on one side to act as shielding.

Laying out the work

If you are duplicating someone else's design, you can skip what is probably the meanest part of the job — laying out the components on the board. Trying one layout after another until you find one that packs the circuit in the smallest space with the fewest crossovers can be quite tedious. As all the "wiring" that you etch on the board is in a single plane, you can't carry one line across another. If you want to join two points that lie on opposite sides of a line on the board you use a jumper — a piece of small wire inserted into holes in the board just like you do with resistors or capacitors, and soldered in place. Often you can use resistors, capacitors and other components to act as jumpers by running leads through the space between the terminals on the board.

Graph paper, with 0.1-inch squares, is a big help in preparing the final layout. I usually draw the entire circuit either actual size or twice actual size, using dotted lines to indicate wiring to be etched on the back of the board and large dots to show where holes are to be drilled.

Once the final layout has been prepared, prepare the actual etching plan for the board. This will be a mirror image of the layout. I begin by locating the dots for holes at the proper places, then draw in the foil pattern as it is to be etched. I usually prefer to keep the etching to a minimum, using wide foil strips and narrow etched areas between, as this uses less of the etchant, making it serve for more boards. It also provides more area for soldering leads. After drawing the foil-side layout and checking to be sure it is correct, everything is ready to begin the actual etching.

Etching the board

Fasten the foil-side layout to the board, then use the center punch to mark the centers of all the holes to be drilled after the board has been etched. Remove the layout sheet, then use the punch marks as guides and apply the resist, whatever type you use. If it is tape, be sure the tape is pressed down tight against the board. When finished, again check to be sure there are no errors.

Then pour some etchant into the tray, enough to cover the board, and put the board into the tray. Examine the board periodically, about every five minutes or so, and leave it in the etchant until all unprotected copper has been etched away. Then remove the board, wash it with plain water, and remove the resist. Polish it with steel wool to remove the oxide film that interferes with soldering, drill holes where you have punch marks, and the board is ready for use. When you have finished etching circuit boards, you can save the etchant for more jobs. You can extend the life of the etchant somewhat when it becomes cloudy by adding a small amount of water, but eventually it will have become exhausted and must be replaced.

Ferric chloride is corrosive enough to eat copper, and it will eat other things, too, including human flesh. While it is not as corrosive as, say muriatic acid, which would work as an etchant but is too hazardous, ferric chloride can burn the skin. It is best to wear rubber gloves and a rubber apron while etching, and one should be careful to wash up immediately any etchant that is spilled and to wash off any skin areas that come in contact with the chemical. It's a bit messy, but not dangerous if a minimum of precaution is observed.

Mess-less boards

Some amateurs make their circuit boards without any mess, without any chemicals. You can use a hacksaw to cut through the foil on a board to break it up into a number of pads. Some also use routing tools to do the same job. A hacksaw can cut only straight lines, and usually the lines are the entire width of the board. The router is not limited in this way, and those skilled in its use can cut intricate circuit patterns in the board. The requirements for planning are the same as in the case of boards to be etched.

An opportunity

If you succeed in etching (or routing) a few boards and find that you like to do it, you might let the amateurs in your area know you can do it. You might be surprised how many will be asking you to etch boards for them. The cost of the materials is quite low, so most of the cost is for labor. If it's your labor, you may find it pays quite well. □

Antenna Quiz answers

(Quiz on page 43)

1. True
2. True
3. One-quarter wavelength.
4. False — The more radials used, the longer they must be for maximum efficiency. Making radials one-quarter wavelength long when using less than 90 radials is a waste of wire.
5. False — A ground radial system under a horizontal beam is a waste of wire.
6. False
7. True
8. True — Since the energy is evenly distributed throughout the wavefront regardless of the wavelength, the effective area that the receiving antenna can utilize varies directly at the square of the wavelength.
9. True
10. False — Only part of the elements are active on a given frequency. □

Revived club

(continued from page 1)

involved a rewiring of the old, 6 volt positive ground electrical system. This and the installation of a solid-state ignition system, heavy-duty alternator, and the installation of new lighting equipment was quickly accomplished by "trading" the vehicle's much coveted (but no longer needed) heavy-duty power winch to the city's mechanical shops in return for the electrical system conversion.

Through the efforts of city mechanic Bill Gies (who, along with his wife, is currently studying for his amateur license), a heavy-duty storage battery system was installed. The donation of a 4.5kV gasoline-powered generator and heavy-duty battery charger provided all of the power required by the dozen separate radio systems carried on board. A local bank donated a paint job, and the project was well underway.

Two-way communications on local and statewide police and fire frequencies — as well as lifeguard, public works and hospital/paramedic channels — was accomplished by installing two six-channel VHF radios. These were obtained from two police units being surveyed from the fleet. An electronic siren/public address system was similarly obtained. A local service organization donated a programmable scanner covering all needed frequencies from 30 MHz - 512 MHz (including aircraft). Other service clubs provided a citizens radio service transceiver and an AM/FM and television unit for monitoring public media coverage of major incidents.

Because Coronado has within its city limits two large U.S. Navy bases (Amphibious Base and Naval Air Station North Island), a transceiver for communication with Navy police and fire units was installed.

The Amateur Radio community — through the Coronado Police ARES group, the South Bay Amateur Radio Society, 220 Club of San Diego and the San Diego Council of Amateur Radio Clubs — has been equally generous in its donations of equipment. Operational from the van are: a 10-160 meter HF SSB transceiver; synthesized 50 watt 2-meter transceiver; synthesized 30 watt 220 MHz transceiver; and synthesized 10 watt 450 MHz transceiver. The van also includes a fully synthesized 2-meter portable repeater with 220 and 450 linking and control capability.

