Worldradio

January [illegible] Issue 7 • 80¢

Amateurs busy during MGM fire

Kay D. Davis, K6HIT

On Friday morning, 21 November 1980 at 7:20 a.m. fire broke out in one of the world's largest hotels, the MGM Grand in Las Vegas, Nevada. The Las Vegas Convention Center was activated as a reception center for guests of the hotel and its employees, most of whom were in a state of shock and suffering from smoke inhalation.

Shortly after 8:00 a.m., Kay Davis, K6HIT; Charles Pranger, W7HWL; Howard Nutter, K7GHS; and Rick Peters KA7BBB arrived at the convention center and set up 2-meter and MARS nets for handling traffic. The Las Vegas 28/88 repeater and the Kingman, Arizona 16/76 repeater handled the bulk of the traffic — mostly health and welfare type.

Other amateurs participating in handling the traffic were: Ruth Spreng, WA6ZVN; Robert Gomez, N7XE; James Harris, W7KAX; Robert Gillam, W7LQV; Dale Blanchard, WA7IXK; James Weeks, W6FNG; David Davis, W7MWF; WA7CPW; John Charrey, Sr., KA7AVO; John Carlson, WD9HBB/7; and MARS station AFF6NV.

As of this date, 84 people perished in the fire, with hundreds injured and hospitalized, but once again the Amateur Radio operator came through when emergency communications were sorely needed.

All involved deserve congratulations for a job well done. □

A boat sinks, and a dream

The saga of a three-hulled boat has put Neil McMullin, KD6EG, in the news recently.

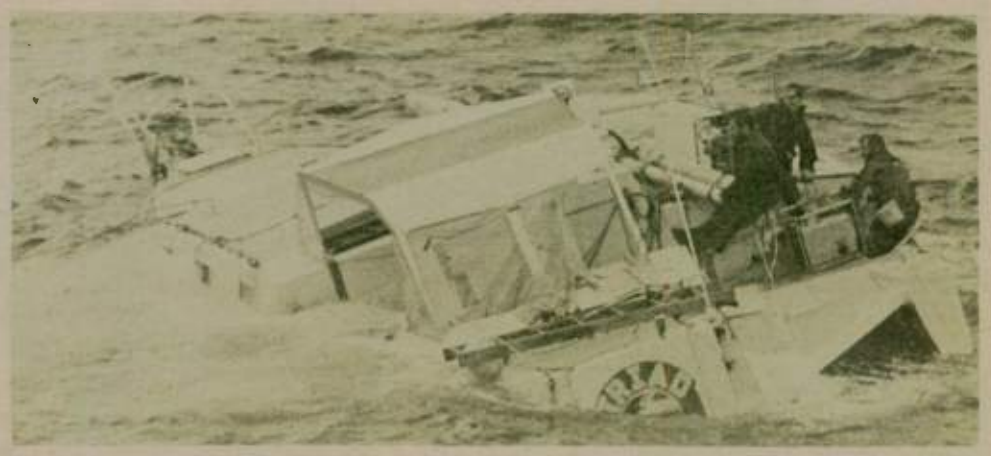
This story began several years ago, when Dick Garello, W6BPS, built a trimaran on a vacant lot in Ontario, California. Neil, like many another person, noticed it in passing, but didn't go beyond wondering how the 44-foot sailboat would be transported to the sea.

On 4 March 1979, Garello and a crew of six (family and friends) sailed from Oceanside, California on what they hoped would be a cruise around the world. The crew's names were: Paul and Sheri Garello (Dick's son and daughter-in-law), Jack Wirtz, Dean Nichols, Faith Asay and Scott Rheinish.

Although the Triad was radio-equipped, nothing was heard from it for two weeks. A parent of a crew member dropped by and asked Neil if he could make contact. That would be extremely difficult, he said, considering the size of the Pacific Ocean and the numerous radio frequencies being used out there. But he went fishing through three Amateur Radio nets that cover vast areas of the Atlantic and Pacific. The Triad, through a net member, heard of Neil's search and contact was finally established.

The difficulties of the Triad were numerous. The climax came when Garello sailed between the Hawaiian Islands without knowing it, learned of his navigational mistake, and turned around. The rudder failed. He got a tow to Hilo.

Moving to Oahu, bad luck followed him, a storm grounding the Triad. The keel was damaged. Garello spent months working on it.



Members of the U.S. Coast Guard sit astride the trimaran Triad, 1,000 miles off the Washington-Oregon Coast after rescuing Dick Garello, W6BPS, and his crew members. Garello's dream of an around-the-world voyage went down with the boat. ***(Official Coast Guard photo by BM2 Eric Johnson)***

The skipper invited Neil to come to Hawaii and sail with him for a few weeks. It was OK, but uncomfortable.

Paul Garello, the skipper's son, was quite insistent that Neil sail with them to San Francisco, where the engine would be replaced. But Neil demurred, insisting he is no sailor and was incompetent to be a member of the crew.

On the first try, the Triad got out 600 miles from the islands. The bolt at the top of the mast, to which the stay wires are secured, gave way. They shortened sail and returned to Hawaii.

During the crew's stay in Hawaii, the tropical lure of the islands apparently overwhelmed most of the crew members, as Wirtz, Asay and the Garellos set up residences there. The others returned to the mainland.

Garello decided to return the Triad to San Francisco, where he planned to have a new engine installed and completely refit the boat with the help of a brother.

The Triad's captain gathered three crewmen from Haleiwa, Hawaii for the trip — Robert Degnan, 24; Glen Whitford, 27; and David Meyer, 26. They left Oahu's north shore on 29 August and the trip went fine until the morning of 14 September.

At 10:00 a.m., about a thousand miles out from the Washington-Oregon coast, the stay wires gave way. The 53-foot aluminum mast fell, breaking off an upper section.

Garello contacted a radio operator in Warrenton, Oregon — Bill Johnson, WA7UYS — who notified the Coast Guard and also telephoned Neil. Before long, the Coast Guard was in action as far north as Alaska. What the distressed boat needed the most was diesel fuel for the engine. But when the airplane reached the spot, darkness had set in and an air-

(please turn to page 29)

The Dreaded Word — FIRE

Ralph Swanson, WB6JBI
Emergency Coordinator, North Orange County

The "Owl" fire, so named because of its origin, started in Santa Ana Canyon in the early morning hours of Tuesday, 28 October 1980. Pat Mahaffey, KA6MAC — American Red Cross Disaster director — put out the plea for help on the Anaheim repeater, WR6ACB, 146.19/79, at about 6:00 a.m. The American Red Cross Disaster Center had been activated to support the numerous fire departments called upon the scene. A fire camp had been established at Yorba Regional Park near the City of Yorba Linda and communications were needed.

Gary Holoubek, WB6GCT, on his way to work at this time, heard the plea and immediately responded. Gary is an Assistant Emergency Coordinator for the North Orange County ARES. He activated the emergency Amateur Radio station at the Disaster Center and quickly started recruiting ARES volunteers. The response was overwhelming. Within the hour, over 30 members had checked in and offered their services.

Karl Pagel, N6BVU, Jeff Harris, KA6IGT, and Rick Jenkins, WD6EBT, were dispatched to the fire camp. There they set up the needed 2-meter link via the repeater to the Red Cross Disaster Center. Wayne Zike, WB6AXT, who lives in the area, volunteered to set up communications from the Disaster Center to Canyon High School where an evacuation center was established. These volunteers worked tirelessly passing traffic concerning medical needs, food requirements and numerous other problems, until well after noon on this day. Larry Wayt, KC6K, relieved Gary at Red Cross.

At this time, the fire was nowhere near under control due to the whipping winds that gusted up to 50 miles per hour. It became evident that the vigil would continue for many more hours.

At about 1400, Clancy Smith, WA6HNQ, and his RV (a virtual rolling ham shack) and Frank Mish, K6ESS, relieved Karl, Jeff and Rick at the fire camp. Wayne, at the high school, remained until about 1600 hours. At 1630, Larry, KC6K, was relieved by Glenn Mulligan, N6AFZ, and Tim Powers, KA6BJF, at Red Cross.

Due to the progress and direction of the fire, it became less and less probable that evacuation would be necessary. Wayne secured the station at Canyon High School at this time.

At 1930, Pat Mahaffey at Red Cross decided the need for support communications could wind down because the fire was now 50 percent contained. The fire camp station, as well as Red Cross Disaster Center, was then secured with the remaining communications being handled on Red Cross frequencies. Everybody sighed with relief, but remained on standby.

At 0630 hours the following morning, new outbreaks of fire occurred and again, Red Cross traffic became overloaded. The Disaster Center was reactivated at 0643 by Emergency Coordinator Ralph Alexander, W6RE, and the plea for help again went out. This time, however, setting up the various operations was much quicker and easier due to the help of Jim Farley, WB6UIG. Although Jim was ill and confined to bed, he used his bedside radio and telephone to schedule the list of volunteers accumulated the previous day.

Mark Shapiro, N6BMO, set up operations at the fire camp, assisted later by Clancy at 0830. At 0840, Archie Miller, WD6CSL, Assistant EC for St. Joseph's Hospital, relieved Ralph Alexander. Traffic concerning eyewash, food and other supplies flowed continuously. Use of the Anaheim machine became so heavy that other repeater owners and control operators offered their machines as alternates. Machines being volunteered were N6ME, WR6AKV, WR6ADO, WA6KOS and others.

At 1250, Robin Hoff, KA6HNY, relieved Archie. Clancy was also long overdue for relief but he volunteered to remain at the fire camp as long as necessary. Randy Miller, WD6GXU, finally convinced Clancy to go and get some rest.

Randy reported at 1515 hours that although 15,000 acres were involved, the fire was 100 percent contained and 95 percent controlled — welcome news!

At 1630, after a long shift, Robin relinquished Red Cross NCS to Roger Denny, WB6ARK. At 1700, Randy turned over the fire camp station to Bob Reitzel, KD6DA.

Donations of hamburgers, coffee and soft drinks were generously made to the

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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.

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Rescue at Sea

N.A. Armstrong, VS6AG, and P.J. Weaver, VS6CT

The yacht **Gambit** a 35-foot Choey Lee newly built yacht, left Hong Kong for Guam on Saturday, 8 December 1979 with four Americans onboard — Dean, Michael, Henry and Daniel. The northeast monsoon was blowing quite strongly and after two days of being driven further south than they intended, they decided to return to Hong Kong to await better weather.

At approximately 1420 GMT* on 11 December 1979, the yacht was knocked down to the horizontal by a "Rogue Wave". The yacht subsequently dropped, in the horizontal position, with such force that the port-side coach house glass-side port was stove in, immediately flooding the yacht. When the vessel turned upright, those on board found 4 feet of water in the cabin, a broken main boom and — as a result of the diminished freeboard — water breaking through the broken coach house, causing further problems. Meanwhile, the two men in the cockpit were thrown overboard and subsequently pulled themselves back on board, as they had been attached with lifelines. Those below, although shaken and thrown about, fortunately broke no bones.

At about 1435Z the captain of the yacht, Dean Pregerson (WH2ABD/MM3) put out a distress call on 14345 MHz which we understood was first heard by Kiyoaki Ishikawa, JA2AU1, and Johanes Sotyakantjana, YB3KA. The Indonesian amateur "SCOTY" changed frequency and broke in on Phil (VS6CT), who was at this time in QSO with Kamchai Chotikul, HS1WR, as the estimated position given in the distress call was 100 miles southeast of Hong Kong.

Tony (VS6AG) also happened to overhear the distress call and made contact with the yacht. Phil spoke with Dean on the yacht at 1455 to ascertain position, number of persons on board and obtained a situation report. The exact position was not certain although an EPIRB (Emergency Position Indicator Radio Beacon) had been activated.

Meanwhile, an amateur operator in Guam — John, N4ACX/KHZ — had overheard the subsequent discussions and alerted Anderson Air Force Base on Guam, which subsequently stayed on to assist in coordination until rescue was effected some 18½ hours later.

At 1500 hours, Phil spoke to the Hong Kong Marine Department Search and Rescue Center, who put out a call to all ships advising of the distress. However, as it was only an estimated position and

(*please turn to page 4*)

ARES members and their emergency availability display in San Fernando Valley during "Earthquake Awareness" weekend. From left to right are Leonard Drayton, WA6LAU; Norman Friedman, W6ORD; Ted Lisiecki, WB6BSA; Dave Tucker, WB6FAK, Section Emergency Coordinator; Lenore Jensen, W6NAZ, Bob Burns, N6ZH; and (seated) Mel Borses, Wb6VHS, District Emergency Coordinator. *(Photo by Bob Jensen, W6VGQ)*

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FEATURES

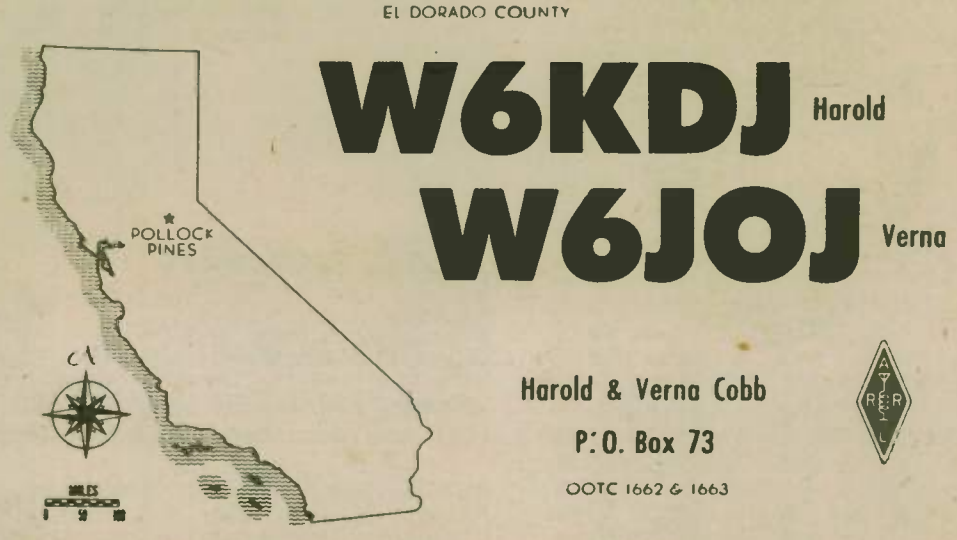
COLUMNS

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

Pair "Meet" Via Radio, Wed

Yesterday Today

Verna Gillespie and Harold L. Cobb met via Amateur Radio, as explained in a 1935 *Los Angeles Times* article, which ran with this picture. The couple became acquainted while chatting with each other "over the ether waves", and later met at the local Amateur Radio Club. They're shown here, married, with their radio outfit at that time.



Here is the Cobbs' current QSL card. As can be seen, the Cobbs now reside in Pollock Pines in El Dorado County, California.

Brooks' Books — a book review

The Magic of Ham Radio

by Jerrold Swank, W8HXR
$4.95

Norm Brooks, K6FO

What makes a book so interesting that you can't put it down? It's probably the skill of the author. Such an author can tell a story so masterfully that you forget you're reading a book. Instead, you visualize the story being told — page after page after page. **The Magic of Ham Radio** is such a book, and Jerrold Swank, W8HXR, is such an author.

I'm not really a history buff, but I found myself enjoying the experiences of the early radio inventors and developers. Jerrold obviously did a lot of research for this book because he goes on, story after story, from the beginnings of radio to today.

Somehow, Jerrold also weaves in his own story, and it is worth telling. He is an inventor in his own right, having made significant contributions to early radio.

Jerrold has been called the "Godfather of the Antarctic". He spent a lot of time in and with Antarctic expeditions. He has run thousands of phone patches for the Antarctic scientists. One chapter is devoted to this ice-bound continent, and when you read it you will feel like you were actually there.

I highly recommend **The Magic of Ham Radio** by Jerrold Swank, W8HXR. You'll be glad you read it.

FIRE

(continued from page 1)

fire-fighters and emergency workers by such local restaurants as Carl's Jr., Knollwood and others.

At 1645, Roger was joined at Red Cross NCS by Ray Frost, WA6TEY. At 2100 Sid Shishido, N6AQC, and Robin reported they would be at Red Cross at 0545 the following morning. They would take the following morning shift to noon if necessary. At 2345, Ray and Roger were relieved by Jim Edds, KA6G.

Luckily, things slowed during the night. The winds died down and things were once again under control. At 0545, Robin and Sid relieved Jim and wrapped it up at 0720 hours when the fire captain in charge approved secural.

Many thanks go to all the radio amateurs who participated, as well as those who volunteered to stand by to help if needed.

As Emergency Coordinator of the North Orange County ARES, I am proud of every one of them and am thankful there are such dedicated people in the group. I am also grateful to the press media such as the **Los Angeles Times** and the **Orange County News** for giving the volunteer amateurs some of the recognition they deserve. □

On page 39 of last month's issue, Norm Chalfin, K6PGX, was given credit for writing "Voyager imaging of Saturn." The actual author of that article is Mary Beth Murrill, of the JPL Information Office. □

Reunion held at Sunset & Vine

Lenore Jensen, W6NAZ

The daily net on 7190 kHz at 1700Z of (mostly) retired NBC engineers held a semi-annual reunion on 25 October at the clubrooms of the Pacific Pioneer Broadcasters, a Show Biz organization to which most belong. The site is that of NBC Hollywood's former and famous location, Sunset and Vine.

Members of the daily net that meets on 7190 kHz at 1700Z are shown here, along with their wives, at their semi-annual reunion in Hollywood. *(photo by Bob Jensen, W6VGQ)*

"Swapping lies" and cheered on by their XYLs, the gathering included Jack Burrell, K6WO; Jim Platz, W7HA; John Knight, W6YY; Ralph Clements, K6AB; Oscar Wick, N6LX; Lloyd Hockin, W6TKK; Al Korb, W6OSH; Leon Fry, WB6JTR; Ed Callahan, W6KO; Bob Daly, W6TVG; Rod Meyers, N6BXF; Bill States, K6BG; Jim Brown, W6VH; Ed Holm, K6II; Russ Butler, ex-W6ENX; Wendell Seward, W6LBC; Vince Hultman, W6QK; Russ DeBaun, W6KOV; Vern Thompson, W6ZJU; Bob Jensen, W6VGQ; Bill Palmerston, K6BWJ; John Stagnaro, W6MAB (ABC); and Harold Jones, W6BWH.

Almost 1,000 man-years of network service were accumulated by those shown along with untold hours of ham-net time!

A cross-country NBC gathering holds forth daily at 1500Z on 14,265 kHz. □

Sea Rescue

(continued from page 2)

the only means of communications on the yacht was the ham rig (a Kenwood TS520S), other efforts had to be made.

A situation report from the yacht at 1545 hours was recorded and can give some idea of what those on board must have been going through, bearing in mind it was night time and the very heavy weather:

"We are in danger of sinking, we took about 180° roll, broke in a window in very heavy seas. The bilge pumps are both not functioning. We're trying to pump by hand. We've got a lot of water on board. We will sink. We could sink any minute . . ."

Tony advised the yacht that everything was being done and that transmissions should be kept to a minimum to conserve battery power. Anderson Air Force Base asked the yacht for a long count to try and get a D.F. fix on the yacht.

Phil spoke to the local Coast Radio Station run by Cable & Wireless advising them of the frequency and asking if they had D.F. capability. The coast station was unable to assist in this; neither could they transmit on the ham bands. The next call was to another radio station in Hong Kong, who in previous years had been able to D.F.; however that facility had subsequently been disbanded. After that, the staff officer operators of HMS TAMAR — the local Royal Navy Shore Station was advised of the situation. Lt. Commander Charles Freeman happened to have with him Lt. Commander Peter Decker, USN liaison officer, and he was able to advise that the U.S. warship *Henry B. Wilson* was due in Hong Kong in the morning. On hearing of this, Phil (VS6CT) called Anderson Air Force Base, advising them of the fact and requesting that the destroyer be advised through their networks of the situation.

At 1615, the yacht gave a report that she was "making about 3 knots towards Hong Kong somewhere south of Hong Kong. A monstrous wave just tried to turn us over, we have 2 feet of water above floor boards. We have a 50-50 chance of staying afloat." Phil reassured them that everything was being done. At 1715 the U.S. warship *Henry B. Wilson* (NFZT) came up on frequency and assumed the role of "On Scene Commander".

As the yacht's EPIRB was supposed to be operating on 121.5 MHz and 243 MHz, Phil advised the duty supervisor at Kaitak Airport in Hong Kong of the distress and asked if there were any aircraft due in or out. None were scheduled at this time. Subsequently it was found the Beacon was faulty and probably never operated, as no signal was ever heard.

While all this had been gong on, Tony (VS6AG) had been monitoring and attempting to keep the frequency clear from any other QRM, his equipment on ICOM 701 with an FL2100B linear into a TH3MK3 beam from Hygain, having a bit more punch than VS6CT's Yaesu FT301D barefoot into a ground plane on the top of the apartment block.

At 1600Z, the Marine Department advised the Royal Hong Kong Auxiliary Air Force of the situation and that if the yacht was not found during the night they would be tasked for an Air Search at daybreak.

Throughout the night, attempts were made to D.F. the yacht and flares and rockets were set off by both the yacht and the *H.B. Wilson*. At 1815 hours the warship reported a radar contact in the expected area of the distressed yacht some 50 miles away.

By 1900Z (0300 local), things had quieted down. Phil was not copying *Gambit* anymore so he went to bed, leaving Tony guarding the frequency. QRM was quite bad at times, especially during the next morning, and a number of amateur stations had to be talked-off the frequency. Tony subsequently stayed up until 0600Z 12/12.

At 2110 it was ascertained that the *H.B. Wilson* had the wrong contact and she turned north to search that area.

By 2130 it was realized that some backup would be necessary at daylight and aircraft from a U.S. airbase were alerted.

At 0015 the Cessna Titan of the Royal Hong Kong Auxiliary Air Force left from Hong Kong, and by 0245 both the Titan and a United States P3 Orion were doing radar sweeps down the line of positions taken by the various D.F. fixes, several sun sighting by the yacht, and the estimated position from information fed to the computer. The *Gambit* started to "shoot the sun" more frequently in the hope of getting an accurate fix when the sun was at its highest.

A Guam operator Paul (KG6RN) contacted the *H.B. Wilson* and advised that Dean's wife was in his shack; she was able to communicate with Dean and they reassured each other. *Gambit* was flashing mirrors in the sun in the hope of attracting attention as it was very difficult to see a white yacht amongst all the breaking waves, and a radar contact was not certain because nothing large could be hoisted on the yacht because of the conditions. *Gambit* eventually got a good fix at 0412Z. The position obtained was now the center of a more vigorous search until, at 0517, a navigational error was detected and the search was moved nine miles to the east.

The search continued, but by now things had become more ship-shape aboard *Gambit*. A generator had been going for an hour to boost the batteries and most of the water had been hand-bailed out.

When Phil came home from work at 0755, the first thing heard when switching on the rig was that *Gambit* had just been located by an Orion aircraft approximately 102 miles away from the original position where 18½ hours previously she had called her first "Mayday". Within 30 minutes, the *H.B. Wilson* was in the area, and by 0900Z all four crew members were safely on the motor boat of the destroyer.

"I didn't know grey was such a beautiful colour" was Dean's last transmission. The wives of three of the crew on the *Gambit* had been in the shack of Paul Abbate, KG6RN, at Guam following all the rescue attempts and everyone was extremely happy to hear the patch between USN *Henry B. Wilson* and Guam when all personnel were safely on board the *Wilson*. The yacht was abandoned to sail on with her life-saving Kenwood TS520S.

**Note that unless stated otherwise, all times quoted are GMT.*

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Margaret Nally, VK2VZJ — an Australian visitor.

A visit from 'down under'

S.E. "Sel" Carlson, KA6ERF

Margaret Nally, VK2VZJ, from Coffs Harbour NSW, visited the United States from 31 August to 15 October. Her headquarters were at the QTH of "Sel" Carson, KA6ERF, in Napa, California.

While here, she received a cablegram from VK2EP that she had passed her examination for a full call (same as Extra Class here).

Margaret enjoyed the Hello Hollywood Hello show at the MGM, and saw Virginia City and Lake Tahoe during one side-trip. Oregon was given a brief tour and Yosemite Park was a thrill for her.

VK2VZJ was in the Australian Navy as a communications specialist for four years in the '50s — her fine CW fist is quite well-known to many U.S. and Canadian amateurs. Get-together dinners were held in Napa, Eureka, Los Gatos and Hollywood, where Larry Andrews, KA6ERE; Roy Harrison, AA6W; Valentine West, WB6VVZ; Carol Botz, KA5GIS; Steven Estes, WB7OWN; Peter Sutter, WD6GHZ; Rolph Stoddard, W6TWO; James Alley, WN7UMU; David Ross, KA6FCP; and many others met with her. A highlight of the vacation was a sailboat picnic on the *"Wild Spirit"* with skipper WD6GHZ in San Francisco Bay.

Margaret was thrilled to have a reunion with a buddy she had not seen in 26 years — Valerie in Oceanside, California, with whom she had served in the Australian Navy. While in Oregon, a visit was made to the QTH of Carmen Brand, WB7UGU. In Hollywood, she enjoyed dinner at the Spaghetti Factory. Her headquarters while in Gardena was with Milt, the brother of KA6ERF, who spread it on thick with barbecues and gourmet dinners.

Our Australian visitor sold the Banana Republic, as Coffs Harbour is referred to, to many in the United States. Upon her departure from Napa, she bestowed me with the badge and certificate conferring the ORB honour — Order of the Ripening Banana — only bestowed to one judged to be of Presidential potential, business acumen, good luck or common sense.

Many CW contacts were made on the Novice bands of 40, 15 and 10 meters while touring, and there are many who will fondly recall the 2-meter QSOs with the charming lady from down under. Her accent was so feminine and sweet she was never without a caller who bid her welcome to our country and pointed out the interesting sights to see in their respective areas.

I can vouch that whenever Australia has amateurs like VK2VZJ to send to the United States, we will always welcome them with open arms. □

Island DX Award

The Island DX (IDX) Award, sponsored by the Whidbey Island DX Club, is available to licensed amateurs and Shortwave Listening Stations worldwide.

Awards are issued for two-way CW, two-way SSB, two-way SSTV, two-way RTTY, and Mixed and Single Band accomplishments.

Fifty (50) IDX Islands are required for the Basic Award. Endorsements are given in increments of 50 islands, up to and including the maximum number of islands possible. All DXCC countries which are bonafide "islands" are the only qualifying contacts.

To be valid, all contacts must be made after October 1977.

To apply, prepare a list of contacts in prefix order. Include the call of the station worked, IDX Island name, band, mode, date and GMT. **PLEASE NUMBER YOUR CONTACTS 1 through 50, etc.**

DO NOT SEND QSL CARDS!!! Have your list verified by two amateurs or local radio club official. Confirmation of each contact must be in applicant's possession and confirmed by verifying signatures.

Send your verified list of contacts with $4 in U.S. funds and a large SASE to the following address. Foreign stations may substitute the fee by enclosing 10 IRCs.

Whidbey Island DX Club
2665 North Busby Road
Oak Harbor, WA 98277

Rules governing this award program are reviewed annually in September. Please enclose an SASE with any inquiries regarding this awards program. □

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

World-wide DX contest

Dear Hams and other friends,

We concluded our operation as W6QL/SV5 yesterday. We were on the air just 16 days, and during that time, we made 6,500 QSOs with amateurs in 133 countries. As usual, we were about half the time on CW and half the time on SSB, using all bands available to Greek amateurs.

The tourist season in Rhodes is from April through October. This turned out to our advantage because we obtained a room in a hotel that was actually closed, and we were the only occupants in a large three-story hotel. We had no TVI, BCI nor worries about making noise since there was no one within 1,000 feet of us. Rhodes is located very near Turkey, and we could look across the water and see the hills of Turkey.

Entirely by accident and with no pre-arranged schedule, Iris worked what may be an all-time amateur record for communicating with all continents of the world under such conditions. On 2 November 1980, operating as W6QL/SV5, on 14 mc, SSB, Iris worked the following stations: 4Z4DT 0542Z, EA9IE, 0543Z, SP5XM 0544Z, W2LU 0544Z, VK2BVD 0545Z, YV5HAT 0545Z; all continents of the world (WAC) were worked in **THREE MINUTES.**

From here, we go to Israel. We will operate from there for the CW portion of the CQ-WORLD-WIDE DX CONTEST.

73 es 88
Lloyd Colvin, W6KG
Iris Colvin, W6QL □

40 meters in New Zealand

New Zealand has advised that the New Zealand Post Office continues to allow ZL amateur stations to operate in the band 7100 to 7300 kHz.

This special permission is given on the strict understanding that amateur stations working in this part of the 40-meter band do not cause interference to broadcasting services.

— Break In, NZART □

DX communications information

James J. Coleman, KA6A

It has been argued many times that most QSOs with DX stations are simply an exchange of signal reports and that the international brotherhood of Amateur Radio is largely a myth. Some amateurs do, indeed, want only short contacts. However, there are probably many amateurs who just do not know enough about the countries they are working to carry on a longer conversation. Even if your only concern is the QSL card, some of the big guns will tell you that a DX station is more likely to QSL if the contact is interesting.

There are obviously a number of ways to alter this situation. One way to learn some more information about the various countries you might work is to take a few history or political science courses at the local university. Another is to keep your set of encyclopedias near the radio. I think I have found an alternative solution that is not only useful in the shack but may be useful as well for your school-age children.

The United States Department of State publishes a series of background notes on every country of the world and selected international organizations. There are a total of 160 notes which are updated regularly. Each note is four to six pages long and includes a map and concise information on the history, geography, culture, government, politics, and economy of each country. The key word is concise and each section, though not long, has a large amount of interesting information. There is also a short section for potential visitors.

The notes are punched for a three-ring binder and the complete set could easily sit along-side your radio for ready reference. A subscription (1 year, about 75 notes) is available for $16 from the U.S. Government. For information write to: Background Notes PA/PC, U.S. Department of State, Washington, D.C. 20520. □

Silent Key

Bill Grenfell, W4GF

Many mariners have heard the familiar voice of John McKinley, W3OB, coming in over the maritime net as a control operator several years back. John was formerly from Pittsburgh. He became a Silent Key on 13 November 1980.

Expressions of sympathy may be sent to his daughter, Mrs. Charles R. Jenner, RFD No. 1, Hazelgreen, Wisconsin 53881. His voice will be missed by many who check into the mariner mobile net. □

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Tornadoes = (TV2+Hams2+NWS2)½

Vince Luciani, K2VJ

Although the title equation is a fiction, its parameters are quite valid and there is a relationship to be demonstrated.

Few readers may have correlated the inconspicuous item on page 11 (**Worldradio,** September 1980) with the front-page article on severe storms, by Cortney Decker, D.D.S., WB9QVU (same issue). The former was an incomplete reference to the use of a TV set in detecting tornadoes (known as the 'Weller Method,' after its inventor, Newton Weller). The latter, for those of us who know, was a vivid account of yet another hair-raising public service performed by the Amateur Radio community — the saga of the 15 July Wisconsin severe storm/tornado strikes.

There is much more to both articles than meets the eye. The following may help establish the relationship of these stories to each other and to my invented title equation. I'll explain. But first, be advised that tornadoes have struck and can strike in every state. No state is immune from them; therefore, the subject of tornadoes is pertinent to all.

The discovery of using a TV set to detect tornadoes was a contribution from Newton Weller, West Des Moines, Iowa. Having interviewed Weller in the past, I can say there is need to clarify the Weller Method to the public, for it is being repeated in too many places, all too incompletely.

And how do I, a radio amateur from the 'non-tornado' country of South Jersey feature in all this? It is from my involvement which began, innocently enough, with an item in our local club bulletin which described the Weller Method, while incorrectly listing Weller as being an Amateur Radio operator. He is a tinkerer and an experimenter in the truest traditions of Amateur Radio, but he is **not** a member, nor was he ever. The club item sparked my interest, nevertheless — an interest which ultimately consumed six months of studying, researching, interviewing, sifting and finally, some writing. What I have found bears repeating.

Weller first announced his discovery about a dozen years ago. He and an associate, Paul J. Waite, Iowa State climatologist, delivered a paper to the American Meteorological Society. Weller also gave the story to a local newspaper on what turned out to be a fateful day, as soon afterward, several tornadoes struck nearby, giving Iowans a first-hand opportunity to check him out.

Weller offers these directions for using your TV set as a detector of killer tornadoes:

1. Tune in channel 13. Adjust the brightness control of your TV set to where the screen is nearly black (some color sets may not respond properly.)

2. Switch to channel 2, but don't touch the brightness control again. The set should still be nearly black.

Basically, what you are doing is calibrating the brightness level of your set to channel 13, which does not pick up tornado electrical radiation. You then monitor on channel 2, which **can** pick up tornado radiation.

"After your set is calibrated, you sit and wait," says Weller. "If it suddenly flashes on brightly during a tornado watch and stays bright, **move fast.** That's the indication that a tornado is down within five to fifteen miles of you."

While a tornado is still aloft, the TV set shows a snowy screen with either constant or wavering snow. But when the tornado touches down, the screen goes solid white or flickering solid white like a fluorescent tube.

The distance at which the TV set can detect a killer tornado depends upon the antenna in use, the direction in which it is pointed, and the strength of the tornado's electrical radiation. A good outside antenna, properly pointed, could pick one up as far as 25 miles away.

If there is a local station on channel 2, the darkened screen is likely to switch back and forth a few times between brightly lit (from tornado radiation) to the local TV program, even though the brightness has been turned down. But, if the tornado nears, the screen will then stay brightly lit.

"For those on cable TV," advises Weller, "disconnect the cable from in back of the set and connect the built-in rabbit-ears antenna."

In several conversations, Weller repeatedly expressed concern over the rejection of his method by the National Weather Service (NWS). And that was when I knew I had something by the tail — a something that turned out to be as elusive as a twister.

After next talking to NWS officials from several offices, I began to appreciate a need to attempt some unbiased reporting. It has been difficult, and I may not have succeeded. Time will tell.

NWS, you see, won't (and perhaps, really can't) sanction anything but a totally guaranteed method of tornado detection for public use. Their reasoning has something to do with the bureaucracy and with their desire to have the public stay with officially sanctioned tornado practices.

"Of course, the TV set won't work on a weak tornado where the electrical energy is too low," says Weller. "But that weak tornado won't usually do much more than lift the roof off a hog shed. Even a straight windstorm will do that. The TV set **does work on killer tornadoes, and they** are the ones that count." In contrast, NWS wants an unrealistic guarantee to cover all situations.

Technically speaking, you need to know that tornado electrical radiation has a wide passband from the low frequencies (LF) to the very-high frequencies (VHF), reaching up to about 100 MHz. The peak, however, is centered around 50 MHz, which is directly below channel 2, and that's a mighty important bit of information, as you may now suspect.

In reviewing research papers which dealt with tornado electrical radiation, I ran into difficulties. I had asked for and had hoped to obtain results of a TV-set evaluation. No luck. That which they sent described NWS experiments using detectors in the LF range (strike one); they used highly selective receivers (strike two); and they didn't use a TV set (strike three). In fact, they should have been listening around 50 MHz, and they needed to have used broadband detectors. After all, the TV set as a detector coupled to the human eye as a sensor is an incomparable wide-band integrator. This feature is a basis for Weller's invention.

Has NWS ever evaluated the TV technique for tornado detection? Weller says they have, but that they still refuse to accept it. This is an unfortunate closed-mind approach. NWS should publish their findings. They cannot say it doesn't work, for that, too, would be an incomplete statement. They should qualify the TV set technique — the Weller Method — so that it is completely understood and properly used by those who choose to use it.

I remain convinced that NWS really does try harder. I could tell, from the mounds of research papers I had to wade through; papers which obviously were addressed to peers; papers in which the affinity for intriguing charting drove me nearly mad in attempts to extract meaty, simplified substance.

ing for it: 1) radars (somewhat ancient) with which to detect tornadoes and severe storms, and 2) a network of spotters in an organization called "Skywarn."

About those radars . . . it wouldn't be entirely accurate to infer they were originally designed to spot U boats, but they are old. They are mostly conventional tube-type pulsed radars which have an inherently high rate of false alarms to tornado detection. False tornado alarms indirectly kill people because it is human nature to be turned off by excessive cries of "Wolf".

NWS proposes to replace those pulsed radars with modern Doppler radars. (Doppler radars are inherently motion detectors, and a tornado in action is motion in action.) The Dopplers will offer a three-fold improvement in reduction of false alarms. They will also offer a ten-fold improvement in providing advance warning time. Advance warning saves lives.

Unfortunately, science seems to have been placed on hold by economy-seeking politicians beginning the day we accomplished our man-on-the-moon objective. We are only now beginning to see a return to science for a fix on our latest earthly problem — energy.

Doppler radars will cost $250 million and will need ten years work to make them fully operational in an extended network. Will we ever get them? We certainly need them.

But look at NWS's other key resource — Skywarn.

What classification of citizens do you imagine has turned out in the largest numbers to provide the most overwhelming, competent support? Enter Parameter Two of the equation: **Amateur Radio operators!** Over 2,000 are mobilized in Texas, alone, to assist NWS. Amateur Radio operators are credited with having saved 1,000 to 2,000 lives by their dangerous but vital contributions in the tornado strikes at Wichita Falls, Texas, in 1979. Amateur Radio operators have the only totally **reliable** communications network in and throughout the world, and I include the talents of every military force and government in the world when I make that claim. As one minor example, there is our 2-meter FM equipment which gets through tornado electrical radiation when other services (such as CB) cannot. There are many other instances in which we have excelled, communications-wise.

In my interviews with meteorologists from the Ft. Worth/Dallas and San Antonio offices, they raved about the fabulous people and of the dedicated equipment offered through Amateur Radio. They spoke well not only of what we have done and are doing, but also of what we can be counted on to do. (I delight in using the possessive plural in those statements, even though I am not a member of Skywarn. I am simply much too pleased with the public services offered by my associates to disassociate myself from them in any way.)

We're good, folks. We're damn good!

Now, then, take another look at the article on the Wisconsin severe storm/tornado strikes. Six months ago, I might have read it with bland interest. Today I read it with my heart in my throat. My God! They risked their lives by spotting tornadoes from the tops of tall buildings! The first rule of tornado safety, you should know, is to head for the lowest floor of any structure — for several good reasons.

Twenty minutes of devastation that day in Wisconsin left untold damage, but only one death. I quote from the article: "Early warning by the Skywarn weather (Amateur Radio) net was probably responsible for the number of personal injuries remaining so low."

I have wondered, of late, how many Amateur Radio operators throughout the country are members of Skywarn. A census should be taken to firmly establish this service in the eyes of the public and of governing officials everywhere. Perhaps if we did, we would then have less threats such as that of the Winslow Township caper (p. 3, September 1980 **Worldradio**).

If a census isn't already done, I'm willing to volunteer myself for the job. Clubs should send to me such information as club name, location, number of members in Skywarn, equipment capabilities, past incidents supported, date service started, and whatever else may be cataloged.

If readers are interested in learning the clear, no-nonsense facts about tornadoes,

(please turn to page 10)

FCC HIGHLIGHTS

Bill Grenfell, W4GF

The current refund program includes $20 license fees. My November Highlights report was in error in that it should have included, not excluded, $20 license fees paid FCC between 1 August 1970 and 28 February 1975. Forms and instructions may be obtained by writing to: FCC Fee Refund Program (Phase II), Box 19209, Washington, D.C., 20036 or by calling (toll-free) 800-424-2901 (Metro D.C. area 653-8515). The fee paid must have been not more than $20 but at least $4.

•

ARRL requests that FCC delete 160-meter band power restrictions for amateur stations ". . . at the earliest possible opportunity . . ." The League's "Request for Agency Action" pointed out that the Commission was empowered to delete the 1800 - 2000 kHz powersub-band limitations by simple Order. "As the priority of the LORAN-A is now essentially non-existent, according to the U.S. Coast Guard, it would seem proper for the Commission to issue an order eliminating the restrictions."

•

FCC will look at the 1850-2000 kHz band for a navigational warning service presently operating on 518 kHz. A statement to this effect is in FCC's Notice of Inquiry, Docket 80-184, concerning preparations for the special World Administrative Radio Conference (WARC) on mobile communications, scheduled for March 1982 in Geneva.

Use of digital techniques in the bands above 50 MHz, in addition to Morse, Baudot and ASCII, is requested by ARRL in its RM-3788 petition on file at FCC.

•

FCC alleged fraud was committed by 14 amateurs who obtained or attempted to obtain, (or participated in such activity), new or upgraded amateur licenses without examination, about five years ago. Thirteen had their operator licenses suspended recently and must "show cause" why their station licenses should not be revoked. One must show why his license should be renewed.

•

Amateur stations installed at commercial broadcast facilities should be clearly permitted by the rules, for the limited purpose of supplying emergency information during an official activation of the Emergency Broadcast System. Claiming the present rules are unclear, the Amateur Radio subcommittee of the National Industry Advisory Committee has recommended that FCC amend its rules to ensure such installation and operation. (From ARRL's *AMATEURADIO*, November 1980 issue).

•

A request for 160-meter band radio printer operation was denied by FCC at their 6 November 1980 meeting. The changes in the band due to implementation of WARC-79 provisions during the next year or so, was given as the reason for not granting the request now (RM-3240).

•

The senate may have deleted the money needed for FCC's move to Virginia, just across the Potomac River from the District of Columbia. FCC is now located at four different buildings on "M" Street and 20th Street in northwest D.C. However, one FCC staffer advised me that as of 1 December, an action to restore the move budget addition looked as though it was going to succeed! However, the latest word is that the new location has been rented to some other party!

•

Commissioner Robert E. Lee apparently is to be appointed the interim chairman of FCC until the incoming President selects a permanent Chairman. The current Chairman, Charles D. Ferris, a Democrat, has announced that he will leave the FCC, in which case the President elect will almost certainly select a Republican to replace him. Commissioner Lee's regular term is up 1 July 1981, and he is said to be considering retirement at that time. Commissioner Quello's term was up last July, but whether he will be reappointed or replaced had not been determined at the time this was written. Therefore, it is possible the new President could have the opportunity to choose three new Commissioners out of the seven, soon after he is inaugurated. There are seven Commissioners, serving seven-year terms, and the terms are staggered so that each year one Commissioner is due for re-appointment or replacement.

