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## Crossband Repeaters Approved

November 5, 1975

The Commission has amended its Amateur Radio Service rules to permit crossband operation of repeater stations.

(An amateur repeater is a station licensed to retransmit automatically radio signals of other amateur radio stations within their intracommunity radiocommunication range.)

Crossband operation would allow repeater stations to utilize an output (transmit) frequency within a different frequency band than the input (receive) frequency. The rules now in effect require both the input and output frequency to be within the same band.

The amendments were proposed in a rulemaking notice adopted July 17, 1974 in response to a petition by the American Radio Relay League (RM-2327).

In 1972 the Commission adopted rules providing for the operation and technical development of amateur radio stations (repeaters) that could receive and automatically retransmit the signal of other amateur stations. In that proceeding the FCC expressed the opinion that terrestrial repeater stations should be used only for intracommunity radiocommunication.

The Commission noted that all comments in response to the July 17 rulemaking notice supported the proposal to delete the prohibition of crossband operation of repeater stations as being timely and in general conformance with today's practical requirements for amateur repeater operations.

In addition, the Commission found, as pointed out by several parties responding to the proposal, that there was a considerable disparity in the use of the term "automatic retransmission" as applied to repeaters and other types of amateur radio stations.

By this term the FCC said it meant that retransmission of a signal is actuated solely by the presence of a received signal through electrical or electro-mechanical means — without any direct, positive action by the control operator. To minimize possible ambiguities the Commission said the rule section containing Amateur Radio Service definitions would be expanded to add this term.

While implementation of crossband repeater operation would require no special applications, the Commission said revised station log entries would be required where additional transmitters are added on other repeater frequency bands.

It concluded that these revised rules, together with those recently adopted deleting the limitations on interconnecting repeater stations, would afford amateurs considerable increased flexibility in the operation of such stations.

This action amends Part 97 of the rules and becomes effective December 15, 1975.

Action by the Commission October 29, 1975, by Report and Order. Commissioners Wiley (Chairman), Lee, Hooks, Quello, Washburn and Robinson. FCC



Dr. Al Braley, WØGET, (left) makes presentation of award to Ted Hunter, WØNTI.

### Ted Hunter receives Heise Award

RUSS KREBS, W6HZJ

Ted Hunter, WØNTI, of Iowa City, Iowa has recently received the Leonard Heise Award from the Eye Bank Association of America for his many contributions to the development of the EBAA and to sight conservation itself.

Ted, who has been an Amateur Radio operator for over 50 years, is one of four laymen in

the United States to receive the first Annual Leonard Heise Award given in memory of a former president of the Eye Bank Association of America.

Dr. Alson E. Braley, WØGET, also of Iowa City, Iowa, originally accepted the Award for Ted Hunter at presentation ceremonies held in September in Dallas, Texas. Following this Al Braley presented the Heise Award to Ted Hunter at a meeting of the Iowa City Lions Club.

This Award reads as follows: "In grateful recognition of distinguished service rendered to the nation and the world in the fight against blindness — the Eye Bank Association of America hereby presents the Leonard Heise Award

to Theodore A. Hunter, WØNTI leader in the Eye Bank movement, for outstanding contributions to the development of the Eye Bank Association of America, and for furthering the precepts of an humanitarian who devoted his life to the prevention and cure of blindness."

Ted Hunter, a retired electronics engineer, industrialist and University of Iowa professor

of psychology, is credited, along with Dr. Braley, with founding the first statewide Eyebank in conjunction with the Lions Clubs of Iowa.

Ted, WØNTI, and Al, WØGET, were the founders of the original "Eyeball Network" some thirteen years ago. This is now more familiarly known as the "Eye Emergency Net" and meets nationally several times daily to handle information on needs and availability of human eyes for corneal transplants. In the almost thirteen years of operation, information on almost 8,100 donated eyes has been handled by the Eye Emergency Net.

Ted, WØNTI, designed the styrofoam shipping container used to transport donated eyes throughout the nation as well as overseas. He is a Past President and Member of the Board of Directors of the EBAA, a former District Governor of the Iowa Lions Club, former Chairman of the Iowa Lions Eye Bank Committee, former trustee of the Lions Sight Conservation Foundation and former editor of the EBAA's former publication, *New Sight Magazine*.

Congratulations, Ted, from all of us.

### ARRL election results

The ARRL Committee of Tellers met today to count ballots in the Elections just concluded for Director and Vice Director. The number of votes credited to each candidate is as follows. The first listed candidate is declared elected for the next term of office.

In the Atlantic Division for Director:  
Harry A. McConaghy, W3SW — 3404  
Richard J. Karl, Jr., W3ZUH — 1938

Atlantic for Vice Director:  
Jesse Bieberman, W3KT — 2631  
David L. Heller, K3HNP — 1427  
Harold C. Smith, WA2KND — 1290

Dakota for Director:  
Gar Anderson, WØKE — 790

Benjamin J. Layton, WØUTT — 332

Dakota for Vice Director:  
Theodore A. Olson, Jr., WØIYP — 437

Edward C. Gray, WAØCPX — 351

Ernest Anderson, WØRRW — 347

Delta for Vice Director:  
Malcolm P. Keown, W5RUB — 897

John H. Sanders, WB4ANX — 886

Great Lakes for Vice Director:  
William E. Clausen, W8IMI — 2186

Leonard M. Nathanson, W8RC — 1624

Midwest for Vice Director:  
Claire R. Dyas, WØJCP — 1142

Richard W. Pitner, WØFZO — 1095

(please turn to page 11)

### FCC eases data requirement

November 19, 1975

The Commission has dropped its requirement for technical data in the filing of applications for remotely controlled and associated stations in the Amateur Radio Service.

The technical data originally required with the license application now must only be entered into the station log. However, the FCC said an application for a license must state that the station will be operated by remote control.

(Remote control authorization is required where the control (please turn to page 11)

# Radio operators help in rescue at sea

LEE OXENRIDER

Dr. Earle C. "Doc" Taylor, WA4CFX, at 1399B Fernwood-Glendale Road, Spartanburg, SC, was operating his radio early on Sunday morning (9 November 1975) when he heard a distress call; 14 hours of relaying messages later the three men on the disabled boat had been rescued.

"We're all members of the Southern Coffee Club," Taylor says. "That's a group of amateurs in several states who talk each morning on radio and meet once a year in Forest City for face-to-face conversations."

Last Sunday, Taylor, H.R. "Randy" Randall, K4EAR, of Columbia and Glenn Swan, K4ZU, of Sumter were carrying on a discussion beginning at 6:25 a.m. on about 3935 kHz.

At 6:49 Swan called their attention to a signal that was coming in weakly between their transmissions.

"This is V-E-Zero Mike-Charlie-Mike," the voice said. "We are disabled and distressed in the Atlantic."

Swan asked what the problem was.

The voice identified itself as Dave. "Our condition is we don't know our location," he said. "We're suffering from complete mental, physical and nervous exhaustion. We've been adrift in high seas for three days."

Taylor and Randall kept the frequency open and encouraged the men in the boat while Swan slid down the band to try to contact a retired Coast Guard veteran who operates amateur radio in Southport, NC.

Soon a new voice came on the frequency identifying itself as John Price, WB4JNK, formerly of the Coast Guard. He asked questions to get the basic in-

formation necessary for rescue operations by the Coast Guard: size, color and registry of boat (*The Kluanne*, a 31-foot sloop, a motor-sailer under Canadian registry), sail markings, identities of those aboard, age and physical condition, equipment, food and water on board, owner's name and other related information.

Price then contacted the Coast Guard in Portsmouth, VA. Coast Guard officials called Taylor and asked him to coordinate the amateurs as relays between the authorities and the disabled boat. The men on the boat were running an Atlas transceiver. Their marine radio was out of order and the Coast Guard was having trouble rigging an amateur set that would reach them.

With the aid of some 50 other operators all over the United States (including Glenn Spann, K4EJD; Tarver Holmes, K4OKS; Edward Farmer, WB4TRI/4; Anne Taylor, WA4CFY; and David Ebert, W0PIM/4, who operated as much as he could in view of the fact that his wife gave birth to a baby during the whole ordeal), Taylor, Randall and Swan kept the frequency clear and relayed information back and forth between the men lying on the sloop and officials at Portsmouth, VA and on board cutters.

To find the position of the boat the Federal Communications Commission was called and asked to use direction-finding equipment to pinpoint the source of the radio signal coming from the boat. After several tries within the regular amateur frequencies the FCC gave permission for the men on the boat to use an illegal frequency where no U.S.

transmitters are authorized. The signal came in loud and clear and the FCC stated that the boat was at 30.29 North and 74.45 West, about 450 miles east of Jacksonville.

A Coast Guard airplane sped to the area and after some time had established visual contact. Twice the plane dropped Coast Guard radio equipment for the boat but neither parachute opened. Finally the airplane radio operator was able to adjust his equipment to the amateur frequency.

At approximately 4 p.m., a signal buoy was dropped so that a ship could follow the beam to the boat.

The Cutter *Reliance* was rerouted on its return from Guantanamo Bay, Cuba, and instructed to find the disabled boat. The *Reliance* couldn't get through to the *Kluanne* either. The cutter's captain called Taylor on the amateur frequency and asked that the amateurs keep their relay operation going.

The Coast Guard Cutter steamed on at 14 knots per hour.

By 7:30 p.m., the cutter was in radio contact with the *Kluanne* and was asking for detailed information.

Taylor explained to the Coast Guard captain that the men on the boat were too exhausted to manage any complicated or tiring boarding operation.

The Cutter told the *Kluanne* on the radio: "We have a masked beacon light. Can you spot it?"

Eventually the call came through that the man on the sloop had seen a spotlight.

The Coast Guard captain said over the radio: "I think I see your running lights, *Kluanne*; blink them. That's it. We see you."

The 95-foot cutter moved

astern of the sloop, lowered a small boat and sent a crew to the *Kluanne*.

Pierre Asselin, owner, and crewmen Dave McNaught and Colin Stock were transferred to the cutter while a Coast Guard crew manned the sloop, securing it for the night. The craft decided to lay to until daylight because of the heavy seas.

At 8:20 p.m. the captain of the *Reliance* complimented Taylor and his colleagues on the air, saying, "You can now secure the emergency frequency and thank you all for a job well done."