In addition to communications equipment, the mobile command post contains food and water supplies for 10 people for three days, as well as fuel for 72 continuous hours of generator operation. Foul weather gear, flashlights, batteries, field phones, high-intensity lighting, portable public address systems, radiation monitoring equipment and a variety of other maps, equipment and supplies are also contained in the van's 15 compartments. Portable antennas are carried as a supplement to the mobile antennas permanently mounted on the vehicle's roof. Capability of recording all radio traffic, as well as audio/color video recording of crime and disaster scenes, is available along with ropes, barricades and crime scene perimeter tape. A telephone, capable of being plugged into any working telephone line, is also on board.

As the communications van has grown, so has the police department's ARES group. From a group of three, it has grown to 30; it continues to grow with each weekly net and each monthly training meeting. Thus far, the van and the ARES group have provided communications for a variety of functions, ranging from large parades to city- and county-wide disaster drills, marathon runs and even the visits to our city of the president and vice president of the United States and the president of Mexico.

The city shops state that in its current condition, the command post should continue to function well for many more years. We know our dedicated ARES group will also function for years to come.

Next time you're in the San Diego area, give our group a call on our ARES repeater (W6MLI/R 147.675 down). We'd love to have you stop by for a tour of the venerable REO and meet the amateurs who staff it. □

Highest repeater in the eastern U.S.

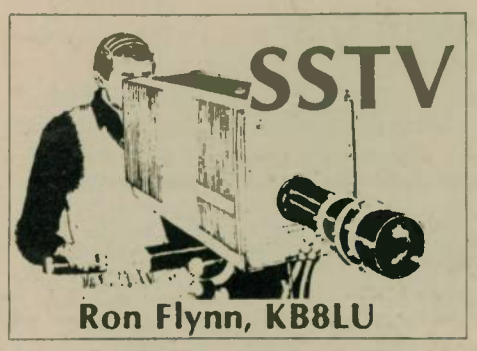
Submitted by Ken Woodard, WA4BVW

The Mt. Mitchell Repeater is on the air. It is the highest repeater in the eastern United States. This repeater is located on Clingman's Peak, 1½ miles south-southwest of Mt. Mitchell, North Carolina at an elevation of 6,670 feet.

The 2-meter repeater is on the frequency 145.190 MHz output, 144.590 MHz input. ERP is presently 20 watts, to be upgraded to near 100 watts, ERP. A 220 repeater is at the same location. Its frequency is 224.540 output, 222.940 input. Its ERP is 14 watts, to be upgraded as funds are available. A 450 repeater is also planned on 448.650 input, 443.650 output, as funds and equipment are available.

The Mt. Mitchell repeater is 600 feet higher than the Mt. Pisgah repeater; 146.16/76 is also well known on the East Coast.

The Mt. Mitchell, 2-meter and 220, and the Mt. Pisgah 2-meter and 220 repeaters are financed by private donations to the WA4BVW Repeater Fund, P.O. Box 126, Lake Junaluska, NC 28745. □



I have settled into a very comfortable routine for the winter, and I have been operating on the SSTV frequencies almost daily for several hours each day. Both my business and activity on my small farm have ceased for the winter, and I have hibernated to my radio shack.

The holidays are now over and Santa seems to have brought new SSTV equipment to quite a few amateurs. 1983 promises to be a very interesting year for SSTVers. I have worked many new SSTVers who have taken advantage of the 50 percent price reduction for both the Robot 400 and 800. Welcome to SSTV! It is good to see many old SSTV friends back on the air who, like myself, don't have as much time for SSTV during the summer months.

I reported in last month's column of the 50 percent price reduction for the Robot 400 and 800. When Bob Rubesh, WA6ENU — Amateur Products Sales Manager for Robot Research — called me last November with that announcement, he also informed me about the new Robot SSTV products to be available this year. A color SSTV conversion kit for existing Robot 400's should be available soon. This should be good news for many of you who have been undecided and wondering which way to go for color SSTV. Bob stated that Robot's conversion kit will be compatible with existing systems and will be offered as a do-it-yourself kit or will be factory-installed.

Bob further informed me that Robot hopes to have production models of their new color SSTV scan converter ready for the 1983 Dayton Hamvention. Prototype models will be displayed at Dayton if production models are not yet ready for sale. Perhaps this new equipment will help to bring some stability to standards and formats for SSTV.

ATV/SSTV Forum

The ATV/SSTV Forum for the Dayton Hamvention will again be held on Saturday afternoon at Hara Arena from 1400 to 1600, local time. I am very pleased to announce that Stan Brokl of the Jet Propulsion Labs ARC of Pasadena, California will be presenting a slide show and talk entitled "The Ultimate SSTV DX." Certainly everyone but the most recent newcomers to SSTV have seen or heard about the excellent SSTV pictures sent by the Jet Propulsion Labs Amateur Radio Club (JPL ARC) over recent years using the call signs N6V and W6VIO. SSTV pictures from Voyager I and II in B&W and color were spectacular!

I am also very pleased to announce that Larry Horne, N2NY and Jim Chladek, KA2NSJ of Network Two New York will give a video presentation showing how they use ATV in the production of a cable TV show. Network Two New York is a weekly live TV show aired on Channel "D" of both New York City's cable TV systems. Network Two New York is a show about Amateur Radio, computer and satellite applications, and other communication technology, and is of primary interest to Amateur Radio operators. National distribution of this show via regular commercial satellite is planned. Because of the non-commercial nature of this show, it would be suitable for rebroadcast via ATV to groups around the country.

SSTV Get-together

The annual SSTV Get-together at the 1983 Dayton Hamvention will be held Friday, 29 April, at the Holiday Inn North from 7:30 to 11:00 p.m. It will be held in the Pine Room, the same location as last year's Get-together. There will be a "social hour" beginning at 7:30. Refreshments and snacks will be provided by Commsoft and Robot Research. This will be your chance to leisurely visit with fellow SSTVers. Representatives of commercial SSTV companies will be there, and you will have the opportunity to talk with them away from the crowds of Hara Arena.

Following the social hour, amateurs who have brought experimental or homebrew SSTV equipment will give demonstrations of their work. Everyone is welcome. If you have modified commercial SSTV equipment and would like to show it, bring it along. I would appreciate your writing me about what you would bring, so that adequate table space for all can be arranged.