•

The 220 MHz band is again being eyed by other Services according to the 14 November 1980 issue of *HR Report*, as "current rumors from Washington". The so-called typo in FCC General Docket 80-1 Notice which proposed 216-225 MHz for inland waterways use was cited by *HR Report*. Also mentioned by *HR Report* was a December *Popular Electronics* article on cordless phones, which says manufacturers are looking to FCC for new frequencies in either the 27 or 220-225 MHz bands for these devices!

•

Use of the 420-450 MHz band for radiolocation (for offshore oil exploration) was made permanent by FCC at its 6 November 1980 meeting, Docket 80-135. Opposition comments were filed by amateurs.

•

Use of the 50-54 MHz band for model control by non-amateurs was rejected by the FCC at its 6 November 1980 meeting. The Academy of Model Aeronautics had petitioned for such operation by any person if under the supervision of a licensed amateur. Although third parties may communicate via an amateur station with a licensed amateur supervising, a one-way control transmission is not a third party communication and therefore not permitted for unlicensed persons. This was the basis cited for the Commission's action.

•

The draft "plain language" amateur rules were approved by the Commissioners at their 18 November 1980 meeting. Three significant changes were included: 1) no logging would be required; 2) the basic requirement that a licensed station must be available for FCC inspection is spelled out; and 3) every amateur would be required to have a copy of the current amateur rules (Part 97). The Notice of Proposed Rule Making (NPRM) PR80-729 may be in the 19 December 1980 Federal Register. Because of its size (it includes both present and revised text plus explanations) and resultant cost, availability of copies may be limited. Comments are due by 19 June 1981, replies due by 19 August 1981. I hope to have better news on a source for obtaining the Notice in the February Highlights.

•

Amateur operator license examination grades have shown only slight changes over the past several months, with Advanced and Extra climbing slightly in the 40-50 percent and 50-60 percent (respectively) passing grade brackets. Element 3, General or Technician, grades are steady in a 45-55 percent passing bracket, whereas the combined elements 2 and 3 examination grades — where a candidate with no license tries to go all the way to Technician or General in one sitting — for some reason have been in the 60-70 percent passing bracket! The new fill-in-the-blank code tests have caused a slight drop in the 13 wpm test passing rate, previously around 50 percent. However, it is thought to be a bit too early in the history of this style of code test to have a good idea of what the long-term rate will be.

•

Amateur Service interference problems which seem to predominate are: 1) amateur to amateur, and 2) amateur to home entertainment equipment, according to the Investigations Branch of the FCC's Field Operations Bureau. The level of deliberate amateur-to-amateur interference in the high frequency bands seems to remain about the same, in that those caught and put off the air are apparently being replaced by newcomers at this sick practice. Complaints of deliberate interference in the 2-meter band seem to be growing and there is some increase in the interference to home entertainment equipment.

Some operators who have gone to the trouble to limit the access to their repeaters via PL or other tone access codes, to prevent violative use of the repeater, complain that non-members record and use the access tones to actuate the repeater. They ask: Do they have the right to expect FCC to help them protect their operation by issuing violation notices when an "outsider" does this without permission? At present, the answer is yes. FCC will issue a violation notice if the outsider deliberately interferes with a communication already in progress. Otherwise, present policy is to tell the owner/licensee the burden is entirely on the control operator. □

Tornadoes

(*continued from page 9*)

I've compiled them in a book called, **Tornado-Wise!** It has an informative chapter on how to prepare in advance for a tornado, some points of which have been in dispute. (For example, do you recall which side of the house you were advised to seek shelter during a tornado strike? If you pick the southwest side, you could be dead wrong — literally.)

The book also describes the Weller Method in detail; and, it gives a rundown of the Lone Star amateurs who have done so much for NWS in Texas. It also tells something of the generation and maintenance of tornadoes, a subject on which we know astoundingly little. Tornado characteristics and statistics are also given; what months to expect them, on average; where they usually strike; how long they stay around; how destructive they can be, and more.

Another feature of the book offers the potential for public service. The book contains a reader survey form designed with inputs from Paul J. Waite, Iowa State Climatologist. Waite conducted the only published survey of the Weller Method on record, but that was back in 1969. He has graciously consented to receive these Reader Survey Forms from **Tornado-Wise!** readers in order to conduct an updated survey from those who have experienced the Weller Method in the past.

Questionnaire

This questionnaire is directed toward those who have used the Weller method in the past. The information you provide will be an invaluable public service.

Please note, below, the proper address to which these questionnaires are to be forwarded.

Use additional questionnaire forms or comments should you have had more than one Weller-method experience.

Your name and address:

Weller method:

1. Did your TV screen go bright? _____
2. Did you properly adjust your TV set according to directions?_____

The tornado:

3. Date of tornado? _____
4. Is this an exact date _____ or an estimated date?_____
5. Approximate local time of tornado?____
6. Estimated nearest distance of tornado to you?_____
7. Did the tornado funnel touch down? __
8. Size of tornado? Weak____, moderate____, strong____
9. Was tornado size officially confirmed_____ or personal estimate? _____

Your TV set:

10. Brand name?_____
11. Model year? _____
12. Color set? __or Black-and-white?____

Your TV antenna:

13. Was your TV antenna outside? _____ Indoors?_____Cable TV?_____
14. If outside, was it facing toward_____ away from tornado?

Your opinion:

15. Based on this experience, do you believe the Weller method to be useful?

_____

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Worldradio is a two-way communication. Send in Amateur Radio information and news. Share your knowledge with your fellow amateur and Worldradio reader. We are most interested in your comments and suggestions. We would appreciate being placed on the mailing lists of amateur club bulletins.

COMMENTS

Please forward questionnaire to: Mr. Paul J. Waite; State Climatologist; Iowa Dept. of Agriculture; Rm. 10, Municipal Airport; Des Moines, Iowa 50321.

The book is available only from Cologne Press, P.O. Box 682, Cologne, N.J. 08213. Price is $3.95, plus $1 shipping/handling; Amateur Radio operators get a discount price of $3, complete; publisher will pay shipping charge. ☐

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Amateur Radio call signs

Amateur Radio operators have continually expressed an interest in what are the latest call signs which have been systematically assigned. To further our policy of making the new call sign assignment system public, a list of the last call issued, by group, for each radio district and non-contiguous area is published. The following is a list of the last call signs assigned as of 1 November 1980.

Radio District	Group A	Group B	Group C	Group D
0	KF0Q	KB0SL	N0CCP	KA0JSR
1	KA1Q	KA1MI	N1BFT	KA1GEK
2	KI2P	KB2UX	N2CDZ	KA2KPE
3	KB3Q	KB3MI	N3BNT	KA3GMU
4	NF4H	KC4QV	N4DWG	KA4SHK
5	KM5R	KC5CV	N5CNB	KA5KKA
6	KS6E	KD6MW	N6DQK	KA6NQH
7	KE7O	KB7QV	N7CCK	KA7JBG
8	KI8R	KB8WU	N8CEV	KA8LIO
9	KC9R	KB9SB	N9BTQ	KA9JNY
N. Mariana Is.	AH0A	AH0AA	KH0AC	WH0AAE
Guam	AH2J	AH2AF	KH2AM	WH2ACR
Johnston Is.	None	None	KH3AB	WH3AAB
Midway Is.	None	AH4AA	KH4AC	WH4AAF
Hawaii	NH6I	AH6CD	KH6KZ	WH6ANE
Amer. Samoa	AH8A	None	None	WH8AAK
Wake Wilkes Peale	None	None	None	WH9AAA
Alaska	NL7O	AL7BM	KL7KQ	WL7AOA
Virgin Is.	KP2B	KP2AC	NP2AH	WP2ACG
Puerto Rico	NP4E	KP4BT	NP4BL	WP4BQD

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13.8 VDC power amplifier...$149.00

Specifications:
Frequency Coverage: 440 to 449.995 MHz
Channel Spacing: 30 KHz minimum
Power Requirements: 9.6 VDC
Current Drain: 17 ma-standby 400 ma-transmit (1 amp high power)
Antenna Impedance: 50 ohms
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Supplied Accessories: Rubber flex antenna 450 ma ni-cad battery pack, charger and earphone
RF output Power: Nominal 3 watts high or 1 watt low power
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Tempo S-1

The first and most thoroughly field tested hand held synthesized radio available today. Many thousands are now in use and the letters of praise still pour in. The S-1 is the most simple radio to operate and is built to provide years of dependable service. Despite its light weight and small size it is built to withstand rough handling and hard use. Its heavy duty battery pack allows more operating time between charges and its new lower price makes it even more affordable.

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*For use with S-1 and S-5

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With an S-2 in your car or pocket you can use 220 MHz repeaters throughout the U.S. It offers all the advanced engineering, premium quality components and features of the S-1 and S-5. The S-2 offers 1000 channels in an extremely lightweight but rugged case.

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S-20...$89.00

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Boost your signal. . . give it the range and clarity of a high powered base station. VHF (135 to 175 MHz)

Drive Power	Output	Model No	Price
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30W	130W	130A30	$199
2W	80W	80A02	$169
10W	80W	80A10	$149
30W	80W	80A30	$159
2W	50W	50A02	$129
2W	30W	30A02	$ 89

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Please note, as of Dec. 1, 1980 we will occupy our new world headquarters building with a new Los Angeles address and phone number.

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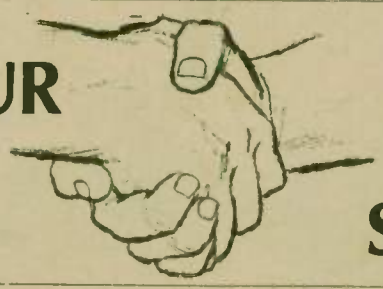


Boston 350 parade

Jim Hatherley, WA1TBY

As Boston was closing its 350th birthday celebration, one of the events scheduled was a parade, and they wanted it to be something special — a big one. The Massachusetts Army National Guard was given the assignment to organize this parade. As the time neared the parade date, the number of units entered had swollen to huge proportions.

Realizing the need for dependable communications, so vital to the success of such a venture, the Guard called on the amateur fraternity for help. The Wellesley Amateur Radio Society responded to this call.

After several meetings with the Guard's higher echelon, a communications plan was devised by Dick Paret, WA1ZLQ, with Jim Oliveto, WB1DSF, who is also in the National Guard. The plan was designed to cover all the needs of the parade. Two meters would be the band and two repeaters — the 146.04/64 machine in Waltham and the 144.83/145.43 machine in Belmont — were used in addition to a direct frequency, 146.52. (We graciously thank the owners and users of both repeaters for their cooperation.)

In the assembly area, much work was necessary to muster each marching unit and get them to their assigned places in the parade. Since it was such a large parade, we had to have three different assembly areas: one for the marching units, one for the floats and one for the horse divisions. From these three assembly areas, it was vital to have each unit ready for the march at the appointed time. Communications proved to be a blessing in moving up the units to the tri-junction of Boylston Street, Hereford Street and Dalton Street, where they moved into the line of march from that point.

In order for this to happen, the amateurs in those areas worked like crazy to keep track of which divisions were next in line from their respective assembly areas. At one point, considerable search was made to find a mayor of a visiting town so he could enter the parade on schedule. After a while it was accomplished, and to the credit of the amateurs and their National Guard officers, they didn't miss a unit.

Along the parade route, we had still another area to be covered which was vital to keep the parade moving. Nels Anderson, K1UR, was assigned to this officer and gave a good account because if the parade was halted or slowed down along the route, it meant considerable delays in the assembly areas. This officer in charge was right on the ball and covered a lot of ground doing his job.

At the end of the parade, we had still another critical area — the dispersal area where finishing marchers had to be loaded aboard their transportation and moved out of the area to make room for the next finishing units. Again, this meant a lot of running around by our group to locate the proper bus or truck which would contain each finishing group. Again, they worked in clock-like precision and did another magnificent job.

Another problem which came up was one of those unforeseen things. It was a warm day, and some of the marchers began to pass out from heat prostration, creating a need for ambulances, as well as a water buffalo — a water-carrying vehicle of the National Guard.

All units from the assembly area to the dispersal area were coordinated at the command post of Colonel Dolan through the Belmont repeater; the assembly areas used the Waltham repeater and dispersal used 52 direct.

It all went smoothly for the most part and the National Guard — a little apprehensive at first as to the capabilities of the Amateur Radio groups — were delighted to see things go as they did and another feather went into the hat of Amateur Radio.

We are extremely proud of our guys as they did one heck of a job and a hearty WELL DONE doesn't seem adequate to laud them on their dedication and ability during the long 10- to 12-hour day.

We, the Wellesley Amateur Radio Society, wish to thank you one and all for your help. It was greatly appreciated and showed the true spirit of Amateur Radio is alive and doing well. Thank you.

Amateurs who gave of their time and talents (and I hope I don't overlook anyone), were N1ADY, KA1AHD, N2AWG, N1AWX, KA1BTV, WB1BUM, KA1CGP, KA1COA, WB1DNZ, WB1DXT, WB1EET, WB1EPH, WD9ERI, WB1EZT, WA1GBN, K1HBJ, K9HI, AK1I, WA1IGL, K1OGF, K1OIQ, K1PAD, WA1PQY, WA1QQV, AJ1R, WA1TBY, K1TK, WA1TUX, WA1UGJ, K1UR, WA1VSY, WA1YHV, WA1YOJ, W1YSW, AB1Z, WA1ZLQ, WA1ZVA.

We would also like to extend our congratulations to the Massachusetts National Guard who did an outstanding job of their own and wish to publicly thank them for allowing us to offer our help.

And, finally, an idividual WELL DONE to Dick Paret, WA1ZLQ, who put in a lot of hours planning — telephoning amateurs and Guard personnel to make sure everything would run as a well-oiled machine should. He deserves all the credit in the world for coordinating such an effort. 73 to all.

—*Spark Gap, Wellesley ARS*

What's it good for?

Al Janneke, KBØJD, had a guest in his ham shack 22 October. To demonstrate Amateur Radio to him, he turned on his Swan 350 and found a ham to talk to on 75 meters. The Amateur Radio operator was in Minnesota where Al's brother lived, and the gentleman made a phone patch for Al (who was in St. Louis, Missouri) and the two brothers talked.

Of course, they made a schedule to do it again, and the guest found out what the hobby is good for. □

Keep radios working during emergencies

Book excerpt submitted by David Scott, W6DFS

Having a radio to receive emergency broadcasts would be a great advantage. The stations that would still be on the air after a nuclear attack would probably be too distant from most survivors to give them reliable information concerning local, constantly changing fallout dangers. However, both morale and the prospects of long-range survival would be improved in shelters with a radio bringing word of the large-area fallout situation, food-relief measures, practical survival skills, and what the government and other organizations were doing to help. Radio contact with the outside world probably can be maintained after an attack if you remember to:

- Bring all of your family's battery-powered, portable radios with you to shelter, along with all fresh batteries on hand.
- Protect AM radios by using only their built-in short loop antennas. The built-in antennas of small portable radios are for EMP to induce damaging surges of current in them.
- Keep antennas of FM, CB, and **Amateur Radios** as short as practical, preferably **less than 10 inches.** When threatened by **EMP (electromagnetic pulse),** a danger that may continue for weeks after the initial attack because of repeated, high-altitude explosions, do not add a wire antenna or connect a short radio antenna to a pipe. Remember that a surge of current resulting from EMP especially can damage diodes and transistors, thus ending a radio's usefulness or reducing its range of reception.
- Keep all unshielded radios at least six feet away from any long piece of metal, such as pipes, metal ducts, or wires found in many basements and other shelters. Long metal conductors can pick up and carry large EMP surges, causing induced current to surge in nearby radios and damage them.
- Shield each radio against EMP when not in use by completely surrounding it with conducting metal if it is kept within six feet of a long conductor through which powerful currents producted by EMP might surge. A radio may be shielded against EMP by placing it inside a metal cake box or metal storage can, or by completely surrounding it with aluminum foil or metallic window screen.
- Disconnect the antenna cable of your car radio at the receiver — or at least ground the antenna when not in use by connecting it with a wire to the car frame. Use tape or clothespins to assure good metal-to-metal contact. The metal of an outside mirror is a convenient grounding-point. Park your car as near to your shelter as practical, so that after fallout has decayed sufficiently you may be able to use the car radio to get distant stations that are still broadcasting.
- Prevent possible damage to a radio from extreme dampness (which may result from long occupancy of some below-ground shelters) by keeping it sealed in a clear plastic bag large enough so the radio can be operated while inside. An additional precaution is to keep a plastic-covered radio in an air-tight container with some anhydrite made from wallboard gypsum, as described in Appendix C.
- Conserve batteries, because after an attack you may not be able to get replacements for months. Listen only periodically, to the stations you find give the most useful information. The batteries of transistor radios will last up to twice as long if the radios are played at reduced volume.

— Nuclear War Survival Skills, by Cresson H. Kearny. Those who are interested in obtaining this book can send $8.95 (postage included) to the American Security Council Education Foundation, Boston, VA 22713. □

Amateur Radio for the handicapped

Do you have any friends or family who are seriously handicapped? Their life might be brightened by being able to operate an Amateur Radio Station. Many people who are blind, have missing limbs, are unable to speak, are confined to bed or wheel chairs have received their licenses. They have been given a new lease on life by being able to communicate and make new friends around the world.

There is an organization dedicated to helping these people. It is an international service called Courage Handi-Ham System. It consists of handicapped and able-bodied amateurs dedicated to bringing the excitement of Amateur Radio to persons who otherwise could not make it. The organization provides educational material, close personal supervision, loan of equipment and special devices to allow station operation by the handicapped.

If you want more information, write: Courage Center, Courage Handi-Ham System, 3915 Golden Valley Road, Golden Valley, Minn. 55427. The organization needs equipment, working or not, also donations to keep it going. Courage Handi-Ham System currently serves about 1,000 people worldwide. □

Turner Fire

VIP program in action

Gerhard F. Schilling, AI6I

The California Department of Forestry (CDF) has been assigned by Governor Brown to develop a Fire Prevention Volunteer Program, titled Volunteers in Prevention (VIP). In October 1980, the Riverside County Ranger Unit started to implement it and called for Amateur Radio participation as part of this program.

In response, we started to organize an Amateur Radio communications support program, centered around existing ARES and RACES groups, with the primary purpose of relieving and substituting for CDF tactical radio links and overloaded telephone lines in case of a major emergency. The alert system was to be based on the 66 fire stations in Riverside County. A first test of capabilities was planned for December, in order to be ready for possible winter floods.

At 02:08 on Sunday, 16 November 1980, an arson-caused fire broke out near Lake Elsinore and began to show very dangerous potential. CDF Headquarters in Perris decided to activate its fledgling VIP Amateur Radio support. Eventually, this so-called Turner Fire consumed 28,000 acres and, as of this writing, is still not under full control. This is therefore only a preliminary report.

Within two hours of activation on Sunday morning, amateurs established a station at Temecula where the large CDF Base Camp was in the process of assembly. This camp was the center of fire suppression operations and involved more than 1,000 fire fighters, fire engines, bulldozers, water tenders, fuel tenders, helicopters, air tankers, and support equipment and personnel from CDF, the U.S. Forest Service, Camp Pendleton Marine Base, Red Cross, and many other organizations.

Another amateur station was in operation at the CDF Supply Center in the Perris Compound, and an emergency net control position was operated from Riverside. The VIP Amateur Radio coordinator was located inside the hectic CDF Command Center in Perris. Operating in shifts, amateurs responded from radio clubs of the neighboring cities of Anza, Elsinore, Hemet and San Jacinto, Riverside, Sunnymead, and Sun City.

Three 2-meter repeaters (N6BAE/R, WD6CTX/R, and WB6FUB/R) provided excellent coverage throughout, even to an HT inside the Command Center. Cooperation from the repeater owners and normal users was so outstanding that at no time were messages interfered with or delayed. Thus, HF was on standby, but not needed.

There is perhaps no better proof of the potential contributions Amateur Radio can make in major emergencies than having the first test of a support organization, still in the planning stage, being the real thing. Ours was successful.

Both the CDF Riverside County Ranger Unit and the VIP radio amateurs learned — very fast — how best to help and assist each other. Already, the extent of watershed destroyed by the Turner Fire constitutes ominuous danger for the forthcoming rainy season in the Lake Elsinore area. A major earthquake is always a possibility. Other large and dangerous fires are certain to occur again.

The VIP radio amateurs in Riverside County are ready. Let us hope we will not be needed.

Dr. Schilling, AI6I, is the Coordinator for Amateur Radio Communications Support in the VIP Program, and ARES Emergency Coordinator — Liaison to the CDF Riverside County Ranger Unit. Contact him (Callbook address) for information or participation in Riverside County.

One example of a SET

Walter Read, W6ASH

On Saturday morning, 20 October, 76 amateurs pretended that an 8.0 magnitude earthquake had just struck. Their mission was to support the local police, fire, Red Cross and hospitals with backup communication networks. Seven networks were used: one HF, three repeaters (VHF) and three on simplex (VHF).

The exercise is one of several held annually by the Southern Peninsula Emergency Communication System known as "SPECS". This one is national in scope, being sponsored by the American Radio Relay League — the amateur's national organization.

By prearrangement, crews of six or eight operators manned fixed installations at Palo Alto and Moffett Field Red Cross headquarters, the Santa Clara County Communication Center in San Jose, El Camino and Stanford Hospitals, the Palo Alto Medical Clinic, the Police and Fire headquarters in Palo Alto, Mountain View, Los Altos and Los Altos Hills, and the amateur station at Foothill College Electronics Museum.

In this simulated emergency test — "SET" — realistic emergency messages were originated by each group for transmission to one another. One network simulated health and welfare messages into and out of the area. A total of 222 messages were handled in the seven networks.

Should a big disaster strike this area, those operators will proceed to their assigned locations and be ready to furnish backup for communication circuits which have become overloaded or disabled.

Walter Read of Los Altos is the Emergency Coordinator for "SPECS".

Handi-talkies to the rescue

Lenore Jensen, W6NAZ

A pair of handi-talkies were the links, in mid-September, between a stricken backpacker, high in the Sierras, and rescue.

John Strain, KØHGW, and Bob Tribble, K6YC — like most Amateur Radio operators — wouldn't think of going anywhere without such little rigs, in this case an S-1 and a Standard.

The plan was to conserve battery power over the week-long hike and possibly make a couple of fun contacts when they reached a point near 12,000 feet.

Both on a week's vacation from NBC Engineering in Burbank, they had started on Saturday from Bishop, where their friend Larry Dunlap, WB6FZV, had driven them to the start of a trail which would take them over Piute Pass.

The crisp fall air was exhilarating, just right for a hike up to the beautiful John Muir Trail which they would follow for several days. Camping out under trees and stars in non-smoggy air is a joy known only to backpackers.

It was, of course, a snap to QSO when they reached 11,500 feet at the junction of the Muir and Bishop Pass Trails. Larry's wife, Paula, WB6IWV, greeted them over the repeater at Bishop on 146.34/94, glad to hear all was well.

By Friday, going "down" but still at least two days hike from trail's end, they met an anxious young woman. She explained that her father had collapsed, apparently from altitude sickenss and exhaustion.

It took about 2½ seconds for the fellows to realize this was one for Amateur Radio! However, their location was out of the repeater's range. Looking up at a 900-foot ridge, John decided to scramble to its top, for a try. Bob remained with the daughter, keeping in touch with John by simplex.

Luckily, the higher point was good for a break on the repeater. Paula happened to be monitoring. Immediately, she phoned the local Sheriff substation; then she was back on the air with questions. John relayed down by simplex and Bob let the young lady give her answers via S-1.

The hikers were able to pass on the exact location, using their USGS topographical maps for coordination. They had determined they were not far from a helipad near a closed ranger station.

Paula reported that Bishop was in touch with Fresno, in whose jurisdiction the area happened to be. With relief, they learned a helicopter from "Airlift for Life" would be on its way. The organization is a 24-hour helicopter and fixed wing medical emergency transportation service serving the San Joaquin Valley.

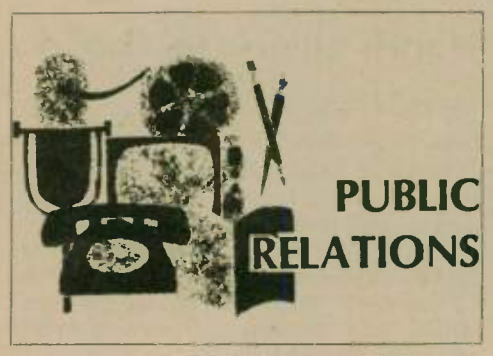
Within an hour, a far-away motor was heard. Straining to see, their hearts sank as a helicopter flew high above and disappeared in the distance.

Paula and Larry's phone was kept busy. Eventually another craft was dispatched from near Bishop and this time the pilot spotted the pad, settling neatly down for a med-evacuation. The victim was large and his pack heavy, so he was taken out first and checked into ICU at Northern Inyo Hospital. A second flight took out the daughter and co-pilot.

As John and Bob watched them leave, they gave rewarding pats to their rigs.

By the time they reached the end of the trail, there still was sufficient battery power to contact Larry by radio. Sure he'd give them a lift back to town. After walking 60 miles, it felt good to ride and to learn that the victim was feeling much better and had sent his grateful thanks.

MORAL: never go backpacking without your handi-talkie! □



Police thank amateurs

City of Lincoln
Department of Police
233 South 10th Street
Lincoln, Nebraska 68508

29 September 1980

Reynolds Davis
3437 Anaheim Drive
Lincoln NE 68506

Please extend our sincere appreciation for your quick and efficient response to our request for assistance in the abduction of Officer Sid Yardley on 25 September 80. We feel very pleased and fortunate to have a dedicated group such as yours to rely on when the going gets tough. It seems "ham" operators are often forgotten until disaster strikes.

Please extend a big thank you to all your members from the Lincoln Police Department and especially from Officer Sid Yardley and his wife Mona.

B. Dean Leitner, Chief of Police
Don Buckner, Captain, NE Team
Sid Yardley, Officer, NE Team

The following assisted in the emergency net that followed the abduction: N0AJQ, WA0APY, KA0AYY, KA0BMV, W0CHV, WA0CPS, WA0DDD, WB0DGF, K0DI, WD0DMS, WB0DVS, WD0EUZ, K0FJT, WD0FJY, WB0GAK, K0GND, KA0GON, WA0HBS, K0HMZ, WA0IEF, WB0IUT, W0KBS, W0LJO, W6MHB, WB0MKD, K0NB, AE0O, WA0QJK, WB0QLH, WB0QQS, KB0QW, WB0QYW, WB0RJJ, WB0ROG, WB0RRK, WB0RZR, WB0SIN, WB0SIP, WB0TED, K0UJU, K0UQU, WA6URR, WB0USW, AE0V, W0WKP, WA0WRI, WB0YYE, and WA0ASM who was Net Control.
— Lincoln Log, Nebraska □

U.S. Senate commends Amateur Radio operators

United States Senate
Committee on Armed Services
Washington, D.C. 20510

12 September 1980

The Honorable Charles D. Ferris
Chairman
Federal Communications Commission
1919 "M" Street, N.W.
Washington, D.C. 20554

Dear Chairman Ferris:

It has recently come to my attention that a group of Atlanta area amateur operators were extremely helpful in providing communications during a serious medical emergency.

The enclosed copy of a letter from Dr. Cassandra B. Evans, Medical Director for the Peachtree Road Race — the largest running event in the nation — details the contributions of hams in this incident. (See below)

I am pleased to bring this to your attention, and urge you and your associates at the Commission to continue to recognize the vital services provided by the Amateur Radio operators. I know you will agree with me that in the pursuit of their hobby, the hams constitute an important national resource.

Sincerely,
Sam Nunn

14 August 1980

Mr. Robert Diefenbach
2402 Lauderdale Dr., NE
Atlanta, GA 30305

Dear Rob:

Thank you and the other ham operators for assisting with our medical plan for the Peachtree Road Race. I appreciate all the time you spent evolving our final plan. The plan worked perfectly and was appropriate for our needs. I am glad we decided to tone down our initial plans.

The ability to have reliable, clear tent-to-tent and tent-to-medical control communications was valuable and reassuring. During the tense moments needed to discuss privately the cardiac arrest, the phone patch to Grady Hospital was a great help.

Thanks again for the time and expertise provided by the Metropolitan Atlanta Technical Society to the Medical team of the 1980 Peachtree Road Race.

Sincerely,
Cassandra B. Evans, M.D.
Medical Director
— The Atlanta Ham, Georgia □

Please send news and pictures to Worldradio

Ed Byers (left), president of the Warren, Ohio Amateur Radio Association, hands Dr. Alan C. Coe, dean of Kent State's Trumbull Campus, a scholarship donation of $1,200.

Radio club donates to scholarship fund

The Warren, Ohio Amateur Radio Association recently donated $1,200 to the scholarship fund at Kent State University Trumbull Campus.

For the past four years, the association has held its annual Hamfest at the campus and has brought more than 3,000 people to the event each August.

The Hamfest has been sponsored for 23 years by the association, according to Ed Byers, president of the organization.

Accepting the scholarship from Byers was Dr. Alan C. Coe, dean of Trumbull Campus. □

In the best tradition

On Halloween evening, 31 October, Howard Stone, K6OKW, was in QSO with Manuel Schiavoni, LU2CIS, when Hugo Rodriguez, LU1ACF, broke in with medical emergency traffic. Hugo explained that a baby girl was near death from a rare syndrome and needed a special medicine that was not available in Argentina. Howard called Dr. Dave Gardner, K6LPL, and they QSYd from 15 to 20 and confirmed exactly what was needed.

Dave went to work and located the special medicine. Howard took it to the airport to put it on the next flight to Buenos Aires but ran into a realm of red tape. He phoned Jon Gallo, KB6WT, who called the airline and after some effective legalese muscle flexing and arm twisting got the package cleared for shipment. Howard then got on the land line to Argentina to advise them the details of the arriving flight.

This was a literal life and death situation since the baby girl's older brother had previously died from the same disease when they were unable to treat him. The effective team work of these three SCDXC (So. California DX Club) members, who personally paid for the costs of the life-saving medicine, air freight, and international phone calls, is in the best traditions of our great fraternity and is an inspiration to all of us.

Muchas gracias Manuel, Hugo, Howard, Dave y Jon.
— SCDXC Bulletin □

Radio Free Kalamazoo

Afghanistan — Olympics news stuns Russian amateurs

It started as a routine radio call to the Soviet Union, American ham to Russian hamsky. Hey, out there, anybody want to know the weather in southern Michigan?

But David Clark, also known as K8MPF, found that Russian's Ivans are after more these days than weather checks. They wanted to know what was happening to their 1980 Moscow Olympics.

"It was a very unusual call — about as emotional as you can get in Morse Code," Clark said. "More and more stations kept joining the conversation, all of them quizzing for information. And the more I told them, the more frustrated they got."

Call it Radio Free Kalamazoo. It lasted 30 minutes on 25 March. Amateur Radio experts say they've never heard of a contact quite like it.

Clark, 36, who teaches the handicapped at a local public school, was expecting the usual quick hellos goodbyes when he went to his radio set shortly after 4:00 p.m. (11:00 p.m. Moscow time). Ham operators are an unusual breed. They spend hours calling all over the world — and then say nothing much. It is a point of ham etiquette, in fact, not to discuss politics, religion or other subjects that make people angry.

Nor was Clark surprised when he raised a Moscow resident name RZ3---. The Soviet Union, especially since Joseph Stalin's death, has encouraged "radio sport" among more than 17,000 ham stations from the Minsk to Pinsk to Vladivostok.

But then RZ3--- started tapping out his message. He explained that he had been assigned a special "R" prefix because he was promoting the 1980 Moscow Olympics. He described with great pride the special preparations, the plans for increased tourism, the renovation of his hometown's Byzantine domes and grand facades.

"Moscow is not what it used to be," he said.

Clark tapped out a terse reply. "The U.S. team won't be going to the Olympics because Russian troops are occupying Afghanistan."

The next thing Clark knew he was talking with six more Russian ham operators from Moscow, Leningrad, Kiev and other cities. They jumped in, one by one, and asked for a repeat of the transmission, the Morse code equivalent of: What?

"It was like a spontaneous emotional reaction, as if they didn't take time to think," Clark said. "Some of them seemed to know hardly anything about Afghanistan. All of them expressed a really strong sense of frustration."

The Voice of America — which claims a Russian audience of 27.5 million in five languages — says it's likely much of the news still hasn't sunk in. The Soviet Union is a land of bent information and traditional cynicism about most reports on everything.

"They're simply not being told the real reasons for the boycott," said Diane Conklin of the VOA.

But one thing David Clark knows for certain: "We were no longer talking about equipment and the usual things. They were asking all kinds of questions. Why aren't you going to participate? When did it happen? How?

"And everybody wanted to express an opinion. It was all somewhat guarded — mostly a sense of frustration and great disappointment. They had taken an awful lot of pride in the Olympics, what with the whole world coming to them. Now here's something political messing it up."

It was nearly midnight in Moscow when the conference call ended. Experts at the American Radio Relay League say such a contact probably won't happen again.

"USUALLY, you're lucky to get five minutes," said Don Search at ARRL headquarters. "And the Soviet amateurs never mentioned politics — not if they're smart."

Clark has sent information about the ham contact to Zbigniew Brzezinski, then White House national security adviser, whose office had expressed interest. There haven't been any similar contacts since.

"What a pity it is," he said, "What a pity."

• People reaching People •
Amateur Radio is what Worldradio is all about.

Penril president elected to Fellow

The Board of Directors of The Radio Club of America, Inc. of New York, New York has announced that Kenneth M. Miller, President and Chief Executive Officer of the Penril Corporation of Rockville, Maryland, has been elected to the rank of "Fellow."

The Selection Committee stated "Mr. Miller was selected for this recognition for his unusual success as a leader in our industry and acceptance internationally for his efforts and contributions."

The award to Mr. Miller and other industry leaders was presented at the Annual Awards Banquet Dinner Meeting of The Radio Club of America, Inc. on 21 November 1980 at the New York Sheraton Hotel in New York City.

The Radio Club of America, founded in 1904, boasts a select membership roster of many of the leaders engaged in high technology electronics and who are active in the fields of commercial, industrial and government electronic communications.

Penril Corporation, which is listed on the American Stock Exchange (PNL), designs, develops, manufactures and markets a diversified line of high technology electronic equipment and consumer audio equipment. The company is headquartered in Rockville, Maryland and has manufacturing operations in Rockville, Maryland; Santa Ana, Califor-

Kenneth M. Miller, W9NQT, in his station.

nia; Newburyport, Massachusetts; Amsterdam, New York; Danbury, Connecticut; and Montreux, Switzerland.

On the personal side — Ken is married, has four children, and lives in Rockville, Maryland. He was educated at the Illinois Institute of Technology and UCLA. His first aircraft pilot's license was obtained in 1955.

He is active as a radio amateur operator, and has been continuously licensed since 1939. In addition to his original station call sign, W9NQT (which he still holds), he also owns an Extra Class license under the call K6IR. In addition, he's held a First Class Commercial Telephone Operator's License continuously since 1940.

Ken is a life-subscriber to **Worldradio,** , a life-member of ARRL, and has 318 SSB DXCC credits. □

Energetic new SEC appointed

A new Section Emergency Coordinator (SEC) for Illinois ARES was appointed effective 1 June; Bob Hajek, W9QBH, of Riverside, Illinois is now active in creating more interest and activity in Amateur Radio emergency preparedness in Illinois.

Besides working on closer relationships with the National Weather Service, Red Cross, Salvation Army, and various state and local government emergency preparedness agencies, a primary goal is to increase the number of active Emergency Coordinators (EC) so that each county is represented.

One benefit of the increased activity has been to make ARES more visible on the 3915 kHz Illinois Phone Net and improve coordination between ARES and the NTS. A special ARES net for discussion of topics of interest to ECs is planned for the near future.

Since less than one-third of the counties are represented at present, persons interested in the EC appointment or who would like more information should contact W9QBH at P.O. Box H, Riverside, IL 60546. □

Los Angeles City Councilman Hal Bernson, right, inspects emergency RTTY station set up during an "Earthquake Awareness' weekend in his district. Also shown, left to right, are Bob Burns, N6ZH, an Emergency Coordinator; Mel Borses, WB6VHS, District Emergency Coordinator; and Dave Tucker, WB6FAK, Section Emergency Coordinator. The RTTY was programmed from a tape, continuously turning out sample disaster traffic, demonstrating typical messages to be handled after a disaster. *(Photo By Bob Jensen, W6VGQ)*

RACES alerted after explosion

A limited status standby alert was put into effect Wednesday night, 5 November, following a major explosion at an industrial plant in Richmond, California.

Due to the conflicting reports released by Bay Area electronics media concerning release of toxic fumes by the explosion site, a standby alert was put into effect. The 4Cs repeater was placed on emergency status with George Gabriel, WA6KQB, acting as net control.

Within minutes after activating that repeater, 2-meter communications were established with every adjacent county in the North Bay Area and a large number of mobile rigs were made ready to roll. Fortunately, we were not needed. But the speed with which the alert was placed into effect reflects very well indeed on EBARC members who took part and on the readiness of the 4Cs club to respond quickly and efficiently in an emergency. WA6KQB did a superb job as Net Control.

By 11:00 p.m. that evening, the alerted amateurs were released from standby duty after it was confirmed that no danger from toxic fumes existed.

Both the SET and the more recent standby alert were coordinated by Dave Tyler who worked in collaboration with Dwayne Eskridge, W6LKE, the ARRL DEC for Contra Costa County.

— The Blown Fuse, East Bay ARC, Richmond, CA □

Signal 99?

Picture an amateur mobile unit coming upon what seems to be an emergency on a lonely road late at night. Here is a chance, the operator thinks, to perform the public service Amateur Radio is so well known for, by using his rig and the local repeater and even perhaps the autopatch. The amateur stops and gets out of his car to see if help can be given. At this point, imagine the worst . . .

But before getting out of the car, and without shutting off his motor, the amateur has made a Signal 99 call on the mobile rig. Why? Because a Signal 99 is to alert any and all listeners that the issuing party is about to investigate a situation in an unprotected environment and would like a back-up in case the situation warrants it. After getting a response to the Signal 99, the mobile operator should give:

1. location called from;
2. license number and description of car and/or the persons in trouble; and
3. the apparent emergency.

The responding station should acknowledge and remind the mobile station to report back in no more than five minutes. Then, and only then, should the mobile operator get out of his car, shut off the motor and take his key with him. The mobile operator must make sure he returns to his rig and calls within five minutes; otherwise, the acknowledging station should call the authorities to proceed to the location to see if everything is in order. It is firmly believed the Signal 99 procedure should be adopted throughout the amateur fraternity in the United States and Canada.

Autopatch is great but you can't have the personal touch of having someone standing by and listening, knowing where you are. Of course, if you can't raise anyone on the repeater or direct and you do have an autopatch, by all means use it call the authorities and give details — again, before you leave your car.

— Spark Gap, Wellesley, ARS, MA □

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

See your group in print and help your fellow amateurs with shared experiences. Your story may help others be better prepared.

OFF THE AIR

An old-timer responds

To Carl C. Drumeller, W5JJ

Dear Carl:

I enjoyed the picture of the young handsome man in your "Old-Time Radiq" column, **Worldradio,** November '80. I can't stop looking at it and reminiscing.

I wish I knew who he was. I hope he is still around and someone, or maybe he, will contact you. He would, be in his late eighties. This December I will be 80, and that's why I'm so interested, because the picture brings back so many fond memories — like that good-looking haircut (cost at least 15¢) and that sweater with the large collar. He sure is typical of many young hams of those days.

I would nominate him as one of many of the first amateurs that can lay claim to having the first HOMEBREW.

I got interested in wireless in 1912 when the Titanic hit the iceberg, but I didn't get started until 1916. (There was no free-loading in those days. The OM had to put in 10-12 hours a day, six days a week. We lived in Milwaukee and my older brother worked in the post office. He bought me a rig from Sears Roebuck, for about $20 — Murdock condenser variable, loose coupler, Galena, and their headphones that used to jerk out a few hairs, which I had plenty of then. There was also an electrolytic interrupter in series with the transformer primary, hand key, Helix, etc. I took the test for license when the inspector came up from Chicago; I got the operator license, code speed 5 wpm. There were some questions on coupling, like decrement had to be one peak on the wave meter had to be about 20% less than the other, so the sig would not be too broad. In other words, don't jam the coupling too close.

I never got around to sending in for a station license, on account of WWI so later I joined the Navy and went to their radio school at Harvard in Cambridge. Talk about old-timers as instructors. You just learned the code — not like the rip-off artists they have today (practice, practice). After the Navy discharge, I enlisted in the Coast Guard and by golly, I did go up among those icebergs that got the Titanic.

Oh, yeah, maybe you heard WME. That was the commercial station in Milwaukee. The operator there didn't care much for us snots poking around. But I did like when he called those lake boats and they came back.

I don't want to get too windy, I know ur busy for the next issue of Worldradio which I look forward to. Maybe sometime we can QSO on 40 CW only, somewhere around 7050-7075, unless the phone buffs take over.

I sure hope you find that nice lad in the pic, and get a run-down on who he is and what he has been doing since the farm days.

73,
Paul Williams, W6WEQ
Santa Cruz, California □

Should auld acquaintance be forgot

I'm sending in this picture hoping you will be able to put it in your paper, as I would like to hear from some of the amateurs in the picture. It was taken in the winter of '60-'61 at Clear, Alaska.

This was taken at night, as it was always dark up there in the winter. It was about 50 degrees, and we had to give up a quart of antifreeze to get the use of the jack hammer. We had to drill through eight feet of ice to get a hole dug; then it took a quart again to get a cherry picker to put a pole up, but it was a nice gang of hams.

I'm the one with the shovel. The one with the hard hat is Jim Musgrove, W7MNT, from Seattle, Washington. I'm sure some of the guys will remember this.