Fourteen hours had passed while Taylor sat at his equipment on Fernwood-Glendale Road. Mrs. Taylor, WA4CFY, had brought his meals in to him and had shared in the vigil as information was relayed to and from the men on the boat.

"Anytime we stopped transmitting, to give the sloop a chance to call back, someone else would come on trying to make a casual contact without knowing there was an emergency," Taylor said, "When that happened we'd have to jump in and ask them to switch to another frequency. That happened hundreds of times during the day."

A sad sequel to the story of the rescue also involves the aid of amateur radio operators.

The *Kluanne's* owner, Pierre Asselin, was on board the sloop with his crew, limping up the North Carolina coast, with Coast Guard Cutter *Point Martin* as escort Tuesday, 11 November, when he was again contacted by an amateur radio operator, this time, however, to tell Asselin his father had died.

The sloop's owner was picked up by the Coast Guard and taken to the airport while his crew took the *Kluanne* to Wrightsville Beach for temporary storage.

—Spartanburg Herald-Journal, Spartanburg, SC

## Worldradio

Dec., 1975

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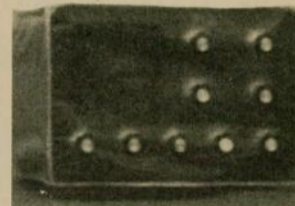
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# Stork flies by radio wave

Reprint from the "SAN JOSE MERCURY" November 3, 1975

A young San Jose, CA, woman, eight months pregnant, was in the early stages of labor late Sunday night, 3 November 1975, after being rescued from a flaming pickup truck after it flipped over on Summit Road in the Santa Cruz Mountains.

Mother and unborn baby were said to be "in fine shape" by hospital nurses thanks to the coordinating efforts of three Amateur Radio club members who happened upon the accident scene, and a fourth club member who relayed their call for help.

Mrs. Carol Westermeyer, 20, of 5691 Tucson Drive, San Jose, was pulled from the pickup truck by her husband, Don, 23, and several other motorcyclists and motorists as flaming engine oil spread over the vehicle.

Seconds later radio club members Bruce Lerner, WB6CDN, Bill Melody, WA6YBD; and Bill Walters, WA6UIN, drove up and aided others in scooping dirt onto the fire to extinguish it. Lerner and Walters comforted the injured Mrs. Westermeyer while Melody radioed for help to fellow club member Richard Lemon, WB6CTA, sitting by his home transmitter at 5041 Trenary Way.

Lemon contacted Santa Clara County Communications which dispatched an ambulance. A rendezvous was set up at Highway 17 and Summit to meet a convoy of vehicles bringing Mrs. Westermeyer to the valley floor.

A West Valley Ambulance Co. rig quickly arrived at the meeting spot, then elected to continue on up Summit Road for a quicker transfer of Mrs. Westermeyer. The vehicles met near the Mt. Hermon Road junction and Mrs. Westermeyer was rushed into the emergency room at Good Samaritan Hospital just 37 minutes after the initial call for help was made.

"She's in early labor but is okay and the baby sounds good," said a supervising nurse who explained that doctors checked out the infant with a device called a fetuscope.

The Westermeyers and driver Ken Ellison, 39, a neighbor, were out for a pleasure drive when the pickup's right front wheel suddenly dipped on the dirt road and the vehicle rolled onto its right side. Highway Patrol officers said. The right front tire was later found to be flat but it was unknown whether the flat occurred before or after the sudden dip. Ellison and Westermeyer were not injured.

The amateur radio operators, all members of the Santa Clara Valley VHF Repeater Society, had completed repairs on the club's repeating station atop Mt. Chual and were driving home when they came upon the accident.

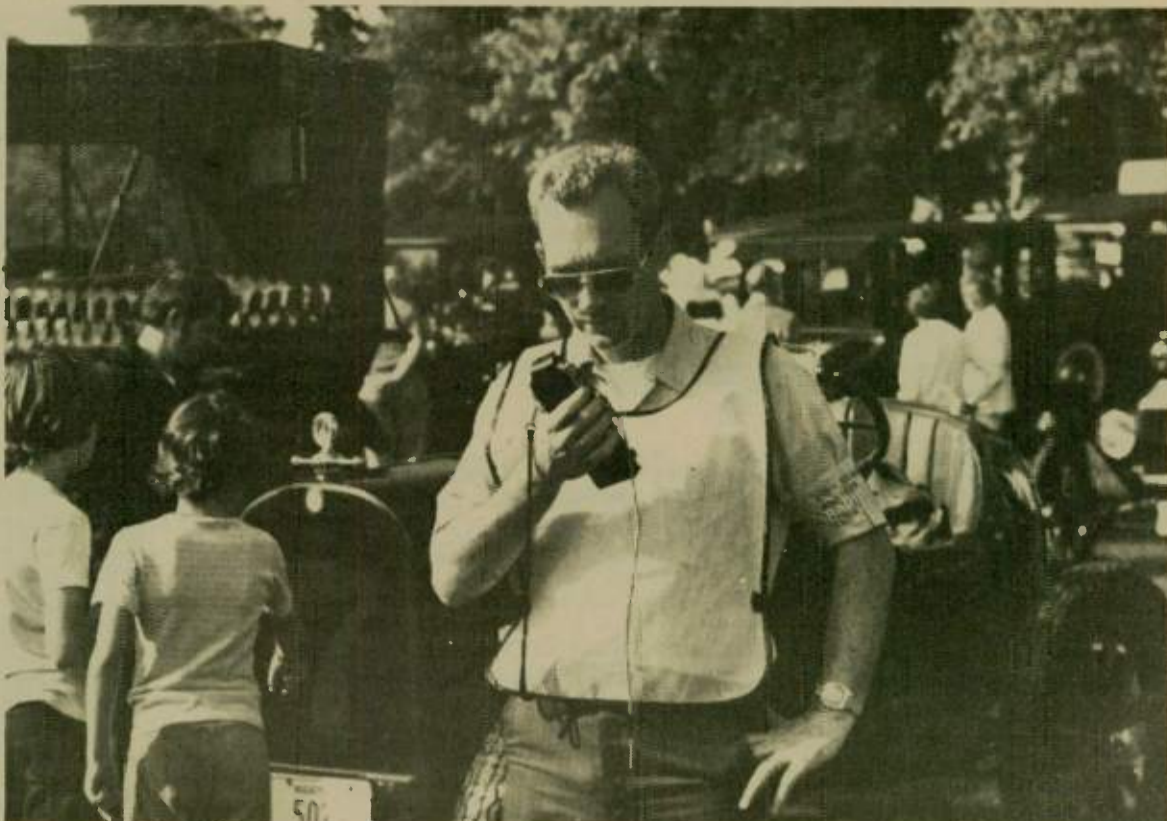
"They were fantastic," said County Communications dispatcher in praise of the radio operators. "He (Lemon) was really super-professional about the whole thing. He didn't go into any superfluous radio traffic, just the specifics. The whole operation was really smooth."

The 130-member club has fashioned a self-made repeater system for both UHF and VHF frequencies and say they can provide the entire Santa Clara Valley with an emergency communication network.

—San Jose Mercury

**Note:** Carol Westermeyer gave birth to a 5 pound 12½ ounce boy on Sunday, 10 November 1975, her proud husband announced.

Don Westermeyer said his wife was up and walking around Good Samaritan Hospital Sunday evening after the 12:16 p.m. delivery. Both she and the baby, Justin William Westermeyer, were in fine shape. The baby was born exactly one week after the rescue.



Montgomery Amateur Radio Club Activities Chairman Bob Nelson, WA3PAD, (pictured) organized the club's communications support for the Rockville, MD Antique and Classic Car Show held recently at the Rockville Civic Center. Tom Black, W3CYQ; Tom Coates, W3HHB; Richard

Ogden, WA3UVM; Robert Bugash, WA3VPE; WA3ZLB, WA3ZQA, and Rich Suess also participated. Over 250 vintage autos were exhibited at the annual one-day affair. Pictured with Bob is No. 7, a 1924 Dodge dirt track racer. [Photo by Tom Coates, W3HHB]

## 1975 Regatta

BOB LOCKWOOD, WA0DHU

The great river raft regatta 1975 got off to a good start on Sunday, 30 August, with 38 canoes entering the Missouri River at the Cottonwood Marina north of Blair (Nebraska) for their race down the river to the Omaha Marina. Sunday found over 175 rafts following the same path down the river as they raced toward Omaha.

Ak-Sar-Ben Radio Club AREC was on the job both days supplying communications for officials and the news media. Stations were set up at the Cottonwood Marina which was

the starting point, at Wilson Island which is 10 miles south of Blair, at Dodge Park north of Omaha and at the Omaha Marina, the finish line. Also, a mobile unit was set up on the press boat. A base station was utilized both days for relaying information to the news media.

The following people provided communications: Lloyd McElhaney, K0DKM; Gary Maples, W0OXT; Ray Willis,

WB0PGK; Harold Abrahamson, WA0ORC; Bob Lockwood, WA0DHU; Marion Wilczynski, WB0BMV; Robert Golden, WA0AHT; and Jack Barnett, WA0CMK.

In addition, Paul Sherrerd, WB0BKZ, stood watch at the Mormon Bridge. He radioed in an overturned raft at that point. The crew was later helped by a passing boat. We kept the Coast Guard informed of the incident.

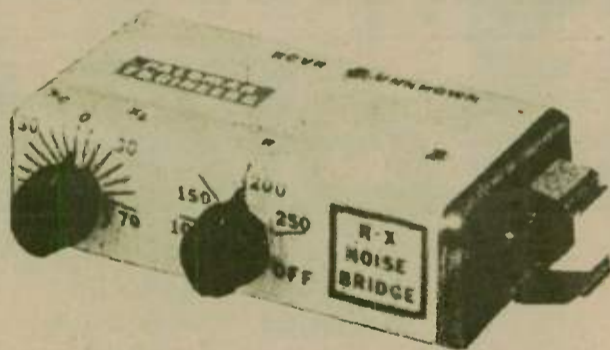
The AREC had two major exercises on the Labor Day weekend and did an outstanding job on both. Once again Omaha amateurs performed valuable public service utilizing communications of a professional quality. Nice job well done! —Ham Hum, Omaha, NE

One kept WR3ABM on the air. NCS duties at the county emergency operating center were shared by Richard Ogden, WA3UVM; Bob Nelson, WA3PAD; and WA3ZLB.