Following the demonstrations, Stan Brokl of the JLP ARC will show a videotape about the club. This videotape will be completely different from Stan's featured presentation at the Saturday afternoon ATV/SSTV Forum. For those of you who missed the live SSTV pictures of Saturn from JPL, Stan will be bringing cassette tapes, for sale, featuring the best SSTV pictures of Saturn from Voyager I and II in B&W and color. He will also have a limited supply of hard-copy photos and slides from the Viking and Voyager missions. A color JPL souvenir card will also be available.

Dayton housing

The 1983 Dayton Hamvention is shaping up as quite an event. There are a few rooms still available at the Holiday Inn North in the block of rooms I have reserved. If you would like a room at the Holiday Inn North for Dayton, you must act before 15 February. The dates for the Hamvention are 29-30 April and 1 May 1983.

A deposit check in the amount of $50, made out to Holiday Inn North, is required to hold your reservation, or you may use your American Express credit card number.

To reserve a room, send your name, call sign, address, phone number, number of people, number of beds (one or two double beds), date of arrival, plus deposit check or American Express card number. Send the above to: Ron Flynn, KB8LU, Rt. 2 Box 204 67th St., Bangor, MI 49013. You may call me directly at 616-427-8166 if you need more details.

Six-memory Robot

For those of you operating a Robot 400 with Interface System's 3000C three-memory color board installed, it is now possible to load and store one full-color RGB SSTV picture ready for transmission and still be able to receive and display a second full-color SSTV picture. Tom Hibben, KB9MC has developed a circuit that adds a set of three additional B&W memories to the Robot 400/3000C system.

The circuit consists of one SPDT switch, a small four-chip PC control board mounted directly on the 3000C board, and 12 additional 16K RAM chips piggybacked on the original memory chips. All wiring is done directly on the 3000C board except for two wires to the switch, which mounts on the front of the 400 and switches between the two memories. Complete documentation and bare PC boards are available from Tom. Send an SASE to Tom Hibben, KB9MC, Box 188, DeSoto, WI 54624.

Tom originally developed this circuit last summer and wired it up on a perfboard and installed it in his 400. Since then, he refined the circuit and made a couple of PC boards and was looking for a guinea pig 400 to try it on. I've known Tom for many years and "jumped" at the "chance" and shipped him my 400 last November. It came back a couple of weeks later and works great! Tom did an excellent job, and the three extra memories certainly make B&W and color SSTV operation much easier. I don't miss any incoming color SSTV pictures, and I have a color shot always ready to send when my turn comes around. I'm sure many of you have worked Tom and me and our six-memory Robots. □

Same School, same years

Recently, Dick Waechter, KA3JXA called CQ on the 80-meter band. Back came Fred Wissell, KA1FFB.

In the course of their CW ragchew, Dick mentioned that while he was in the service he was a radio communications officer. Well, Fred came back and said he had been the same, and where did Dick get his training?

"At the U.S. Maritime Radio School at Hoffman Island, New York," said Dick.

"Hey . . . me too!" answered Fred.

"When were you there?"

"1944-45," said Dick.

"Me too," said Fred.

After some comparing of mental notes and jogging of memories, they decided that they had been classmates. They also remembered each other. They haven't seen each other since those days, but they do plan to get together for an eyeball session soon.

— *Indiana County ARC, PA* □

ZX-81 Software

Available for the Sinclair ZX-81 computer is the software program HAM ANTENNAS which allows Amateur Radio operators to calculate antenna dimensions for operating frequency and displays them graphically. The user may choose groundplane, Yagi beam, dipole or Delta Loop.

HAM ANTENNAS requires a 16K memory expansion and is available for $4.95 plus $2 shipping and handling. The shipping is per order and a free catalog is available through RAK Electronics, P.O. Box 1585, Orange Park, FL 32073. □

High-resolution SSTV converter

High-resolution slow scan television (SSTV) is now here with the introduction of the VIDEOSCAN 1000 by Microcraft Corporation.

The unit is completely compatible with amateur-standard SSTV and first generation equipment. That is, VIDEOSCAN can convey high-resolution 8 second, 128-line SSTV pictures to first generation scan converters using current standards. However, VIDEOSCAN stands alone with the introduction of two separate high-resolution modes. In these modes, the TV picture utilizes the full 256 TV lines and 256 picture elements (pixels) per line four times better than earlier units, resulting in pictures that truly rival commercial TV quality. The pixels are quantized to 64 levels of gray — four times better than first generation units. Consequently, no contouring (false edges) are introduced to detract from the picture.

VIDEOSCAN is a second generation scan converter that employs the latest concepts and technology. Some noteworthy features of VIDEOSCAN are:

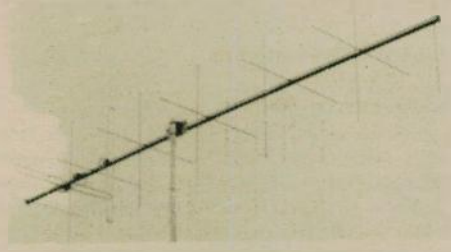
- **Split-mode** — This is a special mode that enables viewing four regular 8.5 second SSTV pictures at one time on the TV monitor as they are received.
- **Stop motion** — A single frame of video may be grabbed into memory from a TV camera manually or automatically, thus stopping motion.
- **Cursor** — A cursor dot appears on the screen to indicate the current line being transmitted.
- **Gray scale; call sign** — Mode selector activates a gray scale and optional "call sign" which are superimposed on picture, in memory.
- **Station switching** — All necessary switching between transmitter, microphone, and tape recorder is included in VIDEOSCAN.

Microcraft is presently working on a computer input/output port and a color conversion of the VIDEOSCAN 1000.