I'm 76 and had my first ticket in 1919. I still have my old Spark set.

73,
Reg Hoskin, W7ROL
P.O. Box 496
Hamilton, WA 98255 □

Recognize anyone?

Remember spark?

To all former spark operators — Greetings:

Were you operating on spark when you obtained your first Amateur Radio license? If so, READ ON:

Looking at the pictures in QCWA Fall News, of the 1947 organizing members, I succumbed to reminiscing the fact that we all had been on spark — incidently 22 of the 34 at Pappas' Restaurant are SK; also 34 of the 54 charter Members are SK.

We have QCWA, OOTC and other "time" organizations, which are based on years licensed, etc., but to the best of my knowledge, there is no organization composed exclusively of amateur former spark operators, — the endangered species of Amateur Radio!

To make a long story short, what we have in mind is a very informal organization of spark operators — no constitution, no politics, no membership fee, no dues, no assessments — just a bunch of old operators around the country with a common interest in the old legendary Ford spark coil, spark gaps made with nails, condensers made with photo plates, rotary, sync, and quench gaps, etc. A group that pioneered the development of the high frequency bands — 80-40-20-10-5 and 2½ meters.

There are not too many still around that can qualify for membership, and of course the organization will self-destruct in not too many years. But in the meantime, it would be nice to know how many are still around and where! It would be great if we could get up a directory and perhaps have a net on the air.

At any rate, we are playing it by ear. If you remember the nostalgic aroma of ozone and want to be counted, just fill in the form below, return to me, and we'll see where we go from there. If you know of others who qualify and might be interested, please Xerox the application before filling in, and pass along. Many thanks!

Fraternal 73,
Ralph Hasslinger, W2CVF (2CVF)
(Acting Custodian of the OZONE)

Sponsors: Bernie Stahl, W2HL; Al O'Hara, W2OG; Frank Anzalone, W1WY; Sherman Mallery, W2CJX.

The Ozone Club

Yes, I was an amateur spark. Please list me as a member.

Present Call_____

Name_____

Original call_____Date_____

Address_____Birthday_____

Would you be interested in an OZONE net?_____ Freq?_____

Telephone #_____

Original spark equipment_____

Suggestions_____

Please mail to: Ralph Hasslinger, 28 Warren Pl., Glen Rock, NJ 07452.

(NOTE: **Amateur spark became obsolete about 1924; unauthorized by Fed. 1927)** □

About the 'new' code tests

Students preparing for a FCC code test should be aware that the format has been changed from a 10 question multiple choice exam to a 10 question fill-in-the-blank exam. This has already been reported in several publications (including Worldradio). However, we at Bash Educational Services are finding that the "new" code tests have apparent deliberate misspelling in them.

For example, you might be copying the test and the tape may say that the sender's profession is a writer but it is speed "writek". Later, on the written portion of the code test, you could be asked for the sender's profession. If you write down "writer" instead of "writek" you will miss the question. This exam expects verbatim copy.

Another example to be alert for is the QTH. The tape might say that the QTH was "Miami, Florida". If you answer the question as to what the QTH was with "Miami, Fla." you will miss the question. Likewise, if the tape says "Miami, Fla." and you write "Miami, Florida" you will also miss the question.

This information is not intended to compromise the code exams but to alert you to be especially careful to write down what you hear and not what you think you should see. We have received several calls from clients complaining of this and wish to pass on this precaution to all of the readership. Good luck!

Sharon Williams, KQ6A
Bash Educational Services □

Luciani explains opposition to Bash

No sooner had the December issue of Worldradio hit the streets than my phone rang. It was an agitated Dick Bash calling, wanting to know what in hell I meant with my comments about him in that issue.

Since my copy had not yet arrived, there was a confusing 10 minutes in which I had absolutely no idea what he was talking about until, suddenly, came the dawn. And with that, also came the need to inform your readers.

The pointed comments in my letter to Gordon West, WB6NOA, were direct criticism of the Bash manuals for being non-creative work; this was the conclusion I had reached from the magazine articles on him, that his manuals were no more than printer's copies of FCC exams. I also added a defensive expression in that letter to the effect that my newest book *(Amateur Radio, Super Hobby!)* was quite the opposite.

Well, Dick and I had a long discussion on his products and mine, his philosophies and mine. I think we understand each other better, but I still feel a need to amplify the situation.

You see, in late summer I had just about had my fill of the rash of rash publicity on Bash and *The Final Exam*. In a discussion with Alan Dorhoffer, K2EEK (CQ editor), I allowed as how an open forum on *The Final Exam* at Dayton — with me as moderator of a panel consisting of Bash, and Bash supporters Dorhoffer and Wayne Green, W2NSD (73 editor) — might provide some stimulating responses from the floor. Alan thought it was a good idea, so I approached Wayne with the suggestion.

Wayne also thought it was a good idea but he wouldn't have any part of a moderator who was as "obviously biased" as I was. That cooled the idea; plus the fact that the Dayton people have never responded to my letters.

When I then picked up a 73 issue that had still another Bash article (the same old stuff) I decided to put my thoughts in writing. The result was a lengthy counterpoint article titled: "Bash, Friend or Foe?", which I only vaguely considered offering for publication. It was enough that I freed myself of a lot of repressed views, and it was also when I realized I no longer had vital objections to *The Final Exam* but, instead, that my resentment was directed toward the Bash publicity machine for coloring Amateur Radio in the negative.

About *The Final Exam*, I said this: ". . .his manuals will not go away, nor should they, for they are viable products." Does that sound biased, Wayne?

I oppose any move to do away with the code requirement in Amateur Radio, as Bash proposes. My arguments are not as technical as his, for I say even neglecting code's proven mechanical bases, there remains something else about it — a certain something from my Amateur Radio inheritance that cannot be dismissed — a romanticism.

Laugh, if you will, but keep in mind they started all this at the turn of the century with code; they took the infant hobby through its toddling years with code; they supported two world wars with code skills; and our Amateur Radio history and heritage are fully lodged in the code. I believe it to be a romanticism of sufficient weight as to be its most human basis for continuation. Laugh, if you will, but be informed when you do.

My book emphasizes code because code is a present-day requirement. My book emphasizes code because the applied psychology was intended to present code as a pleasantry rather than a drudgery, and to influence people into looking upon the code skill as an exact price for a ticket well earned. I'll never change those views.

Consider, there is no Final Exam for the would-be Novice — probably because such a manual would have no practical application. There is, however, a first need to inspire interest and desire on the part of laypeople and that is what my book attempts to do. I wrote it to the butcher in

Boise, the baker in Boston and the candlestick maker in Charleston. I poured into it my experiences in technical writing, correspondence course writing, instructing, 15 months of my time and a lot of dollars. I hope for two exchanges: Novices and, frankly, financial gain.

I am aware my book offers me no glory from my peers. My book is too different from any you've seen on the subject, and I do believe it to be creative writing despite its mild exaggerations about the hobby. And why not? Does the layperson really need to know, early-on, the precise technical substances of the hobby when a first objective is simply to arouse interest? Sell the sizzle and not the (ham) steak, the advertising people say. If true, my book is one giant advertisement for Amateur Radio, readable by non-technical people.

Still, the book does teach in ways I hope are subtle enough to not be a drag (even with its quiz at the end). It also does what some may fault — it stresses the positive in the hobby while totally ignoring the negative. Again, why not? Too often, we believe the negative to be reality when, in fact, reality is what we individually choose to believe. My major criticism of the Bash machine is in its stressing the negatives of the hobby.

There is another philosophy I am working at these days, one that is simply expressed in three words: What is, is. Which is to say, accept that which already exists, for we can really do nothing about it. I now accept *The Final Exam* and even believe it may well be an interim solution to the problem of large numbers of Novices failing to upgrade.

Dick, I admire some of the work you say you are doing and I ask: Why don't you tell the gang more about those positive things?

Cordially,
Vince Luciani, K2VJ
Cologne, New Jersey

Thoughtful mariners are concerned about our Novice band traffic nets. Those who sail need no introduction to Peter Sutter, WD6GHS — a noted sail-maker, rigger, ex-Navy radioman and global sailor. His interesting letter follows.

18 September 1980

Dear Armond:

I note with interest your article for Novices concerning a CW net for maritime mobile Novices. As I am a Novice and do a lot of cruising in the Pacific (11,000 miles in the last 18 months) and operate CW, I am interested in the net.

For the past three months, I have been keeping a sked with KA1FKF/mm2 "Jack" aboard "CIRCA". We meet everyday on 21.101 MHz at 2030Z. He sends me his position, course, speed, wind direction and percentage of cloud cover and barometric pressure. I send him the weather information (location of the high and low pressure areas, their attendant ridges or fronts, and any warnings) which I copy from either NMO — Honolulu or NMC S.F. These are Coast Guard stations and this WX information is sent out for all mariners on CW at about 20 wpm.

I plot their position on a chart, keeping track of their progress, and call their friends and families to keep them posted of their progress. Their telephone call upon arrival in Hawaii, expressing their thanks and how useful the WX info was, was of great satisfaction to me, as well as to Bob, KA5CWE, who with his big beam and more watts out was a great help to me. I should say is a great help as we are now QSOing with them on their return trip.

Two problems always prevail with each contact — heavy QRM and slow code speed. We are coping with the code speed OK and Jack is improving with each contact, but let me tell you it is indeed slow — hi hi. The QRM is another matter!

I find very few Novice operators listen before tuning up and then going into the longest CQ sequence you ever did hear. A few ops do send QRL IMI, but they are the exception, and they will always move off when asked to. I guess your suggestion of 21.150 MHz as a good maritime CW frequency is OK, but my experience QRM there is about the same as any part of the Novice band.

Many cruising people get a Novice ticket before departure and few have had the time for upgrading or improving their code speed. There are two wonderful Pacific Maritime Nets — primarily for yachtsmen — but unfortunately the Novices may not check in, as those nets are in the general bands, SSB.

Most Novice nets I have worked either say nothing; or when a message is sent it really does not mean too much. Why not start a CW Maritime Net for Novices that means something: i.e., position reports and their weather, etc; sending them good WX info that is not readily available without a good receiver and a fast code speed?

Sincerely,
Peter M. Sutter, WD6GHZ
214-3rd Street
Sausalito, CA 94965 □

(*please turn to page 55*)

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.

Flo Majerus, W7QYA

Want to test out your 80 wpm CW? Then listen for Flo Majerus, W7QYA.

But high speed is only one of her accomplishments. Flo has a strong love of adventure, travel and friend-making.

"I wish I could live to be 200," she says. "I look at a map and there are so many places I want to go! In a library there are so many books I want to read. I drive a highway and see so many side roads I'd like to travel. Looking up at mountains, I think of the wilderness trails I'd like to backpack into!"

Actually, Flo has already done these things.

After growing up on a ranch in Montana's Bear Paw Mountains, she earned an early BA and started teaching sixth grade. But come 1940, the lure of adventure was so strong, she and a girlfriend boarded a boat to Ketchikan.

As a fine musician, (piano, organ, accordian and a number of stringed instruments) Flo had no trouble finding a job. "The first night there I was given a spot playing piano in a night club. I made more in one evening than in three weeks teaching school!" Obviously, Alaska had been a good idea.

With the outbreak of war, the FAA (then CAA) needed operators. It seemed an interesting challenge so she joined up, learning code, navigation, weather, theory and other necessities. She heard Kleinschmidt tapes pouring out messages up to 150 wpm. To work point-to-point CW circuits for movement of aircraft, she was forced to run about 40 wpm, so heavy was the traffic. "I couldn't help but learn the code. It soon became as natural as talking."

"Oh yes, we used phone, too — for air-to-ground circuits, working military, commercial and private planes. In fact, that's how I became interested in flying itself."

For variety from the 56-hour work week with no vacations, she formed a little orchestra to play four nights a week. "But that finally became too much, so I gave it up."

She and OM Mel, W7VMB, operated from various spots in Alaska — such as an isolated station in Kenai. She finally retired to Montana in 1950.

But soon she was working again — this time as an elementary school supervisor. This meant long summer vacations, ideal for the travel-hungry. She determined to see as much of the world as possible.

She could also hear it, by using the ham ticket she'd earned (but never used) in Alaska. Since she was good at CW, she had no trouble finding far-away stations and soon collected a host of foreign friends.

Obviously, she was greeted by them on her travels. "The wonderful bond between amateurs is remarkable. For instance, in a hotel lobby in Syria, I was chatting with a fellow who said he was an engineer at a local radio station. No, he wasn't a ham but his friend was. To my surprise, in half an hour an amateur telephoned and invited us to meet his family. What a treat, to visit a Moslem home!"

It has been the same all over the world in Asia, Africa, Europe, Middle East, Pacific, Australia, New Zealand — everywhere — the ham hospitality was wonderful.

"In Russia, I went with a group of 400 tourists and, far as I know, I was the only one who had access to Russian homes." It was thrilling, in a crowd to see a QSL card being waved in greeting!

In some South American cities she was invited to use rigs in order to talk home to Mel.

Of all her trips, Flo especially remembers a three-month safari across the Sahara and jungles of Africa. "This time there were few hams, it being so primitive. But all my life I had read aobut the blue-veiled Tauregs and I finally saw them, around the Hoggar mountain area near Tamarasset. We did a lot of camping and yes, it was strenuous."

Amateur Radio friendships are more important to Flo than certificates, so she hasn't gotten around to collecting many other than DXCC. But she's always right there if emergencies strike and is a handy operator to have around!

Another ticket used after returning to Montana was her pilot license which allowed plenty of Big Sky adventure, often with her mother as a passenger.

Backpacking, "a good way to see places that many never get to see," has been fun for Flo. "Sometimes you are above 10,000 feet for days," she tells us. "Like the canyon country of the Southwest or the high mountains of the Northern Rockies."

She and Mel leave the winters of Montana for the sunshine of Hemet, California, where dancing and golf are special joys. In fact, he urges her to "see the world" while he seeks lower scores.

And see the rest of the world she will. Flo's taken a course in tour directing and may try that, especially in Latin America. But then a far-away glint comes to her eyes. "However, maybe I'll take the Trans-Siberia Railroad to Japan. . ."

Wherever — W7QYA will be meeting friends. □

The last ride down the tracks

Louis Cook

The lonesome whistle of Hebdin Smith's locomotive moaned through the misty dawn of central Michigan on Friday, 1 August, for the last time. After 60 years in the cab, Smith decided it was enough.

Until Friday, the Grand Trunk Western brass held Smith as the oldest active locomotive engineer in the nation. He is 76 and recently passed a physical examination qualifying him for another year of service. But he decided to retire.

Smith, however, will still be busy. For one thing, he is an active Amateur Radio operator (his call is W8MRJ). Also, he can now devote more time to the Christian Transportation Inc. and the Fellowship of Christian Airline Personnel — one reason he decided to retire now instead of later.

He learned to fly in his spare time 51 years ago and was issued one of the first flight instructor licenses in Michigan. He is still a licensed pilot today, as well as a licensed aviation mechanic.

Smith was born in Wales and was brought to Battle Creek when he was four. But not even his late father knew the origin of Smith's first name, Hebdin, much to the disappointment of curious inquirers.

"I think somebody jumbled 26 letters together and drew out six of them and they spelled Hebdin," Smith said.

He hired on as a Grand Trunk fireman in 1920 and qualified for engineer four years later, at the same time Calvin Coolidge was elected president. There is a legend that he started out tossing logs into a firebox. He didn't, but he fired for an engineer who had. Smith shoveled coal, saw the introduction of stokers and oil burners, and bowed out at the controls of an Amtrak five-car diesel.

Smith's last train, the Blue Water Limited, pulled out of Port Huron at 6:15 a.m. on Friday, 1 August. He sat at the double throttle; his wife of 46 years, Dureatha, sat quietly in the passenger area just behind.

The last journey started out almost wistfully. It was misty and dark. The train windows were dewed over, and the scrub timber along the track to Imlay City loomed mournfully along the right-of-way.

Smith would have preferred to make his last run on a six-eight wheeler, fire belching from the boiler firebox, the drivers flashing, steam hissing, whistle bellowing and a bronze bell tolling. But it has been many years since he eased the Johnson bar forward to allow steam to enter the piston. Turbotrain No. 69 has a console like a truck dashboard, and the cab is clean as a kitchen.

Witnesses to the final run were disappointed to discover that their Casey Jones did not appear in overalls, sporting an oil can. Smith wore a snappy brown sports jacket, a tie, a jaunty straw hat and slacks because that is what he usually wears.

Throughout the trip, there was a steady procession of Grand Trunk executives in the cab (Grand Trunk executives, cameramen, etc.). So the wistfulness gave way to a party, with free cake passed around, towns along the way sending delegations track-side to offer congratulations, oncoming trains flashing signs in the cab windows — "Good luck, Heb" — and Smith himself quoting freely from the Book of Job, recalling the elephant buried beside the track near Durand after the wreck of a circus train long ago, and having a very good time.

Smith spent many of his working years on Grand Trunk runs from Chicago to Toronto and Montreal, but his chief acquaintance is with the portion of the route from Port Huron to Battle Creek, where he knows all the crossroads to toot at — two longs, a short and a long — and has an affectionate anecdote for every town and hamlet.

At 9:25 that morning, he eased into the familiar old red brick station at Battle Creek, where he received a gold pin from Grand Trunk and other gifts from dignitaries who met him there. No. 69 wound out of sight.

Then he turned and walked away.

— *Detroit Free Press* and *Enquirer and News*

U.S. QSL Service

The holidays are over and we hope yours was enjoyable. The low bands are wide open now and we are having a good time working 80 meters, especially. The QSLs keep coming in and with them many SASEs. A big THANK YOU is in order for all the correspondence we have received and the amateurs who have used our service.

I would like to take a minute to give a few more suggestions to those of you who have or will be sending SASEs to the USQS. I have received many SASEs with enough postage to return a book! I wish the service was operating on that large a scale but the truth is that most people only have one or two cards on file at this time. Our intent is to save money and we hate to see good postage wasted. If you send a legal size envelope, 15¢ postage will cover a full ounce of cards. We would like to see everyone happy and hope this note will help. We ask in our flyers for an indication on the envelope of how many cards you would like to have in each envelope. Knowing some people would like to have the cards right away and that others would like to wait for a full envelope, we hope in this way to please the majority of amateurs. At any rate, we aim to "serve," so please consider using legal size envelopes and 15¢ postage each!

We still have thousands of cards on file and the calls printed each month are new calls, so please tell friends and contacts if you see their calls printed. Last month we published a basic guideline of how we operate. If you missed it, here are the basics again.

USQS handles incoming cards at the rate of 25¢ for each 20 QSLs you send to the bureau. Pre-sort the cards by call sign area (0-9). **No postage or address necessary** on QSLs — only the operator's call sign. **Please print in capitals, plainly.**

For outgoing QSLs we operate like the other Bureaus, using the SASE system. Send SASEs, legal size, correctly addressed to yourself to be put on file by call sign. For your convenience we will put SASEs on file for you, just send $1 for five or 50¢ for two to USQS.

Well, Happy Hamming and Please QSL! We have noticed many QSLs that need to be double checked for accuracy and complete details. Don't forget to include your county for the Worked All Counties Award people. For now, HAPPY NEW YEAR!

If your call is listed here, or in any issue since October, please send a SASE to:

U.S. QSL Service (USQS)
P.O. Box 814
Mulino, OR 97042

WA1AUZ
K1BW
KA1CI
KA1EQJ
WA1FCN
WA1GBA
WB1GLH
WB1GQR
K1IU
K1JB
W1KKF
AK1N
W1OP
W1QCQ
N1RI
W1RM
N1TZ
K1WB
W1WEF

KP2A
K2BJA
W2CS
KA2DNJ
AB2E
W2GD
WA2OVE
WA2QNS
W2RQ
WA2SFB
K2VV
K2ZJ

KA3A
KB3AG
VE3ART
KA3EQM
K3EST
W3FA
W3GN
K3HPG
K3IU
N3JT
W3LPL
K3PA
K3RA
K3RS
K3SA
N3TR
K3UC
W3UJ
K3WW
AE3Y
WA3YRM
K3ZJ

N4ARO
WD4AXM

N4BAA
N4CD
W4CN
N4CUM
W4EI
K4EZS
WA4FFW
K4FJ
KA4HMV
K4ISV
KA4JVP
K4KDJ
KA4KYK
K4LTA
N4MF
AA4NC
WD4NWW
KA4OCL
W4OVU
W4PRO
N4QB
WB4QBB
KA4QZS
KA4RRN
WA4UGF
K4UWH
AG4V
W4WHM
K4XU
W4YE
WB4YOL

KB5AS
N5AP
N5ATC
N5AU
N5BET
KC5BX
N5CDO
KA5CER
N5CG
KB5CS
N5CT
KB5FU
KA5GKW
K5GN
K5GO
KA5GQO
AE5H
N5JJ
W5JW
WD5JYA
WB5KIA
K5KU
N5MF
KB5MM
WB5MUI

N5NN
K5NW
KA5Q
N5QQ
K5RC
K5TA
N5TP
W5UN
N5VDK
WB5VFS
WB5VZL
K5WA
W5WG
WA5WPB
W5XR
W5XZ

AH6BL
N6BT
N6CN
W6COP
KH6DLW
WA6EDK
N6IG
KA6JMP
KA6LDQ
W6LEN
N6MG
W6MXA
WA6OYV
WA6PDM
N6PN
K6RR
K6SG
W6TYV
WA6VEF
K6XV

KA7DCM
KA7EBK
W7EJP
WA7GVM
W7IA
W7ISX
AD7K
W7KHN
WA7LOQ
WA7NHU
KL7R
N7TT
W7UMX
W7WA

WD8AUB
AC8E
KB8EC
KA8ESD
KA8HJN

AD8J
KA8JEI
KA8JSJ
W8LT
K8NZ
N8UM
WB8YRY
WB8ZJY

N9BV
AA9D
WD9DBC
KA9EFD
WD9IIX
KA9ILG
K9IVN
KB9MJ
W9NA
KB9OV
W9QWM
W9RW
WA9TAF
K9XR
W9YB

KF0A
N0ACL
WA0AVL
N0BOC
N0BYP
KA0DGN
WD0EWD
K0FRP
KA0FWQ
WB0GSY
KD0H
KB0HN
AB0I
K0IS
KA0JBN
K0LUZ
AJ0P
AK0P
KB0QA
K0RWL
AC0S
K0TK
WB0TMC
WB0VLL
K0WA
W0ZCX
W0ZV

American Radio Relay League

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

Just over 10 years ago, the ARRL Board of Directors authorized League Headquarters to contract for production of a 16mm film on the subject of Amateur Radio. This film was to be made available to amateurs, news media (especially TV stations), and others interested in Amateur Radio — partly for public relations purposes and as part of the League's overall educational program.

The film, "Ham's Wide World," was produced by Dave Bell Associates, and over the years has been widely circulated through many Amateur Radio channels. Undoubtedly, the film has been viewed by millions of people, since it has been shown over many TV stations throughout the United States. The film has been shown at probably thousands of Amateur Radio events and organizational meetings.

The first film has been followed by others produced by Bell. All have been outstanding productions.

Just how well have "Ham's Wild World" and the follow-up films done in promoting the story of Amateur Radio? Apparently very well, since during the past 10-year period we have experienced a spurt of growth in Amateur Radio population and in League membership.

But there is another aspect of this "public relations" program and use of the films Amateur Radio that may be more important than just helping Amateur Radio grow.

This is our continuing effort to educate all levels of public and governmental leaders about Amateur Radio as a worthwhile activity. We must show that we do make worthwhile use of the radio frequency spectrum we use in our Amateur Radio operations.

We have been successful in this effort thus far, as can be seen by our winning efforts at Geneva in WARC-79, where we not only generally kept our present radio bands, but gained new bands of frequencies in the HF spectrum.

But the "battle" is not yet over and we need to continue our educational efforts, especially at the local level. We need every friend we can get, especially our own next door neighbors.

How many times in the past have we heard of Amateur Radio operators as being just "a bunch of kids playing with radio?" Or those "nuts" playing at radio broadcasting? Or the guy down the block who causes nothing but a lot of TVI?

Over the years we have been successful in countering these negative images and have done well, even with the advent of CB radio, where amateurs and CBers are one in the same in the minds of many laymen.

Even so, we need to continue our efforts. Individual amateurs as well as local radio clubs and organizations can help in this effort.

Some years ago when I was living in Merced, California, the local radio club started a program to educate the local community through Amateur Radio presentations at local service club meetings. This program was highly successful, especially since the presentations were well-covered by the local press. There were articles and pictures in the local paper; but more important, many local individuals learned about Amateur Radio and, as a result, went away with a positive feeling about our activities.

This program was started over 25 years ago — long before the availability of the League's 16mm film program. The main part of the program was a demonstration of the operation of an actual Amateur Radio station.

Of course, this is even easier today, when we have many repeaters in most major metropolitan areas of the country and handheld solid state "handy-talky" radios.

In fact, solid state electronics has made it possible to set up a working station in very limited space, and except for the problem of installing a proper antenna, it is now very easy to set up a demonstration station on even our lowest HF bands.

Today, as never before, we can demonstrate Amateur Radio to local citizens at practically any location, and the demonstrations are still one of the best ways of communicating the "Amateur Radio story" to individuals.

Certainly we should continue our efforts to interest people in becoming radio amateurs. But, more important, we want those who are not going to become "hams" to have a positive feeling towards our activities.

How can we best set up such a PR program?

Our best avenue is to work with the local radio club, and many clubs already have educational programs in effect. Over the years, many clubs have set up demonstration amateur stations at fairs and other local events, and many already make presentations at service clubs and other local organization meetings.

There is a lot of material available from League Headquarters to help in such promotional programs. Individuals, as well as radio clubs, can obtain this material by writing to ARRL and asking for it.

If your radio club does not have a PR program such as this, perhaps you can encourage the members to become active in promoting a good image of Amateur Radio in your local community.

Some amateurs have even established their own programs for presentation to local organizations, working individually to demonstrate the operation of an amateur station and telling people about Amateur Radio.

Another area not to be overlooked is going to meetings of local CB organizations, and showing the members what Amateur Radio can do as opposed to what is possible on CB.

This is not always easy, since many CBers resent the fact that so much is available to the radio amateur which is not available to them.

Another important aspect of the PR program for radio amateurs is contacting those who live in your own neighborhood.

How well do you get along with the people who live right around you? Even if you don't have TVI of any kind, do you at least project a friendly image that will lead your neighbors to at least feel your hobby is worthwhile?

We all need to work on public relations at all levels. There is much available to help even the individual radio amateur in PR efforts. Besides our PR films, there is much available written material explaining Amateur Radio to lay people.

Contact ARRL for a list of what is available and use it to help in your PR efforts. The results will pay off for you as an individual, as well as help Amateur Radio in general.

Remember, a positive image is what we need. Make sure you are not projecting a negative image. □

ARRL election results

The ARRL committee of tellers met 20 November to count ballots in the elections just concluded for Director and Vice Director. As a result of the resignation on 19 November of Don C. Miller, W9NTP, as Director Central Division, Edmond A. Metzger, W9PRN, was the only eligible candidate and was declared elected without membership balloting. The number of votes credited to each candidate is as follows. The first listed candidate is declared elected for the next term of office.

Central for Vice Director: Kenneth A. Ebneter, K9EN 3591; Norman E. Meyers, N9MM 2625.

Hudson for Vice Director: Linda S. Ferdinand, N2YL 2181; George A. Diehl, W2IHA 1977.

Northwestern for Director: Mary E. Lewis, W7QGP 2982; Dale T. Justice, K7WWR 969; Robert A. Thurston, W7PGY 718.

Northwestern for Vice Director: Mel C. Ellis, K7AOZ 2745; Ronald D. Mayer, K7BT 1882.

Rocky Mountain for Director: Lys J. Carey, K0PGM 1157; Hugh Winter, W5HD 712.

Rocky Mountain for Vice Director: Marshall Quiat, AG0X 803; Karl O. Ramstetter, WA0HJZ 590; Robert A. Scupp, WB5YYX 478.

Southwestern for Director: Jay A. Holladay, W6EJJ 3019; Fried Heyn, WA6WZO 2821.

The new Directors and Vice Directors take office starting 1 January 1981. On that date the following candidates, previously declared elected, also take office for two-year terms. Hudson Division Director Stan Zak, K2SJO; New England Division Director John Sullivan, W1HHR; Roanoke Division Director Gay Milius, W4UG; West Gulf Division Director Raymond Wangler, W5EDZ; New England Division Vice Director Richard Beebe, K1PAD; Roanoke Division Vice Director John Kanode, N4MM; Southwestern Division Vice Director Peter Matthews, WB6UIA; West Gulf Division Vice Director Thomas Comstock, N5TC. □

Midwest names Davis 'Amateur of the Year'

One of the nicer things that happened during the ARRL Midwest Division convention was the selection of Lincoln Amateur Radio Club President Reynolds Davis as "Midwest Amateur of the Year." He was nominated by Mary Rea, WD0FJY, and Harold Moon, WD0FGZ, for his work with the Lincoln club and his service in other areas of the community.

Reynolds is a member of the Board of Directors of the Lancaster County Red Cross, is completing a term as chairman of the Lincoln/Lancaster Civil Defense Disaster Preparedness Planning Committee, represents Norden on the Lincoln Chamber of Commerce, is a fourth year advisor to Norden's Junior Achievement Company, and is a member of the Lincoln Ad Club.

Reynolds has taught LARC Novice classes, brought the Toy-a-thon to Lincoln, and is completing his fifth term as president of our club. During the time of his presidency, the club has grown from 75 to 322 members!

He is Lancaster County Emergency Coordinator, a Public Relations Advisor for our Division, and was recently appointed by ARRL President Harry Dannals as the 0 call district representative on the Public Relations Advisory Committee.

Reynolds has DXCC and is completing a 6 band WAS. He has been a major promoter of the community service aspects of Amateur Radio.

We congratulate Reynolds on this well-deserved honor!

— *Lincoln Log, Nebraska* □

Contact Worldradio for hamfest prizes.

Vignettes of telegraphy

Ed Marriner, W6XM

It's never made much difference to me whether code was sent to the outside world by a wireless transmitter or a twisted pair going from the shack to a telegraph pole. The thrill was just the same for me! It was the vision of an operator in the Alaskan wilderness humped over a stove sending on the key, or an operator in the jungles sweating it out sending code. The fun and excitement of the act always fascinated me. I could travel vicariously in my mind to strange lands or enjoy visions of exciting experiences.

My son watches me send code and remarks, "how boring." To each his own, and I wonder why the difference? Has it been I was brought up in the world of Hugo Gernsbach books? Perhaps wireless is so commonplace now. However, it is no fun for me to plug in an IC to a computer and get the same thrill. I am glad there are a few of the old-timers left to enjoy CW.

Telegraphy has been with us a long time. Looking back through old magazines I came across a few stories that seemed interesting enough to repeat and pass on to the readers.

Telegraphy probably reached its peak in the mid-1800's, and here I looked for a few references. There must be many more.

11 MAY 1857 WAS A HISTORIC DAY for the British. That is when the telegram was sent from Delhi, India warning of a mutiny outbreak in the Punjab. It electrified the whole world!

A young telegrapher was at his post in the telegraph office when the mutineers were almost upon him. As they were yelling outside, he continued to send his message in the true operator spirit. His message on the sounder flashed news to Umballa, to Lahore, Rawulpindi and Peshawar. He warned the authorities of the Punjab a mutiny was taking place and that Sepoys had come in from Meerute burning everything in their path. Many Europeans were dead and fires were everywhere.

As the last click of the telegraph sounder died away the mutineers burst into the telegraph office and slew the young operator. In England, Sir Herbert Edwards proclaimed this young operator's valor and said the warning was a means of salvation for the Punjab.

The full story, as later told, was that a Mr. Todd was in charge of the office, along with two young telegraphers — Mr. Brendish and Mr. Pilkington, both aged 18 years. On Sunday, 10 May at 4:00 p.m. it was found the line to Meerut was broken and Mr. Todd set out on a journey to find it. He was met along the way by mutineers and slain. This left the two lads alone and in charge at the telegraph office, which was located outside of the Kashmir gate. With their view, they could see the mutineers pass along and could have escaped had they so desired. However, they stayed at their duty post to send messages to the outside world. One of the lads, Mr. Brendish, went out later to see what was happening as the noise quited down. Pilkington stayed on duty. Both, however, spent the night in the old flagstaff tower and the next day started to make their way to Umballa.

Pilkington, however, was requested by a British officer to return to the telegraph key and send a message. It was a daring mission that was accomplished, but at the loss of his life as soon the natives broke in the door.

A few years after this event, telegraphy was expanding all over the Middle East. It is interesting to note that it came to Iran (Persia) in 1870 with misgivings by the priests who denounced it as a species of magic. They felt it had magic along with evil principles subversive to their religion. In 1862, a telegraph line was started and passed through Persia going from India to England. It was not very satisfactory and had many delays and errors. It was not until 1870 that telegraphy became practical there.

A SHORT DISTANCE AWAY, in Egypt, General "Chinese" Gordon was about to start a telegraph system. In 1878, he ordered some telegraph equipment to be sent to Khartoum in the Sudan. Eventually 12 telegraph sets arrived. If you are a movie buff and saw the movie about Khartoum and the Dervish fanatics along with the relief column sent with Gen. Kitchner, you can visualize this telegraph office location. Omdurman fell, General Gordon was killed, and it was years before the British returned.

On 3 September 1898, a British column re-captured Omdurman from the Dervish hordes. After the battle one of the sergeants of the Royal Engineers was entering the city from the south at Khar Shambat, and he noticed a telegraph wire. This seemed strange and out of place to him. He decided to follow it and was amazed to find a mud hut with an old man seated inside at a bench with a telegraph key. The old Egyptian telegrapher had been held prisoner all these years by the Khalifa for the purpose of operating a telegraph. He told the sergeant when General Gordon was defeated the telegraph instruments had been retained to keep communications between the city of Khar Shambat and the arsenal at Omdurman.

The consequent results of the sergeant's discovery was that this telegraph instrument was sent home to England in an honored place as the property of the officer of the telegraph battalion and placed on display at Aldershot. It would be interesting to see if it is still there.

ANOTHER INTERESTING NEWS STORY occurred in India. In August 1897, Bombay suffered from bubonic plague. The whole staff of the telegraph office stuck to their posts. The operators were working in

(*please turn to page 26*)

STATION Appearance

This month's winner of a one-year extension of his **Worldradio** subscription is John Rouse, KA3DBN, of Bowie, Maryland. The picture on the right shows John's "Wall of Fame", or the brag wall, with various certificates and a display of DX QSL cards.

In the picture below is John's operating position with the scope for monitoring outgoing signals, which almost seems mandatory for Station Appearance winners.

Since KA3DBN is a CW buff, his main rig is the Ten-Tec Omni-D. As can be seen, there is a lot of other equipment to cover the entire spectrum. Listening to everything everywhere comes quite naturally to John, as when he was in the Air Force his job was to do just that, concentrating on UA land. The question does arise — "If on such a job could you monitor a circuit and then work the same guy later for fun?"

Worldradio editor N6WR met John Rouse on 1 June 1980, when both were on a flight to London. Since John is an amateur and also a newspaper editor, lots of good conversation followed. Then on 3 December, these pictures and a note came saying, "Here's a picture of my shack; maybe it's good enough to beat you out of another year of **Worldradio**." How can you turn that down? □

Carrier pigeon ham

On 29 September, Lenore Jensen, W6NAZ — aboard the Queen Mary docked in Long Beach, California — called Security to unlock the 3-room complex of W6RO, the "Wireless Room" and Amateur Radio station beneath the center smokestack of the huge ship.

As the gentleman unlocked the room adjoining the radio room, a white pigeon walked nonchalantly out as a group of tourists walked by. Lenore, poised to answer the usual tourists' questions, could only smile as one guy, eyeing the pigeon, asked: "Is THAT the way hams send messages?"

Lenore and her husband Bob, W6VGQ, recently received an award for their PR activities in support of Amateur Radio at the ARRL Southwest Division Convention Banquet. □

A 'Berry' busy family

The Berry family in El Cajon, California certainly has its share of Amateur Radio operators. Their names and calls, in case you're curious, are: Howard, WD9EWO; Sally, WD9FMX; John, KB9KK (ex-WD9EWN); and Mark, WD9EWM. □

DON'T FORGET . . .
Include first and last names with call signs.

Vignettes

(*continued from page 24*)

the most infected areas of the city with plague all around them. They did not panic but stayed on duty to perform meritorious service. Two died, despite washing the telegraph office and quarters with chloride of lime placed in pans.

IN THE UNITED STATES, at the beginning of the Civil War, there was a plan to use telegraphy. Although it had been used commercially, it was not used in the U.S. Army. News of the war outbreak was sent on commercial telegraph; the War Department closed down the American Telegraph Company one week after the war started.

The Union forces then started to form telegraph corps by obtaining operators from the Pennsylvania Railroad.

From the first few skilled operators the corps grew to 1,200 before the war's end. Most of the operators were boys in their teens. It was a trusted but dangerous assignment, and over 1,000 operators were killed during the war.

The operators were at the front lines moving with the generals and in many instances, were the rear guard in any retreat. They had full knowledge of all troop movements and held this honor with trust and in the spirit of operator tradition.

General McClellan was probably the first to use the telegraph from his headquarters in Virginia on 3 June 1861. Since the corps was civilian, the Army wanted it as their own. The Chief Signal Officer, A. J. Myer wanted to control it and tried to get the Secretary of War to give the corps to him with no avail. He decided to make his own army unit, which he did, and improved the field equipment. The friction still continued during the war and the corps acted in a semi-military department. The operators were civilians who were badly under-paid.

During the war 6,000,000 telegrams were sent by these operators. The Southern forces had no corps but used commercial telegraph whenever they could obtain the services. During the war, the Union extended the telegraph lines west to the Pacific Coast. By 1900, there were lines across Alaska.

DOWN IN ARIZONA, there was trouble with the Indians with the U.S. Army chasing Geronimo. The country was not suited for telegraph wires where they had to go. In 1886 an alternative was started — signaling by heliograph. By putting stations on mountain tops, they could signal long distances over vast areas. One record set was a distance of 125 miles from Mt. Reno near Fort McDowell to Captain Murray on Mt. Graham. This message was repeated to Fort Huachuca — another distance of 95 miles. Another flash with a repeating station was 225 miles. The same feat today is accomplished on 2 meters. Later, a record of 183 miles was made from Mt. Ellen, Utah to Mt. Umcomphgre in Colorado. If this can be done by light, it sure could be done by 2 meters.

Some of the instruments can be seen today on display at the Fort Huachuca Historical Museum.

A footnote I would like to add is that as a boy in the 1920's, out climbing the coastal hills near Laguna Beach, I found the remains of an old signal station. It was a relay point from San Diego to San Pedro during the Spanish American War. □

AM still popular

Bob McGarvey, WB2EVF

If you have been thinking AM doesn't exist any more except on 11 meters, you're kidding yourself.

The amateurs running AM aren't all diehards who were running AM 40 years ago and don't think this newfangled sideband will last.

There are young fellows who have picked up used AM equipment just to get on the air without taking out second mortgages on their wives and children.

On 10 meters, you'll find mobiles and fixed stations alike working at 28.708, if you live in New Jersey. Some of these amateurs have been using that frequency for years and others are new enough to have gotten on with converted CB sets.

It is not unlikely you will run into someone running one of those little three-channel AM CB rigs.

They are easy to convert, with crystal changes and a little tuning. And they were being sold for next to nothing after the 40-channel jobs came on the market.

The 28.708 spot is a New Jersey landmark. Next time you're tuning past it, listen for a whistle to let you know there is a low power AM station transmitting.

Up at the top of the 10-meter band is where you'll come across most of the out-of-state AM operators, many running considerable power and putting out big signals.

I had a long and very enjoyable contact not too long ago with a young fellow in Colorado.

He told me, quite honestly, he had bough some old AM gear because it was what he could afford. And he was enjoying using it.

More surprising was an equally satisfactory QSO with an operator in England, who also was running a vintage AM transmitter.

One night during the Trotters and Pacers sideband net, a whistle checked in from Georgia. He was an oldtimer, a 1×2 General Class operator.

There was a lot of twiddling with knobs as New Jersey stations maneuvered to work him with their sideband emissions.

When my turn came, I gave him a call with just 5 watts input.

Did he copy me? He came back with a delighted exclamation that I too was running AM.

I simply had switched modes.

— *The Home News* □

Happy Flyers

HAMS & PILOTS

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

INTERNATIONAL COMMANDER Hart Postlethwaite, WB6CQW
1811 Hillman Ave., Belmont, California 94002 (415) 341-4000

International Vice Commander, Paul Hower, WA6GDC
Box 2323, La Mesa, California 92041 - (714) 465-5288

Nationwide ELT program review

About this time in 1976, the HAPPY FLYERS launched into a campaign to enlist the aid of Amateur Radio operators in listening on the International Distress Frequency (121.5 MHz) for downed aircraft. We were not the first, nor the only ones, to realize the great life-saving potential of listening on mountain-top repeater sites. We were unaware of the great work already accomplished by Rick Goodman, W5ALR, and the New Mexico amateurs. They had perhaps the first receiver on a ham repeater. Nonetheless, the HAPPY FLYERS campaign launched in **Worldradio, 73 Magazine, and Ham Radio Horizons,** was perhaps the first and only attempt to solicit nationwide assistance.

It is time to look back at the accomplishments and disappointments of these last few years. We were met with an extremely wide variation of acceptance and rejection. There was the majority, who rapidly embraced the value of the concept, and there were the few in high places that actively opposed what they claimed was our concept. It was interesting to note that their chief complaints were in areas that our plan would almost totally avoid. The other question they raised was the legality of the plan.