Among other active participants were Robert Cunitz, W3BFV; Tom Black, W3CYQ; Marlin Heckendorn, WA3HEM; Chauncey Gilbert III, WA3OIB; Joseph Venit, WA3PAE; Rolan Clark, WA3PBC; Carl Olson, WA3SEE; Armond Caron, WA3TNQ; Gerald Fishow, WA3UQF; Donald Crane, W3VG; and WA3ZHW.

—Northern Virginia Radio Club

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## Emergency communications

STEVE GLASSER, WA3ZNW

The September floods in Montgomery County (VA) were not as catastrophic as they were elsewhere in the area, but the effects were serious nevertheless.

Many club members and other area amateurs assisted in providing emergency communications under the directions of RACES. A net was activated on 146.64 by WA3YOO at 4:30 p.m. on Thursday, 25 September 1975, and secured at 11:15 p.m. when the rain stopped. The rain resumed and the net was reactivated at 5:30 a.m. Friday, securing when the sun emerged at noon that same day.

The principal activity was at stream watching. Dozens of up-country roads in the Potomac and Rock Creek watersheds were flooded. County authorities used the reports to keep contingency plans up to date. One operator established liaison at the Red Cross in Silver Spring. Another stood by at a nursing home where evacuation was starting.

## MI Swap 'N Shop

The Cherryland Amateur Radio Club will hold its third annual Swap 'N Shop on Saturday, 14 February 1976.

It will be held from 9:00 a.m. to 4:00 p.m. at the Northwestern Michigan College campus in Traverse City, Michigan. Talk-in will be 146.52 and 3935. Door prizes will be given away.

For more information contact Bill Mader, WA8WWM, Box 2, Empire A.F.S., MI 49630. Donation is \$1.00.

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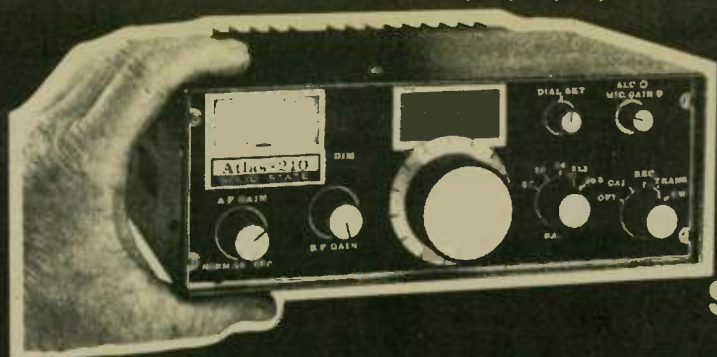
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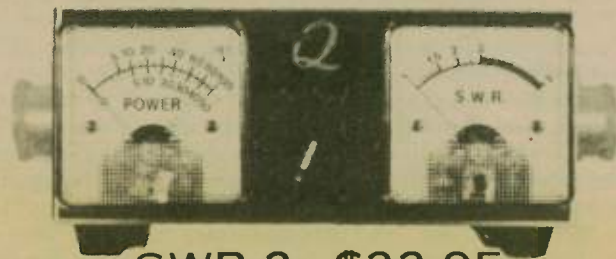
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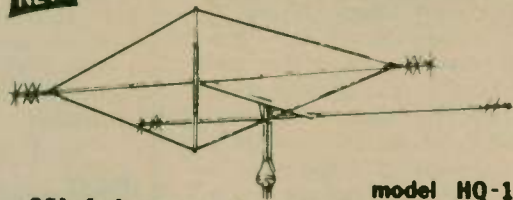
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# Radio communications on the 1975 Baja 1000 Off-Road Race

A Checkpoint Report

K. HERB KLARER

WB6VGC

Photos by Louise Klarer, WA6FHH

Floating over the babble of "happy-hour" voices were heard the words, "Doing a radio stint in Baja is like an emergency exercise, only it's real!"

That remark was certainly true, but it is probably more like a combination of a SET, a Field Day, A DXpedition and a club emergency exercise since all the messages are serious and are sometimes about true emergencies. Further, there is a great volume of diverse traffic and nearly all the communications depend upon Amateur Radio. The whole operation is a fully portable one where it is necessary to go long distances into the field with gas-powered equipment and to maintain communications over a period of two to three days. All of this is in the midst of confusion, anxiety and rapid message arrivals to say nothing of unexpected contingencies such as wind, equipment failures and general Murphy's law permutations.

In short, participating as part of a communications team on one of the Baja Off-Road Races (either the 500 or the 1000 or in the stateside Parker 400) is an exciting event. It is an experience from which amateurs can learn a great deal about the real world of traffic handling and the nature of difficulties in operating under high traffic load conditions. Moreover, this is usually in difficult physical conditions of cold, wind, sand or heat (or all of these!). Perhaps these are ideal places to learn the kinds of things which are needed to truly understand the role of amateurs in time of emergency and, indeed, to polish our skills. The communications for the 1975 Baja 1000 Off-Road Race were provided by the Baja Amateur Radio Racing Association (BARRA) which is comprised of Mexican and US amateurs, many of whom are veterans of previous similar exercises. BARRA Net Director is Doug Freeman, W6NHX, and Bob Gorham, W6UC, is the Net Coordinator.

The tale which ensues will be the "saga" of the crew which went to Checkpoint 4 at El Crucero. This was the most southerly checkpoint in the 1975 race and is about 400 miles south of the Mexico/US border. The team was made up of Louise Klarer, WA6FHH; John Dallons, W6YDZ; Jon Dallons, WN6KNP, and myself.

The two-day trip from central California to El Crucero was made over US highways and the new Mexican Highway 1 to a point inland from Bahia de Los Angeles. Checkpoint 4 was located at the junction of the main highway and the unimproved road leading north to Gonzaga Bay. It lies in the midst of a lush forest of desert flora, the exotic and surrealistic Cirio or "Boojum", Cardon with its resemblance to the Saguaro, many Yuccas, Cholla with their fierce spines

and countless smaller cacti. This desert shrubbery is often so dense that it is difficult to walk through. The boojum frequently reach heights of fifty and sometimes one hundred feet and provide a stark and sometimes amusing appearance to the landscape. They would make excellent antenna masts if fortuitously placed, hi. In the early morning or evenings with the beautiful and unspoiled desert mountains of Baja California in the background, the scenery is striking and beautiful. Being surrounded by such beauty makes some of the hard work of the tours seem very worthwhile.

We arrived at El Crucero at evening, selected a campsite, had supper and got a good night's sleep in advance of the arduous two race days to come. The radio transmitting site was selected the following morning far enough from the arriving vehicles to prevent their roar from drowning out the receiver and, hopefully, to keep as much sand and dust out of the radio gear as possible. All AC equipment was run faultlessly from a Honda EM 400 with a new electronic voltage regulator. A Tempo-One transceiver was used with a tuned center-fed, all-band dipole for the HF links. The 2-meter equipment (loaned by Ken Bull, K6GCT) was an ICOM 22 with a 5-element Yagi. A public address system and all-channel CB setup provided by John Dallons, W6YDZ, made local checkpoint communications much less hectic than on former outings.

All was in readiness when the 6:00 p.m. check-in time came the evening before the race. Net Control (XE2BCM) in Ensenada



Amateur Radio Communications Center for the 1975 Baja 1000 Off-Road Race.

queried all checkpoints to make certain we had an operation net and gave last minute instructions to all stations.

This year's "1000" had been "advertised" as a difficult and challenging event for the 270 participants. As the news began appearing in the form of net traffic reporting cars which were "broken" (or out of the race), it was apparent that the early warnings had been correct. Notices from vehicles stuck on

the course are carried to the next checkpoint by other drivers. These are appropriately called "Stuck Stubs" and are sent by radio to other checkpoints or to net control in order that the driver may get assistance. Other traffic consists of radiograms sent as needed to other checkpoints or net control, and of reporting the official passing times of all vehicles through the checkpoint. These passing times are entered into a computer by

net control in Ensenada so that up-to-date information is available to race officials. With over 200 vehicles in the race the transmission of all these items plus the copying of passing times from all other checkpoints constitutes a very large volume of traffic, particularly during the peak of the race.

Two aircraft were flying over the race course during the daylight hours and were in contact with ground stations on 3880 kHz and 146.52 MHz. At checkpoint 4 the distances to Ensenada were so great that signals were not detectable from the 146.19/79 repeater on 10,000 foot Picacho del Diablo Peak in the Sierra San Pedro Martir National Park. However, some of the other checkpoints were effectively able to use this machine. The 80-meter frequency was generally quite reliable with the usual shifts at sunset and in the mornings. Relay stations in the US and checkpoint 4, because of its southerly location, did handle a large volume of relay traffic during these "long band" conditions. There were times when band conditions made intermediate relays necessary in order for checkpoint 4 to pass its traffic to Net Control in Ensenada.

It would be remiss not to relate some of the other activities at a checkpoint such as #4. Pit crews, officials, timers, alternate drivers and spectators crowd the areas. People may number in the hundreds. Much equipment is on hand to repair vehicles. Power units light the areas at night as if it were daylight and their sound drones on in the darkness. Coupled with all this is the scream of highly tuned racing vehicles leaving the checkpoint under heavy throttle and with their quartz iodine lamps lighting their way over (please turn to page 39)

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# Amateur Radio in Israel



Archaeological expedition camp with the dig site behind it near Tell Beer-Sheba, Israel.

PHIL SAGER, WB4FDT/4X

When I decided to spend the summer of 1975 on an archeology dig in Israel naturally my first thoughts turned to Amateur Radio.

Of course I intended to bring a rig along to go "first class". I intended to borrow a Yaesu FT-101. However, friends pointed out some of the difficulties involved in bringing a rig. Security on Israeli airlines is quite tight and I didn't know what sort of problems I might encounter trying to hand-carry the rig aboard the aircraft. Then there was the problem of going thru Israeli customs. Since I didn't have an Israeli license there was the possibility that Israeli customs might take the rig. Of course, security on the dig site itself is quite poor especially since I would be living in tents.

So I decided to bring a cheaper more expendable rig along. Bill McKean, WA4DXO, provided me with a Heathkit HW-16 transceiver with an old Lafayette VFO. I threw the VFO in my suitcase, put the rig into an old knapsack and off to New York's Kennedy Airport I went.