The VIDEOSCAN 1000 is available as a complete kit for $595, or wired and tested for $795 plus $6 for shipping. Shipments are made worldwide. A free brochure on VIDEOSCAN 1000 and "Getting Started in SSTV" are available from Microcraft. Microcraft Corporation, P.O. Box 513, Thiensville, WI 53092 USA. □

Circular Polarized Antenna

The new KLM 143-150-14C Circular Polarized Antenna not only provides optimum reception of OSCAR satellite signals but can dramatically improve 2-meter terrestrial communication, too. Linearly polarized signals (any mode, fixed or mobile) are frequently affected by buildings, mountains, movement and, as a result, circular wavefronts develop. Reception with the 14C reduces flutter fading and multipath distortion, and often improves S/N ratios. Benefits of circular polarity on transmit are similar, regardless of the polarization of the receiving antenna.



Since circularity may have a right-hand or left-hand "twist," the 14C antenna kit includes a feedpoint-mounted switcher, keyed by +9 to +15VDC right from the shack. For single feedline convenience, a special matching harness is included. If desired, the 14C can also function as two separately fed antennas — one vertical and one horizontal. Each set of feedpoints is equipped with a 2kW balun ready for direct coax feed.

The 143-150-14C is built to provide years of reliable service. All aluminum is 6061-T6 and 6063-T832 alloys. All hardware is stainless steel except U-bolts. Matching harness and balun coax features weather-impervious teflon insulation and silver-plated conductors.

With seven elements in each plane, the 14C produces 11dBdC gain at better than 1.5:1 VSWR. Circularity is maintained within 3dB. Virtually unbreakable 3/16" rod parasitic elements, anchored through the 1½" boom, help reduce weight to 7½ lbs., windload to 1.2 square feet.

For more information, contact KLM Electronics, Inc., P.O. Box 816, Morgan Hill, CA 95037; (408) 779-7363. □

31-inch whip

Detectives, undercover agents, policemen and anyone who relies on a disguise antenna for their car to keep a low-profile image, should take note of some significant improvements offered in the line of VHF-High Band and UHF cowl-mount disguise antennas from The Antenna Specialists Co.

A.S is now offering a high-performance, 31-inch stainless steel whip for six different disguise antennas. With the new whip, the antennas precisely simulate the appearance of conventional broadcast receiving antennas. Special versions are available for Ford, Mercury, Chrysler, Plymouth and Dodge automobiles. Two universal mount antennas are designed for every other car, from Alfa-Romeo to VW. The antennas mount in the same hole as original equipment antennas, and even include black insulators for added authenticity.

The three models available for the VHF-High Band (130-174 MHz) include the ASP-1427 (for Ford), ASP-1428 (Chrysler), and the ASP-1429 (universal). The ASP-1429 features a narrow fender cowl-mount for vehicles with restricted mounting areas. All three VHF antennas can handle up to 100 watts of power. An optional coupler (ASPS619) allows simultaneous two-way and AM/FM entertainment use.

In the UHF range (406-512 MHz), the ASP-1628 (for Chrysler), ASP-1627 (Ford) and ASP-1629 (narrow universal cowl mount) combine exceptional performance with the exact appearance of a conventional broadcast receiving antenna. Each utilizes a DURA-CON™ plated stainless steel whip, which reduces power losses to increase efficiency. The antennas handle up to 100 watts of power. An optional coupler (ASPS829) is also available for simultaneous two-way and AM/FM entertainment use.

For further information, write to: The Antenna Specialists Co., 12435 Euclid Ave., Cleveland, OH 44106. □

DON'T FORGET . . .
Include first and last names with call signs.

VISIT YOUR LOCAL

RADIO STORE

ALABAMA

Amateur Radio Communications of Huntsville
303A Jordan Lane
Huntsville, AL 35805
(205) 837-2661

CALIFORNIA

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801

Henry Radio
931 N. Euclid
Anaheim, CA 92801

Ham Radio Outlet
999 Howard Avenue
Burlingame, CA 94010

Jun's Electronics
3919 Sepulveda Blvd.
Culver City, CA 90230

Fontana Electronics
8628 Sierra Avenue
Fontana, CA 92335
(714) 822-7710 or (714) 822-7725

Jun's Electronics
7352 University Ave.
La Mesa, CA 92041

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 820-1234

Ham Radio Outlet
2811 Telegraph Ave.
Oakland, CA 94609

The Radio Place
2964 Freeport Blvd.
Sacramento, CA 95818
(916) 441-7388

Ham Radio Outlet
5375 Kearny Villa Road
San Diego, CA 92123

Quement Electronics
1000 S. Bascom Avenue
San Jose, CA 95128

Shaver Radio
1378 S. Bascom Avenue
San Jose, CA 95128
(408) 998-1103

Tele-Com/Alltronics
15460 Union Avenue
San Jose, CA 95124
(408) 377-4479 or 371-3053

C&A Roberts, Inc./Radio King
25326 S. Crenshaw Blvd.
Torrance, CA 90505
(213) 534-4456 or (213) 775-7684

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91401

HAWAII

Honolulu Electronics
819 Keeaumoku Street
Honolulu, HI 96814
(808) 949-5564

ILLINOIS

Aureus Electronics, Inc.
1415 N. Eagle
Naperville, IL 60540

MASSACHUSETTS

TEL-COM Communications
675 Great Road
Littleton, MA 01460
(617) 486-3400 or 486-3040

MICHIGAN

Purchase Radio Supply
327 E. Hoover Ave.
Ann Arbor, MI 48104
(313) 668-8696

MISSOURRI

Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA

Jun's Electronics
460 E. Plumb Lane, #107
Reno, NV 89502

NEW YORK

Radio World, Inc.
Oneida Cnty. Airport Terminal Bldg.
Oriskany, NY 13424
(315) 736-0184
(800) 448-9338/out-of-state

OHIO

Universal Amateur Radio, Inc.
1280 Aida Drive
Reynoldsburg (Columbus), OH 43068
(614) 866-4267

TEXAS

Appliance & Equipment Company
2317 Vance Jackson Rd.
San Antonio, TX 78213
(512) 734-7793

Steel stacking towers

Towers up to 200 feet high can be constructed using Aluma Tower Company's all-steel stack-up sections. Either 10-foot or 20-foot sections are fitted with all connecting hardware at the factory for "building block" assembly on site. All sections are welded with diagonal cross-bracing for maximum strength and minimum wind drag.