Had we actually suggested rebroadcasting the ELT signal down the amateur repeater, it would have been prudent to question the legality. However, we had realized the practical disadvantage in having every ELT and/or voice transmission on 121.5 sent into the midst of standard repeater activity. To avoid causing problems with local non-flying repeater users, we had suggested the presence of a carrier on 121.5 starting a timing circuit. Should it remain in excess of a predetermined number of minutes, telemetry (generated by a tone encoder in the repeater transmitter) would be sent for a few seconds every 10 minutes or so to alert interested trained Search and Rescue (SAR) personnel to respond according to their State jurisdictional laws. Rick Goodman's group realized the wisdom of this approach and switched to this type of monitoring. In any event, the ARRL no longer has a stand against listening for downed aircraft at remote sites.

It might be well to point out at this time that International law gives priorities to **emergency transmissions,** which give liberties to far more questionable transmissions in the case of emergencies involving life-saving circumstances. Regardless of the number of false alarms a fire department receives, they treat every fire report as real until proven otherwise. Thus the ELT (Emergency Locater Transmitter) signal on 121.5 needs to be treated as an emergency transmission, until proven otherwise. Even the too numerous false triggerings must be rapidly located and silenced, so they will not mask any real signals from a downed aircraft in the same local area. **A program similar to what we suggest is very definitely legal.**

To continue with our review. Many amateur and CAP repeaters across the United States are now listening for downed aircraft, and to assist in the rapid silencing of false signals. The problems we have faced have been multi-faceted. First, though the majority felt this was a marvelous idea and a wonderful opportunity for Amateur Radio to do great public service, the "let George do it" syndrome bit most who heard of the concept. Too many NEVER heard. Those (named George) who were willing to do it, found it was almost impossible to locate a quality crystal-controlled receiver that would live at a repeater site in the high RF environment.

This lack of quality receivers was partially met by a large company making their surplus receivers available for a $15 handling charge. They have recently donated a good number of them to us without cost. When I receive permission, I would like them to receive public recognition for their years of support in this project. (While on this subject, if this article moves you to put a receiver at your site, we have about a dozen receivers available for shipping costs only. Since we receive these on a limited, but continuous basis, we ask that you not send for one until you are ready to actually install it within 45 days of receipt.) The receivers will someday save lives, but they certainly do no good sitting on a shelf or in a garage.

Dr. David Cook, W7VOM — Sheriff's Air Squadron pilot and HAPPY FLYER — installed one of the first Hamtronics aircraft receivers in a single box with a DF for use in Orange County SAR planes. He has built about a dozen DFs for others.

We made numerous requests for manufacturers, or some enterprising amateur to design a good, solid state, high adjacent channel rejection receiver for Search and Rescue people. There is a great market out there in the SAR field — all very dedicated people. To date, no one has submitted a really acceptable radio. We will volunteer whatever expertise we have towards helping them design in the right specifications, and in testing and evaluating their finished product. Will also write about their product in this column, as well as tell about it in our speaking engagements. Any entrepreneurs reading this???

In keeping with the above philosophy, we would like to thank Hamtronics for their creation of the aircraft kit receiver added to their line as a result of our letters and articles. Not all receivers we tested would function well with the various switched antenna DF units. Doc Cook, WB6FMX, and I put together the Hamtronics kit and connected it to a HAPPY FLYERS DF unit. It passed all the tests we had time to perform. You will find a picture of it (on this page) with the receiver and DF in the same box.

We did find that the DF actually worked better when the pick-off point was taken from the high side of the volume control rather than from the detector diode (as is the normal place for most DF units). After this discovery, we do recommend anyone having trouble with any DF installation to try a couple of different pick-off points. Perhaps the shaping and time constants in some circuits cause a problem in various DF Units. (Remember, we found every DF unit we tested COULD work, although almost ¾ DID NOT. Do not give up — yours can work.)

We were also fortunate in viewing and using the first Exeter synthesized aircraft hand-held. It was a little bigger than I expected, spoiled by the little S1 I had at the time. My new 2400 is closer to the size, and I look forward to receiving one of the production units so I can install and test a couple of DF brands on this unit. If the switched antennas DF units will not cause inteference with the synthesized receiver, it will most certainly be a boon to those of us in SAR. Will let you know when the tests are completed.

I will have to continue the review of the ELT program next month, as I have some other items to cover with you this month. The bottom line is that we have had great success in many ways, but we have just barely begun to uncover the tip of the iceberg — as far as public service is con-

Stage 1 — area-wide monitor program

1. Existing ham and CAP repeaters install 121.5 receivers with special time lock-out decoder to by-pass ELT test period and voice communication for 6 minutes. This provides high level, wide area coverage, through thousands of existing repeaters.

2. Low-band amateurs and interested citizens would install low cost monitors in homes in remote wilderness areas not covered by repeaters, FAA, or military facilities.

3. Every airport in the country to have an individual volunteer monitor with same lock-out decoder. Receiving range cut to hear only one airport. Purpose of these monitors to immediately localize false airport triggering of ELTs.

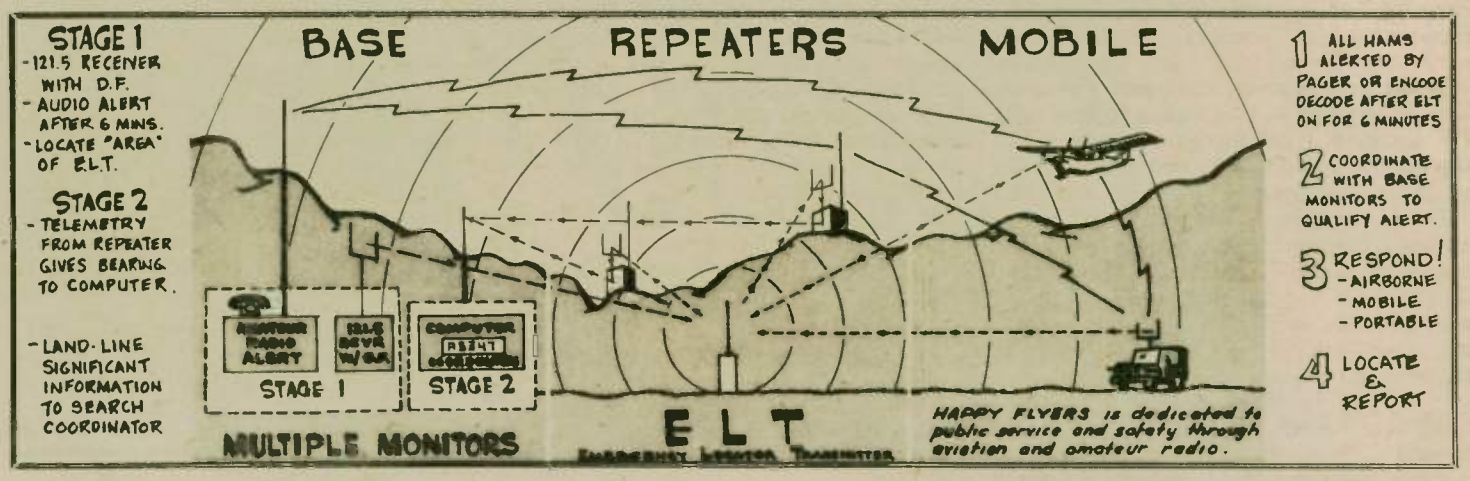
4. When 6 minute test lock-out exceeded, repeaters to generate emergency tone [2000 and/or 200 cps] to "Silent Monitor" decoders and paging receivers alerting search and rescue personnel and coordinators alike.

5. Proper coordinator will assemble information from repeater and individual monitor reports. Airport falses would be immediately identified by airport volunteer.

6. Individual alert of all SAR personnel via wide coverage repeater tone-alert will cause pilots and ground crews to remain available while validity of emergency is verified by coordinators. Call-up can be accomplished through repeaters or phone. Acquiring crews at odd hours will be greatly simplified.

7. SAR personnel can be reached at social functions, work, in car, or during sleep hours via extensive coverage of repeaters and use of its tone alert. Airborne search pilots would also be able to be contacted. TIME SAVED, SAVES LIVES.

Nation-wide E.L.T. Program



Stage 2 — electronic direction finding

1. Remote RDF capability will be added to repeaters and be available on command of coordinators. Bearings from two or more repeaters will be plotted for probable area of trouble. Low-cost tone telemetry has been developed for this.

2. Remote individual wilderness monitors will add low cost RDF to supply bearing information with reports via radio or telephone.

3. Airport monitors will add portable RDF capability and assist in locating offender.

4. Amateurs to assist in equipping more planes with low cost RDF capabilities.

5. Computer equipped amateur repeaters will inter-link for rapid calculation of more precise intersections of multiple bearings.

6. Continue free educational seminars for amateurs, pilots and other interested people.

7. Encourage pilots to report their own accidental triggerings [to cancel searches].

8. Encourage more pilots to monitor 121.5, in flight, and at shut-down.

9. Continue conducting free check rides for pilots and observers in RDF techniques.

10. Issue gold embossed DF rating cards for passing written and flight/ground checks.

Additional proposed goals

1. Visit with Congressional leaders, FAA, FCC officials to effect necessary changes.

2. Establish a legal procedure to silence illegal ELT transmissions.

3. Provide Scott AFB with current lists of volunteers, capabilities and locations.

4. Continue to seek donors of used commercial equipment, receivers, pagers, etc. to minimize overall costs to SAR volunteers in the program. □

cerned. We presently know of 26 lives saved as a result of the work of the HAPPY FLYERS. Interestingly, all of these saves were by regular SAR personnel rather than by those HAPPY FLYERS involved in the DF training and ELT Monitor program work. We must have more of you interested enough to get a ball rolling in your area. Only YOU can accomplish the task in your area — among those with whom you have contact.

Personal notes from Hart

I wish to take this opportunity to thank each of you who wrote and called to see what happened to me — and the HAPPY FLYERS column. It certainly is gratifying to know how many of you take the time to read our column. Sorry for the delay in the answers — I still have over 30 to answer. Yes, I was in the hospital again, and it looks like I will be going in for one more operation. At this writing, I plan for January at Pacific Hospital in Long Beach, with Dr. Cook, W7VOM, performing the operation. It would be a pun to say I trust him with my life, but I know he will make the best possible decisions for me while I sleep. To ease the work load on me during my recuperation period, Paul Hower — our Vice Commander — has agreed to answer whatever mail he can for me. Please remember that all requests for the free use of our two slide/sound shows are always through Paul.

Radio insurance

Those of us involved in volunteer Search and Rescue activities — along with our regular Amateur Radio public service roles — spend much of our time and money helping others. Often, this humanitarian part of our life is marred by the theft or damage of our radios or test equipment. I felt it might be advantageous to share with you the coverage provided California Amateur Radio operators by HAPPY FLYER, John Layne.

John was able to negotiate a special group policy for us whereby our radios, antennas and test equipment can be insured against theft and/or damage. We are able to insure any selected equipment, which in my case includes my special battery powered portable DF-lab. It contains most of the non-linear systems miniature test equipment such as scope, counters, pre-scaler as well as antenna simulator, delay lines, substitute DF, signal generator, gel cell variable DC supply, etc. My Civil Air Patrol and MARS equipped TR2400 and TR7800 radios are also covered, along with my other Amateur Radio gear.

The peace of mind I now have has sure been worth the 3 percent premiums. Since this coverage is only available to California amateurs, perhaps reading this might cause some other amateur-oriented insurance broker to set up a similar program in your state.

If you have questions, please contact him directly: John Layne, P.O. Box 1342, San Mateo, CA 94401.

New Zealand amateurs visit SFO

We were highly honored to be visited by Jim Meachen, ZL2BHF, and friend, from New Zealand. Jim writes for NZART in the official publication "*Break-in.*" His column is the "Amateur Radio Emergency Corps." He is also very active in many aspects of Amateur Radio in that beautiful country. He was the sound engineer when I was their conference speaker in 1979 and sent me cassettes of several of my talks. I have two 120-minute cassettes that were live tapings of activities at conference, as well as some of the radio interviews done by Fred Johnson, ZL2AMJ, and myself (ZL2TNY/WB6CQW). I would be happy to copy them onto your tapes, provided you send adequate return postage and mailer.

Jim reports that 45 inspectors from the post office (their equivalent of the FCC), are now using HAPPY FLYERS DF units supplied by NZART and donated by us. He says the helicopter pilot I worked

Capt. and 1st Lt. Postlethwaite joined with other amateurs riding this C141 from California to Kentucky, for the national Civil Air Patrol (CAP) Board Meeting. More radio amateur participation is needed to assist in communications and maintenance.

with when there is now so good, He can hover over a downed aircraft, or even a false ELT at the airport. I still envy the rapport the New Zealand amateurs have with their Government. Top post office officials, SAR leaders, and forestry people flew all the way to Wellington to hear my DF seminar. I am unaware of any U.S. top official flying to hear one of my talks!

By the way, both Jim and friend were able to have their first opportunity to fly a light airplane. They both did well flying to and from the Red Baron. While each one took his turn at the controls, the other spent a fortune taking color pictures of the Bay Area from the air.

Civil Air Patrol National Board

Janie Postlethwaite, WB6ODQ, Dennis Polito, WA6SDJ, and I were able to attend the Louisville, Kentucky meeting this year. The trip out and back in the Air Force jet was "something else." It never ceases to amaze me when I see the total dedication of those involved in SAR activities. They spend a lot of their money, but more important than that, they spend much of their lives trying to help others. As I have become older, and perhaps my medical problems contribute, I am realizing that the most valuable thing we possess (and can give), is our time. The rewards a SAR worker receives are really something that money can not buy. Janie and I spent about $10,000 of our own money in the nearly four years of volunteer speaking on DF — but that first 12-year-old girl who was saved by someone we trained was worth the whole thing (not to mention the other 25 who have followed).

If you are looking for a lift in life — or something to add more purpose to each day — give a thought to doing some volunteer work. You need not join an organization (like CAP) to volunteer to help them repair their FM radio, or build them a DF.

Try it — I bet you like it!? □

Hart, Hartley (V), Jim Meachen, ZL2BHF, and an amateur friend all took turns flying 21DF, our specially equipped DF plane during a recent visit. Cessna 182 can DF on Amateur Radio, CAP, aircraft, marine, law enforcement, or commercial VHF frequencies.

A boat sinks

(continued from page 1)

drop was not feasible.

Neil could talk to the aircraft as well as to ships.

On 15 September, the Triad crew learned, via the ship's radio, that two merchant vessels were searching for them — the Sealand Liberator and a Chinese ship, Jinzhou. The first, with an English-speaking crew, was dismissed by the Coast Guard, leaving the Chinese ship on the scene. This was fatal, since the Chinese could understand no spoken English, only written.

Coming alongside the sailboat, the Jinzhou bumped the fiberglass boat, cracking the port hull, which began taking on water.

A succession of Canadian and U.S. Coast Guard vessels tried everything to save the trimaran, but under tow she took water in the main hull. The crew had to abandon ship and go aboard the cutter.

It was a bitter moment when Garello, speaking into a microphone, said: "Neil, I've lost the boat."

In addition to Neil McMullin, KD6EG, there are other amateurs who deserve credit for their participation in this emergency. Francis Hurbert, Jr., KL7HHX, of Anchorage, Alaska, rendered valuable assistance to the Triad on 7 MHz. Chuck Laird, W7BCJ, acted as backup to Bill Johnson, to insure against losing the Triad's frequency.

The Pacific Maritime Net was also involved, with Larry McPherson, KH6HEO, and WA7GMT as the principals.

Bill Johnson adds to this list of credits: "I would like to throw a bouquet to the Coast Guard of both countries for their concern and cooperation during the ordeal," he writes. "Also to San Francisco for thinking enough to contact me later and give me a complete follow-up on the Triad."

*— Material for this article was obtained from several sources: **Redlands Daily Facts**, "With A Grain of Salt" by Frank Moore (13 October); **The Daily Report**, Steve Standerfer, (5 October); Bill Johnson, WA7UYS; and Neil McMullin, KD6EG.* □

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Hand-shack.

Synthesized, big LCD, 10 memories, scanning, DTMF Touch-Tone®

TR-2400

Put a ham shack in your hand. The TR-2400 is the ideal hand-held for 2 meters FM. It features a large LCD readout that can be read in direct sunlight or in the dark, 5-kHz-step PLL synthesized operation, 10-channel memory, scanning, and 16-button autopatch DTMF encoder.

TR-2400 FEATURES:

- **Large LCD digital readout**
  Readable in direct sunlight (better than LEDs). Readable in the dark (with lamp switch). Virtually no current drain (much less than LEDs) and display stays on. Rugged and dependable in hot or cold temperature ranges. Shows receive and transmit frequencies and memory channel.
- **5-kHz-step frequency selection**
  PLL synthesized keyboard channel selection system. No "5 up" switch needed. Selects from 144.000 to 147.995 MHz.
- **UP/DOWN manual scan**
  Single or fast continuous 5-kHz steps from 143.900 to 148.495 MHz for Amateur and MARS or CAP simplex or repeater operation.
- **10 memories**
  Retained with battery backup (only 2.0 mA). "M0" memory may be used to shift the transmit frequency any desired amount to operate on repeaters with nonstandard split frequencies.
- **Built-in autopatch DTMF (Touch-Tone®) encoder**
  Uses all 16 buttons of keyboard while transmitting.

- **Automatic memory scan**
  Checks all 10 memory channels. Programmable to lock automatically on either BUSY (signal present) or OPEN (no signal) channels.
- **Subtone switch**
  Activates subaudible tone encoder (not Kenwood-supplied).

- **Repeater or simplex operation**
  Convenient mode switch shifts transmit frequency +600 kHz or -600 kHz or to the frequency stored in "MO" memory.
- **Reverse operation**
  Push-button switch shifts receiver to transmit frequency and transmitter to receive frequency.
- **Extended operating time**
  With LCD and overall low-current circuit design. Only draws about 28 mA squelched receive and 500 mA transmit (at 1.5 W RF output), for longer operating time between charges.
- **Two lock switches**
  Prevent accidental frequency change and accidental transmission.
- **BNC antenna connector**
  Easy to connect external antenna.
- **LCD "arrow" indicators**
  Show "ON AIR," "MR" (memory recall), "BATT" (battery status), and "LAMP" switch on.
- **High-impact case and zinc die-cast frame**
  Extremely rugged with antenna counterpoise.
- **External PTT microphone and earphone connectors**
  Easily accessible on right side of transceiver.
- **Compact and lightweight**
  Only 2-13/16 inches wide, 7-9/16 inches high, and 1-7/8 inches deep. Weighs only 1.62 pounds (including antenna, battery, and hand strap).

Microphone PTT and audio terminals

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Earphone Jack

STANDARD ACCESSORIES INCLUDED:

- Flexible rubberized antenna with BNC connector
- Heavy-duty (450-mAh) NiCd battery pack
- External-standby (PTT) plug
- AC charger
- Hand strap
- External-microphone plug
- Earphone

NOTE: *Price, specifications subject to change without notice and obligation.*

OPTIONAL ACCESSORIES:

- ST-1 base stand (shown) which provides 1.5-hour quick charge and automatic switch to trickle charge, floating charge (operate while charging), 4-pin connector for dynamic microphone, and SO-239 antenna connector
- BC-5 DC quick charger (1.5 to 2.0 hours)
- SMC-24 speaker/microphone
- LH-1 deluxe leather case (top-grain cowhide)
- PB-24 extra battery pack with charger adapter
- BH-1 belt hook

TRIO-KENWOOD COMMUNICATIONS INC.
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Easy selection.

15 memories/offset recall, scan, priority, DTMF Touch-Tone®

TR-7800

Kenwood's remarkable TR-7800 2-meter FM mobile transceiver provides all the features you could desire for maximum operating enjoyment. Frequency selection is easier than ever, and the rig incorporates new memory developments for repeater shift, priority, and scan, and includes a built-in autopatch DTMF encoder.

TR-7800 FEATURES:

- **15 multifunction memory channels, easily selectable with a rotary control**

  M1-M13...memorize frequency and offset (±600 kHz or simplex)
  M14...memorize transmit and receive frequencies independently for nonstandard offset
  M0...priority channel, with simplex, ±600 kHz, or nonstandard offset operation

- **Internal battery backup for all memories**

  All memory channels (including transmit offset) are retained when four AA NiCd batteries (not Kenwood-supplied) are installed in battery holder inside TR-7800. Batteries are automatically charged while transceiver is connected to 12-VDC source.

- **Priority alert**

  M0 memory is priority channel. "Beep" alerts operator when signal appears on priority channel. Operation can be switched immediately to priority channel with the push of a switch.

- **Extended frequency coverage**

  143.900-148.995 MHz, in switchable 5-kHz or 10-kHz steps.

- **Built-in autopatch DTMF (Touch-Tone®) encoder**

- **Front-panel keyboard**

  For frequency selection, transmit offset selection, memory programming, scan control, and selection of autopatch encoder tones.

- **Autoscan**

  Entire band (5-kHz or 10-kHz steps) and memories. Automatically locks on busy channel; scan resumes automatically after several seconds, unless CLEAR or mic PTT button is pressed to cancel scan.

- **Up/down manual scan**

  Entire band (5-kHz or 10-kHz steps) and memories, with UP/DOWN microphone (standard).

- **Repeater reverse switch**

  Handy for checking signals on the input of a repeater or for determining if a repeater is "upside down."

- **Separate digital readouts**

  To display frequency (both receive and transmit) and memory channel.

- **Selectable power output**

  25 watts (HI)/5 watts (LOW).

- **LED bar meter**

  For monitoring received signal level and RF output.

- **LED indicators**

  To show: +600 kHz, simplex, or -600 kHz transmitter offset; BUSY channel; ON AIR.

- **TONE switch**

  To actuate subaudible tone module (not Kenwood-supplied).

- **Compact size**

  Depth is reduced substantially.

- **Mobile mounting bracket**

  With quick-release levers.

See your Authorized Kenwood Dealer now for details on the TR-7800...the remarkable 2-meter FM mobile transceiver!

NOTE: *Price, specifications subject to change without notice and obligation.*

MATCHING ACCESSORY:

- KPS-7 fixed-station power supply

DX WORLD

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

Activities calendar

17-18 January	FRACAP (Central America) Worldwide Contest (Phone)
17-18 January	73 Magazine 160-Meter Contest (Phone)
25-26 January	French (REF) DX Contest (CW)
25-26 January	CQ Magazine 160-Meter World Wide DX Contest (CW)
07-08 February	RSGB 7 MHz Contest (Phone)
14-15 February	Dutch PACC Contest
14-15 February	SRJ Yugoslavian DX World Wide Contest (CW)
21-22 February	ARRL International DX Contest (CW)
28-01 February	French (REF) DX Contest (Phone)
28-01 February	CQ Magazine 160-Meter World Wide DX Contest (Phone)
28-01 February	RSGB 7 MHz Contest (CW)
07-08 March	ARRL International DX Contest (Phone)
21-22 March	Bermuda Contest
28-29 March	CQ Magazine Worldwide WPX Contest (SSB)

W-100-N

Only two applications were successful this month. Congratulations go to the following amateurs:

87. K9WG	W.Y. "Bill" Golden
88. WA6CUP	Gerald W. Boyd

Lloyd and Iris

The Colvins must be tired of California as they are off again to other parts of the world. Lloyd, W6KG, and his XYL, Iris, W6QL, are part of the YASME Foundation, born out of the old Danny Weil days. Here is a letter from the Colvins, dated 27 October 1980 at Crete Island, where they had just finished operating as W6KG/SV9.

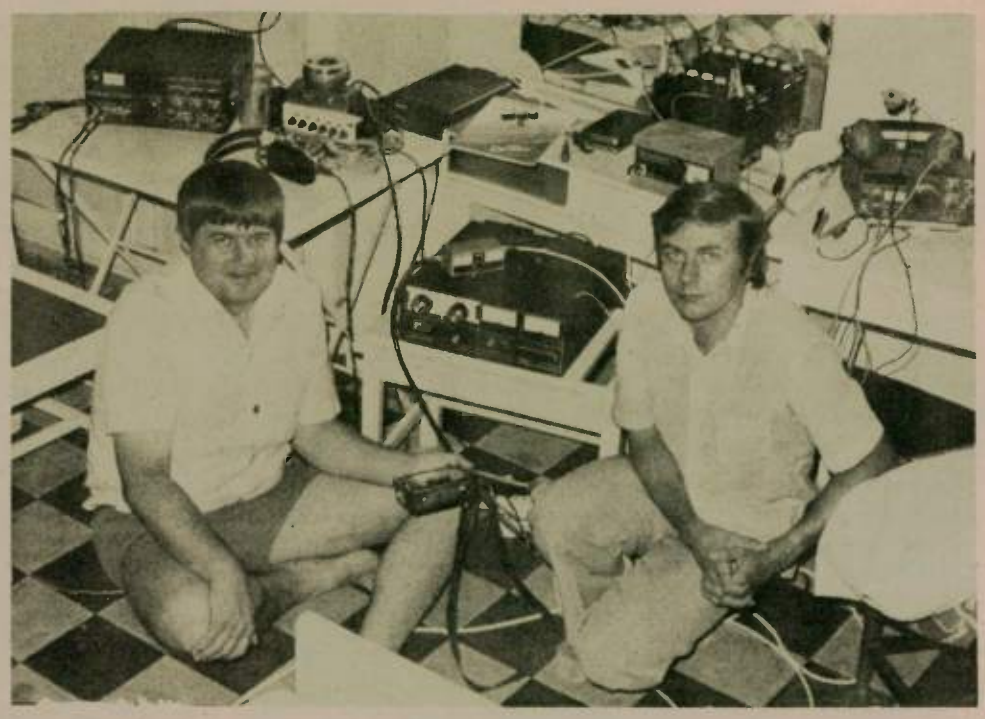
Dear Friends. We departed California on 1 October 1980 and flew directly to Athens, Greece. The next 10 days were spent clearing customs and obtaining our licenses. It was only through the efforts of Cliff Saccalis, SV1JG, and Charles Jackson, SV0AA, that we got our licenses that fast. Anyone going to Greece should apply at least two months before arrival!

We got on the air from Crete Island as W6KG/SV9 on 12 October and by 26 October we had 9,500 QSOs, half phone and half CW. We worked stations in 142 countries and were on all bands permitted in Greece. 160 meters is not permitted yet for use by Greek amateurs. Operation on 40 meters is limited to 7000 kc through 7100 kc, and on 80 meters to 3500 kc through 3600 kc. We were on 48 hours in the CQ World-Wide Phone Contest and made the highest score for Crete.

The tourist business is a major industry in Greece, and, as a result, all of the islands have great numbers of hotels and everyone in the hotels and shops speaks English.

We try to use Lloyd's call in one country and Iris' call in the next. From here, we go to Rhodes Island in the Dodecanese and will use Iris' call there as W6QL/SV5.

We expect to be on the air almost continuously for six months. Please pass the word to everyone. 73 es 88, Lloyd Colvin, Iris Colvin, W6QL.



Marti, OH2BH, and Ville, OH2MM, relax for a photo during their operation from ST2FF/ST0 at Juba in Southern Sudan. It has not been determined as to why they are sitting on the floor. Maybe they just finished working JA's. *(OH2BH photo)*

OH DX operations 1980

I received a note from Marti Laine, OH2BH, (plus my ST2FF/ST0 QSL), regarding their operations from Fadul Kabar Mohmed, ST2FF/ST0, and 6T1YP this past summer. The DXpeditions were sponsored by the Northern California DX Foundation with the main purpose of lecturing, training and establishing Amateur Radio in Sudan. The two operators — Marti, OH2BH, and Ville Hiilesmaa, OH2MM — completed some 20,000 contacts during evening time operations.

All QSL cards have been mailed. The stateside cards were sent via Wayne Gingerich, W6EUF, and the Japanese cards via JA1IFB. The balance will be mailed from Finland, including 6,000 direct requests. Anything left will be sent via the bureaus in the next six months.

Marti's note follows:

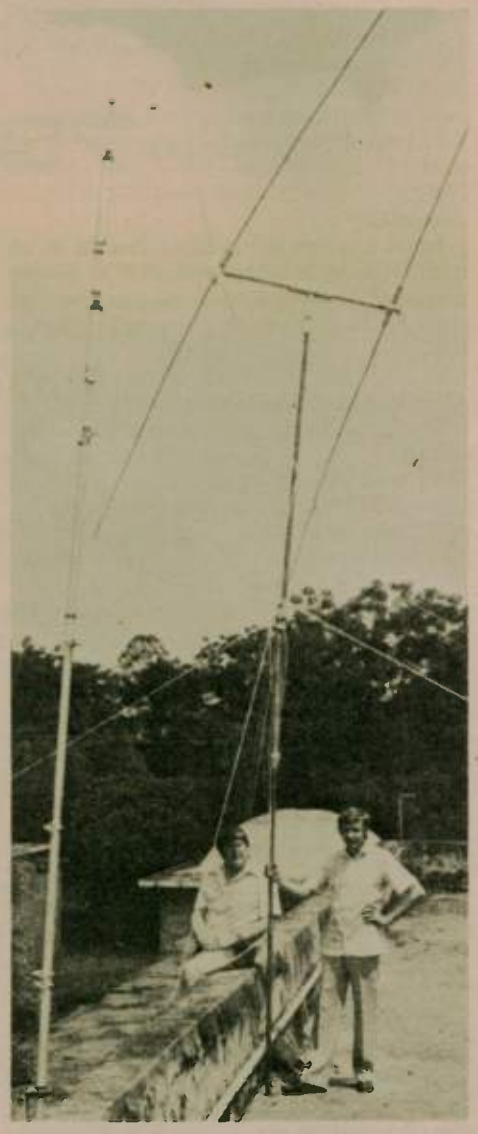
ST2FF/ST0

Juba is the center of the Autonomous Southern Region of the Sudan. The area close to the Equator is different from the rest of the country, not only in terms of a more favorable climate and tropical nature, but also in regard to its people with a different color, race, religion and language.

Ours was the first flight made in three months across the 400-mile desert along the Nile River. We stayed four days in the area previously isolated for cholera. People mostly plagued by chronic malaria were extremely friendly to foreigners assisting them in health care, education and other programs.

9,000 QSOs were made from the Juba Hotel where Nile fish was served for breakfast, lunch and dinner due to a food shortage. The equipment functioned flawlessly on a shaky 160 VAC — only the Dentron relay circuit had to be rewired for our 12 VDC battery which supplied our power during the hours of darkness.

We are extremely grateful to Dr. Sid Ahmed Ibrahim, ST2SA, and Mr. Eduard Bashier of the Ministry of Information of the Southern Region for making this operation possible.



Here is the antenna farm of ST2FF/ST0 atop of the Juba Hotel. OH2BH is the one on the ledge. OH2MM is holding the Quad. ***(OH2BH photo)***

6T1YP

The Youth Palace is performing important tasks for the young people of the Sudan in many educational areas, including physics, chemistry, sport, music and the arts.

The Physics Department takes great pride in having trained Amateur Radio operators at their newly established club station 6T1YP. The Yugoslav (SRJ), German (DARC) and Finnish (SRAL) national societies as well as the Northern California DX Foundation (NCDXF) deserve recognition for their contributions.

As invited guests for training and lecturing, we managed to open the station 6T1YP for international friendship between the Sudan and the rest of the world. Some 10,000 QSOs were logged during four nights of operating.

Mr. Amir Kobani (now 6U1AA), Director of the Palace, and Secretary General Fadul Kabbar, ST2FF, acted as our excellent hosts and many plans were developed for promoting Amateur Radio in the Sudan. We have reason to be proud of having the Youth Palace and their fine people in the ranks of Amateur Radio.

Kingman Reef

There appears to be a group that is aiming for a DXpedition to Kingman Reef and Palmyra Island this April. Harry Mead, VK2BJL, and Jack Binder, VS5JB, will be heading there on the latter's yacht "Banyandah". Approximately 30 days will be required for the operation. The two are looking for additional operators. Those who are interested should contact Karl Kensen, KB7KQ, P.O. Box 275, Redmond, WA 98052.

Guinea

There is another signal out of this one. Ian Doncaster, VK4NIC/3X, is an Australian Novice who is there as a pilot on a geodetic survey and should be there for about six months. He can operate only in the 10 and 15 meter bands, but on both CW and SSB. He runs 100 watts to a wire antenna.

Ian's interest is ragchew, but he is an understandable chap and will make an attempt to work the mob via the list method. Reports have given him recently found on 28.500 to 28.510 MHz after 2000 UTC. Ian has also been found on 21.155 MHz working Europeans at 2200 UTC.

Suggested frequencies to look for VK4NIC/3X are 21.202 MHz from 0500 UTC and on, or about 28.505 MHz at 2145 UTC weekdays and 1600 to 1700 UTC on weekends. Your QSL cards should be routed via John Parrott, Jr., W4FRU.

Now if you are the Dx'er who always knows what is going on, then you probably have already heard the other station from Guinea that was to have been on over New Year's. EL2CA/3X is the other one and is reported to have all the necessary documentation to satisfy the DXCC requirements.

Regarding the operation of LA5KC/3X, (see November issue of **Worldradio**), Don Search of ARRL headquarters reports they still have not received any documentation from them. Don has written to them, but has had no reply as of this writing.

Iraq

Amateur Radio Club station YI1BGD has been off the air for some time now. The tribander had been taken down with the club station moving to new quarters. This station will probably remain off the air until the Iraqi-Iranian conflict ceases.

At that time, there are to be training classes for new amateurs, with a license to place midway between the U.S. Novice and Technician Class licenses.

The members of the club are busy individuals and the QSL chores have been a problem. Further requests for QSL cards from YI1BGD should be routed to their new address:

RC Baghdad Scientific Center
P.O. Box 5864
Baghdad, IRAQ

Early this year there should be a DXpedition to Iraq from Jordan, reported to include six operators.

Jordan

Those JY7 stations that had been on recently were the Jordanians celebrating King Hussein's 45th birthday. An award is available for working at least seven Jordanian stations using the JY7 prefix during the period of 13 through 19 November.

If you missed a JY7 and could use any JY call, perhaps you can look for the following that have been reported in the past. JY4MB has been found on 14.212 MHz at 1400 UTC, and 14.220 MHz at 0330 UTC; JY4YJ on 14.250 MHz at 0400 UTC; JY5NS on 28.564 at 1100 UTC; JY5ZM on 14.221 at 0300 UTC; JY9DI on 14.209 at 2300 UTC, and JY9ZZ on 28.595 at 1500 UTC. Doesn't anyone over there operate CW?

Abu Ail

This operation should have been completed by now. The operators were to have included that traveling Californian, Dave Gardner, K6LPL; Joseph Cassaro, F6ATQ; Pierre Reissian, J28AZ. The group were to have been using the call J20AA/A. There were other reports that Franz Langner, DJ9ZB, and Dave Schoen, N2KK, were part of the team. I am saying all this in a crazy past tense as I am writing this prior to the DXpedition. Dave, K6LPL, was to have been the anchor man on CW.

Dave also reports that the group is not requiring four IRCs for the return of a QSL card, which had been reported elsewhere. Of course, any donations will be appreciated. QSL requests are to go via DJ9ZB.

When not operating from Abu Ail, K6LPL will be operating J28LP.

Heard Island

Jim Smith, formerly P29JS, now VK9NS on Norfolk Island, advises that the Heard Island DXpedition is still set for January and February — provided they have the financial assistance. They still need quite a bit of assistance, and all donations may be sent to Jim at P.O. Box 103, Norfolk Island.

Dave, K6LPL — that traveling Californian again — is reported to have dropped out of the DXpedition.

Another report is that they cancelled the operation due to lack of funds and were considering heading to Mellish Reef as a compromise. Heard Island was a most needed, and although Mellish Reef is way down on the list, it is still needed by many a deserving DX'er.

Nigeria

Dave Guthrie, 5N0DOG is probably the most active station from Nigeria. I have reviewed the DX bulletins and have found some additional stations that have been reported. Look for 5N9GM on 21.305 at 0100 UTC, or 28.597 MHz at 1100 UTC; 5N20FAV on 21.296 MHz at 2230 UTC; and 5N20RMJ on 28.561 MHz at 2200 UTC or 1200 UTC.

Those 5N20 calls were used in October celebrating 20 years of independence for Nigeria. The two calls above, 5N20FAV and 5N20RMJ, will be using their normal district numbers by now, whatever they may be.

Turkey

That recent comment of mine on the Amateur Radio activity in Turkey being illegal ever since that law was enacted in 1937 was misleading. Things have just tightened up over there. If you correspond with an amateur there, please omit any reference to Amateur Radio on the envelope.

I received a letter from Burt Vander Clute, WB4RLQ, concerning Amateur Radio activity in Turkey. Perhaps some of you have worked Van when he was over there operating as TA2BAV. He says it is true that there are severe penalties for violation of that old law, but it is seldom enforced. If you have ever heard or worked a Turkish station with a self-assigned call, it is most likely a pirate. Turkish calls, while not recognized by the government, are assigned by the Turkish Amateur Radio Society (TRAC). The society is recognized by the government and is the Turkish representative body to the IARU. I have included an article that Van had prepared for the *ECARS Monitor*, which is presented in its entirety.

Ham Radio in Turkey

Last year, while I was stationed in Turkey, I had the opportunity to be 'rare' DX as TA2BAV. Several of the ECARS regulars asked me to explain about ham radio in Turkey, and this is the result.

Amateur Radio in Turkey is illegal. In 1937, Turkey was concerned that she was becoming the focal point of spy intrigue for the world. Her government was struggling to keep the country out of the world war which everyone sensed was coming. As a result of the two concerns, the Turkish parliament passed a series of neutrality bills. One of these, Law 3222, banned private ownership and use of all radio transmitting equipment. In effect, 'personal radio,' as we have come to know it in the States, was outlawed.

While the law still remains in force, the "exceptions" to the law have increased. Transmitters are built and demonstrated legally in school science classes; city public works use radios to dispatch work crews, police and fire departments . . . even city buses carry two-way radios. All of these have been case-by-case exceptions to the basic law.

Just about every branch of government in Turkey sees the need to change law 3222. Provisions to allow and encourage Amateur Radio have been included in each of the past three five-year development plans. The Turkish General Staff has strongly endorsed the desirability of Amateur Radio.

It is just this prevailing sentiment which allows hams in Turkey to continue operating (illegally) today. Government agencies charged with enforcing the law see the need to change that same law; hence, they turn a rather blind eye and deaf ear to current ham operations. Hams are simply allowed to operate unmolested.

Concurrent with this desire to change the law or to grant another exception for amateurs, there is also a fear that once the law is changed, radio might be used to coordinate clandestine or illegal activities in the country. The Turks have been exposed to TV programs and films (primarily of U.S. origin), showing how robberies and other plots have been aided by the use of radio. They're not convinced that they will be able to effectively control abuses of two-way radio. Our concept of amateur self-regulation has not been widely understood, and no specific agency wants to accept responsibility for "policing" radio misuse. Additionally, Turkey looks at personal or hobby communications as "nice-to-have," but certainly not necessary.

The Turkish Amateur Radio Society (TRAC) is a nationally authorized and recognized association much like our own ARRL. TRAC publishes its own magazine, *CQ de TRAC*, which is sold through subscription and on the newsstand.

The current membership of TRAC is rather unremarkable. They are middle class students, workers, teachers and businessmen. They have no special connections or clout with the government and they are relatively few in number. But they're a wonderfully dedicated lot, and work hard at their hobby and for their society. They are certainly the friendliest, most avid hams I've ever met.

There are probably as many, if not more, "CBers" and "HFers" operating in Turkey as there are amateurs. The major difference is that TRAC insists on adherence to the basic IARU rules: code proficiency, procedures, customs and courtesies, etc.

It might seem odd to have such an assortment of folks all operating radios in Turkey. On the other hand, if you consider that all forms of private operation are illegal, you can better understand.

TRAC is working hard to change all of this and get ham radio out into the open. The bill to abolish Law 3222 has been introduced several times, but always tabled in order to move on to more pressing legislation.

I had a wonderful time meeting all of the Turk hams and in operating from Turkey. Almost all of my operation was on 14.055 MHz CW. I used both an SB-102 and HW-8 (QRP) into a 20-meter dipole . . . only half of which was outside! But that's another story.

73,
Van, WB4RLQ/TA2BAV
ECARS #4055

Following is a list of some of the more active Turkish amateurs and their direct QSL addresses:

Call	Name	QSL Address
TA1HY	Halit Yetkin	P.K. 23, Bakirkoy, Istanbul
TA1KD	Kadri Doda	P.K. 93, Bakirkoy, Istanbul
TA1MB	M. Kadri Basak	P.K. 1167, Istanbul
TA1MD	Kemal Doda	P.K. 93, Bakirkoy, Istanbul
TA1NAG	Tuncer Topdemir	P.K. 53, Tophane, Istanbul
TA1RO (now TA2DX)		
TA1SU	Salim Unuver	P.K. 531, Aksaray, Istanbul
TA1TS	Tahir Songulen	via TRAC
TA1UA	Unal Akbal	P.K. 787, Istanbul
TA1ZB	M. Metin Kutlu	P.K. 188, Istanbul
TA2DX	Ruchan Ozatay	P.K. 1132, Istanbul
TA2HIA	Halil Akkaya	via TRAC
TA2TAT	Talat Turgay	P.K. 133, Ankara
TRAC Headquarters		P.K. 699, Karakoy, Istanbul

The above list was prepared by Van, WB4RLQ.

TA2TAT has been reported on 10-meter CW between 28.027 and 28.031 MHz at 1200 UTC, and on 7.002 MHz at 2300 UTC. Also, TA1HY has been found on 21.295 MHz at 1700 UTC and 28.551 MHz 0840 UTC.

Club news

New officers for the Radio Society of Bermuda include: Robin Cotterell, VP9JK, President; Gretta Petty, VP9IW, Vice President; Tony Siese, VP9HK, Treasurer; and Steve Dunkerley, VP9IM, Secretary, Charles Kempe, VP9II, is the past President. Allan Davidson, VP9AD, is responsible for contests, while Jackie Harbutt, VP9JS, runs the QSL Bureau.

In Oregon, there is the newly formed Southern Oregon DX Club with William Shrader, W7QMU, President; Robert Butler, WB7RQG, Vice President; James Dukes, KB7MM (ex-WB7PHS), Treasurer; and AK7T, Secretary. The club also operates the Southern Oregon DX Club Net at 0100 UTC Fridays (that's Thursday evening local time in Oregon) on 21.370 MHz. When there is an interest and band conditions permit, the net moves to 14.290 MHz around 0500 UTC.