I had no problems getting the rig aboard the aircraft. Israeli security looked inside the rig and asked what it was. I told them it was a "radio" and I was let through. Thirteen hours later I was in Israel. (Incidentally, the direct flight between Israel and New York on the Israeli national airlines, El Al, is the longest direct commercial flight in the world, covering some 11,000 plus miles.) I was lucky for there was no customs check for my group, although I must admit I gave the customs officials a few nervous glances as I walked past them.

I arrived in Israel on a beautiful Sunday afternoon. My group was to spend a week touring the city of Jerusalem before starting the dig. I moved into a dormitory at the Hebrew University on Mount Scopus

overlooking the city. There is a saying that "every man changes once he views Jerusalem". Such a saying is certainly true. To view this ancient site of so much biblical and modern-day history, to walk in the footsteps of King David, of Jesus and other biblical figures, is enough to change any man.

After a few days of touring I suddenly felt the urge to travel to Tel-Aviv where I could receive my reciprocal license. I was somewhat hesitant to leave my group since my Hebrew wasn't exactly fluent. However, the lure of the Israeli amateur license was too great. I left my group on Tuesday morning, intent upon catching a bus into Tel-Aviv.

I soon discovered that I had nothing to worry about. At the bus station each of the stops had signs in Hebrew, Arabic and English telling where to catch the buses. There were buses leaving from Jerusalem to Tel-Aviv every 20 minutes so I had no trouble catching one. In fact, it was easier than catching a bus in the United States. I soon learned that many Israelis speak very good English, and whenever I got lost and needed help all I had to do was to open my mouth and ask!

The Israeli FCC is located on the 11th floor of Shalom Towers, the tallest building in Israel. Naturally I had no problem finding it upon my arrival. In fact, it was only a mile or so from the bus station so I walked. When I got to the 11th floor I just explained to the secretary what I wanted, and a dozen emerged with my WB4FDT/4X license in hand! (Incidentally, while in Tel-Aviv don't miss the Wax Museum located in the Shalom Towers or the observation deck on its top floor.)

Naturally that night I ran a small magnet wire from my room on the first floor to a balcony on the second floor, and got on 40 meters and called CQ. I held my breath and was immediately called by David Schlacht, WA2KGY, who gave me a 599. However, once my excitement had subsided I discovered it was WA2KGY/4X who was located on French Hill, about 5 blocks from my Mount Scopus QTH.

Thirty minutes later I was having an eyeball with Dave, WA2KGY/4X, and his neighbor Sam Goldwasser, WA3TUP/4X. Both of their families had emigrated from the United States to Israel and both had just graduated from Israeli high school. Since the All-Asia contest was that coming weekend I made arrangements to go over to Dave's QTH Saturday evening.

In the next several days I quickly discovered that both 80 and 40 meters in Israel were completely dead during the day. 15 meters was dead until between 5-8 o'clock in the evenings. Mostly I sat around in the late afternoons working Eastern Europeans. One afternoon I called CQ on a completely dead 15-meter band and raised Lokesh Khanna, VU2LO.

I got back over to WA2KGY's QTH for the contest and worked around 70 stations on 20 meters that evening. The band was full of Europeans and even a few USA. I worked John Kanode, W4WSF, the manager of the W4/K4 QSL bureau and he called my parents to tell them that I had arrived safely.

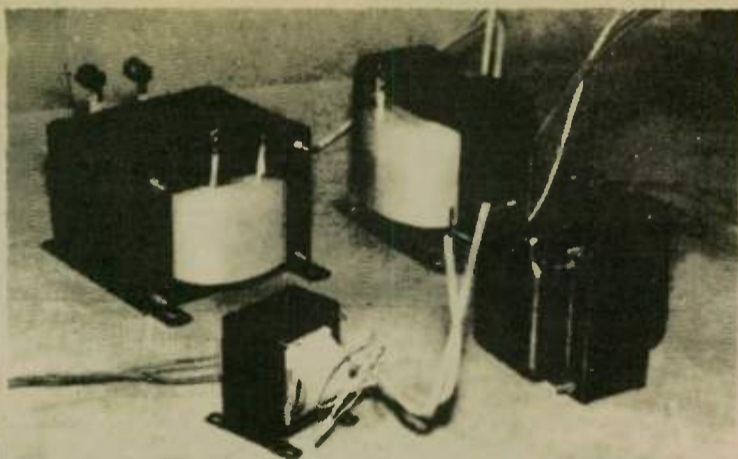
In Israel 20 meters is the "band". Anytime of day or night one can work slews of Europeans there. Since my HW-16 did not have 20 meter capability, I began to miss my 5-band transceiver.

The next day I was off to my dig. Briefly, I (along with 150 other Americans, Europeans and even a few Israelis) dug at a site called Tell Beer Sheta which is located about 3 miles from present-day Beer-Sheva. The site is the biblical Beer-sheta of the Bible. The area around the Tell is a desert.

Upon arriving at the site of the dig I was horrified by our camp there. The fact that our living quarters consisted of 8-man tents didn't bother me. The fact that there was no hot water didn't bother me. The fact that our food was so bad that I would not have dared to feed it to a sick camel didn't bother me. The fact that we began work at 4 a.m. and worked until 2 p.m. didn't bother me. What horrified me was that there was no (please turn to page 22)

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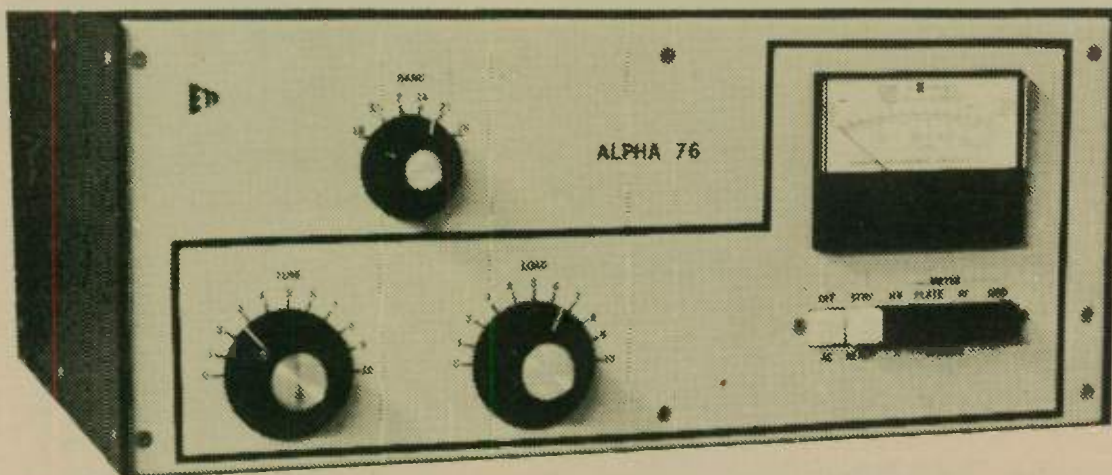


Phil Sager, WB4FDT/4X

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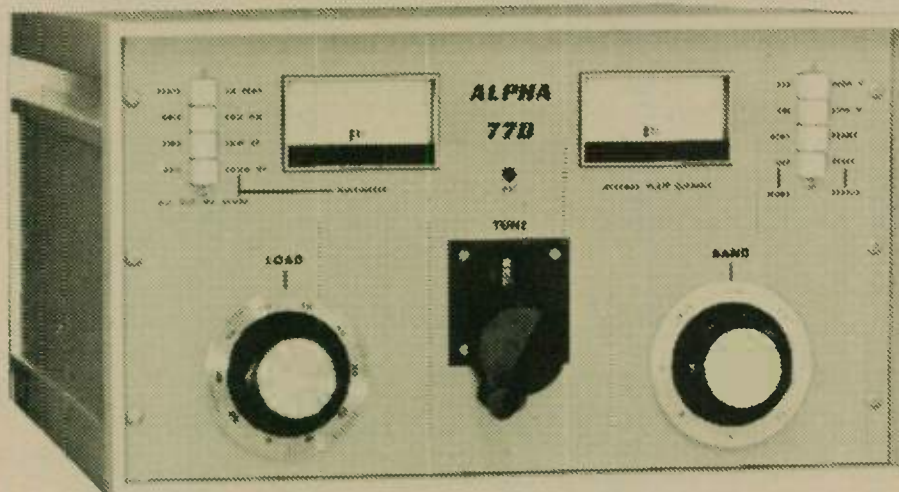
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Hell, Norway

## QTH Hell

HALVARD TORGERSEN  
LA2AD

How would you like to write in your log: QTH Hell? — It is one of the rare ones to be heard but if you do hear it don't smile that grim smile; it may be "genuine".

Hell is the name of a small community some 30 kilometers east of Trondheim (63.5° N — 11° E) in the middle part of Norway. Of course the name means something else in the Norwegian language, but it is quite a thrill when you can tell your English-speaking contact that the QTH is really on the map. And sometimes it needs quite some telling too!

As far as I know no active amateur has permanent residence in that community but once in a while amateurs from Trondheim go camping for a weekend. Some years ago Radioklubb Akademisk, LA1K, did so. In 1974 Kjell Duna, LA7AH, and I (LA2AD) worked a couple of days from a caravan using a Hallicrafters SR-400 and a 3-band 2-element Quad. In June 1975 Harold Kjode, LA9SN, worked field-day-like with a FT-250 and a 20-m groundplane antenna.

The main road (E-6) from Trondheim to Sweden and to North-Norway cuts through the community, but being rather inconspicuous I think many mobile amateurs pass through without realizing this opportunity of having some good-humored fun on the DX bands.

For QSLing LA1K got some color postcards showing the local railway station and a rather gloomy sunset with blood red clouds in the horizon. LA7AH and I were not so sophisticated.

We took some amateur shots of which two are shown. Copies were pasted on our ordinary QSL cards, but nevertheless we believe that the amateurs who eventually received our cards will recall the thrill of speaking with Hell.

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Railway station, Hell, Norway

## Miami Bicentennial QSL Card Contest

STEVE KAPLAN, WB4SJQ

On 24 January, 1976, the Mayor of Miami will kick off the Miami Bicentennial QSL Card Contest. The contest will end on 4 July, 1976, midnight.