Steel stacking towers are designed for permanent installation for business, civil defense or private communication needs. Aluma Tower Company also manufactures all steel and aluminum telescoping towers which require minimum or no extra guying.

Contact Aluma Tower Company, P.O. Box 2806, 1639 Old Dixie Hwy., Vero Beach, FL 32960; A/C 305-567-3423 for free brochure. □

CW Morse

The CW Morse allows your computer to become a Morse terminal for your Amateur Radio station. It is capable of sending and receiving Morse code at speeds of 25 wpm or more. Includes multiple 255-character message buffers, numerous special function keys, type-ahead keyboard buffering, and automatic speed control on receive.

Available for PET 2000/4000 series with 8K or more memory, VIC-20 with 5K memory (increased abilities with optional 3K memory expansion), Commodore-64, and ATARI 400/800 16K+ computers.

Software written in BASIC for ease of modification by the user. Requires construction of two transistor, one IC interface. Connection is made through the I/O User Port on the VIC-20, C-64 and PET/CBM, or joystick port on the ATARI. Package includes software on cassette, complete documentation, interface schematic, and required connector — $19.95 ppd.

Order from RAK Electronics, P.O. Box 1585, Orange Park, FL 32067-1585. □

VIC RTTY

Turn your VIC-20 into a RTTY terminal. Features include split-screen operation (compose your reply in a special text buffer while receiving marquee style); four 255-character user-defined messages; 60, 66, 75 and 100 wpm Baudot speeds; Morse code ID; RTTY ID (his call and yours); RTTY CQ message; special unshift on space option — 15 different functions and controls in all!

Manual includes instructions on how to modify software for your call and special "permanent" messages. Hardware manual included with various interface designs (RS-232, TTL, current loop, etc.), as well as info on homebrew and commercial RTTY modulator/demodulators.

VIC RTTY requires VIC-20 computer with 8K memory expansion, recorder, and VIC-to-Radio interface (RTTY terminal unit and interface). Interface requires some construction ranging from simple 1 IC TTL interface to multi-IC modulator/demodulator (for completely homebrew terminal). Connection to VIC is through the USER I/O PORT.

Package includes software on cassette, software and hardware manuals, and I/O edge connector — $24.95 ppd.

Complete catalog of products is available. Specify type of computer. Order from RAK Electronics, P.O. Box 1585, Orange Park, FL 32067-1585. □

HT power amplifiers

Mirage Communications' pocket-size B-23 (2 meters) and C22 (220 MHz) power amplifiers, ever popular with HT users and experimenters, have been upgraded for even greater versatility. A new "power" switch permits selection of full amplifier power or a non-energized bypass mode when only HT power is desired. The FM/SSB switch controls choice of rapid or delayed relay action. Power amplification is linear in either mode. The B23 produces 30 watts (minimum) for 2 watts in, 15 watts for 1 watt, etc. The C22 produces 20 watts (minimum) for 2 watts in, 10 watts for 1 watt, etc. Duty cycle of both amps is "continuous."

The B23 and C22 are made in the United States and carry a five-year general warranty with one year for RF power transistors. For more information, contact KLM Electronics, Inc., P.O. Box 816, Morgan Hill, CA 95037; (408) 779-7363. □

Stereo code cassettes

RADIO SCHOOL® stereo code cassettes are a fresh new approach to learning the International Morse Code. Developed by Gordon West, WB6NOA — nationally-known writer and instructor, these stereo code cassettes are the first on the market to make code learning easier and fun.

One stereo channel contains the computer-generated code which meets the latest FCC code tape speed specifications. The second channel contains the voice. Separating the code and voice channels allows the student to practice code letters and words in unison with the tape with their own code oscillators. Playing both channels simultaneously in a car allows students to practice the code without having to write down any letters. All RADIO SCHOOL cassettes play both channels on portable monaural tape players.

The RADIO SCHOOL beginning/Novice code course contains four 1½ hour stereo tape cassettes. All instructions are given on the RADIO SCHOOL cassette. There is no paperwork to lose. The RADIO SCHOOL code course is intended for students having no previous background in code sending or receiving. By the end of the fourth RADIO SCHOOL tape cassette, students will be able to send and receive code at 6 wpm and pass a Novice Class Amateur Radio code examination. They will know enough code for shortwave listening as well. Each RADIO SCHOOL code tape meets published FCC code tape specifications. The code generated is identical to typical FCC code test tapes. This familiarizes students with the tone, speed and dit-dah ratio sent by the FCC or volunteer Amateur Radio examiners.

The new RADIO SCHOOL Novice stereo course is $39.95. Add $3 for shipping. California residents, add 6 percent sales tax. All orders shipped out first class mail or UPS. Save time and pick up the course at your local radio dealer.

RADIO SCHOOL also offers code courses for upgrading to FCC General Class, and to Extra Class. Code test cassettes for instructors are also available. Theory cassettes are available for students wishing to pass any grade of Amateur Radio license.

For more information and a complete catalog on stereo RADIO SCHOOL code and theory courses, write to: RADIO SCHOOL, 2414 College Dr., Costa Mesa, CA 92626. Phone (714) 549-5000. □

Florida

The Fort Myers Amateur Radio Club, Inc. will present their second annual City of Palms Hamfest on Saturday, 12 March 1983 at the National Guard Armory, 3405 Marion St., Fort Myers, Florida. Many programs and lots of good food are scheduled as well as plenty of room for swap tables and tailgaters. Commercial exhibits will be inside. Set up at 7:00 a.m. and gates open at 8:00 a.m. Saturday. Admission $2, children under 12 free. Swap tables $4 each plus admission. Drawings and prizes, too.