Amateur Radio Awards

Throughout the world, Amateur Radio societies offer awards for operating proficiency, and collecting these is a popular and interesting aspect of the hobby.

The Radio Society of Great Britain has completely revised their book, *Amateur Radio Awards*, with the second edition published last year. Roy Stevens, G2BVN, has sent a copy for review, which we find very attractive. The soft-cover book contains 80 pages with awards from all over the world. In most cases, a photograph of the award is included.

In addition to the awards, several Amateur Radio-type maps are included, which identify countries by their prefixes and call areas.

Only one price was given — the United Kingdom price of 2.95 pounds. Stateside amateurs may order the book from **Ham Radio Magazine** at Greenville, NH 03048, or directly from RSGB.

Please QSL via the buro!

This statement is obvious to most of us, and most of us take it for granted. But we fail to realize that there are many newcomers to DX who know nothing of

these "buros" and probably wonder if a horse will do. So if the experienced DX'ers will forgive me, I will make an attempt to explain the function of a QSL bureau.

The QSL bureau is a "clearing house" for radio amateurs who work DX. The DX'er periodically collects his outgoing QSL cards and ships them in bulk to his local QSL bureau, which in turn ships them to other QSL bureaus throughout the world. This step may be bypassed if the DX'er so chooses, who can then ship them directly to the other QSL bureaus.

These QSL bureaus receiving the incoming QSL cards sort them and periodically ship them to the individual radio amateur that the cards are designated for. The functioning of this system is designed to save money on the part of DX'er.

This is where you come in. Each call area in the United States and Canada has its own individual bureau — or bureaus, depending upon the size, such as the fourth U.S. call area. If you desire to receive cards via the bureau, you must have envelopes at the bureau. Each envelope, 5½ by 7½ inches or whatever size the bureau may request, must have your name and address on it, with your call in block letters at the upper left hand corner. Include a First Class postage stamp on each envelope with loose postage for extra weight. If you have more than one call, you must submit separate envelopes for each call. Some bureaus will request additional funds, as they may elect to ship your QSL cards via United Parcel Service, which in turn saves you money.

The QSL bureau in the United States and Canada is a service of the American Radio Relay League and is available to all radio amateurs, ARRL members or not. Check QST for the address of your individual bureau.

This is for incoming QSL cards only. The ARRL also maintains an outgoing QSL bureau and the service is available to ARRL members only. Include with your outgoing QSL cards the mailing label from your copy of QST and ship them to the overseas QSL bureau at ARRL headquarters. U.S. amateurs may use this service for cards to Canada, and vice versa. There is a small charge involved, about $1 per pound, or fraction thereof.

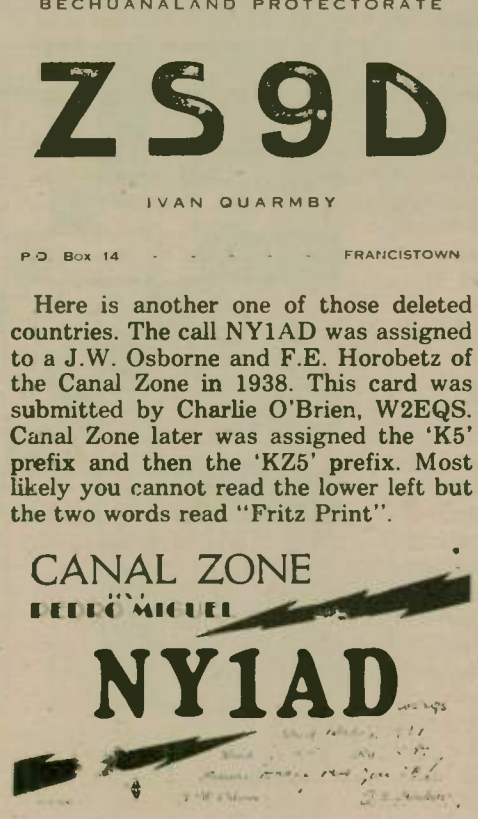
Contact your individual QSL bureau to check their policy. Basically, they all operate the same. I assume that most readers of Worldradio are ARRL members, so there should be no need to list the bureaus here as they are available in QST.

Bear in mind that the QSL bureaus are operated by the ARRL membership. The personnel receive no pay for the long hours of sorting out QSL cards. Although some parts of the bureaus may function poorly, most QSL bureau workers are dedicated to do a hard, thankless job. It would sure help them by maintaining a supply of envelopes at your bureau.

Thanks to Carl Gorodetzky of Nashville for requesting the above information. Carl did not list his call, so I cannot credit his call here.

Antique QSL Department

Several of the QSL cards which have been displayed in the past months are from DXCC countries that no longer exist. The one for Bechuanaland is typical of one of these. ZS9D was the call assigned to Ivan Quarmby of Francistown. This was for a contact made with Al Miller, VE7KC, in 1949. The name Bechuanaland no longer exists, although you might check Botswana. I checked the 1979 Callbook and there was no Ivan Quarmby listed in Botswana.



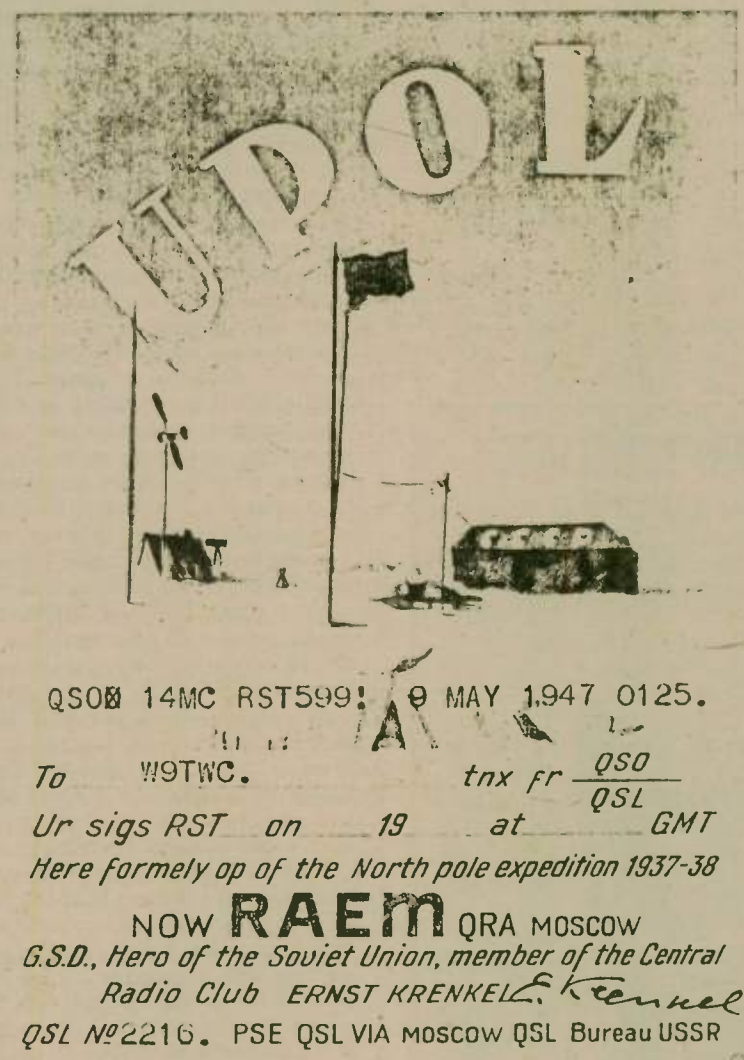
Here is another one of those deleted countries. The call NY1AD was assigned to a J.W. Osborne and F.E. Horobetz of the Canal Zone in 1938. This card was submitted by Charlie O'Brien, W2EQS. Canal Zone later was assigned the 'K5' prefix and then the 'KZ5' prefix. Most likely you cannot read the lower left but the two words read "Fritz Print".

QSL routes

A9XDB	—AF4K	TG9XHB	—WD9EYO
A35F3	—JA7SGV	TU2JJ	—KN0KCW
C31SW	—F5MF	VE8MC	—VE4TZ
CT2BQ	—W4JVU	VK3DCU/VK2	—K2UO
CT2CQ	—W4PKM	VK4NIC/3X	—W4FRU
CT8EAH	—CT2CQ	VK8NY	—DF1NY
EE3ESG	—EA3AYK	VK9CCT/VK9Y	—VK5QX
EL2AM	—WD4NBX	VP1GK	—WA4JTE
F6UW/3A	—F6UW	VP2VGR	—GW4FYK
F0NP/FC	—OH2NP	VP2VGT	—W1FB
FB8XAA	—F6DHI	VP2VGU	—W1FB
FG0DYM/FS7	—W3HNK	VP5AH	—WA4DRU
FG0GBL/FS7	—K8BPX	VP5B	—N4KE
FK8CE	—K2ROR	VP5WW	—N4KE
FO0GMM	—PA0GMM	VP8AI	—WD4AHZ
FP8AB	—F6CZY	VQ9JW	—KA3EDN
FP8MR	—WA1NQP	VQ9RS	—N6BLN
FP0EP	—VE3IUE	VS6JR	—WA4QMQ
FP0FSZ	—VO1FB	VU2RAK	—W2YTO
FR0CGP	—K2FV		*(See Note 1)*
G3JKI/5A	—F6CYL	VU2YK	—W2YTO
GJ5CHV	—DL3EW		*(See Note 1.*
GM4FDM	—KB7MM/WB7PHS	W7ZR/KX6	—W7ZR
GU5BPU	—DJ7PR	WB1GDQ/9K2	—K1LOM
GU5CTM	—DF6ST	YC1GJ	—W2GBX
GU5DQT	—DJ5PA	YJ8NPS	—KB2KN
H5ADX	—ZS6J	ZB2CV	—G3SXE
HB0CBJ	—DJ1BF	ZK1AXE	—PA0GMM
HD1QRC	—HC1QRC	ZL1AMO/C	—ZL1AMO
HG19HB	—HA5KHG	ZS1ANT	—ZE1EQ
HL9QK	—N5AVW	3B6CD	—3B8CF
HL9UB	—WA3WZF	3B8RS	—DJ6QT
HR1RBM	—HR1FM	3D2GM	—PA0GMM
HS1AMS	—W7PHO	3D2MK	—JA2JSF
I50FGM	—I4BFY	3D2WW	—W9GW
J5KJ	—CT4KJ	4A9J	—XE1J
J6LIH	—W2GBX	4S7KK	—K2FV
J20KK	—K2FV	5B4KK	—K2FV
J73A	—K2TJ	5N0RHK/TL8	—DJ8UM
K4IIF/OH2	—W4KA	5R8AL	—WA4VDE
KA4EIN/TI4	—N5ANA	5V7HL	—DK9XT
KA6HIQ/KH3	—KB7MO/WB7VVU	5X5FS	—EI9G
KA9BUY/HC1	—WB7QYI	5Z4WD	—DF0BV
KG6SL/KH0	—WA6AHF	6J8RF	—WB7RFA
KH3AB	—KB7MO/WB7VVU	6Y5MR	—VE3KGK
N6YK/VP2A	—N6NK *(Repeat N6NK)*	8P6IM	—VE3JIQ
OA8AX	—KA7DBS	8P6MY	—W2GBX
OC4R	—OA4ALP	8P6OP	—W2GBX
OD5IG	—WB8JSQ	8Q7KK	—K2FV
OD5KK	—K2FV	9K2JD	—F6AZN
ON6TW/LX	—ON6TW	9K2JP	—I2JHO
OX3PT	—WA2TTI	9Q5BG	—F5JT
PJ4CR	—WB2LCH	9U5DL	—ON6WC
PP2ZDD	—W2LEJ		
PY0ZDX	—WA4VDE		
SM0LLA	—W2GBX		
SV0BK	—K4BAI		
T2AAD	—W9GW		
T2AAE	—JA2JSF		

H5AK	—P.O. Box 127, Makeking 8670, Bophuthatswana, R.S.A.
HV1SDP	—Central Post Office, Vatican
J73PP	—34 Greens Lane, Goodwill, Dominica
KG6RT	—Byrd. P.O. Box 209, Saipan, Mariana Islands 96950
VK9NS	—J.B. Smith, P.O. Box 103, Norfolk Island 2899, Australia
VP1DN	—Don, P.O. Box 98, Dangriga, Belize
W6KG/SV9	—Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546
W6QL/SV5	—Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546
WH3AAB	—P.O. Box 156, APO San Francisco, CA 96305
3D2AF	—P.O. Box 1354, Suva, Fiji Islands
3D2GH	—P.O. Box 1354, Suva, Fiji Islands
5U7AF	—P.O. Box 877, Niamey, Niger Republic
9G1JM	—John Monroe, Computer Science Center, University of Science and Technology, Kumasi, Ghana

The QSL card for UPOL is a treasured one by all who had worked him. This card was submitted by Dave Kennedy, N4SU, formerly W9TWC. The operator was Ernst Krenkel for this 1947 contact, who was later issued the special call of RAEM, which he held until his death. The original call of RAEM was for a ship that Ernst Krenkel had served on.



Note:
1. For QSL manager W2YTO use address in 1980 or later Callbook

Contributors to this column for this month include: W2EQS, W3GBX, W2YTO, W3AZD, W4FRU, WB4RLQ, WA4QMQ, N4SU, N5ANA, K6BIA, N6BLN, W6KG, AK7T, K0BJ, VE7KC, G2BVN, OH2BH, Radio Society of Bermuda, Savez Radio-Amatera Jugoslavije (SJA), CQ Magazine, QST, *The DX Bulletin, DX News Sheet, The DXers Newsletter,* and the *Long Island DX Bulletin.*

By the time you read this, we should be into 1981. Lots of interesting activity was around for the deserving this past year. Maybe the new year will bring more of the same.

This column could also use a shot in the arm. By that, I mean, how about some photos that you could share with us of your favorite DX'er? Pictures are always interesting to look at if you can't read. Very 73, de John, N6JM. □

DX and contest calendar

Pete Nissen, W4PTT

I thought I'd start this article off with a few words about QSLs and the art(sic) of QSLing. Having been an active DXer for many years as well as operating from Morocco for six years, I think I've had a share of both sides of the fence. I sometimes wonder if the QSL game falls within the classification of petty exploitation. To see why I may think this, read on.

Those who don't or won't QSL fall into several categories. First, there's the well intentioned character who is always going to get down to writing out his QSLs — but years have gone by and he's not faced it yet — and you could safely take the odds at 100 to one that he never will. There are many amateurs whose sins are of omission, rather than commission. Lack of self-discipline is probably one of the most common human failings. While it is possible to tolerate these characters and philosophically accept the money lost in dollar bills, IRCs, SASEs, etc., in a futile attempt at verification, they go on ending each QSO with a "QSL FOR SURE"; adding nothing worthwhile to the standard of ethics or the good of our hobby.

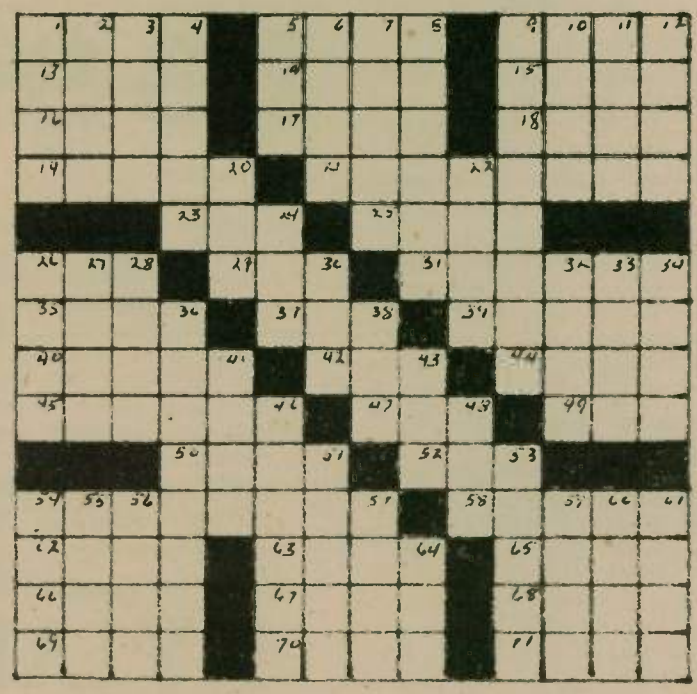
Then there is that broad group who don't intend to QSL. These are the cheaters, deceivers, and small time opportunists. Among them is the type who sends his address with each QSO and promises to reply "as soon as I get yours." The verification never comes. The intention is only to take.

More than one possessor of a rare call is playing the averages. He is determined to sell his call at the best possible price and show a little profit on his QSL printing costs at the same time. His request is anything up to five IRC's and an SASE with your card — or make a contribution please? I recently heard a QSO on 20 meters discussing the proposed QSLing practices of a station soon to be operating from a very rare country. The gist was that in order to be privileged with a QSL from this country it would be necessary to enclose a $10 "donation" to the sponsoring "non-profit" parent organization . . . UGH . . . That will be one country I won't even attempt to work. Such practices can only be stopped by not working these mercenaries — and may all their finals go up in smoke!!

Then we have the manager/ham setup, a combination that's brought more than one piece of connivance into existence. Before you get your hackles up about how great managers are, rest assured that I agree most do their job ethically and provide good timely service. They provide an outstanding necessary service to many remote areas where the DX operator must make a decision to spend most of his available time providing QSOs to those seeking new countries or reduce that available operating time to reduce the number of QSL's to be answered because of time or cost. In such a case, the adjunct of a manager is quite in order. In fact, it's a must, but the charitable bit about helping the boys and girls to a new one is in reality most likely a rationalized half-truth in order to seek privilege. He's providing a new country, yes — but gaining considerable status in the process. The cost of the QSLs are still largely his responsibility, or a matter of arrangement with his manager; and the body of amateurs who make a QSO should not have to meet the cost of printing two QSL's and postage both ways.

When I operated from Morocco (over 6.000 QSOs) I believe that the bulk of the QSL expense was paid by unsolicited contributions and I QSL'd 100 percent to anyone who wanted my card and to all SWL reports. At the present, I am running 88 percent on countries worked compared to confirmed. There's nothing spectacular about this when you consider I am enclosing a $1 bill and an SASE or SAE; thus I am, in effect, buying what I want.
NOFARS AR News, Florida □

CROSSWORD PUZZLE



ACROSS

1. Type of wave
5. Unit of power
9. War prisoners
13. Space
14. Room for antenna farm
15. Put out a signal
16. Farm animal
17. Encapsulate
18. Unless — used in law
19. Penetrate
21. Improperly tuned transmitter may cause this
23. Movement of approval
25. Japanese wrestling
26. Ladies Golf Assoc. — Initials
29. Obscure
31. Composed
35. A direction
37. Organized group on radios
39. 9N1 land
40. What you may lose on field day
42. Nothing
44. Window part
45. Weatherproofed
47. A very long time
49. It's for M/M operators
50. Squeezed by
52. Obtained
54. Hams
58. Arch villain on Hawaii Five-O
62. Buffalo Bill
63. What you can't eat and have it too
65. City in Texas
66. Circular band
67. Arab ruler
68. Rebounding signal
69. Rim
70. Feed it to a computer
71. Goes with 20 down

DOWN

1. Wise person
2. Golf club
3. Orderly
4. Consumed
5. Get this when you contact all 50
6. There are 4 in a deck
7. Used in multiband antennas
8. Roman goddess
9. 5-element tubes
10. Leave out
11. Smart
12. Mix
20. Pole
22. So be it
24. Noise
26. Smaller
27. It could bring down your antenna
28. On the briny deep
30. Adult males
32. Sacred bull
33. Story
34. Girl's name
36. It requires a keyboard
38. Ascot
41. Small dog — abbr.
43. Record of contacts
46. Confounded
48. At once
51. Serious act
53. Used to hold an antenna
54. Pain
55. Emotion
56. Man's best friend
57. Short play
59. Part of head
60. Same as 54 down
61. Implement
64. Popular women's group

(Answer on page 49)

Results of 1st Annual 160 Meter Phone Contest

Ed. Last month, we printed the information regarding the upcoming 2nd Annual International 160 Meter Phone Contest page 57. Here are the final results of the 1st annual 160 meter phone contest, and some of the comments about it.

From the logs of those entries submitted, over 500 individual stations were found to be on the air for the weekend event. Unfortunately, only 74 of these operators forwarded their scores to the contest chairman. It was a weekend of achievement, however, with over 60 DX stations activated on the band.

1980 rules were quite vague in regard to the status of Canadian contacts. Over 45 Canadian stations supported this first annual event and everyone will be pleased to learn our 1981 rules will reflect a change, whereas each Canadian province will count as a separate multiplier.

One of the advantages of gathering contest results is that one has an opportunity to survey the actual equipment and antennas being utilized. For years, one of the restrictive elements which kept many amateurs from operating 160 meters was the availability of equipment. As you'll witness in the following responses, it would seem that 160 meters could be considered a "born-again band".

Many amateurs felt they would never try 160 meters, as they thought you had to own acres of real estate to erect an antenna. To the contrary, a variety of antennas were used — most installed on small city lots.

Special recognition should be paid Dan Murphy, WA2GZB, who was 1980's (and will be 1981's) Contest Chairman. Assisting Dan were fellow top band operators John Fried, W4WWD; Vic Misek, W1WCR; Ed Steeble, K3IXD; Paul Engle, K9QLL; Bill MacDonald, W8EPT; and members of both the Top Band SSB Net and the Worked All States Net on 160.

Contest feedback

W1BB — "a well-planned, interesting and fun contest. Only lacked better DX propagation and more respect for the DX Window. Congratulations to WB7BFK of **73 Magazine** and the many volunteers who made it all possible!"

K2DWI — "Had a ball in this contest. Lots of stations on. Let's do it again as I think it is the best contest on 160; a great bunch of gentlemen and darn good operators."

W2MPK — "my first contest that I operated from start to finish. Please have it again next year. I'll try to do better."

K8NG — "seems funny during a CW contest the operators flood the entire 160 meter band but when a phone test comes about, a few soreheads claim we are out of line operating below 1810. Let's count Canadian provinces for multipliers next year. Had a great time and will see you again next year."

WD0BNC — "my first contest. Had rain and lightning the first night. Met some very nice people on 160. Thanks to **73 Magazine** for a fun time."

VE3OCU — "Very surprised at the high level of activity. Conditions were very good and some surprising DX was heard here, including HP and VP2M. . ."

Feedback from non-contestant

W1WY (Ref: **CQ Magazine**, Pg. 80, May 1980) — "listening during the weekend of the new 160 phone contest organized by Wayne Green, I found that it generated quite a bit of SSB activity. There was one disturbing factor, however — the malicious QRM from a few CW diehards who resented the invasion of SSB signals in that portion of the band usually occupied by CW operation. I had expected a retaliation by the phone boys the following weekend during our CW contest, but it did not materialize. They were real gentlemen."

Score results

Final results listed in order by total score. Shown are call sign, state or DX, QSO's, QSO points, multiplier points, total score. (*)=State winner in their class. (**)=Multi-operator stations.

*K8NG	MI	472	2360	59	139,240
*K0GVB	IA	400	2000	69	138,000
*WA9EYY	IL	418	2090	63	131,670
W8EPT	MI	355	1775	63	111,825
*N1AAR	CT	369	1845	54	99,630
*WB0IBT**	NB	375	1875	53	99,375
*W4PZV	FL	258	1290	77	99,330
*K3LGC	DE	354	1770	51	90,270
WD0BNC**	KS	328	1640	54	88,560
*N9GT	IN	314	1570	54	84,780
K9QLL	IL	338	1690	49	82,810
KB8EZ	OH	242	1210	63	76,230
*VE3OCU	DX	286	1430	48	68,640
*WA3GMS	PA	315	1575	43	67,725
*W2MPK	NY	271	1355	46	62,330
*W1WCR	NH	249	1245	50	62,250
*AE5H	MS	203	1015	55	55,825
WA0DXZ/5	MS	237	1185	45	53,325
*N7DF	UT	229	1145	46	52,670
AA1K	CT	181	905	53	47,965
*WD4EPX	TN	246	1230	38	46,740
WB8HCV	MI	221	1105	40	44,200
*WB2QLO	NJ	169	845	49	41,405
K8ES	OH	176	880	47	41,360
*W3YOZ	MD	156	780	53	41,340
*AI2K**	NJ	172	860	44	37,840
*N7AM	WA	157	785	46	36,110
N4CMU	TN	170	850	42	35,700
*VE4WR	DX	172	860	41	35,260
K2HPN	NY	162	810	43	34,830
*WB4ASY	AL	145	725	48	34,800
W8QBF	OH	169	845	41	34,645
K3IXD	MD	150	750	44	33,800

(*please turn to page 39*)

AMSAT OSCAR K6PGX

Dr. Norman L. Chalfin

The year 1981 will see the completion of the Phase IIIB Spacecraft in anticipation of a launch opportunity now scheduled for 24 February 1982. The European Space Agency has given a place on its L-7 Ariane Vehicle to AMSAT for its OSCAR Phase IIIB. Jan King, W3GEY, engineering V.P. of AMSAT has cautioned that since we are a non-paying (pick-a-back) payload, we could be "bumped" in favor of a paying customer since this will be a "commercial" launch. Nevertheless, paperwork from ESA is now on hand confirming the launch.

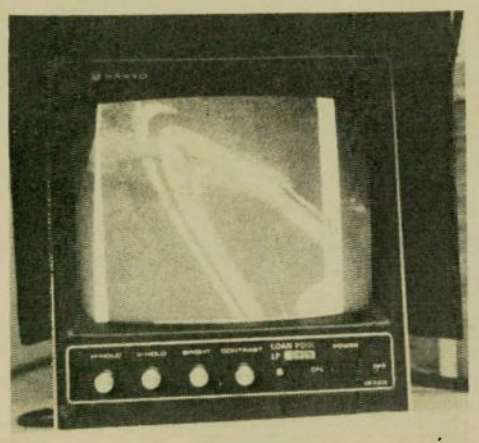
Discussions were in progress as this was being written at the Max Planck Institute in Germany, attended by Jan King and Dr. Karl Meinzer, DJ4ZC, regarding the FIREWHEEL/AMSAT-PHASE IIIB payloads. If you have been reading these columns over the past year, you will recall the Firewheel experiment was designed to study the effect on radio transmissions through clouds of Barium and Lithium released in space from canisters on the Firewheel Assembly following the release of transmitters. Earth-based monitors will receive the transmissions in areas from Canada to Argentina to assess the effect.

On this launch for AMSAT phase IIIB, the 3-pointed amateur communication spacecraft will now ride atop the Firewheel assembly and be released first. The Phase IIIB is expected to be essentially identical with Phase IIIA. However, it has been determined that a larger kick motor is needed. The discussions with Thiokol were in progress just before Thanksgiving to establish which of their units will be used. The new kick motor will make it possible to establish a more accurate argument of perigee for the projected orbit of the Phase III spacecraft.

Another important addition now under discussion, which may be included with AMSAT Phase IIIB, is a second transponder with a 23 cm uplink and 70 cm downlink. A decision is expected in the spring of 1981. There is also discussion now that all future spacecraft for Amateur Radio communication will be limited to the UHF ranges. This thinking is a direct result of the malicious interference that has been experienced in the VHF region, particularly in California. However, as has been reported, this is not a phenomenon limited to the West Coast.

Proposals are being reviewed by Bill Brown, K9LF, V.P. for AMSAT in charge of fund-raising activities. Some of the suggestions include the sale of AMSAT patches for caps or the shoulder, T-shirts, tie-tacks or bars, slide sets, and others. Your suggestions will be welcome. If you have any, send them to Bill Brown, K9LF, AMSAT, P.O. Box 27 Washington, D.C. 20044.

AMSAT will need your donations and help. If you are not yet a member of AMSAT, become one! Individual Memberships are $16, Club Memberships are $20.



The rings of Saturn can be seen on this W6VIO SSTV monitor during the Voyager I Saturn Flyby Commemorative. *(photo by K6PGX)*

Life Memberships are $200. Address AMSAT, P.O. Box 27, Washington, D.C. 20044.

Life Membership will earn you premiums of a large quantity of unique multicolor QSL Cards relating to AMSAT/OSCAR Amateur Space Communications activities. OSCAR slide sets may also be available as premiums.

AMSAT Phase IIIB and Phase IIIC are being constructed in parallel. Phase IIIC may go two years after Phase IIIB is launched.

Bernie Glassmeyer, W9KDR, OSCAR coordinator for ARRL, advises that a small quantity of OSCAR satellite tracking kits are available at $1 for each kit. Contact Bernie at ARRL Headquarters for the kits if you want one.

Joe Kasser, G3ZCZ, editor of **Orbit** magazine — the AMSAT journal — advised that the fourth issue was in the mail at the end of November.

There are two matching funds for AMSAT/OSCAR donations. One is the ARRL Foundation Fund. There is another fund available by an anonymous donor who will match donations so designated, dollar for dollar.

John Henry, VE2VQ, is visiting Southern California at the end of November to discuss the Syncart project, and project OSCAR and AMSAT cooperation with this activity at John Fail, KL7GRF's home.

Martin Sweeting, G3IOR, of AMSAT UK will be in Southern California in mid-December to discuss mating fixtures for UOSAT on the Delta Rocket.

During November, the NASA/JPL Voyager I space probe gave us our first close look at the planet Saturn and its moons. The mission was part of the greatest planetary voyage in history, and scientists say the discoveries it made boggle the mind.

For example, it was expected that during Voyager I's close view (at 400 km) of Titan (a moon of Saturn known to have an atmosphere), the moon's surface would be revealed. Instead, it appeared covered with a "nitrogen smog." The rings of Saturn, believed to have A, B and C rings seperated by divisions appearing dark from Earth-based telescopes, proved to have many additional rings — some of strange character not yet explainable by known astrophysical phenomena. Radio emissions were detected from Saturn in the 1000 to 1300 kHz range. These radio waves are believed to be the result of electrical discharges on the planet. The radio emission power is believed to be 1 billion watts.

The power of these lightning flashes is believed to be a million times more powerful than Earth-based discharges.

Winds on Saturn are believed to be four times as strong as on Jupiter.

Saturn has seasons. It also has a smaller metallic core than Jupiter.

During the first 16 days of November, the JPL Amateur Radio Club operated the Voyager I Saturn Flyby Commemorative with its club station W6VIO.

More than 8,800 contacts had been counted by the time this was written. These contacts were on SSB, CW, FM, SSTV and Fast Scan TV.

All continents were worked and also islands in the Atlantic, Pacific and Indian Oceans.

A large number of contacts were made with stations in the USSR, Ukraine, Bulgaria, Yugoslavia and Czechoslovakia. In Canada, nearly all provinces were contacted. When your correspondent checked, all states but Delaware had made contact with W6VIO. We believe all states are recorded by now.

If you made a contact with W6VIO,

Close encounter! Jay Bastow, K6CV, is shown making a contact during the W6VIO-Voyager I Saturn Flyby Commemorative. ***(photo by K6PGX)***

send your QSL and an SASE with postage for 1 oz. to W6VIO, 4800 Oak Grove Drive, Pasadena, CA 91109 and identify the band, emission date and time of your contact. You will receive one of the highly-prized W6VIO QSL's with color pictures of Saturn and its moons on it.

The Fast Scan TV operations at JPL's W6VIO was the result of the effort of Tom O'Hara, W6ORG of PC Electronics who, with members of the Southern California ATV Clubs and Jim Lumsden, WA6MYJ, of the JPL Club, set up a multi-link system and TV transmitter at W6VIO was modulated by video directly from JPL Mission Control so that all Saturn images were available for ATV transmission. The signals on the link from W6VIO at JPL went out on 1282 MHz to Flintridge, CA, two miles away, where Dr. Dale Hauck, W6YFT, retransmitted them on 434 MHz. WA6SVT Repeater on Mt. Wilson retransmitted on 1241 MHz picking up the 434 MHz signal from Flintridge. W6ORG's Repeater on Johnstone Peak picked up the 434 MHz ATV transmissions and retransmitted them on 1268 MHz. The Saturn images were received all over Southern California as far east as Riverside and Palm Springs and as far south as San Diego.

Reception of good color images was reported by Diane Deibert, WA6MVD, in Sunnymeade, California (50 miles), and by John Dieringer, W6RVP, in Los Angeles (35 miles). In fact, by the end of the week of transmissions, all of the 108 members of the Southern California ATV Club had received the JPL/W6VIO Saturn images.

The event was so successful, it will be repeated during the Voyager II encounter with Saturn in August 1981.

An activity of considerable importance may go by the wayside if economic help is not forthcoming to support the Westlink Amateur Radio News, which among its many other activities has carried many AMSAT/OSCAR announcements. If you care to help, send your contributions to Westlink, c/o WA6ITF, 28197 Robin St., Saugus, CA. □

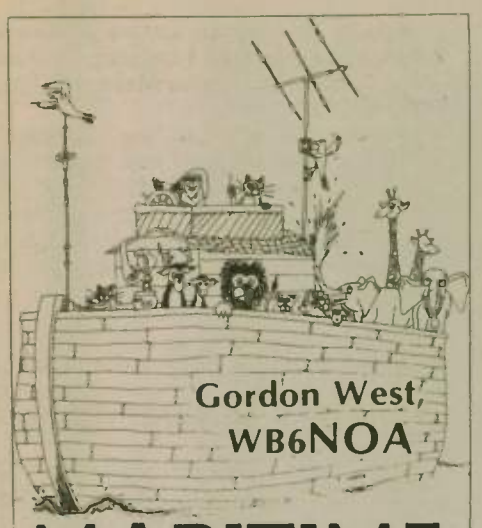
AMSAT — OSCAR 7 Orbital Data

Because the calendar is generally printed in the last weeks of each quarter, there will always be a difficulty in lack of adequate lead time with the first month's data for publication in Worldradio.

160m contest

(*continued from page 37*)

*W4WWD	VA	157	785	42	32,970
*AE6U	CA	135	675	47	31,725
*WD9GGY**	IL	172	860	34	29,240
*WB1HIH	MA	173	865	33	28,545
*W7AVD	MT	126	630	45	28,350
*W4YZX	NC	124	620	44	27,280
*K1NBN	ME	146	730	37	27,010
WD9IIX	IL	150	750	34	25,500
*WD5DUD	LA	114	570	44	25,080
WA7OFH	WA	106	530	45	23,850
WD6EQG	CA	135	675	35	23,625
AI7K	WA	133	665	35	23,275
W4WWQ	VA	96	480	47	22,560
N9RC	IN	114	570	39	22,230
*WA4JWS	SC	113	565	33	18,645
K8SIA	MI	111	555	33	18,315
*W7ULC	OR	96	480	36	17,280
*K5MAT	NM	74	370	44	16,280
*W4VKK	GA	66	330	44	14,520
WA9FTU	IL	85	425	33	14,025
*KØBF	CO	79	395	33	13,035
W1BB	MA	79	395	32	12,640
*WA4UNZ**	SC	72	360	31	11,160
WA2GZB	NJ	58	290	35	10,150
*WB7BFK**	WA	76	380	24	9,120
*N7AKU	NV	72	360	24	8,640
K2DWI	NY	65	325	23	7,475
*W7TO	WY	59	295	23	6,785
WB4ZPF	VA	43	215	30	6,450
W2CC	NJ	50	250	25	6,250
AK7H	WA	50	250	24	6,000
WA4JWC	SC	60	300	19	5,780
N8BJU	OH	40	200	23	4,600
*VE5JQ	DX	41	205	21	4,305
*N8ACQ	WV	41	205	20	4,100
WA6EKJ	CA	50	250	16	4,000
KA8CQI	OH	27	135	20	2,700
W5VGC	NM	31	155	17	2,635
AK2E	NY	19	95	18	1,710
AK7F	WA	26	130	12	1,560
*VP2ML	DX	17	85	18	1,530



Gordon West, WB6NOA

MARITIME MOBILE

Marine weather information

The need for a mariner to know his local weather is paramount. Amateurs operating maritime mobile will probably be expected to know the weather for other parts of their general cruising area. Safety at sea is enhanced when local weather and radio weather reports may be exchanged.

Let's begin 1981 with a look at weather radio reception. Since more and more Amateur Radios are incorporating a general coverage receiver within the same circuitry you get on 10 through 160 meters, we'll cover all the radio weather frequencies from Low Frequency to Very High Frequency.

Low Frequency

There are a few radio direction finder stations that transmit on frequencies below the broadcast band that broadcast weather information. These stations are usually located in airports close to the ocean. One typical station is the weather radio broadcasts from Los Angeles International Airport on 332 kHz. For years, the FAA has claimed it's going to discontinue this service, but it is still on the air. Its range is typically 50 miles from the broadcast station; and most weather reports are geared to the aviator, not to the maritime navigator.

Medium and High Frequency

Radio time signals and weather broadcasts may be picked up throughout the United States on radio station WWV and WWVH. These are the stations that broadcast the continuous time announcements on the following frequencies: 2.5, 5, 10, 15 and 20 MHz.

The time signals are announced every minute, and the weather broadcasts are aired each hour during specific time intervals:

8 minutes past the hour — storm information for Western United States

9 minutes past the hour — storm information for the Atlantic, Gulf of Mexico, and Caribbean

48 minutes past the hour — storm information for the Northern Pacific

49 minutes past the hour — storm information for the Southern Pacific

50 minutes past the hour — storm information for 110° West

51 minutes past the hour — unusual widespread storm conditions

The time signals are also a good way to calibrate your ship's chronometer for cellestial navigation.

HF shore stations

High frequency marine telephone stations also broadcast weather information; their times vary, but for more information, write American Telephone and Telegraph — Long Lines, High Seas Product Manager, Room 4A — 250, Long Lines Headquarters, Bedminster, New Jersey 07921 Pamphlet: "Marine Radiotelephone Service."

The United States Coast Guard also broadcasts marine weather information. Write your local United States Coast Guard District Office for their communications book indicating the time and radio frequency of weather broadcasts.

The U.S. Department of Commerce National Oceanic and Atmospheric Administration also broadcasts High Frequency weather reports using voice, radiotelegraph, radiofacsimile, and radioteleprinter. For a complete listing of the NOAA Worldwide Marine Broadcasts, write National Weather Service, Silver Spring, Maryland 20910, Attention: W-162 Book Number NOAA — S/T 78-409. The book is distributed by the U.S. Government Printing Office in Washington, D.C. 20402 under Stock Number 003-018-00095-4. However, write the National Weather Radio Service first and see if they might have a better and quicker source. This book is ideal in that it gives you just about every frequency under the sun for HF weather reception.

Omni

If you live next to an airport, Airport Omni broadcasts sometimes contain local airport weather information. If you have an aircraft AM scanner receiver, tune in to the Omni Frequencies just above 108 MHz and listen for the weather broadcasts. There are several programmable scanners that include the AM aircraft band in their coverage of low band, high band, and UHF channels.

VHF — FM Weather Radio Network

Your best source of up-to-the-minute marine weather information and weather forecasts is the VHF FM Weather Radio Network. Operated by the United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA), the National NOAA Weather

Digital Flight Scan is capable of receiving omni broadcasts.

Radio Network blankets the United States coastal waters with VHF FM radio broadcasts. The following frequencies are available to the National Weather Radio Network: 162.400,126.425, 162.475, 162.500, 162.525, 162.550 MHz.

Some of these frequencies are brand new. They were added in anticipation of additional growth of the radio to allow correction of some interference problems between weather radio stations using the following popular three frequencies: Weather Channel 1 — 162.550 MHz; Weather Channel 2 — 162.400 MHz; and Weather Channel 3 — 162.475 MHz.

There are over 330 NOAA weather radio stations on these three frequencies in the continental United States, Alaska, Hawaii and Puerto Rico. The most common weather channels are Weather 1 (162.550 MHz) and Weather 2 (162.400 MHz). These 330 stations are on the air 24 hours a day covering 90 percent of the United States' population! There is probably no other radio system operated by one single agency that provides as much coverage as these 330 VHF transmitters.

Weather reports and range

Most of the 330 weather stations broadcast with an output power of 100 watts into 6dB gain antennas that beam the signals into the direction of the largest local population. As a general rule, mariners may depend on clear weather signals on the VHF frequencies up to 40 miles away from the weather station's transmitter. When the weather station transmitter is located high atop a building or on a local mountain range, weather radio reception may well exceed 100 miles to sea.

The ultimate range that you may pick up a VHF NOAA weather transmitter is dependent on your receiver as well as their transmitter location. Small inexpensive receivers with telescopic antennas perform quite well on your boat.

However, if you are located in a "fringe area" out at sea, you will need a better receiver with an external antenna connector. Your VHF set — although many times more expensive than the small dedicated weather monitor — will provide top sensitivity, excellent selectivity, and will pull in distant weather stations sometimes over 100 miles away. The outside antenna will increase the sensitivity of any type of weather receiver tremendously if you experience noisy reception using only the inside telescopic antenna. (Moving the weather receiver just a few feet inside a room or at your business may make the difference of crystal clear reception and no reception because of selective signal fading. Once you find the "right" spot for your small weather monitor with the built-in antenna, keep it there for clear reception.)

Weather alerts

Many weather monitor receivers have the special capacity of activating an alarm in case of a marine weather warning sent out by the National Radio Weather Service. Weather warning tones are transmitted for 10 seconds at 85 percent modulation. These dual tones

Weather position in a programmable receiver

automatically activate special weather monitor receivers to alert the mariner that the Weather Service is about to broadcast a special storm warning. There are five categories of tones:

Tone Category	Use	Tone No. 1 and Tone No. 2
1	General Public	1050 Hz + 1900 Hz
2	Unassigned	1200 Hz + 1900 Hz
*3	Marine bulletins	1350 Hz + 1900 Hz
4	Unassigned	1500 Hz + 1900 Hz
5	Local applications	1650 Hz + 1900 Hz

Inexpensive receivers should be able to respond to all three tone categories. Ideally, they should be able to discriminate between the three — but as an inexpensive receiver, chances are that any one of the three will activate the alarm. Unfortunately, there is no known marine VHF set with tone alert built in.