Amateurs will have 30 days after 4 July, 1976 to send in a QSL card with the amount of confirmed QSLs he or she has, to Ms. Nora Swan, Bicentennial Chairwoman, Miami Bicentennial, Miami City Hall, Miami, Florida. The winner will receive a beautiful plaque from the City of Miami.

The winner outside of Florida has the option of having the plaque mailed to him or coming

to Miami and staying at the plush Barcelona Motel for a week, free of charge, European Plan, in order to attend the ceremony and receive his plaque from the Mayor with the Miami winner.

Rules of contest — Bands 10 through 80 — any mode.

Florida participants must live in toll-free area when calling from anywhere in Dade County. S/Wers or non-participants wishing a commemorative Miami Bicentennial QSL Card should send a letter of request to Ms. Nora Swan, the Bicentennial Chairwoman.

## Massachusetts Bicentennial Award

The Massachusetts Bicentennial Award is issued for contact with Massachusetts amateur stations during the United States Bicentennial years 1975-1976. Contacts must be between the dates 1 January, 1975 and 31 December, 1976. Repeater contacts are acceptable.

The award is earned on a point bases as follows: Massachusetts amateurs must have 200 points. The rest of the United States must have 100 points. DX (including KH6 and KL7) and VHF outside Massachusetts must have 50 points.

Contacts with a Massachusetts station count two (2) points. Contacts with a Massachusetts station in a city or town having historical significance or bearing the name of an American Revolution era important person are four (4) points. Such towns are: Adams, Boston, Cambridge, Clinton, Concord, Franklin, Hamilton, Hancock, Huntington, Lee, Lexington, Marion, Middleton, Montgomery, Mount Washington, North Adams,

Otis, Revere, Warren and Washington.

Double the above points if contact with Massachusetts stations on any of the four Massachusetts holidays of 17 March, 19 April, 17 June and 4 July.

Stations may be worked only once, except that a station may be worked one additional time if mobile. Stations may also be worked again for bonus points on any of the four Massachusetts historical holidays.

QSL cards are not required. Send log data only showing station worked, time, date, band and mode, and city or town if bonus points are claimed. Include points claimed for each contact; certificates will be endorsed for band and mode requested. There is no charge but your application must be accompanied by a self-addressed stamped envelope for return of the certificate. (DX include one IRC.)

Submit applications to: William Holliday, WA1EZA, 22 Trudy Terrace, Canton, MA 02021.



## International friendship

I would like to have contact with some interesting people, especially girls near my age.

I am a 25-year-old amateur radio operator and TV technician. I am 186 cm tall (6'3") and have blond hair and green eyes. I hope to hear from you soon.

Arthur Krause, 6230 Frankfurt — Main 80, Griesheimer-Stadtweg 46A, West Germany.

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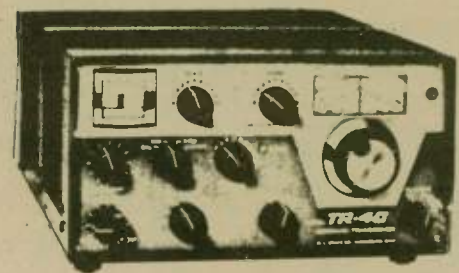
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# Radio Corps enters preparedness plan

John Baker

Amateur Radio Emergency Corps (AREC) stations in Charlotte County (FL) have become part of a plan of the Charlotte County Office of Disaster Preparedness to provide emergency radio communications in the event of a hurricane or similar disaster which might visit this area at some future date.

William North, W4BX, designated Emergency Coordinator for Charlotte County AREC activity, said that an agreement had been signed with Disaster Preparedness Coordinator Richard Konover to provide emergency message service should it ever be needed.

The AREC is part of the American Radio Relay League (ARRL), a national organization of U.S. Amateurs dedicated to public service.

With the hurricane Eloise grinding its way into the Florida panhandle Tuesday, North said he felt it was necessary to advise the community here of the present AREC plan and what it can do in conjunction with the Disaster Office during an emergency condition.

He said he recorded several hours of broadcasts from the



William L. North, W4BX, of Punta Gorda, FL makes radio contact with other members of the AREC group which has joined with the Charlotte County Office of Disaster Preparedness to offset any emergencies that may cut off normal communication. [Photo by Baker]

several stations in the Pensacola and Ft. Walton Beach areas Tuesday from amateur operators within the Amateur Radio Network which, like all AREC stations, uses equipment that can transmit and receive over long-range distances across the nation.

Supported in most cases by their own emergency power, the Charlotte County Radio Society, from which members of the AREC have been drawn, con-

siders several aspects of emergency actions that need to be taken during disaster conditions.

One of the first things that shake a community is the loss of commercial power and telephone service. This means the amateur radio stations are all that remain for outside contact until service is restored after the storm passes.

As a second action, yet realistically a part of the main service, is the handling of health

and welfare matters that deal with damage reports, calls for assistance and the very important matter of coordination with federal or state agencies which need to know where to offer help to begin the long-range program of survival and clean-up.

One of the fundamental considerations of the AREC is that it makes no attempt to become involved with police or fire communications, unless requested to do so by the Disaster Control Coordinator, because these organizations have their own roles to fill. There are other radio nets that are available to them.

—Daily Herald-News, Charlotte County, FL

## New special prefix

LUIS P. CAAMADO M., H18LC

To commemorate the 50th anniversary of Radio Club Dominicano, Inc. the special station HI-50-RCD will operate from January to December 1976.

All QSOs will be confirmed 100% by special gold QSL cards via PO Box 1157, Santo Domingo, D.N., Dominican Republic, W.I.

## Wheaton, IL Hamfest

The Wheaton Community Radio Amateurs midwinter hamfest is Sunday, February 8, at the DuPage County Fairgrounds, Wheaton, Illinois (Manchester Road, near County Farm Road), 8 a.m. to 5 p.m.

Tickets \$1.50 advance, \$2.00 at the door. For advance tickets send \$1.50 each and a self-addressed stamped envelope to L.O. Shaw, W9OKI, 433 S. Villa Avenue, Villa Park, Illinois 60181.

Advance tickets postmarked no later than February 1.

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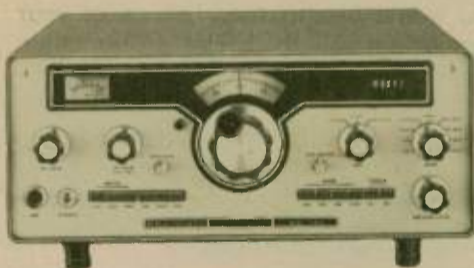
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The HW-104's performance is superlative. Transmissions are clean and crisp—at 100 watts third-order distortion is 30 dB down and unwanted sideband suppression is 55 dB. In the receiver, broadband design virtually eliminates adjacent signal overload, yet sensitivity is less than 1  $\mu$ V. And because cross-

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15 MHz WWV position on the bandswitch, a 15 kHz per turn spinner, 5 kHz markings on the circular dial, 100 kHz/25 kHz calibrator for accuracy to 2 kHz. 12 VDC powered and the optional noise blanker provides up to 50 dB effective blanking. For base use, buy the optional HP-1144 AC Power Supply. Plug-in phenolic circuit boards and two wiring harnesses simplify construction. Alignment requires only a VTVM, mike and dummy load.

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The receiver is tops in features and performance. "Hot" 0.5  $\mu$ V sensitivity for 12 dB SINAD, Schmitt-

trigger squelch with a threshold of 0.3  $\mu$ V or less, a diode-protected dual-gate MOSFET front-end, IC IF, dual conversion and an 8-pole crystal filter for superior IF shape and excellent adjacent channel rejection. Linear audio response and a built-in 2"x6" speaker.

LEDs indicate that the synthesizer is locked on-frequency and warn if channel is already in use. A mode switch selects simplex, -600 kHz offset or an "aux" crystal with a different offset frequency. A built-in continuous/burst encoder accesses most closed repeaters.

The HW-206 is one of the smallest synthesized rigs you can buy, but it's not difficult to build—just 5 circuit boards to wire. Alignment requires only a VTVM, although a frequency counter would be helpful.

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#### ARRL

(continued from page 1)

Pacific for Director:  
J. A. Gmelin, W6ZRJ - 1574  
Gary A. Stilwell, W6NJU - 1394

Pacific for Vice Director:  
Bill W. Eitel, WA7LRU/  
W6UF - 1875  
Albert F. Gaetano, W6VZT - 1090

Southeastern for Director:  
Larry E. Price, W4DQD - 2996  
Ted R. Wayne, WB4CBP - 1113

Southeastern for Vice Director:  
Bev Cavender, K4VW - 2322  
James A. Gundry, W4JM - 1763

The new Directors and Vice Directors take office starting 1 January 1976. As of that date the following additionally take office likewise for two year terms in view of election procedure previously completed:

Canadian Division Director Ron Hesler, VE1SH; Delta Division Director Max Arnold, W4WHN; Great Lakes Division Director Richard Egbert, W8ETU; and Midwest Division Director Paul Grauer, W0FIR.

Because of the Canadian postal strike balloting in the Canadian Division Vice Director election will

be extended to a date six weeks after the end of the Canadian mail strike. Details of the earlier actions appear on page 70, November QST.

#### Data

(continued from page 1)

operator of a station is not located at the station, but performs the control functions from a different location over a control link.)

Part 97 of the rules was amended to insert the logging requirement by amateur licensees for remotely controlled stations, remotely controlled repeaters, control and auxiliary link stations.

The Commission said it became evident in processing more than 2,000 applications that amateurs had developed the knowledge and capability for determining the requirements and technical showing for remotely controlled and associated stations.

The FCC said the new procedure would benefit not only applicants but also licensees since any future technical changes would not require Commission approval prior to modifying the station's

parameters. The Commission's processing of applications also would be simplified and accelerated.

Consequently, the log of each remotely controlled station must contain a complete description of the control system, as reflected in new Section 97.103(b), together with a current system network diagram for every system containing more than one station, such as control or auxiliary link stations.

In addition, the FCC deleted the prohibition in Section 97.88(e) against portable and/or mobile operation of certain remotely controlled stations since it serves no useful purpose. It felt the original concern for a viable control system of a remotely controlled station, when operating at other than the licensed location, was unjustified. However, whenever such operation takes place, the appropriate station identification, notification of portable operation and logging requirements in Sections 97.87, 97.97 and 97.103 must be met.

The new rules became effective December 1, 1975.