Talk-in on 146.28-.88 repeater.

For more information contact Dave Fox, KA8CXQ at (813) 693-0278.

Indiana

The Martinsville Hamfest will be held 13 March. Sponsored by the Morgan County Amateur Radio Club, it will be held indoors at the Morgan County 4-H Building and Fairgrounds. Admission is $4 at the door; $3 advance; children 11 and under free. Flea market with table $5; flea market without table $3; premium table $20. Tables available on first-come basis. Best spaces assigned first. Free parking. Doors open to the general public at 8:00 a.m. Vendor set-up starts at 5:00 a.m.

Talk-in on 147.66/.06.

For tickets, table reservations and information, send SASE to Aileen Scales, KA9MBK, 3142 Market Pl., Bloomington, IN 47401.

Iowa

The Davenport Radio Amateur Club will hold its 12th Annual Hamfest on Sunday, 27 February 1983 from 8:00 a.m. to 4:00 p.m. at the Davenport Masonic Temple, Highway 61 (Brady Street) and 7th Street, Davenport, Iowa. Tickets are $2 in advance, $3 at the door. Tables are $5 each with a $2 additional charge for AC electrical hook-up.

Talk-in on 146.28/88 W0BXR repeater. Table reservations and advance tickets are available by writing to: Dave Johannsen, WB0FBP, 2131 Myrtle St., Davenport, IA 52804.

Minnesota

Mid-Winter Madness Amateur and Computerfest is once again being sponsored by the Robbinsdale Amateur Radio Club, K0LTC. The event will be held on 26 February 1983 at Sacred Heart Church School auditorium, 4087 West Broadway, Robbinsdale, Minnesota.

Doors will open for commercial exhibit and flea market set-up at 7:00 a.m. General admission will open at 8:30 a.m. The day's activities include seminars on antennas, towers and computer interfacing, as well as a slide presentation on the voyage of the Viking ship, *Hjemkomst*. Grand prize drawing will be held at 2:00 p.m. Lunch will be available in the building.

General admission is $2 in advance and $3 at the door. Commercial exhibit space is available at $15 per table. Contact Bob Reid, N0BHC, 19725 Jackie Ln., Rogers, MN 55374. Flea market space is available at $3 per space, contact Barry Blazevic, WB0FBN, 5437 Virginia Ave. N., New Hope, MN 55428.

New Jersey

The Split Rock Amateur Radio Association will hold its sixth annual electronics auction on Friday, 4 March 1983, at the VFW Post #3401, on State Route 53 in Morris Plains, New Jersey.

Doors will open at 7:00 p.m. to unload and inspect equipment, and the auction will commence at 8:00 p.m. sharp. Admission is $1. Items to be sold must be working equipment. Loose parts must be bagged in the largest quantity possible. A commission of 10 percent will be taken on the first $50 of each sale, above which a flat fee of $5 will be charged. Commissions are payable in cash only.

Refreshments will be available, and door prizes will be awarded. The Morris Plains VFW hall is located a short distance from US 202 and NJ 10, and is easily reached via I-80, I-287 and US 46.

Talk-in will be on the SARA repeater WR2ADB, on 146.385/146.985, and on 146.52 direct.

For more information, please write to SARA, P.O. Box 3, Whippany, NJ 07981. □

●

On 6 March 1983, the Old Bridge Radio Association will hold its third annual auction of Amateur Radio, computer and electronic equipment at the Knights of Columbus Hall on Pine Street, just off Route 18, in Old Bridge, New Jersey. Same fun and excitement, new location with plenty of seats and free parking. Doors open for registration and inspection at 9:00 a.m.; sale begins at 10:00 a.m. Admission $2.50. Club commission, on successful sales only, 10 percent on the first $100 of sale price, 5 percent on remainder. Food and drink will be available. Many door prizes.

Talk-in on .72/.12, .34/.94 and .52.

For more information, call Fred Goldberg, WA2BJZ, 201-257-8753.

●

The Shore Points Amateur Radio Club invites everyone to "Springfest '83" Saturday, 12 March, from 9:00 a.m. to 3:00 p.m. at the Atlantic County 4-H Center, Route 50, Egg Harbor City, New Jersey (near Atlantic City).

Buyers and sellers can make their deals inside an 8,000-square-foot heated building, with commercial power available and outside covered tailgating spaces. Admission $3 at the gate; $2.50 in advance; sellers $5 per space (bring own table); XYLs and children free. Refreshments available.

Talk-in on 146.985 and .52.

Info and reservations: SPARC, P.O. Box 142, Absecon, NJ 08201.

New York

The LIMARC (Long Island Mobile Amateur Radio Club) Indoor Hamfest will be held 20 February at the Electricians Hall, 41 Pinelawn Rd., Melville, Long Island, New York. Located just north of Exit 49 of the Long Island Expway (495). Open from 9:00 a.m. to 5:00 p.m. General admission $3. Sellers tables in advance only by sending $10 to Hank Wener, WB2ALW, 53 Sherrard St., East Hills, NY 11577, or 10:00 p.m. to midnight at (516) 484-4322. Table size is 4 x 6 feet with oval corners.

Many door prizes will be awarded. Food and refreshments at the snack bar. Coat and equipment checking along with lots of parking at the hall and in the lot two blocks to the east. Info also from Sid Wolin, K2LJH, (516) 379-2861 at night.

Ohio

The Mid-Winter Hamfest/Auction will be held Sunday, 13 February 1983, at the Richland County Fairgrounds, Mansfield, Ohio.

Prizes, auction and flea market. Large heated building. Doors open to the public at 8:00 a.m. Tickets $2 in advance, $3 at the door. Tables $5 in advance, $6 at the door. Half-tables available.

Talk-in on 146.34/94.

For additional information or advance tickets, contact Harry Frietchen, K8HF, 128 Homewood Rd., Mansfield, OH 44906; or phone (419) 529-2801 or (419) 524-1441.