Weather radio reviews

Here are some observations that will be of interest to mariners and Amateur Radio operators pertaining to the VHF/FM marine weather service. These observations are strictly the author's, and if you have comments, please respond directly to this publication.

Tropospheric ducting over the water may account for marine weather radio reception up to 500 miles at sea. That's right — 500 miles south where temperature inversions are common.

The gain of your marine VHF antenna will greatly affect the range of weather reception. The higher the gain of your

Weather fax printer tied into a short-wave receiver. ***(photo by WB6NOA)***

antenna, the longer distance you may receive the weather broadcasts.

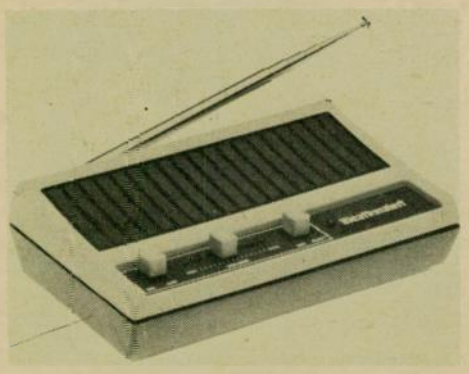
The tone alerting system is seldom used by the mariner. It's time that marine radio manufacturers see the tremendous capabilities of tone alerting for marine weather emergencies, and install this tone system decode box in their VHF/FM marine transceiver.

Some weather radio stations will cooperate closely with mariners. During the start of local races, special marine weather broadcasts are aired. If you have not established a working relationship between your yachting organization and the local weather radio station, do so immediately.

Broadcasting personnel vary greatly. In some parts of the country, you may think you're listening to a professional DJ giving the weather reports. In other parts of the country, the announcer is so illiterate that it's hard to understand what he is saying — and there are so many fumbles in his broadcasts, you simply turn off your receiver in disgust.

Weather transmitter reliability is of great concern to keep this whole system operational. A few years ago, severe rainshowers would render a local weather radio transmitter useless. Locals could depend on it — when the weather station was off the air, there were heavy rainshowers in the Los Angeles area! The problem is now fixed.

Inexpensive weather monitors work OK when within the 40-mile coverage area of the transmitter. However, when reception gets weaker, the inexpensive "other" receiver may pick up radio calls from other types of radio transmitters completely covering up the weather reports. This is a problem of "selectivity."



Inexpensive weather receiver

Many users like receivers — especially programmable receivers — that feature a weather alerting tone. The receiver is muted so you hear nothing. Only when there are severe weather warnings will the receiver pop back to life with a shrill tone that turns on the receiver and automatically broadcasts to you the weather warning.

The National Weather Radio Network is indeed sensitive to your comments. Mr. Don Sarreals works closely with weather radio manufacturers and the public to insure that maximum utility is gained from the weather broadcast system. Don is one of the finest men we have had the opportunity to meet, and would like to hear your comments on the National Weather Radio Network.

Name _____

Address _____

_____

City _____

State _____ Zip Code ____

Weather radio comments: _____

_____

_____

_____

_____

_____Yes, send me a weather radio station map of the United States

_____Yes, send me more information about the VHF/FM radio system

Return this questionnaire to Gordon West, Worldradio Maritime Column, 2414 College Dr., Costa Mesa, California 92626.

Your taxes are keeping the marine VHF/FM weather system on the air. Are you using these broadcasts? If not, you should be! Amateur Radio operators aboard boats are always considered the local weather experts — make sure you are up to date. □

'The great Field Day solar power caper'

John Fakan, Ph.D., KB8MU

To meet the challenge of making five Field Day contacts using energy from a non-fossil fuel source, a group of NOARS members decided to try the solar cell route.

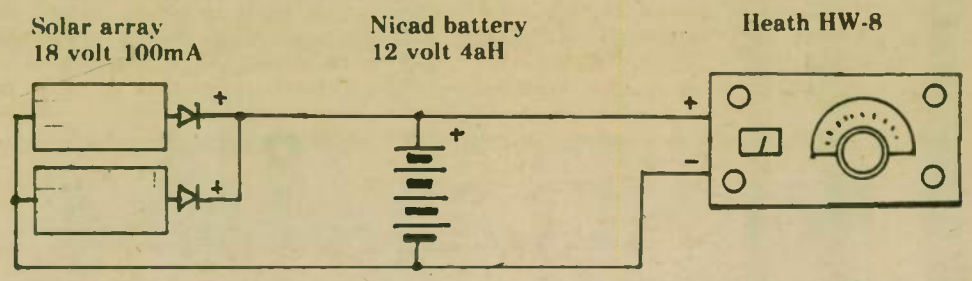
It was quickly concluded that if costs were to be controlled, a QRP approach was mandatory, and that in order to make it through the joyous QRM of Field Day some means of energy storage would be needed to store energy for use in the wee hours when there is some (not much!) let-up in the melee.

The final design (which depended heavily on the availability of 80 small surplus solar cells) included an 18-volt, 100mA solar array, a 12-volt, 4-ampere hour nicad battery, a camera tripod, a Heath HW-8 CW transceiver and associated wiring.

The cells (10 × 20 mm) each produced 0.5 volts at 50mA in full sunlight. They were arranged in two groups of 36 cells each to produce 18 volts. The two groups were then isolated with diodes and connected in parallel to provide 100mA. The cells were glued to a thin piece of bakelite stiffened with two aluminum angles and attached to the camera tripod for aiming at the sun.

The nicad battery was completely discharged over a 30-hour period by connecting a 10 ohm, 10 watt resistor across its terminals and then periodically disconnecting the resistor and watching for any voltage recovery. Since a "deep discharge"-type nicad was used, no problem with cell reversal was encountered.

After the battery was satisfactorily drained, it was connected in parallel with the solar array and the HW-8 as shown in the schematic.



Because the HW-8 draws about 85mA on receive and about 350mA on transmit (key down), the overall duty cycle turned out to be about 4 to 1; i.e.: for each minute of operation the battery would have to be charged for about four minutes. No attempt was made to determine the actual charging efficiency of the nicad in this type of operation, but it would seem we did better than the 50 percent usually stated for nicads in normal operation. This was no doubt due to the small charging and discharging rates.

After having charged the battery until the sun was right down to the tree tops, the HW-8 was fired up into a 500-foot wire dipole hung between two very tall trees. More than 30 minutes later, the first contact was completed and on the log. (Connecticut) Because of the difficulty involved and the limit on remaining energy available, it was decided to conserve what was still in the battery until a better time.

About 0330 Sunday morning we tried again using a 20-meter 3-element beam on a rotor at 30 feet. The going was still tough, but definitely better. Our biggest problem was with two of our own stations so we had those stations go QRX for a bit and went after our contacts with a vengeance.

Finally we managed to log San Clemente Valley, Washington State, North Texas and Idaho. (on 2 watts!) Although that satisfied the five-contact requirement, we tried another stint after getting a few hours of Sunday morning sunshine and managed to put Arkansas on the log for insurance.

In conclusion, the concensus was unanimous that the effort was well worthwhile. We all learned a great deal about solar cells and QRP operation and had a lot of fun in the bargain.

— *Northern Ohio ARS*

Contact Worldradio for hamfest prizes.

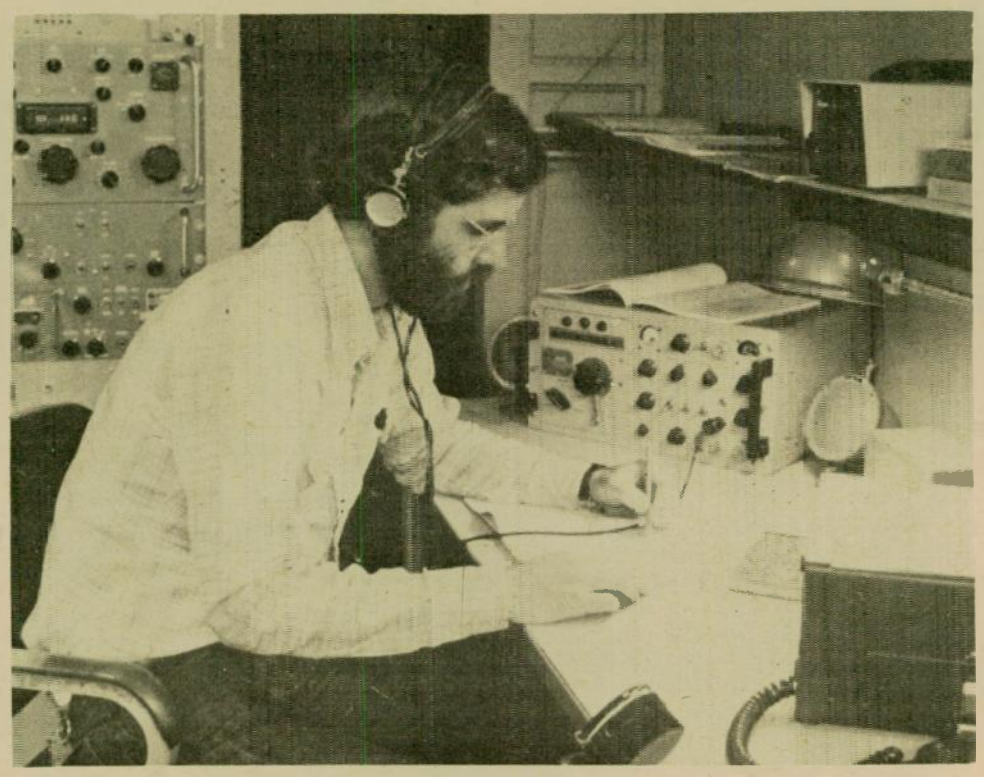
Vern Hansen,
WB6UWQ/AAA9W

Interservice MARS

The following article originally appeared in the Western Area Army MARS bulletin (Central California Area News), and was written by Jim Haley, W6NH/AAR9HN.

Army MARS Member, Dick Dillman, N6VS/AAR9GI, seen in photo, enjoys the best of two worlds — both his vocation and avocation are exciting and interesting. To earn his daily bread, Dick works at Hastings College of the Law as supervisor of the school's Television Production Office, located in San Francisco, California. In that capacity, Dick is involved in the varied and diverse aspects of video production and utilization for educational purposes.

The photograph shows Dick utilizing his radio skills as a volunteer operator at the controls of the Greenpeace Foundation radio station located at Fort Mason. As many of you know, Greenpeace Foundation is devoted to the preservation of endangered species of animals throughout the world. When the picture was taken, Dick was operating the station in support of the Greenpeace effort to protect the whales from the depradations of whalers.



Dick Dillman, N6VS/AAR9GI, at his Greenpeace station.

In its whale protection endeavor, Greenpeace operates two diesel-powered vessels of the 150-foot class. Both are operated by volunteer crews. The radio station at Fort Mason guides the vessels in locating areas of whaling activity, using both commercial and amateur HF frequencies. Upon sighting the whaling activity, the Greenpeace ship puts out large rubber boats powered by outboard motors. These craft physically intrude upon the whaling operation by positioning themselves between the killer boats and their quarry in such a manner as to frustrate the whalers. To understate matters, these confrontations are dangerous for the Greenpeace personnel. The killer boats are armed with bow-mounted cannon which fire harpoons with high-explosive heads.

In addition to its Greenpeace activities, Dick advises that the Fort Mason radio station will soon have both HF and VHF MARS capabilities, and that Dick and his volunteer co-workers plan to integrate the station into the civilian emergency preparedness program of the Amateur Radio Public Service Corps. Due to a current lack of available facilities at Fort Mason, the Greenpeace activity is looking for a new site for its Amateur Radio station. Anyone who is interested in the Greenpeace effort, or in joining Army MARS, is urged to contact Dick Dillman.

The U.S. Army MARS does not sponsor or promote, and is not affiliated with the Greenpeace activities described herein, other than MARS radio operations. □

USAF MARS (statewide)

George Hamilton, Jr., KA4ARZ/AFA2NV, Florida PAC

Things are really popping within Region 2 of Air Force MARS this season. We have a new Region 2 Communications Manager AFF2C, formerly AFF2C of Punta Gorda. Also a new Net Manager AFB2AR of Raleigh, North Carolina. Add to this the fact that the local Assistant State MARS Director AFA2UW has taken a six months leave of absence.

There are more changes to come as Headquarters completely reorganizes the MARS national structure. The confusion has resulted in many old-timers resigning.

Recent graduates of the training course are: Coral Point, AFB2UE; Orlando, AFB2RG; Satellite Beach, AFB2WX; Fort Walton Beach, AFB2WU; Winter Park, AFB2WY; Satellite Beach, AFB2WT; Tampa, AFB2UM; Miami, AFB2WP; Tampa, AFB2WV, and Lake Placid, AFB2VV. In addition, AFB2WT graduated from the Net Control Course and has been doing an excellent job as an NCS.

Statistics show that Florida was still leading in hours and participation during the second quarter of 1980 in all nets.

Steps are being taken to update the APO directory and all members are urged to listen to MARS broadcasts for in-term changes. □

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

Tall crane may be at fault

Submitted by A.K. Green, W5GAJ

The reported disappearance of a freighter in the Atlantic Ocean with all of its 34 crew members has one Brookhaven resident counting his blessings.

Kennith Green of Brookhaven spent three months this summer aboard the freighter Poet, as the radio officer. The Poet disappeared on 24 October while enroute to Egypt. Shortly after her departure, she encountered a severe storm with high winds; the ship was last heard from as she passed Cape Henelopen, Delaware.

Green, who has served on numerous merchant marine ships, including two that were of similar construction as the Poet, has his own ideas as to why the ship went down in the high seas.

"The Poet had a tall crane on top of its deck," says Green. "In high seas those cranes will break loose and start hitting things if the crew doesn't secure it (the crane). It'll rip open one of the hatches and the ship will go down."

Green stated, on two of the ships he has been on that had the crane, this same thing has happened, but the crew was able to secure it before it did any damage.

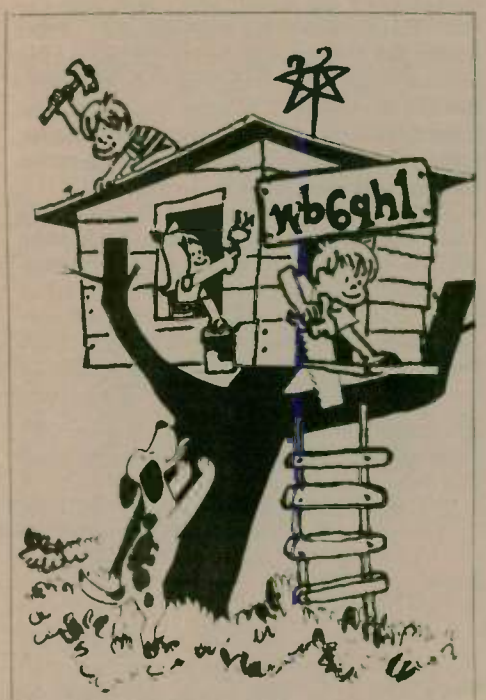
Back in August, Green said the ship's captain asked him to stay with the ship and sail to Egypt. Green refused to go because of the coming hurricane season and he felt the ship was not safe due to the crane. Green left the ship in Corpus Christi, Texas to return to Brookhaven.

The U.S. Coast Guard was taking to the air again today, but officials say their hopes of finding the Poet and its 34 crewmen are diminishing.

The disappearance of the Poet is puzzling to the Coast Guard, according to published reports, for two reasons. She was passing through heavily-traveled sea lanes and no other ship reported seeing her, and she had on board a self-activating Emergency Long Range Transmitter, which would be triggered by exposure to salt water and send signals for two to ten days.

Green says he knows why the ship vanished without any radio report. "The radio aboard the Poet was in excellent condition; it had a solid state power pack, but it takes three minutes to transmit once you turn it on." Green feels that those three minutes were all it took for the Poet to go down with all hands aboard.

— Daily Leader, Mississippi □



CLUBS

MARC — world ambassadors

Tania Miller, WB9TKC

"Today Marissa; tomorrow the world!" I remember Ernie Hand, WB9TDC, making this statement half-jokingly on the 147.81/21 Marissa ARC repeater the first year it was designed and built by the most unique radio club in the United States.

It happened. Our club serves some of the most dedicated people alive. The repeater system is being constantly updated by its designer and "maintenance man" — Robert Heil, K9EID. The newest addition to the system is a 2-meter (or 220 MHz) link to 10 meters FM On both 29.6, the national calling frequency, and 29.5 simplex. Now MARC's members can speak to Europe, Japan, the Americas and around the world via WD9GOE/R.

On Monday 13 October two friendly gentlemen contacted each other on their own handi-talkies with just a few watts and a rubber duckie. One, K9EID, was standing in his kitchen in Marissa, and the other, Oivind Grenness, LA9SC, was at home in Norway. Both were using the technology of the experimenter's fraternity called "hams," going through remote 10 meter FM links. As they chatted, Oivind told Bob he had heard of the Marissa Amateur Radio Club often.

K9EID has written several articles for 73 magazine about the club repeater and club projects. Some of us get on national traffic nets on 20 meters and answer questions about our beacons. We have articles published monthly in the ARNS (Amateur Radio News Service) bulletin, and the newsletter is sent out to several states and a few other countries. MARC members are often heard on 10 meters talking to Europe, Japan, etc., mentioning their club and its projects. And Bill Pasternack of WESTLINK in California told me this has to be the most well-known radio club in the country. No wonder.

When the 2 to 10 meter link is up, we must remember that the world itself is listening. At that time, we are an example of our club and our hobby, and have become world ambassadors, showing that our club's motto "for fun and for service" is true.

Oh yes: "just a few watts" wasn't exactly what the Marissa kid used to talk half-way around the world: it was accomplished with 200 milli-watts: one-fifth of a watt and a rubber duckie in his hand.

Who do we talk to on the MARC repeater? "Today Marissa: tomorrow, the world." □

They climbed out of their rut

Nels Anderson, K1UR

A recent *Ham Radio Horizons* article discussed how many amateurs eventually get themselves into a comfortable rut in their operating activities and how enjoyable it can be when something different is finally tried. With this objective of doing something different, a group of us decided to operate the May 1980 Massachusetts QSO Party — not from the comfortable confines of a fixed station, but mobile in the far western parts of the state. This would make possible an interesting operating environment and enable other QSO party participants to work the rare western counties.

The journey began the morning of Saturday, 17 May in Worcester where a station wagon with camper and a pickup truck were outfitted for radio operation. Although this took a bit longer than planned, both vehicles were on the road shortly after the contest started at noon, with one or both equipped for operation on all bands from 80 meters through 220 MHz.

The first goal was Quabbin Reservoir in Hampshire County. By setting up a generator and the driven element from a tribander, it was possible to operate a kilowatt on 20 through 10. This setup caused a few stares but also nice visits from the MDC police and two amateurs who happened by.

After a few hours in the sun it was off to the far west, dipping briefly into Hampden county and after a dinner at the "Golden Arches" to the evening's destination: Brodie Mountain in Berkshire county. A 40-meter dipole was raised for night-time operation, and with the kilowatt going, many contacts were made up to about 2:00 a.m.

The morning brought rain (there's no escaping Murphey), but after a late start the trip continued to Mt. Graylock, still in Berkshire and the highest point in the state. Fortunately the summit of the mountain was marked, for the fog was so bad we would have gone right back down without knowing it. Surprisingly there was little heard on 2 meters from the summit; there were probably not too many other amateurs up early on a miserable Sunday moring. HF was good though, even bringing in a few DX stations.

After a few hours in the fog with wind strong enough to rock the cars, it was time to start heading back home. Once off the mountain the weather improved, allowing for a couple of hours of operation at a rest stop along Route 2 in Franklin County. By the time we were done there, it was late afternoon, so we rode straight through to Wellesley with operation continuing along the way, making a return to Worcester County as well as Middlesex and Norfolk.

Was it worth it? Sure. In a couple of counties, we were the only ones on the air and so helped out a lot of other entrants. It certainly was a different operating experience. Next year? Maybe a kilowatt station with the generator going while in motion.

Along for the ride were David Curry, K1TK; David Kent, N2AWG; Richard Paret, Jr., WA1ZLQ; and Nels Anderson, K1UR. Operating at home was William Hanlon, N1ADY.

— *The Spark Gap, Wellesley, MA* □

A reminder

This is what one club does to honor a great past member and present outstanding members.

Each year, for the past four years, the Boulder Amateur Radio Club (BARC) has recognized one of its members by presenting them with the **Glenn Johnson Award.** This special award consists of a plaque inscribed with the name of the recipient, and a commendation which states that it is given to those amateurs who have furthered the ideals of Amateur Radio, and have demonstrated — by their interest and labor — their special support of the Boulder Amateur Radio Club. The choice of the recipient is made by the Club officers, but members are encouraged to submit nominees.

Glenn Johnson, in whose honor the award was established, was an active radio amateur in Colorado for over 50 years. He was born in 1907 and grew up in the Greeley area, where he graduated from high school and received Bachelor's and Master's Degrees from Colorado State Teachers College, now the University of Northern Colorado. After several years of teaching in other school systems, he came to Boulder in 1940 as a junior high science teacher, and at the time of his retirement in 1968, was principal of the Washington and Majestic Heights Elementary Schools. His widow, Eva, still lives in Boulder and has retained her interest in the activities of Boulder amateurs and BARC.

Glenn, W0FQK (W9FQK before the zero district was established in 1958), was what we can call a real amateur in every way. He was active on the air, almost never missing a day, and he made friends all over the world — some of whom still mention him when they make a contact with Boulder. He was equally at home on phone or CW and produced beautiful code. During World War II he taught code and theory to about 1,000 Navy servicemen who were being trained for ship radio operation. He was always helpful and patient with beginners.

During the last three years of his life, he lost his voice because of Lou Gehrig's disease, but for some time could still use CW. Later, when he lost the use of his hands, he spent many hours just listening to the activity on the bands. His wife always encouraged him in his hobby and feels that it was his interest in Amateur Radio that kept him alive for his last few months. He died 19 January 1976.

To date, the following BARC members have received the Glenn Johnson Award:
1976 — Margaret Koerner, K0IQ (formerly WB0BEM)
1977 — Jim Ziese, W0PWS
1978 — George Packer, WB0CDI
1979 — David McClune, WB0ZID

Thanks to Margaret, K0IQ, for this biography of Glenn and the description of the Award in his memory.)

— *BARC's BARK, Colorado* □

Ohio Club

The Lakewood Radio Club of Ohio invites all interested local readers to visit them. For information on their meeting dates and time, contact Paul Wiegert, W8TH, 1205 East Franklin Street, Centerville, Ohio 45459. Telephone: 513-433-6825. □

VISIT YOUR LOCAL RADIO CLUB

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

ARIZONA

Metropolitan Amateur Radio Club
J.C. Penny Restaurant, El Con
Tucson, AZ
Call in on 34/94 K7CC/R
Every Saturday morning - 8:00 a.m.

CALIFORNIA

Assoc. Radio Amateurs of Long Beach, W6RO
Signal Hill Community Center
1708 E. Hill Street
Signal Hill, CA 90806
1st Friday/monthly — 7:30 p.m.

Contra Costa Communications Club, Inc.
PO Box 661, San Pablo, CA 94806
Amateur VHF/UHF club and repeater
For info. call WA6KQB (415) 222-1523
Meets 2nd Sun. 9:00 a.m. Hickory Post

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

Mt. Diablo Amateur Radio Club, Inc.
PO Box 23222, Pleasant Hill, CA 94523
Meets: Grace Presb. Church, 2100 Tice
Valley Blvd., Walnut Creek, CA 94595
3rd Friday/monthly — 8:00 p.m.

Nevada County Amateur Radio Club
Financial Savings & Loan Community Room
205 S Church Street — Grass Valley
2nd Monday/monthly — 7:30 p.m.
(916) 265-5958 for information

North Hills Radio Club, Inc.
St. Michael's Episcopal Church
2140 Mission Ave.
Carmichael, CA 95608
3rd Tuesday/monthly — 7:30 p.m.

San Gabriel Valley Radio Club, Inc.
Bowling Green Clubhouse
Arcadia County Park, Arcadia
1st Tuesday/monthly — 7:30 p.m.
(except June & December)

Satellite Amateur Radio Club, W6AB
PO Box 1615
Vandenberg AFB, CA 93437
1st Thursday/monthly — 8:00 p.m.
Building Z1160, Vandenberg AFB

Sonoma County Radio Amateurs, Inc.
PO Box 116
Santa Rosa, CA 95406
1st Wednesday/monthly — 8:00 p.m.
Red Cross Building

Southern California Amateur Radio Computer Club (SCARCC)
Fried Heyn, WA6WZO — (714) 549-8516
Monthly meeting — 4th Sunday — 1:00 p.m.
Weekly net — 7:00 p.m. Tuesday, 144.76/145.36

Stockton Amateur Radio Club
University of the Pacific, Room 238
2nd Wednesday/monthly — 7:30 p.m.
Club repeater net roll call:
Wednesdays 8:00 p.m. — 147.165/765

CONNECTICUT

Southcentral Connecticut ARA (SCARA)
American Red Cross Building
703 Whitney Avenue
New Haven, CT 06511 — (203) 799-2979
1st & 3rd Wednesdays/monthly — 8:00 p.m.

GEORGIA

Atlanta Radio Club
Box 77171 Atlanta, GA 30357
1st Thursday/monthly — 7:30 p.m.
Community Rm./Perimeter Mall Shopping Center
Call (404) 971-HAMS Net Sun. 9:00 p.m. 146.22/82

Columbus Amateur Radio Club (CARC)
David Nulty, N4ATI, Secretary
The Quonset Hut next to Food Stamp Center
Buena Vista Road at the "Spider Web"
2nd & 4th Thursday/monthly 7:30 p.m.

ILLINOIS

Illiana Repeater Systems, Inc. (IRS)
Palmer Amer. Nat. Bank Comm. Rm.
Danville, IL
3rd Monday/monthly — 7:00 p.m.
Call-in K9PD/R 146.22/82 "Super 82"

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
Gen. Telephone Aud. E of I-69 off U.S. 24W
Fort Wayne, IN
Talk-in: 146.28/88, 147.255/855
3rd Tuesday/monthly — 7:30 p.m.

Fort Wayne Radio Club
Ron Koczor, K9TUS
2512 Glenwood Ave., Fort Wayne, IN 46805
The Salem Church
3rd Friday/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.

SE Michigan Amateur Radio Assoc. (SEMARA)
PO Box 646
St. Clair Shores, MI 48083
South Lake High School
1st Friday/monthly (excet July and Aug.)

MISSOURI

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

MONTANA

Great Falls Area ARC
Joe Heyde, WB7TNH
6000 2nd Ave. N.
Great Falls, MT 59405
1st Monday/monthly — 7:30 p.m.

NEW JERSEY

Delaware Valley Radio Association
Villa Victoria Academy
River Road (NJ 29) at I-95, Trenton
(609) 882-2240, call-in 07/67
2nd Wednesday/monthly — 8:00 p.m.

Glouster 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.

NEW YORK

Genesee Radio Amateurs, Inc. (GRAM)
PO Box 572, Batavia, NY 14020
State Civil Defense Center, Batavia
(behind NYS School for the Blind)
3rd Friday/monthly — 7:30 p.m.

Hall of Science Amateur Radio Club, Inc.
Hall of Science Museum
Flushing Meadow Park
Corona, Queens
2nd Tuesday/monthly — 8:00 p.m.

Long Island Mobile ARC
H.B. Thompson Jr. High School, Syosset
Ken Denston, WB2RYC
(516) 379-6463/call-in 25/85
1st Tuesday/monthly — 8:00 p.m.

Staten Is. Amateur Radio Comm. (SIARC)
Northfield Savings Bank (side entrance)
Richmond and Castleman Avenues
Call KA2CUS (698-2006) or WA2KQN (981-0372)
3rd Thursday/monthly — 8:00 p.m.

OHIO

The Clyde Amateur Radio Society
Lou Braum, K8IQB, Secretary
2nd Tuesday/monthly 7:30 p.m.
Clyde Savings Bank, Clyde, OH
Repeater 147.075/675

OREGON

ClatsKanie Amateur Radio Club
Route 2, Box 553
ClatsKanie, OR 97016
ClatsKanie Grade School Library
2nd Tuesday/monthly — 7:00 p.m.

Northern Ohio ARS, Inc. (NOARS)
PO Box 354
Lorain, OH 44052
Mike, K8US (216) 988-2345
Carl, N8BKX (216) 282-2828

PENNSYLVANIA

Radio Assoc. of Erie, Inc.
PO Box 844
Erie, PA 16512
John Lindvay, WB3IFD

TENNESSEE

Lakewood Amateur Radio Club
Harvey Cross, W4PKM, Activities Mgr.
Rt. 8 Box 460, Morristown, TN 37814
State Area Vocational School
Last Thursday/monthly — 7:30 p.m.

TEXAS

Sun City Amateur Radio Club, K5WPH
3709 Wickham
El Paso, TX 79922
1st & 3rd Fridays/monthly — 8:00 p.m.
Jim Bush, WB5KND — (915) 584-0466

WASHINGTON

Seattle Wash. Area Mike and Key ARC
305 S 43rd St. (across from VG Hospital)
Renton, WA 98055
The Good Neighbor Center
3rd Saturday/monthly — 10:00 a.m.

It's never too late

If you enjoy radio as a hobby or would like to prepare for radio as a vocation, take advantage of the classes in Amateur Novice and General Commercial Radio being offered by Grant District's Adult and Community Education, located in northern Sacramento, California. Classes will be taught at their main campus in North Highlands at Campos Verdes Adult School at 3701 Stephen Drive. Evening classes will meet every Tuesday and Thursday for a term of nine weeks.

The course will teach and review Morse Code and FCC rules and regulations. Cost of the class is $20, which includes registration and class fee.

The current class started 13 November and will run through 23 January 1981. Continuous enrollment is accepted throughout the term. For more information, call 332-1918 between 8:30 a.m. and 4:30 p.m. or 6:00 p.m. and 10:00 p.m. □

Chaverim celebrate

Claire Kuperman, KA3DNJ

The Chaverim of Delaware Valley — a group of Jewish radio amateurs recently celebrated their first birthday at an eyeball brunch in Westmont, New Jersey.

CHAVERIM is the Hebrew word for friends — a group of men and women dedicated to the promotion of friendship among hams the world over.

A new slate of officers was elected, headed by Jim Bock, K3PHC, as President; Mike Forshner, N2ASZ, Vice President; Laurie Forshner, N2ASY, Treasurer; Claire Kuperman, KA3DNJ, Secretary; and five Directors: Milton Goldman, K3WIL; Ed Ludin, K2UK; Al Schnipper, W3AYJ; Jay Kuperman, WA3IFY; and Sonny Gutin, WB2DXB.

Coinciding with our first anniversary, the Chaverim of Delaware Valley is happy to report the beginnings of our own radio station, to be housed at the South Jersey Jewish Community Center. The widow of Abe Cutler, WA2ONB — one of our members — has very generously donated his radio equipment to the Community Center and the Chaverim will be responsible for operating the equipment. Members will also be available to teach classes in Amateur Radio.

In the past, members have provided communication for such events as the Jerry Lewis Telethon for Muscular Dystrophy, the Israel Anniversary Parade in Philadelphia, as well as several local happenings in New Jersey and Pennsylvania. □

Newcomers are welcome

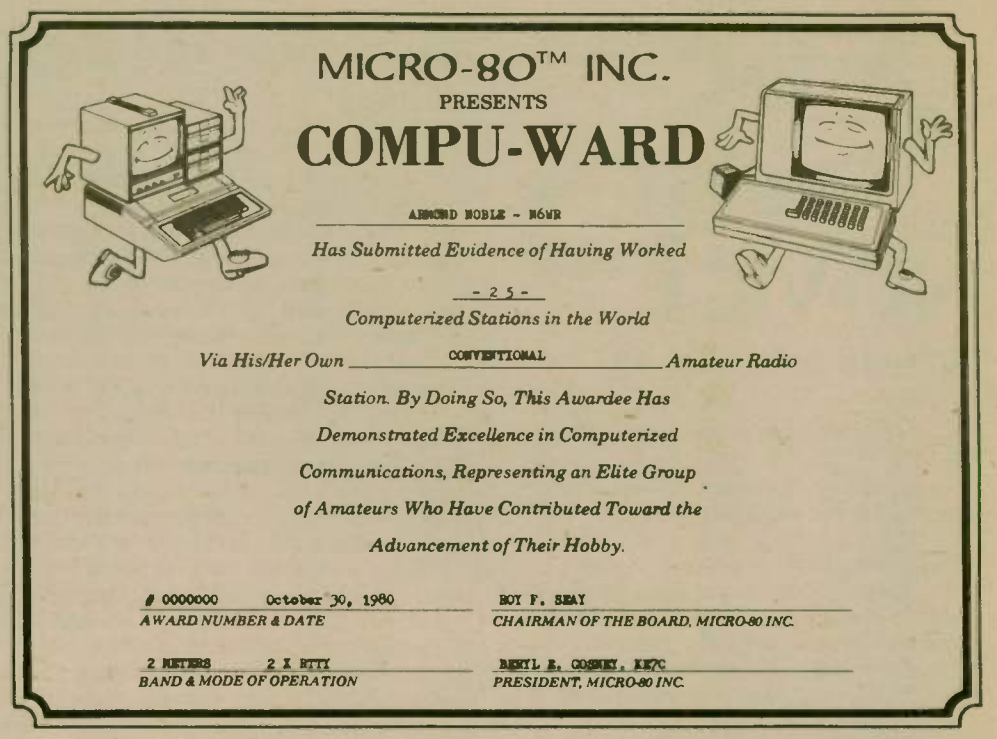
The El Dorado County Amateur Radio Club is a group interested in all phases of Amateur Radio. Most of our members hold a Federal Communications Commission amateur grade license. Those who do not have a license are working to obtain one.

Our club has several activities throughout the year. The big one is Field Day. Once a year, during the summer, we have a picnic. And at Christmas time we hold a Christmas party. At other times, we have different contests to check our operating and technical skills.

The club meets on the fourth Tuesday of every month at the Herbert C. Green School, 2367 Forni Rd., Placerville. Our next meeting will be on 27 January. During the spring and fall we conduct Code and Theory classes. If you are interested let us know at the above address. □

QSL: 2-meter beacon

Brian Button, WD0FDG, Of Chesterfield, Missouri, sent in the first QSL card in the world, as far as we can find out, for a 2-meter beacon. On 5 June 1979, MARC's (Marissa Amateur Radio Club) 144.050 MHz beacon read rst: 519 about 60 miles away with its one watt, received on Brian's 5-element beam at 25 feet. □



COMPU-WARD

As publicized in over 25 individual Amateur Radio publications throughout the world, the COMPU-WARDs, sponsored by MICRO-80 Incorporated, are available to licensed amateurs and shortwave listeners worldwide. The emphasis on these award programs is focused on the advancement of both the Amateur Radio and computer hobbies through demonstrated excellence in the art of computerized communications.

Stations applying for these awards may or may not have a computerized station of his/her own; however, **all stations contacted must be computerized,** meaning the contacted station must have his/her transmitter interfaced with a computer.

To be valid, all contacts must be made on or after 1 January 1980. There are two awards being offered: (1) HF Bands — 29.7 MHz and below; (2) VHF/UHF — 50.0 MHz and above.

All contacts must be made on one or any combination of the following modes (including any modes authorized by the FCC since the release of this announcement) — RTTY, SSTV, CW and ASCII. Crossmode communications will not be recognized for these awards.

Single band and mixed band endorsements will be given with each band segment (HF, VHF, UHF, etc.). Crossband operation will only be accepted for OSCAR contacts. All OSCAR contacts will be considered only for VHF/UHF accomplishments, even though some of the OSCAR satellites have received frequencies on 10 meters. Contacts via repeater are acceptable.

To qualify for either COMPU-WARD:

— Applicants **WITH** a computerized station of his/her own must contact a **minimum of 15** other computerized stations on the bands and modes authorized.

— Applicants **WITHOUT** a computerized station of his/her own must contact a **minimum of 25** computerized stations on the bands and modes authorized.

To apply, prepare a list of contacts for each award. In prefix order, list each call worked, mode utilized, frequency or band of operation, and date and time of each contact made. **DO NOT SEND QSL CARDS!!!** Have your list of contacts and supporting QSL cards verified by two fellow amateurs or a local radio club official. The services of a notary may be sought if applicants prefer.

Forward the verified list with $4 for each award. Send your application to MICRO-80 Inc., 2665 North Busby Rd., Oak Harbor, WA 98277. Foreign stations may substitute the awards fee by enclosing 10 IRCs for each award sought. □

NOVICE

Armond Brattland, K6EA

W0MFW joins in wishing all readers a FB NEW YEAR! We hope "Santa" brought the new gear you've hinted about needing for the past year or two.

A new leaf and clean slate?

In going over the letters, forwarded from Long Beach, it is surprising that even several who put out a good brand of CW, close their letters with "73's" and not "73" as the old-time landline telegraphers did. Likely, such old-time American Morse Code artists might not agree it should be given out in cases where an operator makes numerous mistakes. As a youngster, hanging around the Great Northern Depot with the son of the depot agent, "learning the code," I remember hearing that old time agent telling us, "we didn't deserve a 73." We amateurs seemingly have stretched "73" to cover multitudes of "sinners."

Several very negative letters bring my year to a "sad" ending. Perhaps I've failed to establish one crucial point concerning a person's ability to use code; i.e., UNTIL YOU READ CODE SUBCONSCIOUSLY, meaning with little or no conscious perception, it is not possible to "head copy" with any degree of success. It is for that reason, in past articles, I've stressed the importance of listening to good code and especially tapes from W1AW, the Official Station for ARRL. In past articles you have been urged to confine your listening to such while you are trying to learn to "copy in your head." If you have not followed such suggestions, but continue listening to "stumble bums" that butcher the code, do not blame me for your dour attitude. I've said, "IT TAKES PRACTICE!" Again, I stress, **if you listen to bad code, you are wasting your time!**

Give yourself a real "present" this New Year!

One writer questions whether he will ever learn to copy code except by writing it down, one letter at a time. He also erroneously repeats a mistaken opinion, to the effect that if one learns to "COPY IN HIS HEAD," it follows that they can't write it down. For the benefit of those that seemingly question their ability to someday make full use of their subconscious processes, certain back issues about the method of practice will be reprinted. Increasing numbers appear to be interested in this subject, so practice methods will be revised and updated as we go along. For those who seem to have given up, let me ask: "DO YOU TOUCH-TYPE, AND IF SO, FOR HOW LONG HAVE YOU BEEN USING SUCH METHOD?" If it has been a number of years, it is unlikely that you could correctly sketch out the Standard keyboard — yet your speed and accuracy have increased. Beginners might have a vivid recollection of the placement of keys and thereby, they type slowly. By the same token, having to remember or interpret the sounds and the spacing of Morse characters has exactly the same effect!

I've seen old-time depot agent telegraphers spending part of their time — especially during the winter — AT WORK, but playing cards with cronies. This was during the days when all communications were by "wire." In other words, the telegrapher was a busy man! Every so often, he put down his hand of cards to knock out several messages on the "mill" and seal such traffic in envelopes and either put on an addressee's name, or fold the telegrams so the names could be read through "windows" in the envelopes. The telegrapher never seemed to pay any attention to such work, appearing to be only concerned with the card game, even talking to the other players, or perhaps telling someone at the window whether a certain train would be "on time." It was evident that code, as a means of communication, was no extra burden and it will not be a burden to you either, when with proper practice, you read it as words or sentences. **That is when "the fun" begins!**

Bonbons and "gift-wrapped brick bats"

Thank you Charles Colin, KA6EVN, of Coulterville, California. With nine miles between your home and mail box and mail only once a week, Amateur Radio surely can mean a great deal to you and your family.

Covering your questions, NNN is trying to expand and give Novice-licensed Maritime Mobilers a helping hand also. It may very well become known as the National and International Net and attract attention by using "NN/IN" as the call. Hopefully, in the future it will go back to daily operation, but for the time being listen at 2300Z on 21,150 kHz Sundays. You should arrange for regular schedules with net members that you can hear. It is suggested you also write Sel Carlson, KA6ERF, 560 Greenbach St., Napa, CA 94558 and work up a sked with him on 80 or 40, wherever you hear each other. Sel is active on NN/IN and other nets, including MARS. By now, you will have your December **Worldradio**. Note the simple form for radiograms. I still believe the ARRL Net Directory is a good investment at 41¢ for postage. You will find other things to confuse you also — Hi! Stick to the essentials!

I am glad you are an ARRL member. I have been such for 50-plus years. Many times we have exchanged views — a good "exercise" for longevity. The "QN" signals are useful in net operation, but frankly, I failed to see the need for so many — especially since we amateurs have stretched the regular "Q" signals to fit many similar situations. No doubt I often fail to give the meanings of signals, but ARRL hands such out for free, and that fact has often been mentioned during the past. I do recognize the importance of what you say, however, for new subscribers who are otherwise starting from scratch. However, about including metric measurements — oil companies, radio supply companies and numerous others put out free conversion charts and slip cards, so why burden each columnist in **Worldradio** with such obligation?

You state: "I believe that no transmissions by U.S. hams should exceed 15 wpm in any Novice band!" Another writer only mentions participants within Novice traffic nets that are sent off frequency to handle traffic. That is, when a net control requests that they go off the regular net frequency, but he wanted to limit such participants to 13 wpm when they left the net to handle their traffic. In such case, of course, the net rules might unofficially make such suggestion. However, your suggestion would have to be enforced by the FCC, which makes the enforcement impossible. BUT, how about an official restriction upon persons speaking a foreign language within the United States, so that those of us with less practice might follow along at a slower speed? There are Novices capable of operating at speeds above 40 wpm and a few of them may remain as Novices for a considerable time as questions on theory are a problem for such old-timers; yet operating CW kept food on their family table for a great number of years.