Action by the Commission November 17, 1975, by Order. Commissioners Wiley (Chairman), Lee, Hooks, Quello, Washburn and Robinson.

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One of Florida's youngest and active public service amateurs: Ernie Holmes, WA4LGT, of Pembroke Pines, age 11. Ernie is in the sixth grade at Dade Christian Schools. He holds 15 WPM Code Proficiency, ARRL, BARC, RCC, BPL, PSHR, and is active in EBN, QFTN, FPTN, FAST, SEBGN, QFN and GN. He is also Assistant Emergency Coordinator for Broward County. His hobbies, beside the above, are piano and Judo. See what we mean about ACTIVE? Ah, youth!

## Hurricane Eloise amateurs

FRED MARCHMAN  
WA4WBM

Amateurs throughout Florida and the neighboring states responded to the need for emergency communications when Hurricane Eloise struck a devastating blow to the area from Ft. Walton Beach to Panama City.

It was anticipated that Eloise would make a landfall between Pensacola and Mobile, but a shift in direction at about 0300Z Tuesday brought her over the Panhandle with winds estimated as high as 130 mph.

The Northern Florida Phone Net was activated on a standby basis at 2000Z Monday and was put in emergency session at 0200Z Tuesday to handle emergency and priority traffic. The Florida Amateur Sideband Emergency Net was activated at about 1450Z Tuesday to handle health and welfare traffic. When propagation conditions worsened other channels for H&W traffic were opened on 3957 kHz and 7250 kHz.

Amateur radio communications with most cities in the affected areas were maintained throughout the storm. However, the Area CD HQ in Defuniak Springs lost its tower and all antennas at about 1200Z Tuesday, interrupting all communications until the next day. Also the Okaloosa County EOC lost its tower and all antennas at the height of the storm but maintained local communications on 2M from the mobile CD unit.

The barometer registered a low of 28.52 in Ft. Walton Beach and wind gusts there were measured at 95 mph.

In spite of the extensive damage done by Hurricane Eloise, no deaths or serious injuries directly attributable to the storm were reported.

Since complete information is not available and space does not permit a listing of all amateurs who served during the storm, no calls are included here. Suffice it to say that the many amateurs who responded to the need for emergency communications by

Page 12

## More on tropical storm Eloise

METTLER HENRICH,  
K2DNN

Amateur Radio was again used extensively during the recent flooding in Chemung County, NY. During the flood watch, 23 and 24 September, the Red Cross and Civil Defense gave bulletins to EC/CD RO Mettler Henrich, K2DNN, who sent them out on the air on 6 meters and the local 2-meter repeater, WR2ABL, as well as WR2ABD (Ithaca, NY) and WR3AEC (Canton, PA). Thursday evening, 25 September, the EC/RO collected information on water conditions from amateurs in various locations. This information was called in to the CD office.

Friday dawned like the past few days, more rain. At approximately 4:45 a.m. the phone rang. It was the CD office requesting amateur communications be set up at Big Flats and Erin. While the EC's XYL, Grace Henrich, WA2TCZ, got equipment ready and started to the CD office, the EC was telephoning area amateurs and making assignments.

Later K2DNN was called at work to report to the CD office. From there he contacted other operators as the need for communications spread. Finally amateur stations were set up at the Red Cross Chapter House, Big Flats Fire Station, the Methodist and Baptist churches in Big Flats (evacuation cen-

ters), Erin Fire Station (later moved to Sing Sing School), Chemung Fire Station, Wellsburg and Broadway Schools and Elmira Free Academy, as well as both hospitals and the CD office. A mobile unit was held in reserve to be sent where needed till a portable unit could be moved in. Two mobiles were roving in Tioga and Bradford Counties in Pennsylvania, sending in condition reports.

Reports on water conditions were received via Amateur Radio at the CD office throughout the day from Robert Beecher, K2UOQ; Dolores Beecher, WA2IBA; and Brian Tyndell, WA2OON of Beaver Dams; William Campbell, K3PKL, and Kathryn Campbell, K3QEY, of Westfield, PA; William Buckingham, WA3LIL, of Osceola-Lawrenceville, PA; Wycoff Sherman, W2YIF, of Addison, NY; Benjamin Frommer, W2RQF, Moravia, NY; Lawrence Brown, WA3CSP, Tioga Junction, PA; David Slade, K2SJB, Ithaca, NY; John LaBarre, K3HSK, Rome, PA; Carl Young, W2QXX, Binghamton, NY; Terry Wenner, W2GTS, Owego; Raymond Reynolds, WA2TPC, Trumansburg; William Klepser, WA2QGM, Big Flats; Earl Beecher, WB2ABC, Pine Valley; William Jones, WB2QDX, Campbell; Derek Brook, WB2ZVQ, Breesport; Wilson Fuller, WA2OPU, Horseheads;

Romanta Woodford, WA2HFL, Elmira; and Winifred Demonstoy, WA2GCU; Robert Russo, WB2BMM; Thomas Cook, WA2BPE; Peter Radding, W2DIQ; Larry Carpenter, WB2PMI; James Gray, W2EUQ; Warren Colegrove, K2BFN; Philip Ingraham, W2OSY; Whiting Lightfoot, WA2TPS; and David Schmarder, WB2TCY all of the Corning-Painted Post-Gang Mills area.

Operating the net control station at the CD office were K2DNN and WA2TCZ assisted by Arthur Lutz, WA2SMQ; William Thomas, WA2VBY; and Lawrence Chase, WA2YQO. Manning portable stations in Chemung County were Samuel Semel, W2SHE; Dransfield Hamilton, W2HQY; Shirley Davis, W2GOR; Richard Buchanan, W2BPP; Lyman Howe, W2TJH; Ralph Vosburgh, K2IBG; Frank Thomas, K2JWS; Birdine Blovsky, WA2SMN; WA2OVT; William Stoker, K2PQZ; WA2YKM; Richard Rohrer, WB2DHR; and Jack Slocum, WB2FXX. Leroy Batty, WA2FJJ and Bryant Hozempa, WB2LVW operated mobile at sand boils in the dikes. Jerry Falleta, WA2DWN and Jeffrey Strailey, WA2LUC, employed by local radio stations, sent in reports as they made their rounds getting news for their radio programs. K3CKB cruised in northern Tioga County, PA and Allen Shanks, WA3EBG did the same in northern Bradford County, PA, both sending in condition reports. John Mulligan, W2RTW, an Air Force MARS station reported an open circuit to Griffis AF Base if needed.

Also heard on the air were Douglas Colborn, WB2OCO; Richard Demyan, WA2BOJ; William Blovsky, W2ZSB; and Lewis Lutz, WA2SMM; and WA3FWQ.

## Country Cousins

HARRY HODGES, WA6YOO

The Country Cousins' motto is "Service and help to mankind, when in need call a Country Cousin."

Every night at 9:00 p.m. (PDT or PST) on or near 3970 kHz you will hear the QST QST of the net control of the Western Country Cousins.

Some 950 amateurs from San Diego to Alaska and East to Pittsburg make up the membership of this ten year old fraternal group. As indicated by its motto, net members do what they can to aid those in need, provide solace for the sick and other charitable acts as they are required.

Should a fellow cousin become sick in the home or hospital his illness is brought to the attention of the other members and he is swamped with QSLs or cards to cheer him up. If a community organization is seeking help for a charity (a yearly used eyeglass drive for example) this is brought up on net by one of the project officers.

Members get together at an annual picnic held somewhere along the West Coast. Amateurs (please turn to page 46)

The Worldradio News, December 1975

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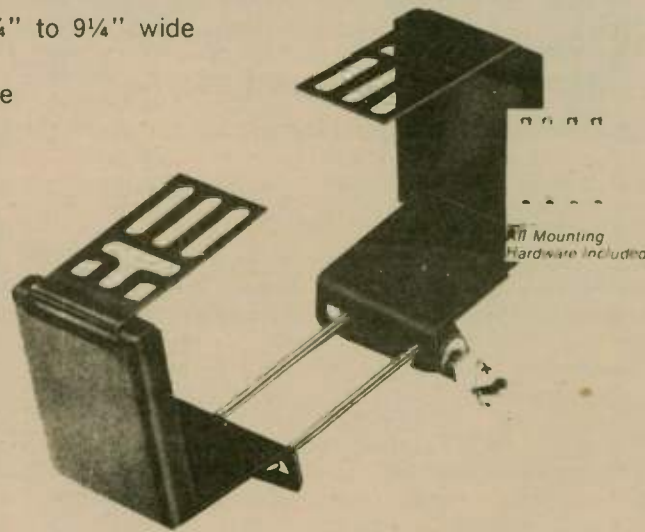
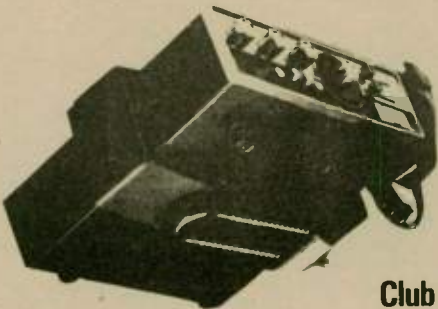
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Students in West Pasco, FL high school show interest when a Gulf Coast Amateur Radio Club member tunes in a TI2 on 20 meters during a demonstration in their classroom. [Photo by Dan Jenkins, WB4TZR]

## Pupils tour world via Amateur Radio network

Junior high school pupils here are taking field trips around the world via an Amateur Radio global network.

Amateur Radio operators thousands of miles away give the class lessons about the climate, topography and life-styles of their countries.

"We're probably the only class ever to talk to someone who lives down the street from where Christopher Columbus was buried," said one pupil in the civics and social studies classes at Union Park Junior High School.

Since last summer, when teacher Lou Hoekstra installed \$1,000 worth of shortwave radio equipment in Room 136, the 186 pupils have been traveling electronically to Africa, Europe, South America and the Far East, collecting information about different cultures and governments.

"It's unbelievable how excited the students are about learning history and civics, two subjects that most of them once considered the most boring of all," Hoekstra said.

"But the unique thing is how students learn a little electronics, science, language and a lot of other things through our history and civics inquiries," he adds.

To insure contact with the country the classes are studying, Hoekstra usually radios several

days in advance to make sure someone who can answer history or civics questions will be on the air when the class calls.

By finding out what is going on in other countries, the pupils say they can determine whether their preconceived ideas are correct.