Pennsylvania

The Radio Association of Erie, Pennsylvania is having a hamfest on Saturday, 19 March 1983. The 'fest will be called the RAE Eyeball QSO Party.

The FCC will be there for testing. Form 10 must be mailed to Buffalo office by 22 February for reservation. FCC will return card indicating testing time.

Tables are by reservation only. Price of 8-foot tables $3. Admission $2. QSL drawing — bring your card. Real food at subsidized prices, 807's, etc.

Talk-in on 01/61 and 22/82. □

Arizona QSO Party

The Southern Arizona DX Association of Tucson, Arizona announces its sponsorship of this year's Arizona QSO Party. Operating times will be from 1800 GMT, 5 February to 0600 GMT, 6 February 1983.

Single operator entries and club entries only. Each station may be worked only once per band.

Exchange: RS(T) and state, province, DXCC country or AZ county. Novices or Technicians also sign "/N" or "/T," respectively. All bands and modes permitted, except no repeater contacts allowed.

Suggested frequencies: *Phone* — 3.895, 7.230, 14.280, 21.365 and 28.560; *CW* — 60 kHz up from lower band edge; *Novice* — 25 kHz up from lower band edge.

Scoring: 1 point per phone QSO; 2 points per CW or other mode QSO; 4 points per QSO with Novice or Technician in the Novice bands. AZ stations multiply QSO points by number of states, provinces and DXCC countries. Non-AZ stations multiply QSO points by number of AZ counties (13 possible). Non-AZ stations can count club station W7NQ as 1 multiplier. If all AZ counties and W7NQ are worked, then multiplier is doubled.

Awards: *Individual* — Certificates to highest score in each of the following categories — Arizona, non-Arizona, Novice/Technician. In addition, certificates for highest score in any AZ county, state, province or DXCC country in which there are at least five entries. *Club* — Certificates for AZ and non-AZ club whose members' scores combine for the highest score. Club entry must consist of at least five individual entries to be eligible. Club residency determined by mailing address.

Entries: *Individual* — Entries show call, exchange, time and frequency of each QSO. Include a summary sheet of your scoring and dupe sheets for bands with more than 50 QSOs. Entry may designate one club with which you are participating (see below). Deadline for entry to be received is 5 March 1983. *Club* — Club officer must submit a summary of call signs and claimed scores to be included in club entry. To be counted toward club total, individual entry must also designate the club. Deadline for club summary is 5 April 1983.

Include a large SASE for results. Entries should be addressed to: Southern Arizona DX Association, c/o Philip M. Stickney, N7BUP, 1890 West Paseo Cuenca, Tucson, AZ 85704. □

YL-OM Contest

A YL-OM Contest will be held during two weekends in February. The phone portion starts Saturday, 12 February, 1800 UTC and ends Sunday, 13 February, 1800 UTC. CW portion starts Saturday, 26 February, 1800 UTC and ends Sunday, 27 February, 1800 UTC.

Eligibility: All licensed men and women operators throughout the world are invited to participate.

Procedure: OMs call "CQ YL" — YLs call "CQ OM."

Operation: All bands may be used. No cross-band operation. Net contacts and repeater contacts do not count. A station may be counted only once in each contest for credit.

Exchange: Station worked, QSO number, RS or RST, ARRL Section or country. Entries in log must also show time, band, date and transmitter power. (Please know your ARRL Section. Section list is available for SASE to YLRL vice president.)

Scoring: A) Phone and CW will be scored as separate contests. Submit separate logs for each contest. B) 1 point is earned for each station worked; YL to OM, or OM to YL. C) Multiply the number of QSOs by the total number of different ARRL Sections and countries worked. D) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of (C) by 1.25 (low-power multiplier).

Logs: All logs must show ARRL Section or country to qualify for awards. Do not send carbon copies of logs. Please print or type. *Logs must be signed by the operator,* and no logs will be returned. Remember to file separate logs for each contest. Logs must show claimed score and be postmarked by 15 March 1983, and received no later than 5 April 1983, or they will be disqualified. *Please send logs to:* YLRL vice president, not yet elected for 1983.

Duplicates: For each duplicate contact that is removed from the log by the vice president, a penalty of three additional and equal contacts will be exacted.

Awards: 1st Place Phone — YL Cup, OM Cup. 1st Place CW — YL Cup, OM Cup. 2nd and 3rd Place YL and OM winners in each contest will receive certificates. The winner of the Phone contest cup is also eligible to win the CW cup. Certificates will be awarded to the high YL and OM phone, and OM phone and CW winners of each U.S. and VE call district and country. □

Two-Land QSO Party

The 1983 Two-Land QSO Party will be held 12-14 February and is the fifth anniversary of this event. The Gloucester County Amateur Radio Club (New Jersey) is sponsoring the event. The time periods for the contest are as follows:

2100 GMT, Saturday, 12 February to 0700 GMT, Sunday, 13 February. 1300 GMT, Sunday, 13 February to 0300 GMT, Monday, 14 February. There is no time limit to the operating times listed, but there is a mandatory six-hour rest period from 0700-1300 on Sunday. The same station may be worked once per band and mode, and mobiles and portables each time they change counties.

Exchange: RS(T), county and state for Two-Land stations; RS(T) and QTH (state, province or country) for the rest of the world.

Scoring: Each QSO is worth 2 points.

Multiplier: For Two-Land stations, the number of states + provinces + DX countries (DXCC countries list OK) + Two-Land counties × number of QSO points. For the rest of the world, multiply number of QSO points × number of Two-Land counties worked (possible 83 maximum).

Frequencies: *CW* — 1805, 3560, 7060, 14060, 21060, 28060. *SSB* — 1815, 3900, 7230, 14280, 21355, 28600. *Novice* — 3725, 7125, 21125, 28125.

Awards: Certificates to the top scoring station in each Two-Land county, each state, province and DX country. Second and third place awards will be issued where justified. Awards also for top mobile, portable, multi-operator, Novice and club.