Your location is unique, being 23 miles (must we add 37.007 kilometers?) away from telephones or commercial sources of electricity. By all means, do involve your family in Amateur Radio and seek out nets on all bands that handle traffic — AND LET US KEEP IN TOUCH! Seriously, I knew a young man who learned to read code at speeds up to or above 40 wpm, merely by listening . He had no license and the amazing thing was that he also learned to touch-type and submitted copies of what he copied to certain amateurs who were operating at such speeds — **all within four months**. He had suffered an injury and stated that copying code was his best therapy, keeping his mind off his misery while the healing took place.

Building from "scrap?"

To Daniel Watt, at Bucksport, Maine: Despite your distinguished name, if you intend to build up a rig to go on the air on many of the present Novice frequencies, you may find it quite a problem to build a satisfactory transceiver, or transmitter and receiver from scrap parts. However, there are things you could build, both for experience and to use. A standing wave bridge, so-called "SWR Meter," is one item. I suggest you keep in touch with the column under "Construction," written by Chuck Clark, K4ZN. If your school does not receive QST, check out the public libraries. Carefully check the list of parts required before you start a building project. You can usually substitute parts ahead of time; it is not that easy when at a midway point.

Can you spare the time?

The National-International Net meets whenever you have traffic to pass and 21,150 kHz is open. Tune up on an open frequency; better yet, make the initial tune-up using a dummy load. Call "CQ NN/IN QTC" — this means you have traffic to send on the net frequency. Add your call sign, and give the destination for your radiogram or radiograms. If the skip is right, you may hear "Sel" of Napa, KA6ERF, calling you and taking your traffic to MARS, or some other outlet. That is the manner NN/IN should operate sometime in the near future. However, in the meantime, all net members (and that means anyone) who takes the time to check in at 2300Z Sundays on 21,150 kHz, should get busy and talk it up — it is your net. Some writers have expressed the idea that Novices don't know what they want or how to go about getting it. Let us take a minute here to decide at least one important point. It has been asked before —

Is the Novice an amateur (or) merely a temporary "facet?"

In this column Novices are considered to be amateurs — you are treated as such. There are some real young Novices; there

are some much older Novices. So perhaps the average age, if it were determined, might remain about the same? In my book, you have all reached the age to know RIGHT FROM WRONG! One writer, not wishing his name or call publicized, questions this statement. He feels that some do not realize how serious it is to QRM someone with malice. This means, simply, doing something determined to cause another to suffer. He has mentioned the Novice bands and frequencies, and even several calls, and claims to have been maliciously QRM'd. He wants to know, "WHAT CAN BE DONE?."

First, read the editorial on page 9 of November **QST**, "It seems to us" — entitled, "Malicious interference — round two."

Second, DO NOT RESPOND IN KIND! In other words, if someone comes on the frequency swishing a signal back and forth, don't do the same back to him! Merely quietly listen, and if possible, make a recording of whatever is going on. Write down the time, the frequency and note from day to day what you hear; then pass such information to the committee named in such editorial in **QST**. By all means, make no mention of what you are doing on the air! If you wish, send your information to me and I'll forward it on for you. Malicious QRM is a serious threat to the very life and heart of Amateur Radio. It must be stamped out. If it is on local bands, we might render some help.

At any rate, supply the established "task force" with the information — that is the effective manner all agencies use to catch criminals. We, individually, cannot and should not try to be a hero and "catch the thief." The evidence to convict is vital — send in the evidence, but without fanfare. That is where the amateurs fell down on the West Coast; such a mistake should not be repeated elsewhere! □

Novice notes

Don Scherig, KA4LSX

W6RO, which is the club station aboard the Queen Mary and is homeported out of Long Beach, California, works the Novice 15-meter band every Tuesday evening Eastern Time. Times are 0100-0300Z (Wednesdays GMT). QSOs should be kept short to give others a chance. W6RO QSLs with a special Queen Mary card for those contacting the club station.

Nothing aggravates me more than receiving a QSL card which has been mutilated by post office cancelling machines. Or having the killer bars across the writing and only being able to read half the card. You could enclose the cards in a sealed envelope, but this is rather expensive if you send out a lot of cards. Even at the 10¢ postage rate, it runs you $100 per thousand. In a sealed envelope, it would cost you an extra $50. By hand-carrying your postcard to the post office and then requesting that they hand-cancel it, the problem can be solved. I've tried it and it does work, although you may get a little flack at first.

Balanced Modulators, NOFARS, Florida □

NARC VHF QSO Party

Jack Mutzabaugh, WB3CXR

A VHF contest sounded like fun; besides, I'd wanted to do some contesting this summer, anyway. So when Walt Supina, N3WS, called for a show of hands, I raised mine with the others. At the time, I didn't realize the enthusiasm this contest would generate during the coming months.

This would be my first VHF contest. Fortunately, not all of the club members who raised their hands that evening were as green as I was. Tom Segalstad, LA4LN, participated in the monthly European VHF contests, while Luther Bissey, WA3IFC; Paul Dimick, WA3ZPW; and Chuck Mulfinger, WB3AEI, had been the route before in previous VHF QSO Parties.

We formed an informal group that evening and met several times during March, May and June to get the mountaintop shack cleaned up, line up the equipment, and plan our operating strategy. The amateurs I've mentioned, and many others, supplied uncounted hours of labor, infinite patience, and unrelenting enthusiasm for the project.

Our last meeting, held at LA4LN's home the night before the contest, was sparsely attended since we still hadn't gotten the antennas on the towers. A run of bad weather forced a delay in mounting them until the last minute. That afternoon and evening, Dave, N3BBH, and Chuck, WB3AEI, put the finishing touches on the antenna farm. Chuck spent more than four hours on the 100-foot tower, causing some speculation that he planned to stay up there for the entire weekend.

June 14 was sunny, and all of us looked forward to a busy day. LA4LN had been collecting weather reports from the local paper all week, hoping to find signs of the weather conditions that indicate likely auroral activity.

When I got to the mountaintop at about 9:30, I found Cal Williams, WA3EBL, and Dave, N3BBH, moving chairs and tables to provide comfortable operating positions. Dave's old short-wave receiver was sitting on top of the refrigerator, and Tom's equipment was already in place. He'd brought the gear up at 7:00, set up the station — our "big gun" on 144 and 432 MHz — tuned and checked it, and headed back down the mountain for another load.

By early afternoon, the rest of the crew had arrived, and the place became a tangle of wires and antenna cables. Luther, WA3IFC, brought his 6-meter station, an SB-110, and Bob Hazelton, K3RBH, brought a Swan 250 with a transverter for 2-meters and another SB-110. Bob gingerly threw the power switch on his homebrew kilowatt and discovered a shorted wall receptacle the hard way. We found the problem and cannibalized a receptacle from one of the club's extension cords. The 6-meter station went on the air at about two minutes 'till three — 1900 UTC — and Bob made the first contact with W4RX in Virginia about 1910. The 144 and 432 MHz stations were operating by this time; Tom worked K3LNZ/8 at 1951.

No contest is complete without a liberal dose of Murphy's Law, and this one was no exception. The rotor on the 100-foot tower jammed for a time, until Carl climbed the tower and prodded the thing into working. In the heat of the contest, LA4LN missed the Hi/Lo power switch on his rig and pumped 10 watts into the Microwave Modules 432 MHz transverter, frying the inputs and taking the station off the air for a while. The 6-meter kW blew three fuses in the grid circuit, and we finally decided to run the station barefoot.

The 2-meter kW never did get on the air — a defective relay. And, in what must rank as one of the most unusual injuries ever suffered by an amateur during a contest, Hans Ostrem, LA1SP, twisted his ankle while operating the 144 MHz station.

The night crew kept the rigs on and logged a few new sections during the wee hours. There is a rumor that LA4LN slept on four chairs placed end-to-end, so that he could keep an ear cocked toward his rig. Who says amateurs aren't dedicated?

Sunday passed quickly. We picked up the Bahamas, southern Florida, Michigan, and the Maritime sections on 6-meters; and Ohio, Connecticut, and Northern New Jersey on 432 MHz. On 144 MHz, we logged Ontario, Connecticut, southern New Jersey, and New Hampshire to add to the sections we'd captured the day before. Tom managed to put the 432 MHz station back on the air, courtesy of Wilber Files, W3SAY's varactor tripler.

We had agreed earlier to QRT at 1900 hours local time to avoid violating the contest rules which stipulate a total operating period of no more than 28 out of 35 hours of the contest. The last holdout was Chuck, who volunteered to stay on the mountain until after the Sunday night net to pick up additional points on 2-meter FM, since we had decided to concentrate on 2-meter SSB and CW during the main part of the contest.

Our five stations logged 248 contacts with 50 multipliers for a total of 12,400 points. Not an earth-shattering score, but a fine effort, nonetheless. The important thing is that all of us had a good time, and we learned quite a lot about the vulnerability and capability of our equipment.

Thanks to all the club members and guests who made the June VHF QSO Party so successful. Let's do it again sometime.

— NARC Radio Newsette, PA □

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

TRAFFIC

Chuck Clark, K4ZN

How to stand out on a net

Nobody will notice you if you do everything the same as everyone else. Develop your own style and the whole net will recognize you at once, even before you give your call sign. Here are a few things you can do:

Call net control when you hear "Net, please stand by," or QNE. Nobody else will be transmitting then, and so you won't have to fight your way through others' interference.

Don't list your traffic when you check in, make the net control ask you to list it. That calls the net control operator's attention to you.

Check into a slow CW net at 30 wpm. Let them know what real hot shot operating sounds like. Check into a busy net handling lots of traffic with experienced operators, and insist on keeping your speed down to 10 wpm. After all, accuracy is more important than speed.

Shoo away any casual contacts that start up on the net frequency. Show the net control station that you're going to do it if he neglects his duty to do so. Too bad if you cause interference to people who are trying to copy traffic through that racket. You can't copy through it, so it's obvious nobody else can either.

Send R or say "Roger" after receiving a message, and then proceed to ask for fills. To most people R or "Roger" means "I am certain I have received the message." To stand out, you have to mean something different.

When net control asks if you can take a piece of traffic, explain fully why you can't. If you just said "No," nobody would realize how full your schedule is, and they might just handle the traffic some other way and you would miss an opportunity to tell them.

If net control doesn't handle your traffic in five minutes, call again. Let them know you are not one to be kept waiting.

When you're sent off frequency to pass traffic, if the frequency to which you're sent is busy, return to the net and tell net control. Eventually the other station will get tired of looking for you on nearby frequencies and come back too, so you can be sent to another frequency that's probably just as crowded.

Wait until most stations have left the net to check in with a big list of traffic.

Show the net control station what the correct frequency for the net is. Don't budge. Make them tune to your frequency if they want to hear you. After all, there is such a thing as being objective about this.

Use Q signals and CW abbreviations on phone nets. Let everybody know you know what they mean. After all, it's the amateur's jargon and sets us apart from the CBers and their ten code.

Develop a distinctive set of phonetics. Using the same ones as everyone else is just following the crowd. Never mind that it is easier to understand when everybody uses the same ones. There are more important values to be served.

Tell the tuner-uppers that the frequency is in use even while they are tuning. They won't hear you of course, but others will, and that's what you want. Show them that your rig has enough punch to ram its way through the loudest of them.

Don't bother to tell net contrtol when you're leaving. That way your call will be repeated several times until they conclude you have left the net. That's what you need, more exposure.

Try a few of these and I'll guarantee your call will be the best-known on the net. But I won't guarantee it will make you popular.

Are area nets needed?

The National Traffic System started out as a system entirely made up of nets. Section nets passed traffic to the region nets, which in turn passed it to the area nets, and a Continental Traffic Net handled traffic between the areas. Both the evening and the daytime cycles began this way. But soon it was found that a Transcontinental Corps of individual operators maintaining schedules is better suited for handling the long haul traffic, and the Continental Traffic Net was closed.

As its model, the National Traffic System seems to have used the military's radio organization or that of MARS. The mission of the Amateur Service is somewhat different from that of military stations, however. Where most communication is up and down the chain of command, funneling all the traffic into a single net makes sense, and that's the way the military does it. But amateur traffic is from everywhere to everywhere, so concentrating everything into one channel can cause congestion. If I have a message for New York, another for Michigan, and a third for California, and several other stations on the net have traffic for other places, it would certainly ease congestion if they weren't all routed the same way. But the present NTS procedure is to route them all to the area net, and there sort them out for further relay, with the result that sometimes the area nets have more than they can handle in their allotted time.

In addition, there are the propagation difficulties. Here in the Southeast, our representatives from Region Four must be from the northern part of the region if we are to be heard on the Eastern Area Net. That effectively excludes the Florida gang in particular, and Florida is one of the most traffic-conscious states in the Amateur Radio Service. Florida stations are thus excluded not only from representing the Fourth Region in the Eastern Area Net, but also from acting as net control and as Transcontinental Corps stations.

Perhaps the staffs of the NTS should give some thought to doing a second time what was done previously — substituting schedules by individual amateurs representing their regions for the area nets, as the Transcontinental Corps does for the area nets now. One objection that may be raised at once is that it would require too many operators. With 12 NTS regions, each reagion would need 11 transmit and 11 receive representatives, if the system were organized like the present TCC. There would be several times as many of these representatives as section representatives, and there would be another kind of congestion.

But it doesn't have to be organized like the present TCC. Instead, during the period between the early and late sessions of the region nets, the area representatives could each meet several others and clear their traffic. Instead of specified schedules with specific stations, the receive representatives for the area nets would operate on published frequencies, probably at least two for each net in different bands to take care of stations at various distances, and the transmit representatives would select the receive representatives on the basis of propagation conditions at the time.

The hour between the two sessions of the region nets should allow enough time for 20 messages or so to be handled by each station, and it would be rare that the traffic load would exceed that. The difference in time zones would cause a bit of a problem, but no more than it does at present. The transmit representatives would simply have to adjust their schedules to the time the receive representatives are open for traffic.

How about the personnel requirements? Normally, it would seem that two receive and one transmit representative would suffice, additional ones being needed only when traffic is exceptionally heavy. The two receive stations would operate on different bands, as already noted. While the transmit stations would, on the average, have twice as much to handle as the receive stations, the transmit stations would have three times as long to move it because of the difference in time zones. At present, region nets normally send two representatives to the area net, so only one more would be required; this could be supplied by amateurs now functioning as area net controls or TCC stations. The result is that few, if any, additional persons would be needed.

Handling traffic in the way proposed would also eliminate one or more relays in cases where traffic would go via TCC according to present routing, and would result in fewer frequencies being occupied for less time. We traffic handlers think our work is terribly important, but there are others who think we are band hogs, and so reducing our frequency occupancy will be good public relations.

This is proposed as something to think about, and amateurs active in NTS region nets and above are encouraged to comment — either favorably or unfavorably. Maybe someone can think of something better. There is nothing so good that it cannot be improved, not even the National Traffic System.

Punctuality

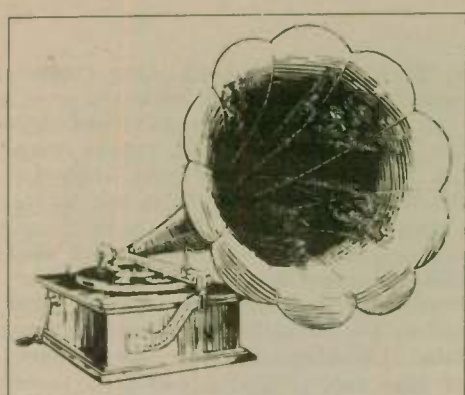
On many nets, all stations are expected to be on hand at the published time for beginning a session. Others are quite flexible. Some of the nets on 14,313 kHz in particular just go on and on with people dropping in and out all day, and with net controls succeeding one another at appointed times. Insistence on punctuality depends on the mission of the net. Region and area nets of the NTS have large volumes of traffic to move in a limited time, and so tend to insist more on punctuality, on having stations on hand when the net begins. In each case, it's up to the net management to decide, and for the rest of us to accommodate ourselves to that decision.

Net controls, of course, must be on time, and must start the net when they are supposed to start it. The usual rule is that if the assigned net control station does not call the net within three minutes of the appointed time, the alternate net control — if one has been designated (otherwise any station on frequency, preferably one with not too much traffic to handle) — should call the net and continue to act as net control for the rest of the session, even if the regular net control comes along later. Not beginning a net on time is something that discourages stations from participating, and is hazardous to the health of any net.

If the mission of the net requires it, other stations should be on time, too. But in many cases, there is no real need to insist that all check in at the beginning. In section and local nets, where the aim is to get more participation, greater flexibility here may make it possible for more to participate. Many of us have other things besides Amateur Radio to occupy our time, and may not be able to get on the air at the time the net begins. If we're encouraged to check in at any time, we're more likely to participate.

Subtle things like choice of words can be significant in this regard. For example, "I'll stand by for any additional stations

(please turn to page 49)



OLD-TIME RADIO

Carl C. Drumeller, W5JJ

Was Marconi a latecomer?

In the minds of most English-speaking people, Marconi is the inventor of radio (or "wireless") communication. Of course, German-speaking, Russian-speaking, and French-speaking persons will dispute this presumption. But, as this is being written in English, let's presume Marconi to have been the inventor.

But is that a valid presumption?

Robert Conot, in researching the Edison Archives and related records while preparing the book *A Streak of Luck, the Life and Legend of Thomas Alva Edison,* unearthed startling evidence. It is well-documented that in[1] 1878, Edison experimented with inductive telegraphy between moving trains and ground stations. Later, he had the thought of telegraphing without wires.

In 1878 he tried to use kites but put the project aside until 1885. In the spring and summer of that year he used two hot-air balloons to support both a capacitor and a wire to ground. In the transmitting unit, the wire terminated in an induction coil and a battery of electro-chemical cells. For the receiving unit, the wire connected to an electro-mechanical device similar to the receiving unit of a telefax set. With this set-up, he was able to establish one-way communication over a distance of two or three miles. He believed this could be extended to ten miles over water.

Like many of his other discoveries (the "Edison Effect" which later became the "Fleming Valve" rectifier for radio reception is an example), he did not elect to pursue the experiments farther. He did, however, take out a patent on "Means for Transmitting Signals Electrically" in December of 1891.

Now let's jump forward three years and witness Marconi demonstrating his wireless telegraph. Note the points of similarity: the grounded antenna, the induction coil, etc. Edison never thought much about these points, but others did. When they were called to the attention of the Marconi Wireless Telegraph Company of America, that company agreed to pay Edison $60,000 and then put him on the technical board of the company.[2]

What does this prove? Not much. But it does strongly suggest that Thomas Alva Edison demonstrated and patented a feasible scheme of wireless telegraphy some years before Marconi appeared upon the scene.

[1]Page 229 *A Streak of Luck*
[2]Page 339 *A Streak of Luck*

Vignettes on single sideband

Now that SSB is the "standard" version of amplitude modulation, it is difficult to recall some of the earlier applications of the system. Oh, there are historical references to the theoretical discussions in the mid-teens and a bit on its applications in the field of carrier telephony. But ... just when did "wireless" SSB transmissions take place?

I don't know. One of the earlier transmissions, however, is given full publicity. That was the first trans-Atlantic radio-telephone transmission.

The transmitter, located near Washington, D.C., used a battery of moderate-power vacuum tubes in parallel. Its schematic wiring diagram appeared to be that of an ordinary radiotelephone transmitter of its day — and that day was shortly after the end of the Kaiser War. How, then, were its emissions classified as SSB?

The answer lies in tuned circuits. It's difficult for us whose experience background tends to be centered on HF or VHF or even MF, to visualize ordinary LC tuned circuits so selective as to discriminate against one sideband while leaving the carrier and other sideband relatively unaffected. But it happens that way when you're dealing with tuned circuits in the LF (30 kHz to 300 kHz) spectrum. And that's the frequency spectrum in which the first trans-Atlantic radiotelephone transmissions were made.

Sometimes such frequency discrimination can lead to undesired effects. Let's consider the CAA four-course aerial navigational aid. The five-tower version had four towers at the corners of a square, with the fifth situated in the center. At times the signal emitted by the center tower (which came from a transmitter serving that tower alone) was amplitude modulated in a conventional manner. If that transmitter was operating near the low-frequency end of the navigational-aids frequency band — that is, near 200 kHz — there was a serious problem. An ordinary tuned circuit at that frequency exhibited such selectivity as to attenuate the sidebands in an unacceptable degree. To correct this phenomenon, the Q of the tuned circuits was deliberately degraded by the use of resistors.

That four-course navigational aid also transmitted SSB radiotelegraphy. Do I sense raised eyebrows? Lower them! Here's how it was done. The center tower transmitted a steady carrier except when it was being modulated for voice transmissions. Another transmitter, offset 1020 Hz in frequency from that powering the center tower, delivered RF to the four corner towers. Not to all four at once, however. An RF relay switched the power from one set of a diagonal towers to the other. This was done in a manner that keyed one set of towers to emit a continuing series of A's, the other a similar series of N's. In the aircraft receiver, which was tuned so as to hear both of the two frequencies involved, the airman heard the SSB radiotelegraphy as demodulated, not by a carrier generated in the receiver, but by an independently-generated and transmitted carrier emanating from the center tower.

The first amateur-type SSB receiver I ever saw was one constructed by engineering students at the University of Colorado. The date was in 1932. It was built strung out in a linear manner on top of a lab table and must have covered a good five or six feet! No doubt its filters were LC types operating near the lower edge of the LF spectrum. Perhaps there may be a reader who helped build that receiver. If so, I'd like to hear from him. □

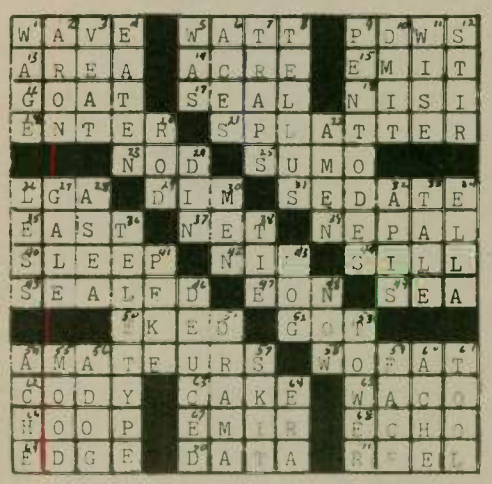
TRAFFIC

(*continued from page 48*)

wishing to check in" does not have the implication of censure that we feel in "I'll stand by for any late stations wishing to check in."

It's important for net control stations not to neglect to allow frequent breaks for such additional stations to check in. Every five minutes or so, at least, is a good guideline. And be sure you pick up all that want to check in too. Often net controls pick up one and then go on with other business, sometimes missing two or three others also trying to check in. A big help here is to remember to take your finger off the mike button when you're not talking, or set your VOX for only a short delay. You won't hear them if you don't listen. □

(Answer for puzzle on p. 36.)



Share your knowledge with your fellow amateur and Worldradio reader . . .

ANTENNAS

- THEORY
- PRACTICE
- QUESTIONS
- ANSWERS

WILL OAR

With the myriad of antenna books on the market it is amazing some of the things one hears on the bands about antennas. Maybe the people who buy them are using them as doorstops.

One recent conversation heard in the portion of the 40-meter band reserved for those who supposedly know more went like this, "I just don't know what's wrong. I cut this antenna exactly to the length in the book and the SWR is really high. I've gone out and measured it several times with a yardstick and it's exactly right. Can't figure it out." It later came out that the antenna was about 20 feet above the ground.

Maybe the FCC should get some of that really dumb stuff out of the test and ask if height above ground affects impedance.

Who knows, there might be an old junk car buried under your antenna, or maybe a silver mine. Anything can affect the antenna, and the lengths in the charts are nothing more than starting points!

One interesting experiment is changing the apex angle of an inverted V antenna, watching the SWR change and correcting the situation with little pigtails hung on the ends of the antenna. Small changes in where the ends are tied down and the steps necessary to compensate can be illuminating as to the nature of antennas.

Another oft-heard statement, that should get an FCC citation from the monitoring station, is "I cut two feet off the feed-line and the SWR came down." While the measurement may have changed, the true SWR did NOT NOT. (NOT NOT is the way the wire services used to send NOT so if a garble knocked out one NOT the other would make it through and the sentence would not change meaning as in "not guilty".) Well, anyone saying that changing feed-line length has anything to do with real SWR is indeed GUILTY of "junk-radio". Now, the truth is (sadly enough) with those $3.98 SWR meters, any reading is doing nothing more than just amusing the operator.

Here is a statement that sets many teeth rattling, always among those who will never try the tests to see if it is true. "An SWR reading taken at the station position through a random length of coax is meaningless." Truer words have never been uttered. The reading you get through a random length is telling you it can be no lower than that, but it can be anything higher.

There are only two ways to know what is really happening. One way is to measure the SWR at the antenna itself. For most, that method is not overly practical. The other method is almost like a free lunch. But it is not without controversy. One seminar speaker would dash from convention to convention saying that it was bunk. However, what cannot be disputed is that "a half-wavelength line will mirror whatever impedance it sees at the other end." That would mean you could measure accurately from a distance. You can use the multiples of a half-wavelength line and see what is really happening "up there".

Unfortunately, the velocity factor figures published for coax vary not only from roll to roll, but also in the length itself. There is only one way to have any real idea of what is going on and that is with the noise bridge. My favorite is the Palomar.

With your station receiver tuned to the frequency you will center your system at, you can cut the line right to the spot. The directions say to push a pin in, listen for the null, then pull the pin out and look at a different place and see if the noise goes down.

Not many of us have sound level memories of any accuracy built into our heads. So, a better method is to use two pins. Push one in. Listen. Push another pin in, up the line and then pull out the other. You will have an instant change to judge from.

Going in the other direction, push in one pin, listen, then push in another pin closer to the receiver. Seeing if the noise goes up or down tells you which way to move.

Two cautions to folks just getting into this game. One radio store owner told me of an unhappy customer flinging a noise bridge on the counter and demanding his money back because it didn't work! Turned out he thought "null" meant get louder. It means get softer.

Also, do NOT transmit through a noise bridge or you will have an ex-noise bridge on your hands.

Then with your perfectly cut line on your hands, you can hook up to your antenna and bridge the antenna. The Palomar can tell you if the antenna is long or short. Then after appropriate trimming, the nulls should all fall at the right place. If all looks good, you can put a true reading wattmeter in the line, look at the reverse power and know that this is the real thing. It is a delight — sheer beauty — to see no reflected power and know that, for this particular antenna system, it is as good as it could be. If you see one or two watts coming back, it is hardly worth another trip outside. Unless, of course, you are a QRPer running two watts forward.

Here's a trick if you live in a noisy location, like over a drugstore with a bad neon sign or next door to a Volkswagen garage. Say you have a dipole up. Take two pieces of identical length coax. Put the center conductor of one length on the left side of the center insulator. Put the center conductor of the other piece on the right side of the center insulator. Bond the shields together. Then when you come into the station, put one center conductor to one terminal of the antenna tuner; put the other center conductor on the other terminal. Bond the shields together and ground them. NOTE: this has to be one of the two-wire tuners, not the little one-wire feed jobs. The ambient noise will go down considerably, and with quieter reception, little weak signals will be heard.

Next month in this space we'll tell the truth about vertical antennas and the shortened dipoles. If you have any perplexing, bothersome antenna questions send them in. We'll send them to Lew McCoy and see if he can answer them.

(Will Oar is obviously a pseudonym. This amateur said such was his condition for writing this column, as he didn't want all the amateurs where he works to go by his desk and say, "You don't know anything about antennas." Such may be true, but we figure his guess is as good as yours.) □

Have you worked Maryland lately?

The Bowie (Maryland) Amateur Radio Club is offering Worked All Bowie (WAB) awards to amateurs who make contact with stations located in this Washington, D.C. suburb.

The award is issued in two classes: Class 1 for contacts with four stations located in the city, and Class 2 for two contacts. DX stations should work two Bowie amateurs for Class 1 and one Bowie amateur for Class 2.

Large self-addressed envelopes should accompany the request for the certificate. Log extracts are all that are required.

Applications should be submitted to: John L. Rouse, KA3DBN, P.O. Drawer M, Bowie, Maryland 20715.

The club is still offering the Garrett Island Award to amateurs who worked K3PI during the recent mini-DX expedition to this uninhabited island located near the Chesapeake Bay in Cecil County, Maryland. A large SASE to KA3DBN will get you the award. QSL cards are required.

The club has scheduled another expedition to Tangier Island, located in the Chesapeake Bay, for the spring. Details will be announced later, and another island certificate will be awarded to those working the station. □

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

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

CONSTRUCTION

Chuck Clark, K4ZN
Assistant Director, Roanoke Division, ARRL

IC keyer

Here is a design for a keyer that will be within the budget of nearly any amateur. All the parts are available, are stock items in the Radio Shack catalogue in fact, and cost a total of about six dollars — a figure that can be trimmed by most amateurs if they use junk box or surplus materials. For the protoype, I used a sheet of perforated plastic. Those who wish to etch a circuit board will find all the information needed in *Figure 2.* The heavy lines represent wire jumpers. The dotted lines indicate foil connections on the board.

The circuit

As seen in *Figure 1,* this keyer uses three COSMOS integrated circuits, plus four capacitors, nine resistors and one transistor. These COSMOS integrated circuits have two advantages over the older types like TTL and DTL: they operate over a wide range of supply voltage, 3 to 12 volts, and they use practically no current except when actually switching — two advantages that will be much appreciated by amateurs who operate QRP and must economize in current drain. They are not as fast, however, but that's no problem at keying speeds, as they will operate up into the 5 megahertz range. They are also subject to damage by static electricity, but the risk is low if a few precautions are taken, as will be explained later.

Operation

When the power is first turned on, a positive pulse is fed from the power supply through C-1 and C-2 to the reset pins of U-2. As a result, pins 2 and 12 of U-2 are in the high voltage state as are both inputs of U-1D, a NAND gate. When both inputs of a NAND gate are high, the output is low, and so there is no base drive for Q-1 which is therefore cut off, and the keyed circuit is open.

Closing the key on the DAH side causes pin 5 of U-1B to go low, hence the output goes high causing the output of U-3A to go low, allowing the clock to pulse.

The positive pulse from the clock causes U-2B to toggle, pin 12 goes low and pin 13 high. With one of its inputs low, the output of U-1D goes high, providing drive for the base of Q-1 and closing the keyed circuit. The high output of U-1D also turns on the sidetone oscillator and holds the clock gate U-3A so that the clock will continue to run even if the key contact is open. When pin 13 of U-2B goes high, it toggles U-2A, and pin 2 of U-2A goes low.

The next positive pulse from the clock again toggles U-2B, causing pin 12 to go high, but the output of U-1D remains high because pin 2 of U-2A is still low, and so the keyed circuit remains closed.

The third pulse once again toggles U-2B, causing pin 12 to go low again, holding the output of U-1D high, even though pin 13 of U-2B goes high and toggles U-2A, causing pin 2 to go low.

Finally, a fourth pulse toggles U-2B and pin 12 goes high. So at this point both inputs of U-1D are high, the output is low, there is no base drive for Q-1 and the keyed circuit is therefore open; the sidetone oscillator is disabled with pin 1 of U-1A low, and the clock gate U-3A stops the clock unless one side or the other of the key paddle is closed.

When the paddle is pushed to the DIT side, operation is similar, except that pins 8 and 9 of U-1C go low, causing the output, pin 10, to go high, feeding a high level input to pin 4, the reset for U-2A. This prevents U-2A from toggling on the positive pulse from U-2B, hence U-2A does not act to hold the output of U-1D high and the cycle is complete after U-2B has flipped back on the second clock pulse.

The clock and the sidetone oscillator show how COSMOS integrated circuits can be used as linear circuit elements too. When resting, enough current flows through the resistors in the input circuit to allow the IC (U-3B and U-1A, resistors R-6-8-9 and R-7 respectively) to operate much like a Class-A amplifier. Hence, when the gate opens, any disturbance in the input circuit will be amplified in the output and fed back through the second gate to the input, and there is oscillation.

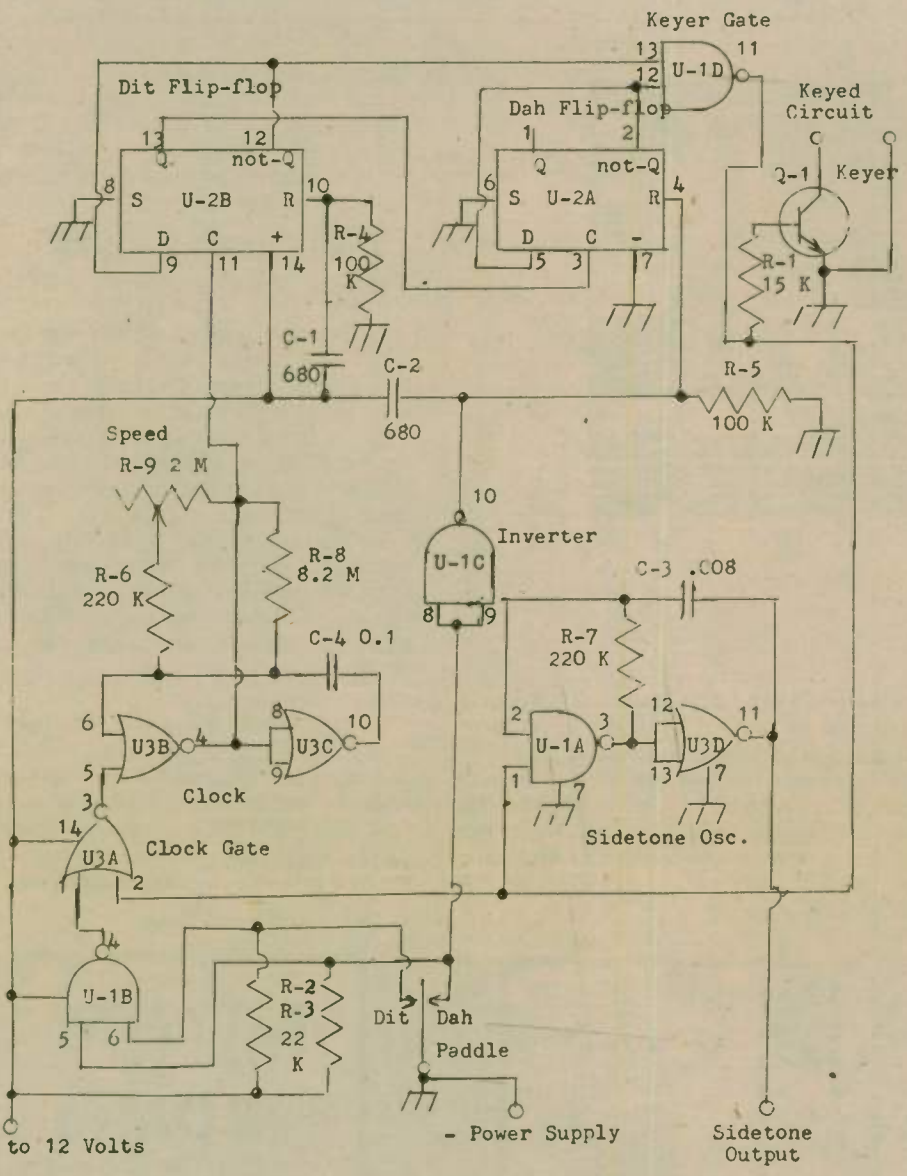


Figure 1

The values of the parts given are only nominal. They can be increased or decreased 50 percent or more with no noticeable effect on performance. The only exception is for the timing circuits R-6-9 and C1, and R-7 and C-3. But even here, if the product of the resistance and capacitance is the same, any change of values will have no effect, and even when the product is not the same, the only effect will be to change the keyer speed range or the sidetone pitch.

COSMOS precautions

Two precautions must be observed in using COSMOS integrated circuits: they must be protected against static discharges, and no inputs may be left floating. The first requirement is because of the extremely thin layer of silicon dioxide that separates the gate from the channel in a MOSFET transistor. While silicon dioxide (quartz) is an excellent insulator, the need for it to be so thin, for the gate to function properly makes it vulnerable to static discharges which can easily reach hundreds of volts. The ICs include protective diodes, but even so, sometimes they fail to function. I often thread a piece of fine wire (usual source an old frayed lamp cord) between the pins (see *Figure 3)* to short them all and thereby to protect the circuit against damage while handling and installing it. After the IC is soldered in place and all inputs properly terminated, the wire is simply pulled out and discarded.

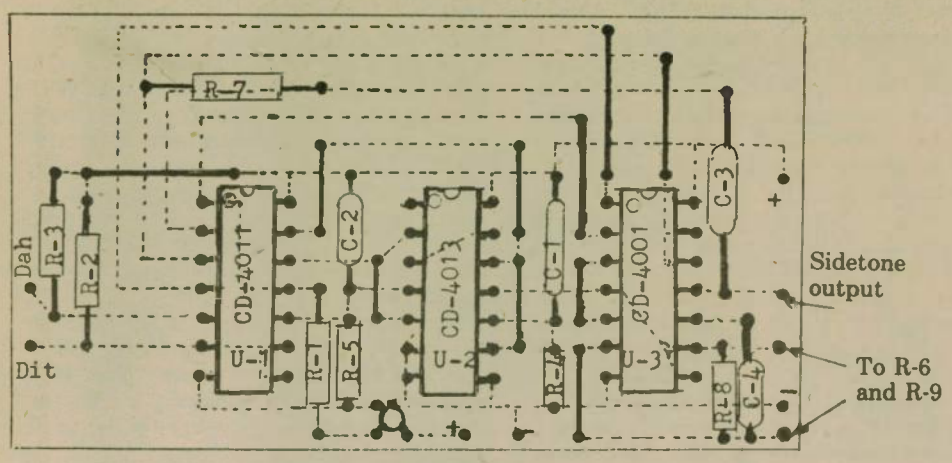
The second requirement, no input may be left floating, is in part a consequence of the first. With very high input impedance, on the order of hundreds of megohms, a floating input can pick up high-voltage charges that can damage or destroy the input FET of the integrated circuit. And far smaller stray charges can disrupt the operation of the IC by causing all kinds of unexpected quirks.

This is the reason pins 6 and 8 of U-2 must be connected to ground, for instance. If a positive charge were to build up, even only a couple of volts, it could cause pins 1 and 13 to go high, regardless of the state of any other input. For the same reason, R-8 is used on the circuit board to insure that there is a DC circuit connected to pin 6 of U-3B, even if R-6 and R-9 should become disconnected from the board.

Use

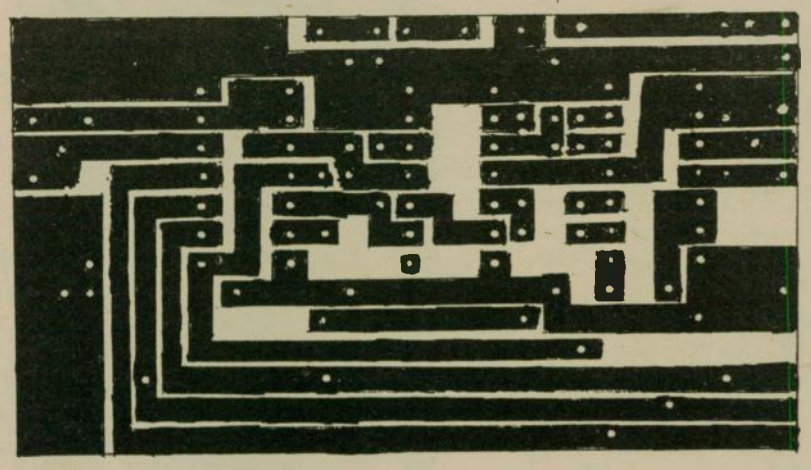
You can send reasonably good CW with a straight key without hearing a side tone, although it is a big help to be able to hear it. But with a keyer, you must hear your signal if you are to send correctly. Further, acquiring the sense of timing takes practice. After building and debugging your keyer, hook it up to an audio oscillator and practice using it off the air until you can manage the beast at any speed, fast or slow.

Some amateurs try to discourage newcomers from using anything but a straight key. In some cases, that is a mistake. Amateurs should stick to the straight key until they master it, until



Keyed circuit

Parts layout

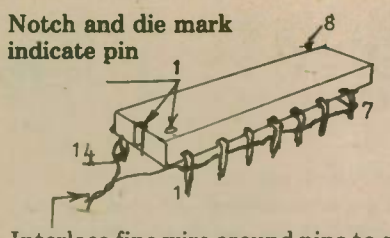


Circuit board, foil side

Figure 2 (twice actual size)

they can handle CW comfortably at about 15 wpm or so. But then it's good to learn to use a keyer. You will probably find it hard to pound a straight key at 25 wpm and send readable code. But until you can communicate easily at that speed, you don't really appreciate CW as a language; it still remains work. Hence, it's a big help to have a keyer that makes 25 wpm so much easier to send. And, while you hear yourself send, you are also training your ear to receive more easily. If you learn to handle code comfortably at that speed, you'll be happy to stay at the less crowded lower end of the amateur bands and won't have such a strong desire to move up into the congestion of the phone part of the spectrum.

Parts list
C-1, C-2, 680pF ceramic.
C-3, .008uF ceramic.
C-4, 0.1uF ceramic.
Q-1, NPN transistor to handle voltage and current to be keyed.
R-1, 15,000 ohms.
R-2, R-3, 22,000 ohms.
R-4, R-5, 100,000 ohms.
R-6, R-7, 220,000 ohms.
R-8, 8.2 megohms.
R-9, 2 megohm volume control.
U-1, CD-4011 integrated circuit.



Interlace fine wire around pins to short all terminals during installation.

Figure 3

U-2, CD-4013 integrated circuit.
U-3, CD-4001 integrated circuit. □

Beam wind resistance

Marvin Mahre, W0MGI

The following information was published by Hy-Gain Electronics Corporation. After I returned from a three-week vacation and found his 4-element tri-band beam, with a 2-meter stick above, bent over the side of the tower, maybe I should have read this item prior to leaving! Anyway, Hy-Gain says:

1. The best position is sideways to the wind. This allows the wind to only see the boom. It blows over the boom and creates a turbulence that has nothing to hit.
2. The worst position is cornerways into the wind. The wind sees the boom and all elements with turbulence hitting the second, third, etc. elements.
3. The next worst position is for the beam to point into or backwards to the wind. (Notice that Hy-Gain did not say "next to best position"). The more elements in line, the more turbulence resistance.