"We also get to find out what people in other countries think of the United States," said Debbie Richardson. "And the best part is that the comments aren't censored."

While studying the Panama Canal, an eighth grade history class called Amateur Radio Operators in the Canal Zone and Nicaragua.

When Hurricane Fifi struck Honduras in September, the pupils aided in sending a rescue message requesting supplies for the devastated area. "It teaches you more than you could ever learn from the textbook," one pupil said.

*Miami Herald*

## Amateur Radio in the classroom

LENORE JENSEN, W6NAZ

On Tuesday, 4 November at 2 p.m., students of the sixth grade in Artesia, CA, were scheduled to communicate directly with a class on Midway Island by Amateur Radio to compare marine conditions of the tropics with those of Southern California.

Teacher Bob Wallar planned to operate the amateur station WB6QNR in the classroom to allow students to ask questions by radio. More than a hundred students of social studies and sciences were to learn firsthand of conditions overseas.

Their school, Luther Burbank Elementary of the ABC Unified School District, has an unusually large aquarium which has enabled the young people to study marine life.

Future plans for the use of the amateur radio station for the benefit of classes include a Bicentennial conversation with Senator Barry Goldwater in Washington and another session with scientists in Anarctica.

The school is located at 17711 Roseton Avenue, Artesia. (Bob Wallar's classroom number: 924-4060, 7 to 2:30 p.m., residence: 429-8275.

**QSL Managers:** Please send info about who you manage QSLs for

## Free tutoring

Gary Feldman, WA2UGO, Advanced class licensee, will gladly tutor up-and-coming Novices-to-be or will give any exams in his area.

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## On-the-air class

BERNITA WALLAR, WA6DJK

Louis A. Cartwright, K6SQ, 4937 Kendell St., San Diego, CA is doing a real service to the Amateur Radio field.

Last year he and friends were discussing radio. This discussion developed into a radio teaching class for the Advanced and Extra class licenses using questions from the license manual.

Louis is an excellent teacher and contributed a great deal to a number of us who have our Advance licenses now.

The teaching has resumed this fall on 3963, or thereabouts, 7:00-8:00 a.m., Monday-Friday.

## Club aids Mayor's study

On 15 October, 1975, Gary Maples, W0OXT, and John Gebuhr, WB0CMC, accompanied by Dick Eilers, W0YZV, presented the story of the Ak-Sen-Ben Radio Club (Omaha, NE) activities for the record of the Mayor's Tornado Study Committee.

In addition to making the report and commenting on our abilities to provide emergency communications, a very brief on-the-air demonstration was held wherein several stations did check in, including the Lincoln Emergency Coordinator.

## GARS aid Gator fans

O.L. JOINER, JR, WA4YPY

For the second year the Gainesville (FL) Amateur Radio Society is furnishing com-

munications for the emergency medical team at all University of Florida home football games.

This operation is being spearheaded by Walt Johnston, W4TKE, radio officer for Alachua County Civil Defense, and Jack Spencer, WA4UFO, emergency coordinator for Alachua County.

Others taking part in this volunteer effort include Steve Padgett, WB4GRK, and XYL Becky; Bob Lightner, WA4PWF, and XYL Jenny; Dick Peterson, W4KFA; Hank Hinkley, WA4EUY; Sonny Johnson, WB4KBL; Earl Tonjes, W4NG; and Mitch Hudson, W4UUW (Alachua County CD Director). Ed (Sparks) Slimak, W4KZL, (broadcast engineer for WRUF, the flagship station of the Fighting Gators) and John Witherspoon, W4GUJ, (who handles the PA gear on the field) are also available for participation if needed. Non-amateurs such as Mike Jamerson are also involved in this public service effort.

Spotters in the west stands of the field alert communicators on the east side by waving handkerchiefs, and vice versa. Ushers also help as spotters by standing in the access ramps and waving handkerchiefs.

The communicator radios the emergency medical team who sends a runner in the event of accidents or illnesses. This same method of communications is used as a means of crowd control whereby the police can be summoned if necessary.

Spotters and communicators stand by after the game until the crowd disperses, giving valuable assistance in crowd control. Communications are carried on simplex channels with the repeater standing by for phone calls, or other service as needed.

Other GARS public service activities this year have included providing communications for the Special Olympics for mentally retarded children, CD, SET (which was a mock tornado), and participation by members as reserve deputies learning and assisting in police communications. Dick Peterson, W4KFA, and Bob Fuller, W4SKM, among others, have been stalwarts in the Sheriff Communications Reserve Program.

GARS works closely with CD and our 22/82 repeater's primary function remains emergency communications.

—Florida Skip

## MARAC

The Mobile Amateur Radio Awards Club, Inc. acts as a clearing house for county hunter information; sponsors several mobile awards and a county hunters contest; publishes a monthly newsletter for members containing award information, county hunting expeditions, members' letters, new member listings, address changes, QSL information, etc.

Dues are \$4.00 per year (includes NL). For further information send a business size SASE with 30c postage to WA4BMC, P.O. Box 6811 — Southboro Stn., West Palm Beach, FL 33405.

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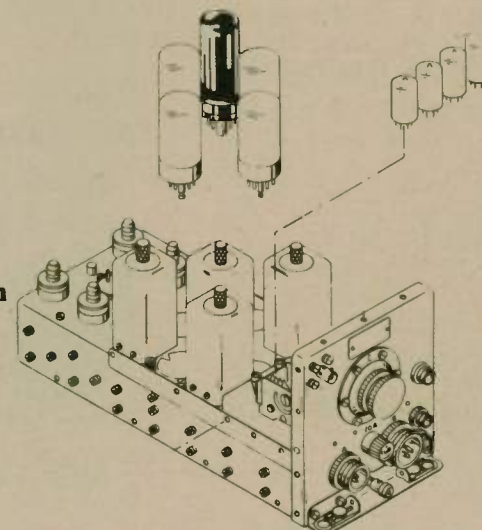
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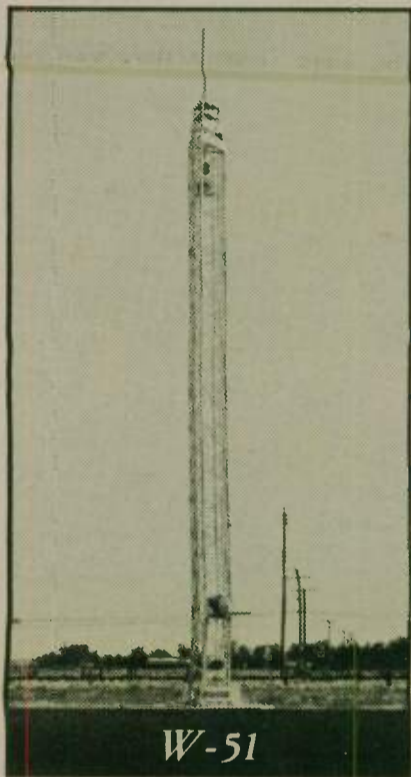
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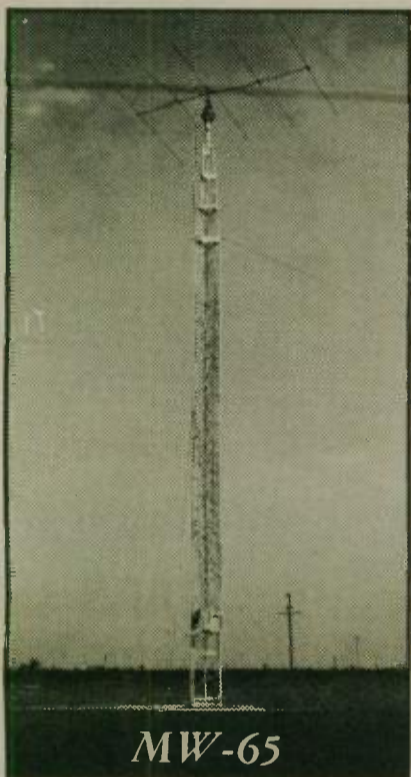
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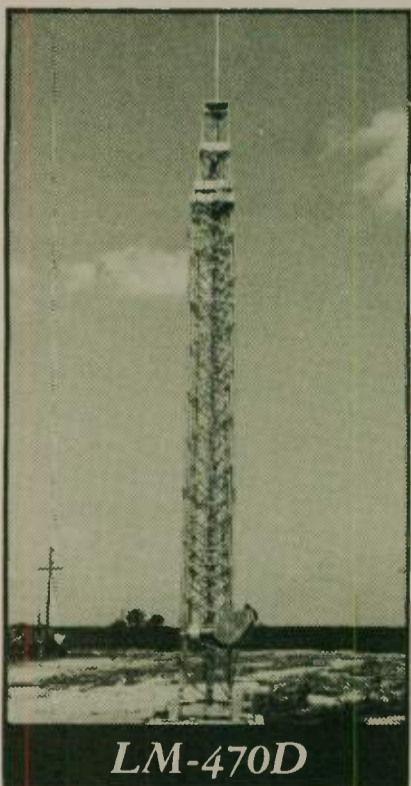
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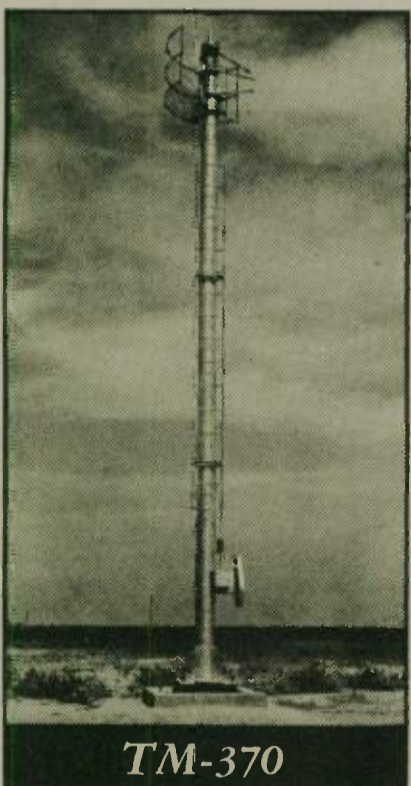
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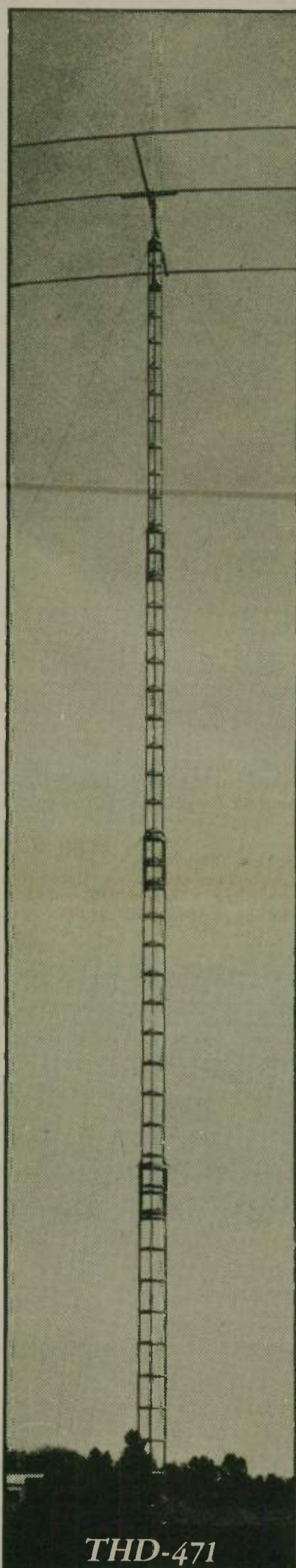
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# Tri-Ex Tower