Logs with over 200 QSOs should include dupe sheets. Indicate each new multiplier as worked. Also include a summary sheet and usual declaration. For results, include a large SASE; DX stations include large SAEs. Send logs to: Dennis Sandole, WB2GES, GCARC Contest Committee Chairman, 814 W. Kings Hwy., Mt. Ephraim, NJ 08059. □

A5 UHF-ATV QSO Party

Our A5 fall North American UHF-ATV DX Contest was such a success that it just seemed a shame to have to wait a year to do it again! At your request, the weekend of 18-20 February will be the date of our A5 ATV QSO Party. The purpose of any contest is to get activity on the bands as well as recognize those individuals who excel in TV operation. Pass the word about this new annual FSTV contest, designed not as a DX contest but a "having fun" get-together by UHF-ATV enthusiasts.

Scoring will be based on the number of successful contacts with bonus points awarded for those who show the "shack," a project (ATV) in the works, mugshot and family or friends. 100 points can be credited for successful one or two-way contacts of P1 signals or better. 25 additional bonus points can be added for the three specialty categories.

No contacts should last more than 30 minutes; IDs must be on video as well as aural required IDing. Add an extra 25 points per contact if audio on-carrier, sub-carrier or independent sound is used. Unlike the DX contest, ATV repeaters are "authorized," and we encourage their use! We recommend repeater sponsors set aside a specified period for contest operations.

Please remember to send in your ATV logsheets and photos of on-the-air pictures received. Shack photos of publishable quality will be run in a future issue of A5 **Magazine**. (All logs and photos will be returned; please send some stamps.) We suggest a log entry similar to this one; GL!

Station Received	Location	Signal	Base	Shack	Project	Mug	Audio	Tot
1. AB9W								
Larry Dickenson	E. Moline, Ill.	P5	100	25	—	25	25	150
2. K9ZFK								
Orv Vogelbaugh	Moline, Illinois	P1	100	25	25	25	25	200
3. W9ZIH Ron Stefanskie	Chicago, Illinois	P3	100	—	25	25	—	150

Vermont QSO Party

Central Vermont Amateur Radio Club (W1BD) will hold a QSO party 5-6 February.

Time: 2100Z, 5 February to 0700Z, 6 February, 1100Z to 2400Z, 6 February.

Frequencies: *(Phone)* 3930, 3960, 7230, 7260, 14280, 14320, 21360, 28570, 50110, 144.2; *(CW)* 3530, 3730, 7030, 7130, 14080, 21060, 21160, 28070, 144.1.

Exchange: VT stations send QSO number and county. Other stations send QSO number, state or province/country.

Scoring: *VT stations* — 1 point per contact with *any* station multiplied by the number of states plus Canadian provinces plus countries (exclude U.S./Canada). *Other stations* — 1 point per contact with a VT station multiplied by the number of VT counties. NOTE: Each contact with each station on a different band or in a different mode counts as one contact. Repeater contacts and multiple contacts with the same station on the same band and mode are invalid.

Awards: *Out-of-state* — Certificate to highest-scoring station in each state (or province/country) and to highest-scoring Novice/Technician. *Vermont* — Certificate to each VT station submitting a log. W/VT Award to stations working 13 of Vermont's 14 counties.

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VIC-20 HARDWARE and programs, 16K battery backup memory with 8K EPROM and real time calendar clock, RS-232 interface bipolar level and 45 MHz frequency counter, send-receive Morse Code and RTTY programs with interface hardware FSK, EPROM programmer, low cost. Send SASE, Frank Lyman, P.O. Box 3091, Nashua, NH 03061.

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Classified ads for jobs wanted or positions offered will be run free of charge in Worldradio's MART.

EXPERIENCED TECHNICIAN seeks shipboard position. Hold General Radio Telephone and 2nd Radiotelegraph licenses, both with Radar endorsements. Have 3½ years sea service aboard NASA tracking vessels as Radar & SINS Nav. Tech. Have practical experience in celestial navigation. Heavy experience in modern auto-track radar systems. Five years experience as USAF airborne radio operator-SAC. W.H.Wiley, W6OWD, POB 52, Pt. Montara, CA 94037, (415)728-7136.

WANTED: INFORMATION ON EMPLOYMENT ANYWHERE, U.S. or abroad. Amateur radio General class licensee since 1974; Indiana-certified Emergency Medical Technician since 1978; various certificates from DCPA and others. Experience: 4 years in ambulance/EMS work (full-time, paid); 8 years in communications; 8 years in search and rescue. Please send info to Jeff Howell, P.O. Box 187, Milton KY 40045.

OPPORTUNITY WANTED: I am looking for a company with a special need for an industrious, dedicated, tireless worker. 20 years with my previous employer. Interest, skills and experience in public relations, public speaking, management, sales, conducting seminars, search and rescue, writing and numerous technical skills. Interested in long term employment. Contact Hartley Postlethwaite, WB6CQW, HAPPY FLYERS, 1811 Hillman, Belmont, CA 94002. (415) 341-4000.

20 YEARS BROAD AND VARIED EXPERIENCE with high technology manufacturing. Last 10 years in quality control. Able to interpret blueprints and schematics. Able to set up and use a wide variety of mechanical and electronic measuring devices. Member, American Society for Quality Control. Certified for Shotpeen inspection, Level Ia Eddy current temper inspection, and Rockwell hardness inspection. Experienced in receiving, source, and in-process inspection. Know true position tolerance. M.R.B. experience. Familiar with A.Q.L. and S.Q.L. sample inspection. Dan L. White, KA7IMF, 506 26th Street S.E., Auburn, WA 98002. (206)939-6695.

HOME COMPUTER business opportunity. Positions available for self-motivated individuals who know MULTI-LEVEL marketing, and desire to introduce to their area a brand-new, ground-floor and unparalleled program that features a well-known home computer, peripheral hardware, software, and other high tech products. Write, COMPU-COTTAGES, PO Box 26, Candler, NC. 28715.