In any event, I have a big repair job ahead of me. I understand a good number of towers and antennas went down during the two wind storms and maybe I was just lucky that the stick bent over instead of the whole installation crashing to the ground in a pile of scrap aluminum!
— The Ground Wave □

Magnetic mounts

Lou Kurkijan, K6MXL

The Larson Magnetic Mounts are among the most popular used by VHF/UHF enthusiasts. If you are like me, over a period of time you will accidently crimp or cut the coax by shutting an automobile window or slamming a car door. Once you do that and have to change the coax, it is time to incorporate a modification that will make coax replacement easy.

The recommended solution is to replace the rubber grommet with a BNC bulkhead receptacle. This is easily done by a small amount of filing to increase the diameter of the grommet hole to accommodate the BNC receptacle. To access the coax within the mag mount base, the aluminum foil must be carefully peeled away. After the coax within the base is soldered to the BNC receptacle, the foil can be reinstalled using contact cement. When you are done, you have a universal magnetic mount base that interfaces with any BNC cable. If weather protection is necessary, the connector and receptacles can be wrapped with black electrical tape.
— Anaheim ARA, CA □

• People reaching People •
Amateur Radio is what Worldradio is all about.

THE AMATEUR'S WORKBENCH

Joe Carr, K4IPV
5440 South 8th Road, Arlington, VA 22204

A letter received this month asked about the correct method for charging a rechargeable battery. Amateurs use lead-acid batteries, nickel-cadmium batteries, and Gel-cel batteries (a sealed type).

Lead-acid batteries are the kind we find in most automobiles, at least those that don't have "service-free" batteries. The water level in these batteries must be periodically checked, so there is a maintenance factor to consider. The lead-acid battery, however, is often preferred in portable operation because it can supply a great deal of current.

Nickel-cadmium batteries are used in 2-meter walkie-talkies and certain other small rigs. These batteries are available in the standard battery sizes: AA, C and D. For most amateurs, the 7-amphere-hour size F cell is about the largest we will use. Some larger voltage batteries in this line, incidentally, are made up locally by your dealer from C, D or F cells.

The Gel-cel is a newcomer for amateurs, but has been used for some years in commercial and medical electronic applications. These batteries are sealed, and are available at reasonable cost ampere-hour ratings up to 20 A-H.

The charger used with lead-acid batteries can be the ordinary low-cost type sold by the mail-order catalog stores, and auto parts stores. These "trickle chargers" are little more than a low-current transformer and a half-wave rectifier. A lot of people also use "battery eliminators" to charge lead-acid batteries. These are heavier power supplies (usually 10 or 20 amperes) designed to replace 12 volt batteries when bench testing car radios and two-way radios, and may have full-wave rectification and filtering.

There is a danger when working with lead-acid batteries: EXPLOSION! One time, almost decades ago (before good battery eliminators were available to service shops), I was working in a radio shop in Virginia that used a pair of 6-volt batteries for bench power. The batteries could be used separately for 6-volt radios (which existed then), and in series for 12-volt radios. One of the apprentice technicians decided one bright day to check the water levels in his bench batteries . . . and he forgot to turn off the chargers before disconnecting them from the batteries! A spark caused by disconnecting the chargers exploded the hydrogen gas that collects around the water filter holes on the top of the battery. That darn battery went off like a shotgun blast and showered the technician with battery (sulphuric) acid! His shirt was in tatters from the acid, but his glasses apparently kept most of it out of his eyes — and saved his sight! The boss took the man immediately to an ophthalmologist for an examination, but not before one of the men played water from an outdoor garden hose over the poor guy's face!

Failure to heed the shop rules regarding those batteries almost cost a man his sight. The rule was simple: a) turn off all loads (circuits being supplied power) connected to the battery, and b) turn off the charger before disconnecting the wires.

Charging nickel-cadmium and Gel-cel batteries is a little more complicated. We can charge the typical nicad with a current-limited power supply. One article in a magazine recently took information from a manufacturer's application note which said to connect a series resistor in one lead from a trickle charger. The nicad battery is usually charged at a rate of 1/10 of its A-H rating. For example, a 500mA-H "AA" cell should be charged at a rate of 500mA/10, or 50mA. The resistor was selected to limit the short-circuit current of the trickle charger to 50mA (or whatever A-H/10 for that battery is).

A method used to charge either nicads or Gel-cels is shown in *Figure 1*. Connect a voltage-regulated-current-limited DC power supply to the cell, and let it charge at the correct rate. I was once involved in a project to make a charger for a piece of critical medical equipment more reliable. The engineer who was doing the job selected a circuit advertised in the "design notes" of one of the engineering "throw-away" magazines (freebies to qualified EEs) as being for Gel-cels. This wonder circuit sensed the battery voltage using an operational amplifier comparator, and turned on and off the charger current according to the state of the battery charge. Another circuit that has been republished about 40-teenth times used a 555 IC timer to monitor the voltage and turn on and off the flow of current to that poor battery.

None of them worked properly. So he called the company that had made the battery and asked what should be done. The answer was so darn simple that it had been overlooked. The battery was to be charged at a rate of A-H/10, so in this case, we needed a rate of 1.2 amperes. We bought a 2.5 A-H DC power supply from one of the O.E.M. manufacturers of DC power supplies and other need things. The model selected was voltage regulated, with a voltage adjustment potentiometer, and current limited. This latter feature was needed to keep the battery from overcharging. A current limiter will shut down the power supply if too much current is drawn.

The procedure was to set the voltage at some low value, and then short the output of the power supply (you can do this on current-limited power supplies) with a piece of wire. Next, adjust the current-limiting potentiometer until the output current is at the same level as the maximum charging current (A-H/10, or 1.2 amperes in our case). Next, adjust the voltage potentiometer until the output voltage (REMOVE THE SHORT FIRST!) is at the precise value specified by the battery manufacturer.

The current will be maximum when the charging cycle is first initiated, and will drop gradually as the battery becomes charged. Leave the battery on the charger for the full time specified by the battery maker, even though the current meter seems to have dropped to near zero. The

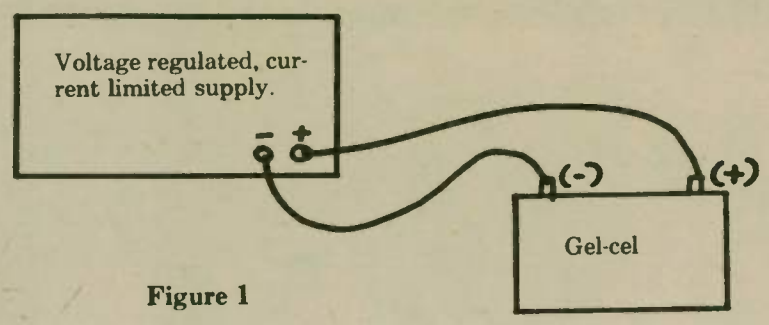
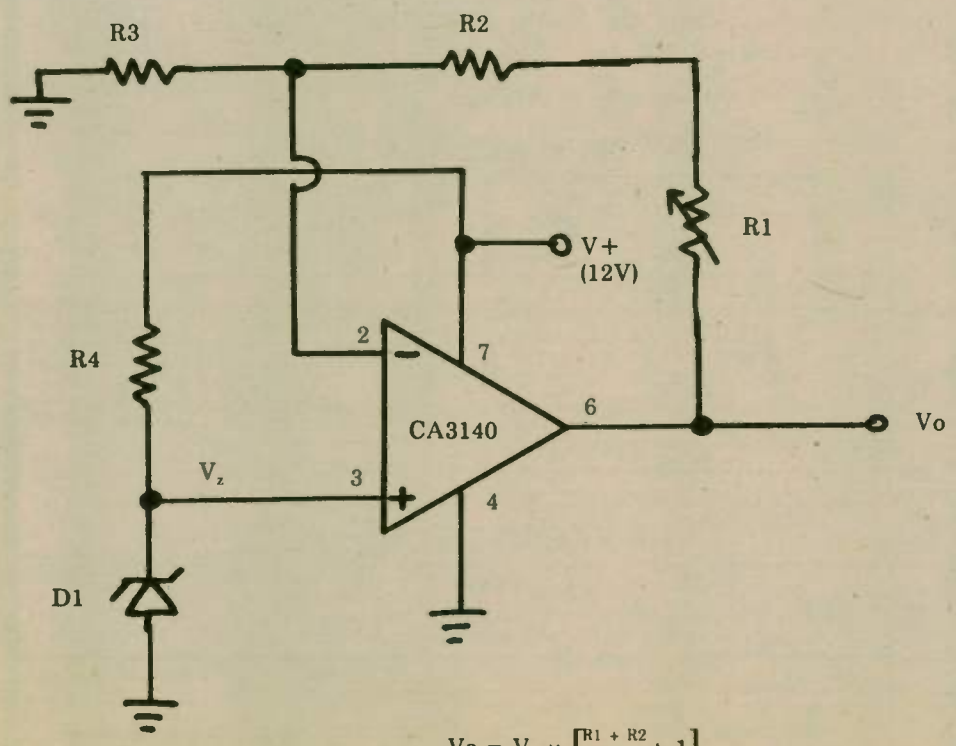


Figure 1



$$Vo = V_z \times \left[\frac{R1 + R2}{R3} + 1\right]$$

Figure 2

battery terminal voltage will rise as the charging proceeds. When the battery potential reaches the power supply voltage, the current will cease and the battery will not overcharge. It's a damn sight easier than some of those fancy comparator and timer circuits!

One note on buying nicad batteries for your portable rig: be careful of some of the consumer types sold as replacements for standard sizes. I recently bought ten "AA" size nicads for my Wilson 1401 2-meter handie-talkie. Only after buying them did I find out that they were a silly millimeter shorter than normal, so would not fit my rig. These batteries, which were a very well-known U.S.-made brand, were too short to make proper contact. The rig kept coming on and off because of that silly millimeter difference. Replacing the battery with the same Gould nicads that were in the rig when it was bought solved the problem.

Another problem is the A-H rating. The standard for "AA" batteries is 500mA, for "C" batteries is 2 A-H, and "D" batteries 4 A-H. There are a lot of batteries on the market with exactly half of the "standard." One well-known manufacturer, for example, makes 1 A-H size-C batteries and 2 A-H size-D. The least result is that you will lose operating time, but you may also wind up charging the batteries at too fast a rate if the charger for the rig was designed for the standard A-H rating (sigh). Also, the big difference in price that seems like such a neat deal may well be due to differences in A-H rating — like about half!

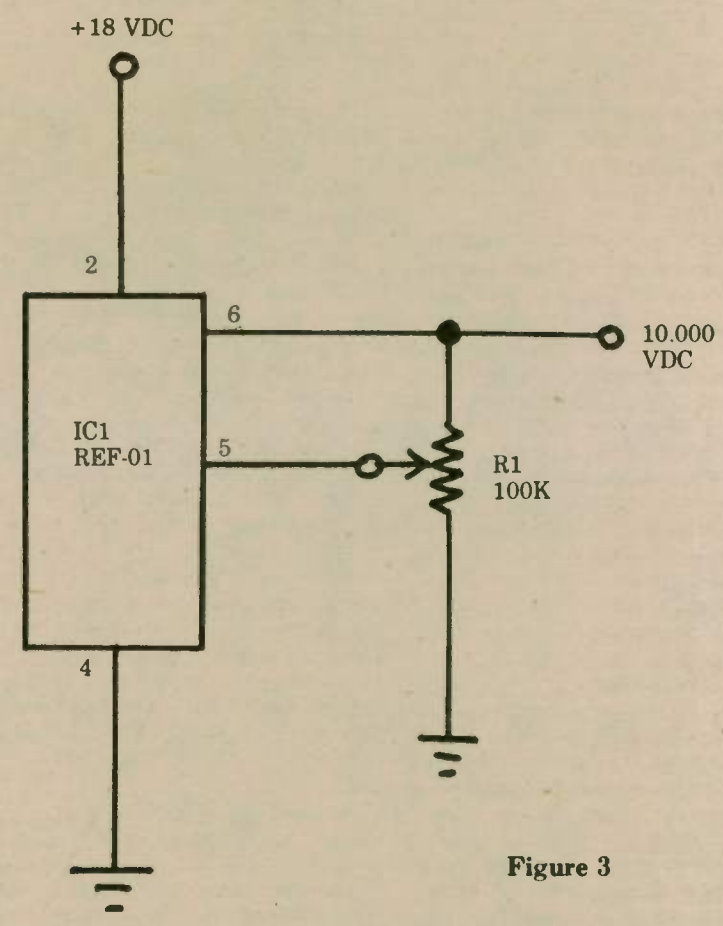


Figure 3

Precision reference sources

Two letters in the past several months have asked for circuits for precision reference voltage sources. We will, therefore, offer two easy circuits that will sometimes prove superior to ordinary Zener diodes.

So why not use a Zener? Well, it seems that the Zener potential is not too precise, and is really little more than a **nominal** value. In the circuit of *Figure 2*, we connect the Zener diode to the noninverting input of an operational amplifier (the RCA CA3140 is a low-cost device that is generally considered superior to the 741 — by a little bit). The voltage seen by the input of the op-amp, therefore, will be V_z. The output voltage is given by the equation in *Figure 2* (which is the ordinary gain expression for the noninverting follower operational amplifier circuit).

If the temperature of the Zener diode is kept reasonably constant, the output voltage will also be constant. We can trim the value of the output potential by using potentiometer R1 in the feedback loop of the op-amp. Make the value of that potentiometer approximately 10 percent of the total resistance of R1 + R2.

The circuit is usually designed to produce an output voltage that is greater than the Zener voltage. But we can also make the output voltage smaller than the Zener voltage by making resistor R3 greater than (R1 + R2).

A precision reference source that uses a popular integrated circuit is shown in *Figure 3*. This device is the Precision Monolithics, Inc. REF-01, and will produce an output voltage of 10.000 volts if potentiometer R1 is properly adjusted.

Neither of these circuits are capable of producing larger output currents, but (then again) that t'ain't the purpose of reference supplies!

In both circuits, make the trimmer

potentiometer a quality 10- or 15-turn model that is screwdriver-adjusted. In the case of *Figure 2*, make all other resistors low temperature coefficient precision types.

Both of these circuits, plus several more, are reprinted from **Interfacing Microprocessors: A/D-D/A** (TAB Books, Blue Ridge Summit, Pa., 17214). Other power supply circuits are also given in this book.

Contacts

Not long ago, I was home on a weekday — rare but delightful event — so I tuned around the frequency of the Halo Missionary Net (21,390 kHz). I heard a KA5-portable HR1 (Tegucigalpa, Honduras) talking about a rig that he'd bought on his last trip to the states: an Alda 103. He was complaining that he could not find a service manual for the rig, and that it drifted badly. I undertook to help him, and now turn it over to you since I have no experience with the Alda rigs. (Alda is now out of business, so we could not contact their service department.) Dick Robinson of Electronic Equipment Bank in Vienna, Virginia gave me a few leads that eventually took me to Henry Radio (by mail) in Los Angeles. Henry very kindly supplied me with a service manual for the rig, which I copied and then sent to the KA5/HR1 in Tegucigalpa. Now . . . who knows how to rid the Alda 103 of drift? We are assuming that the 8.2 VDC Zener diode is intact (which may not be true, but it's being checked, so don't bother telling us about that one — sorry). If we get a good solution, it will be published and the originator who sends it to me at the address below will receive public recognition and credit. (Actually, we're sharing the blame.) Seriously, though, if you have any information to share, please contact K4IPV at the address below.

I am trying to compile a directory of missionaries who are active Amateur Radio operators. If that's you, or you know of one, please contact me at the address below.

And now, for the last CONTACT. This is your column, and we try to answer readers' questions in these pages. I cannot guarantee a personal answer (although have given some), but will endeavor to answer as many as possible in **Worldradio**.

The address to contact this column is: Joe Carr, K4IPV, 5440 South 8th Road, Arlington, VA 22204 □

(*continued from page 20*)

Deaf amateur asks for help

I received a complimentary copy of your November publication. It was very interesting to me because I am one of those deaf hams. I do not mean I do not hear any sounds. I do not hear any sounds unaided. On certain occasions, with a good signal coming in and no QRM, I can read SSB.

I am glad that some publication has published a story of handicapped hams. I have always felt there were quite a few of us around.

I need to contact some deaf hams concerning some RTTY gear I have accumulated over the years. I have got my set-up to receive 100 percent on RTTY, but I am hesitant to transmit because I'll have to get into the guts of the AFSK unit which is an old telephone adaptor to enable a deaf person to communicate on the phone. Any suggestions?

Louis Davis, WB4MBK
1933 Cactus Grove Road
Taft, Tennessee 38488 □

PRODUCTS

Digital clock

Benjamin Michael Industries, Inc. proudly announces the addition of the 173D Presentation Model Clock to its line of quartz digital timepieces. The 173D will be of particular interest to those involved in the aviation or communications industries where both local and Greenwich Mean Time (Zulu) is needed.

The 173D is a fine wall or desk piece which contains two independent digital electronic clock movements. Greenwich Mean Time is displayed in the proper 24-hour military time format while local time is simultaneously presented in a convenient 12-hour format with AM/PM indicators. Both large displays are of the LCD type for excellent viewing and very low power consumption. The 173D features quartz crystal accuracy along with one year of operation on a single, standard penlight battery. The absence of a power cord makes the unit ideal for wall or desk top locations and battery operation eliminates the need to reset the clock after commercial power interruption.

The 173D is the perfect blend of function and form. The clock features a beautiful solid walnut case which accentuates the rough-cut, gold anodized, brushed aluminum face plate. Precious metal contact switches and brass hardware are used throughout to insure long-lasting beauty and functional integrity.

The model 173D sells for $119.95 with keyways for wall mounting. A matching walnut desk stand may be ordered for an additional $9.95. Delivery is from stock to four weeks. Contact Benjamin Michael Industries, Inc. at 65 East Palatine Road, Suite 105, Prospect Heights, IL 60070. Or by phone at 312-459-5760. □

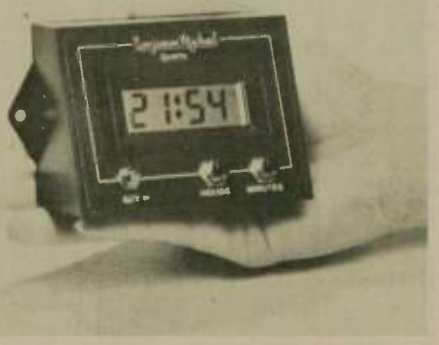
Station clock

Benjamin Michael Industries announces the introduction of the Model 173A station clock. The 173A provides the proper 24-hour military time format used by serious communications operators when logging transmissions or verifying contacts and reports. The unit allows the operator to directly read GMT and avoid the confusion created by various local time zones.

The 173A features Quartz Crystal accuracy and greater than one year operation from a single penlight battery. Battery operation eliminates the need to reset the clock after power line failures and makes the unit ideal for mobile, field, and emergency power operations.

Time setting is accomplished by the use of two push buttons and a hold switch which stops the clock operation and resets the internal seconds counter to zero for precise setting to WWV or other time standards. The unit is housed in an attractive aircraft instrument style case and retails for $29.95.

Delivery is from stock, and is approximately four weeks. The unit may be ordered from Benjamin Michael Industries, P.O. Box 173, Prospect Heights, IL 60070. □



600 MHz prescaler

The TP 600 is a high sensitivity prescaler which will extend the upper frequency limit of most frequency meters by a factor of 10 times, up to a maximum of at least 600 MHz.

Input and output are via 50 ohm BNC connectors. Input impedance is nominally 50 ohms and input sensitivity better than 10mV from 40 MHz to 600 MHz.

Power requirements are 6 VDC to 9 VDC from an external power supply or optional AC adapter. A lead is supplied, fitted with the correct connectors to allow the unit to be powered from the auxiliary power socket fitted to Thandar frequency meters. Current consumption is 150mA nominal, 170mA maximum.

Case size: 4.5″ (114mm) x 1.70″ (43mm) x 1.10″ (28mm). Weight: 4.3 oz. (120gms). **Available from stock; price: $98.**

For further information, contact: Henrick K. Gille, Energy Electronic Products, 6060 Manchester Ave., Los Angeles, CA 90045. TEL: (213) 670-7880. TWX: (910) 328-6161. □

New cohesive bond

After extensive research and testing, a new superior bonding method which combines quick "drive away" with rugged durability, has been recently developed by Avanti Communications, Addison, Illinois.

Especially designed as a more effective means by which to mount Avanti's new line of on-glass communication antennas, the new Duo Bond method consists of high-quality double-stick tape that is applied to the original die-cast antenna base, then affixed to the glass window.

Superimposed on this is a Lexan or ABS "surround" that has been first treated with a primer in the manufacturing process and installed by use of a high quality RTV cement.

According to Avanti, the combination of a tape for fast-curing quick "drive away," and RTV for rugged durability has resulted in installations that have given the on-glass antenna a mechanical integrity that approaches the "hole" type antennas, yet eliminates the shortcomings of the "ground" quarter-wave types.

The Avanti "on glass" communication antennas were developed two years ago as an alternative to the long-standing conventional antennas that are normally "hole" mounted.

Better reception and transmission are the advantages of Avanti's new mobile antennas. In addition to offering a 3 to 5dB gain, they also are designed to substantially reduce static. And since they are half-wave antennas, no ground plane is required.

Avanti's unique Duo Bond mounting method on glass takes place in a matter of minutes, without tools. As a result, the antennas can be used on fiberglass cars, as well as recreational vehicles, boats and even motorcycles.

Other Avanti advantages: the newly designed glass-mounted antennas — including the AP 151.3G. AP 450.3G, AP 450.5G, Astro-Fantom and Moon-Fantom — do not require external electrical connections, thus preventing coax cable deterioration caused by corrosion and water seepage.

And, in addition to cutting static and noise by as much as 30 percent, the antennas also can be easily installed without drilling damaging holes into the vehicle's body.

For more information on glass-mounted antennas, contact Avanti Communications, 340 Stewart Avenue, Addison, Illinois 60101. (312) 628-9350. □

Milli-TO digital ohmmeter

With the new Dr. Kamphausen Milli-TO it is now possible to measure milliohm to Teraohm resistances in one compact instrument. Designed for applications such as copper winding resistance, relay contact resistance, cable insulation, and dielectric material measurements, the instrument spans the range from 10^{-4} to 10^{14} ohms — a range of 18 decades.

The unit displays resistance on a 3½-digit 15mm high LED display with a 1½-digit 8mm high LED display for exponent indication. The decimal point and exponent are PROM programmed to display data in convenient engineering units. An optional BCD data output and a digital adjustable limit control allow use of the instrument for "go/no-go" production, Q.C., or inspection testing.

The low resistance range, spanning 0.1 milliohm to 200Kohm in 7 ranges, utilizes a maximum 500mV test voltage limited to a current of 500mA. Very low resistance samples can be measured by the four terminal (Kelvin) method.

High resistance measurements from 50Kohm to 2×10^{14} ohms are covered in 7 push button selected ranges of 10V, 100V, and 500V. Since these voltages have less than 200 microvolts of ripple at 1 Hz, it is possible to make accurate capacitor and cable dielectric measurements without the errors induced by supply voltage variations. Short circuit current is limited to 3mA for operational safety.

Accuracy on the low range is better than 0.3% ± 1 digit and better than 1.5% ± 1 digit on the high range. The unit operates on 110/220 VAC ± 15%, 50-60 Hz and consumes approximately 17 VA. Size is 5.3″ (135mm)H × 12.2″ (310mm)W × 10.4″ (265mm)D and the weight is 10 lbs. (4.5 kg). The unit is supplied complete with a coaxial test cable. Price: $2550.

For further information contact: Henrick K. Gille, Energy Electronic Products, 6060 Manchester Avenue, Los Angeles, CA 90045. TEL: (213) 670-7880; TWX: (910) 328-6161. □

Air-cooled dummy load

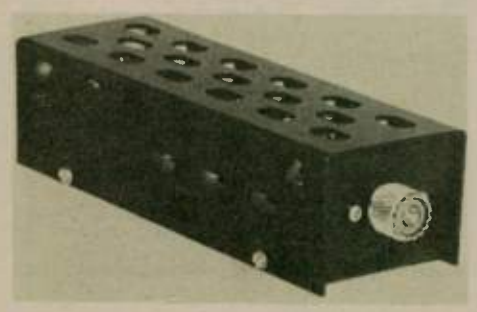
No more oil spills, no more peculiar odors — the new RF dummy load from Ten-Tec, Inc., Sevierville, TN 37862, is air-cooled for clean, easy use around the shack in testing and alignment.

Rated at 300 watts for 30 seconds, the new Model 209 dummy load is just right for quick checks of equipment without disturbing other amateurs on the air. A derating curve is included for using the dummy load over longer periods of time up to a 5 minute maximum.

VSWR is 1.1:1 maximum from 0-30 MHz and 1.5:1 maximum from 30-150 MHz.

The new dummy load is housed in an aluminum enclosure that is perforated with wide slots for free air flow and dark painted for excellent heat dissipation. An SO-239 coax connector is built-in for convenient installation. Size is 1¾″H × 2¼″W × 6¾″D, weight is ½ lb.

Amateur net price is $26. □



Two new antenna tuners

Model 228 antenna tuner/SWR bridge

Design and construction of this new Ten-Tec antenna tuner is unique. A 47-tap toroid, two inches in diameter, with silver-plated 18 gauge wire and tap selector, is the heart of this tuner. Used in a wide range "T" network with variable capacitors, it permits vernier tuning for easy, accurate adjustment. A front panel five-position antenna select switch offers a choice of dummy load or one of three antennas. One antenna may be by-passed around the tuner circuits if desired. Also, one may be a long wire.

Model 228 will match the conventional 50-75 ohm unbalanced output of transmitters or transceivers to a variety of load impedances. A built-in balun converts one antenna to a balanced configuration if desired. Antennas such as dipoles, inverted "V"s, long random wires, windoms, beams, rhombics, mobile whips, Zepp, Hertz and similar types can be matched over a frequency range from 1.8 to 30 MHz. Power rating is 200 watts, RF, intermittent; 100 watts, continuous. A built-in SWR bridge and meter indicates ratios between 1:1 and 5:1. Housed in an attractive aluminum case, Model 228 is an ideal accessory to any transceiver with input power up to 200 watts.

Specifications: Model 228. **RF input power:** 200 watts, intermittent; 100 watts, continuous. **Inductor:** 47 taps; 18 gauge silver-plated wire; silver-plated tap selector; 2″ diameter core. **Input Z:** 50-75 ohms, unbalanced. **Output:** Matches most loads, balanced and unbalanced (max. balanced on 160 and 80 meters is 500 ohms). **Frequency range:** 1.8-30 MHz. **Controls:** transmitter match; load match; inductance; antenna select; forward/reverse switch; sensitivity. **Finish:** Dark painted front panel, black textured top and bottom. **Size:** HWD 3⅝″ × 10½″ × 7¼″. **Weight:** 3½ lbs.

Model 227 antenna tuner

This versatile antenna tuner is identical to the Model 228 but without the SWR bridge. Styled to match Ten-Tec Delta and Omni transceivers. Specifications same as Model 228 except HWD 3⅜″ × 8¼″ × 7¾″.

Amateur Net Price: Model 228 — $95; Model 227 — $79. □

Oil-filled dummy load

The new MFJ-250 Dummy Load is rated at 1kW on CW and 2kW PEP for 10 minutes; 500 watts CW and 1kW PEP for 20 minutes; and 200 watts CW and 400 watts PEP continuous (the derating curve appears on the label).

The MFJ-250 comes complete with one gallon of transformer oil (contains no PCB). The non-inductive 50 ohm resistor gives you a VSWR of less than 1.2:1 up to 30 MHz and less than 1.5:1 up to 300 MHz.

For convenience, the MFJ-250 has a coaxial type connector on the top and a vent cap to allow for expansion of oil during use.

The MFJ-250 is 7½ inches high and 6⅝ inches in diameter and has a convenient carrying handle. If ordered from MFJ, there is a 30-day money back trial period. If you are not satisfied, you may return it within 30 days for a full refund (less shipping). MFJ also provides a one year unconditional warranty.

The MFJ-250 is available from MFJ for $29.95 plus $4 shipping and handling per unit.

To order, call toll free 800-647-1800, or mail order with check or money order to MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762. □

Pulse generator

The new Sinclair-Thandar Model TG-105 is a 5 Hz to 50 MHz pulse generator with an output capability of 100 ns to 100 ms with preset or variable pulse widths and repetition rates. Output automatically goes to ground if selected pulse width exceeds period. Additional controls include external or manual triggering, free run mode, and output invert. Outputs include synch., TTL compatible (fan out of 20), and a 50 ohm output adjustable from 0.05 to 5.0 volts.

The TG-105 operates on 110/220 VAC 50 or 60 Hz and consumes 9VA. **Size:** 25mm (10 in.) × 150mm (5.9 in.) × 50mm (1.96 in.). **Weight:** Approx. 1.2kg (2.64 lbs.). **Price:** $219.

For further information contact: Henrick K. Gille, Energy Electronic Products, 6060 Manchester Avenue, Los Angeles, CA 90045. Tel: (213) 670-7880. TWX: 910-328-6161. □

Florida

The Treasure Coast Hamfest will be held at the Vero Beach Community Center on 21 & 22 February 1981. There will be prizes and drawings. A QCWA luncheon will be held on Saturday.

Talk-in on 146.13/73, 146.52/52, 6.04/64, 222.34/223.94.

Family tickets are $3 in advance, $4 at the door.

For information, write Hamfest, P.O. Box 3088, Beach Station, Vero Beach, Florida 32960. □

Florida swapfest

The Playground Amateur Radio Club (PARC) extends a cordial invitation to you to join us at our 11th Annual SWAPFEST. The 1981 North Florida SWAPFEST is sponsored by PARC and is sanctioned by the American Radio Relay League (ARRL). This year's SWAPFEST is scheduled to be held at the Okaloosa County Fairgrounds in beautiful Fort Walton Beach, Florida on Saturday, 21 March from 8:00 a.m. to 4:00 p.m. and on Sunday, 22 March from 8:00 a.m. to 3:00 p.m. This event usually attracts well over a thousand Amateur Radio operators, electronic hobbyists, and computer enthusiasts from all over the Southeastern part of the United States.

Registration for the event is $2 in advance, $3 at the door. SWAPFEST tables are $5 a day. There will be plenty of activities for the entire family, including forums, contests and games.

All donations and discounts will be publicly acknowledged at the SWAPFEST. During the 1980 SWAPFEST, prizes totaling over $3,500 were given away. If you cannot attend and would like to provide your product literature to those in attendance, PARC (as a service to all) will distribute this literature for you. Please send all donations, discounts, or product literature to Joe Giangrosso, WD4JZG, in care of PARC, 304 Chickasaw Circle, Fort Walton Beach, FL 32548.

The North Florida SWAPFEST is essentially a non-profit function and its proceeds are used to finance the next annual SWAPFEST; but most of all, it aids in the financing of the Playground Amateur Radio Club's Scholarship Fund. Your consideration and assistance in making this 11th Annual SWAPFEST a great success is greatly appreciated.

All inquiries, offers of discounts or donations, or requests for commercial display reservations will be promptly acknowledged. We sincerely hope to see you at our gala 11th Annual North Florida SWAPFEST.

Talk-in: W4ZBB or WR4BDM, 146. 19/79.

For more information, write to Playground Amateur Radio Club, P.O. Box 3075, Fort Walton Beach, Florida 32548. □

Ohio

The Mansfield Mid-Winter Hamfest auction will be held 15 February 1981 at the Richland County Fairgrounds in Mansfield, Ohio.

Prizes, an auction and a fleamarket will be featured inside of a large heated building. Doors open to the public at 8:00 a.m. Tickets are $1.50 in advance, $2 at the door.

Talk-in on 146.34/.94 MHz.

For additional information or advance tickets and/or tables, send SASE to: Harry Frietchen, K8HF, 120 Homewood Road, Mansfield, Ohio 44906. Phone (419) 529-2801.

1981 24th annual QSO parties

Prices going up. Cost of living going up. Interest going up. Don't break the chain! Let's have participation in the good old QSO Parties go up too!

Yes, it is time again for the QCWA QSO Parties; time to renew old acquaintances and say hello to friends you may not have talked to in the past year. It's time to oil up the 'ole fist and lay in a stock of throat lozenges. No matter how you like it, there's fun available in the QCWA QSO Parties.

Back in 1957, Stan Belliveau, W7AYO — in a moment of inspiration — started the first QSO party. It was made into a real success by Dr. Spike, W7OS, and Charles Emigh, W7ER. This is to be a fun party. There will be plaques for the top Phone and top CW scores. Certificates will be given for the 2nd, 3rd, 4th and 5th runners-up in both the Phone and CW parties. Standings and scores will be published in *QCWA News*, summer 1981 issue, but remember that the emphasis will be on fun and good fellowship — and just talking to each other!

PLEASE NOTE: There are two QSO Parties this year, just the same as last year. The first party for CW contestants and the second party for phone contestants. They are on separate weekends.

The 24th annual QCWA Party for CW will be held 14 & 15 February 1981. The CW Party will begin at 0001 UT, Saturday, 14 February 1981 and will end at 2400 UT, Sunday 15 February 1981. Now is the time to start limbering up your fist and getting ready for the party!

The 24th Annual QCWA QSO Party for Phone will be held 14 & 15 March 1981. The Phone party will begin at 0001 UT, Saturday 14 March 1981 and will end at 2400 UT, Sunday 15 March 1981.

Official rules

Contacts: Each contact made with another QCWA member will count as a single point. Contacts with the same station on more than one band can be scored only once. Contacts made with captive stations, such as when operating in local nets, are not valid.

Multiplier: This QCWA QSO Party has a multiplier. Each contact with another QCWA member counts as one point. Add up the contacts with QCWA members and then multiply this number by the number of chapters represented. Thus the number of different chapters worked is the multiplier.

If a member belongs to several chapters, you must choose one and use it for the party. You may use one chapter for the CW party and another one you belong to for the Phone party if you choose.

Frequencies: Any authorized amateur frequency is permissible. The following suggested frequencies have been selected to minimize interference to others:

For CW —	3530- 3560 kHz
	7030- 7060
	14030-14060
	21040-21070
	28040-29070
For Phone —	3900- 3930kHz
	7230- 7260
	14280-14310
	21350-21380
	28600-28630

The above frequencies are selected as a starting place. When pile-ups occur, don't be afraid to go either side of these frequencies. Again — any authorized amateur frequency is permissible and should be used to cut down on the pile ups and QRM.

Exchanges: A valid QSO must contain the following minimum information exchanged between both parties: (a) QSO number; (b) Operator's name; (c) Chapter identification (official number or name). Members not affiliated with a chapter should use "AL."

Logs: It is the responsibility of each contestant to provide a legible log, no carbon copies, and to list all claimed contacts. For more information on logs and for sample log pages, write to:

Pelican Chapter QCWA
Arthur M. Monsees, W4BK
1407-48th Ave., N.E.
St. Petersburg, FL 33703

Separate logs and scores must be submitted for both the CW and Phone parties. Logs must be postmarked no later than 31 March 1981, and sent to the above address. It is suggested that the CW party logs be submitted soon after the CW party, although it is not required. The following information should be entered in your log for each QSO party:

Time
His/Her call
Your QSO Number
His/Her QSO number
His/Her name
His/Her chapter no., or name
His/Her state or country

Work as many QCWA members as you can and then apply for the several Special QCWA Certificates which you have qualified for in the QCWA QSO Parties: Worked 50 States Certificate; Worked 60 Chapters Certificate; Worked 100 Members Certificate; and Worked 500 Members Certificate.

As old-timers, it is most desirable to establish a record for courteous treatment to all amateurs. Use the good operating procedures you have always used; give the other guy a break and enjoy the QSO Parties.

The decision of the Pelican Chapter of QCWA will be final with respect to scores and rules. In event of errors or a disagreement, keep all details off the air; write either to Pelican Chapter, or to Headquarters! □

Land o' Lincoln QSO party

In cooperation with the Central Illinois Radio Club, the Land o' Lincoln chapter of 10-X International will sponsor a QSO party in commemoration of Lincoln's birthday from 0000Z 9 February 1981 until 2400Z 10 February 1981. Operating throughout the 10 meter band, CW and phone, LOL and CIRC members will call "CQ LOL" in an effort to contact as many stations as possible.

Exchange is to be name, QTH, signal report, serial number, 10-X number, if any, and LOL certificate number, if any.

Scoring for LOL certificate holders worldwide and CIRC members to be 1 point per QSO, 2 points per QSO with 10-X number exchange, and 3 points per QSO with LOL number exchange.

Multiply total QSO points (3 maximum per QSO) by number of different states, Canadian provinces, and DXCC countries worked. All others to score 1 point, per QSO with LOL certificate holders, 2 points per QSO with local LOL and CIRC members. Multiply total QSO points (2 maximum per QSO) by number of different states, Canadian provinces, and DXCC countries worked.

Achievement certificates will be awarded to the top scorers in each state, Canadian province, and DXCC country. A special Novice certificate will also be awarded. (Denote Novice on your entry.) Logs, fully duped and summarized, should be submitted no later than 15 March 1981 to Dave Meiser, AG9E, 1112 Andover, Bloomington, IL 61701. Send SASE for special QSL and/or results. □

YL-OM contest

The YL-OM Phone contest begins Saturday, 14 February 1981 at 1800 UTC, and ends Sunday, 15 February 1981 at 1800 UTC. The YL-OM CW contest starts Saturday, 28 February 1981 and at 1800 UTC and ends Sunday, 1 March 1981 at 1800 UTC.

All licensed men and women operators throughout the world are invited to participate.

OMs are to call "CQ YL"; YLs will call "CQ OM." All bands may be used. No crossband 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) One point is earned for each station worked, YL to OM, or OM to YL. (C) Multiply the number of QSO's 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 mutiply the results of (C) by 1.25 (low-power multiplier).

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 16 March 1981 and received no later than 6 April 1981 or they will be disqualified. Please send logs to: YLRL Vice President, Kay Eyman, WA0WOF, RR2, Garnett, Kansas, 66032.

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 CW winners of each U.S. and VE Call District and country. □

YU DX WW contest

The contest is held during the second full weekend in February each year. It lasts from 2100 UT Saturday to 2100 UT Sunday. Thus, the 1981 contest will be held the weekend of 14-15 February. Mode is CW only!

Sections: A) YU station single operator; B) YU station multi-operator; C) YU club scores; D) foreign station, single operator; E) foreign station, multi-operator; and F) SWLs.

Frequencies: 3520-3590 kHz and 7010-7040 kHz.

Call and Exchange: CQ YU for foreign stations; CQ TEST for YU stations; RST plus serial number starting at 001.

Scoring: QSO with: YU station. **Points on 3,5 MHz;10. Points on 7 MHz;** 5.
QSO with: station in same continent. **Points on 3,5 MHz;** 2. **Points on 7 MHz;** 1.
QSO with: DX station. **Points on 3,5 MHz;** 5. **Points on 7 MHz;** 2.

Multiplier: Sum of number of different DXXCC countries and YU prefixes worked on each band.

Final Score: Sum of QSO points multiplied by multiplier.

Special conditions: a) Simultanous operation both on 3,5 MHz and 7 MHz: Sections A and D NOT PERMITTED; Sections B and E if the station worked is a new multiplier. b) One band operation period: Sections A and D at least 30 minutes; Sections B and E at least 10 minutes.

Logs: Log sheets to be headed: Date/UT; station worked; RST + number sent; RST + number received; band, new country or YU prefix, QSO points claimed. Use one log for both bands. Summary sheet showing countries/YU prefixes worked and total score required! Logs must be checked for duplicate QSO and multipliers and that clearly marked. More than 3 percent of duplicate QSOs not marked will be sufficient cause for disqualification.

Each log must be accompanied by the usual Declaration on operating in accordance with Amateur Radio license and YU DX Contest Rules.

Send logs to: Savez Radio-Amatera Jugoslavije, YU DX C, P.O. Box 48, 11001 Beograd, Yugoslavia. The closing date for logs is 15 March each year (postmarked).

Awards: Trophy award to continental winners in each section and to best YU stations. Award to continental second and third. Award to leading station in each DXCC country providing the log indicates more than 12 hours of operation in the contest.

In the case of any dispute, the ruling of the SRJ Federal HF Committee shall be final.

In 1980, there was only one entry from the United States. □

"I Love My New Library"

The Lawrence County Amateur Radio Association will sponsor the "I Love My New Library" contest on 13 and 14 February 1980. This contest is part of the New Public Library Dedication Ceremonies in New Castle, Pennsylvania.

The stations will be on the air Friday, 13 February, 1400 UTC to 2200 UTC, and Saturday 14 February, 1400 UTC to 2200 UTC. The call to be used is KA3X. A certificate will be awarded to each contact that sends a QSL AND $1 to help defray cost. The stations will be operating on the phone frequencies 10m-29.000 MHz, 15m-21.400 MHz, 20m-14.300 MHz, 41m-7.250 MHz and zm-147.795/195 repeater. A CW frequency will be 40m-7.125 MHz.

All correspondence may be sent to: "I Love My New Library", c/o Jack Hudak, KA3X, 422 Galbreath Ave., New Castle, PA 16101. □

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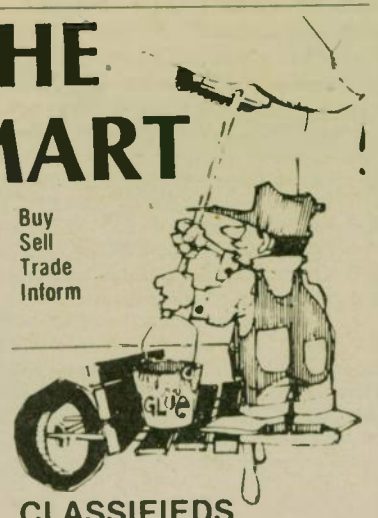

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