Amateurs do anything! Well, almost. Here the Pensacola "Parachute Mobile" group rests up before a jump. Left to right: Bill Craft, WB4MUS; Jerry, WA4AYO; Mike (no call-yet); Dale Sewell, WB4JHQ; Bill Wigton, WA4MYK. Notice what's in MYK's left hand. [Photo by Don Wright, WA4LBM]

## The Knights of the Kilocycle

Phil McMasters, W4BCZ

The Knights of the Kilocycle, oldest radiophone net, will celebrate their Semi-centennial on Christmas Day 1975 as part of the Florida Bi-centennial celebration.

A roundtable participated in by Fred Frick, W4BN; Orville Cheatham, W4DU (Silent Key) (now call of Jacksonville Radio Club memorial); Pat Patterson, W4WS (SK); Anton Litschauer, W4ACZ/W4JQ; and Dr. H. H. Murphy, W4AXY, was decided to be a weekly thing each Sunday morning and was given the name of Knights of the Kilocycle. The Net Control was called the Master Oscillator, the alternate is the

Buffer Doubler and the Recorder-Secretary is the Speech Amplifier.

In 1950 it was decided that a more formal organization was desirable, by laws were adopted and membership certificates and numbers were given to those who checked into the net ten times without missing a Sunday morning. The most faithful were called first on the roll call, and anyone missing a session was dropped and had to call in at the end of the line and start over. Anton Litschauer, W4ACZ, now also W4JQ, stayed on top so long that a by law was adopted that limited first place to ten times.

The net starts with an invocation by the Chaplain, Mac

Britton, W4DVR, or alternate, Phil McMasters, W4BCZ, the roll call of those who checked in the Sunday morning of the past week and those to be added at the bottom. Then a list of the birthdays and anniversaries of members is read and ARRL bulletins if any, follow.

The Master Oscillator gives the meeting number and time of the first "go round", which is limited to two minutes. At the end late stations are given a chance to call in, or those wishing to become members. The second "go" is limited to three minutes, as many drop out after roll call or first "go". If a member does not stay for first "go" three times they must start over again at the bottom of the roll.

Offices are now held only three months between elections and the June 1975 vote changed membership from ten to five call ins for qualifications for the certificate and number.

## Multiple Sclerosis

BOB LOCKWOOD, WA0DHU

At 9:00 a.m. on Sunday, 28 September, 99 bike riders in Omaha, NE headed from Boys Town to Linoma Beach and back in the 1975 50-mile Bike-a-Thon for Multiple Sclerosis. The Ak-Sar-Ben Radio Club AREC again supplied communications for this event.

We expanded our exercise this year by placing portable units at Douglas and Sarpy Sheriffs' headquarters and the Highway Patrol. This action linked these three agencies together for more effective coverage of the route.

Portable units were also set up

at WOW, KOIL and KLNG radio stations to supply information to the media on the progress of the Bike-a-Thon.

Following is a list of those participating in this exercise: NCS Lynn Blesh, WA0DH and Jack, K0UDK; Chet Doll, K0PTG; Earl Sorensen, WA0TMG; Lloyd McElhaney, K0DKM; Butch Burks, WB0NGD; Don, WB0PGS; Bill Dumbleton, WB0NPS; Ed Eichler, WB0CBC; John Gebuhr, WB0CMC; Chuck Hoffman, WB0NVL; LeRoy Hilt, WB0MSN; Bob Lockwood, WA0DHU; Jon Tote, WB0MNK; Mike Wilczynski, WB0BMV; Marty Griffin, WA0GEH; Bill Forbis, WB0IKL; Larry Donnelly, W0KCK; John, WB0PEX; Jim, WB0QGV; Cecil de Witt, W0RMB; John, WB0OSZ; and Don, WB0PGS.

The Net Control Station did an outstanding job directing the net activities and those assigned handled their jobs like professional communicators. An outstanding net operation was the result. Our thanks goes to all these amateurs for a job well done.

*Hum Hum, Ak-Sar-Ben Radio Club*

## MARA members aid walk for mankind

Project Concern, an organization dedicated to helping provide medical care for the impoverished both here and abroad, held a Walk-a-Thon on Saturday, 18 October in Madison, WI.

It started about 7:00 a.m. from Vilas Park and the last walkers hobbled in about 6:00 p.m. About 1500 walkers participated in the 25-mile trek. Several Madison Area Repeater Association (MARA) members with handie-talkies and mobile rigs kept communications with the various checkpoints and headquarters going at top efficiency.

The event, which was co-sponsored by the Madison Jaycees and Jayettes, was a success and the people with

Project Concern along with the Jaycees praised the Amateur Radio crew for its efficient and professional handling of necessary traffic — another public service provided by MARA and WR9ABT.

Those participating in communications were Joseph Androski, WA9QGS; Clyde Downing, W9HSY; Cliff Dawson, WB9DKS; Morris Wickliffe, WB9LCD; Ruth Lawson, WB9MOY; James Aspinwall, WB9GVF; Gary Kassner, WA9NKW; Robert Schmidt, WA9JDR; David Martin, WB9IFG; Alfred Lewis, WB9JLO; Curtis Peters, WB9HLS; and WB9QVV.

## Bike-a-thon a success

Jacksonville, FL radio amateurs were asked to provide communications for the annual American Cancer Society Bike-A-Thon held 12 October.

Area amateurs rose to meet the challenge with around 35 local operators donating their time and doing a great job of coordinating communications between the Cancer Society HQ on Hendricks Ave. and the 25 checkpoints throughout Duval County.

Members of the Florida Crown REACT team pitched in to fill in the gaps and effective communications was the keyword.

CB communications became very difficult around noon as the band became useless except for very short distances.

By using the Jax RANGE repeater, WR4AAF, amateurs were able to communicate without difficulty using both car mobile units and handie-talkies.

A lot of amateurs helped, including: Leon Stem, WB4DAD; Oscar Wolfbrandt, K4DDY; Ed Wilson, WB8GHT; Doug Jacques, WA4QIM; Bob Hawkins, W4UZB; John Reynolds, WB4GCQ; John Parker, K4OAC; Lonnie Roberts, KH6FMD; Robert Kerr, WA8OFU; K4NBN; Charles Anderson, W4HCY; and many many others.

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# The American Radio Relay League

J.A. "Doc" Gmelin, W6ZRJ  
Director, Pacific Division, ARRL

Number nine in a series

The town of Brookdale, California lies about halfway between Ben Lomond and Boulder Creek in the Santa Cruz Mountains north of Santa Cruz. In this town is a unique restaurant called Brookdale Lodge which was famous because a real brook runs right through the middle of the dining room.

Personally I have many pleasant memories of great meals and good times during years now long past for it was a natural setting. I say was because, unfortunately, this place has been closed for over 15 years due to financial setbacks and litigation over ownership.

That the closing of this establishment was a loss to the tiny community where it is located, to the area around and indeed to the many visitors from around the world who once came to see this attraction, cannot be denied.

All this illustrates that when good things are gone it is a loss to everyone, and this is important to us when any radio club in any town dies. Amateur Radio clubs, ham clubs if you will, are the very foundation on which our formal organization in Amateur Radio is built.

This article in the series on the American Radio Relay League is in part the story of one such radio club that died, the Monterey Bay Radio Club, which was headquartered in Salinas, California, in the heart of Steinbeck country.

Out of respect for the many

fine members who were active in the club we will not concern ourselves with personalities or the reasons that the club is no longer active. Many such clubs go through periods of complete inactivity. We only know that the dormancy of this club is a loss to all of us just as illustrated above.

Again, I have many very pleasant memories of visiting this fine club as a guest speaker, or on an official SCM visit or just for fellowship. The club meetings were held on the outskirts of Salinas in a pleasant location. The ride from San Jose to Salinas on either one of two routes is through some of the best of scenic California. Every meeting that I attended had 40 to 80 enthusiastic members and guests present and the club had many fine programs going in many areas of Amateur Radio.

What does amateur radio lose in the death of such an active club? First of course is the loss to the amateurs in the area of the clubs activity in fellowship, in helping one another in mutual aid and, more important, in working together to better Amateur Radio.

And then there is the loss to the community itself because there is much less chance for organized Amateur Radio Service such as Red Cross and Civil Defense activity. And because there is no active club, in all probability there will be no organized program for bringing in new amateurs through code and theory courses taught by the members of the local club.

Yes, radio clubs are very important to the future of Amateur Radio. The League many years ago, in recognition of this fact, established the ARRL Affiliated Club Program bringing local radio clubs into the collective organizational structure of the League.

To affiliate clubs need only make application to the League showing by their constitution and by-laws that the interests of their club and the interests of the League are the same, at least in general terms.

Such application will be submitted to the Executive Committee and if the club making the application is found to be a bona fide radio club having at least 51% membership in the League, then the application will be approved and that club will be affiliated. There are at present over 1,200 such clubs in the United States and Canada.

And what does this mean the affiliated club must now do? Why, just continue to support the interests of Amateur Radio and maintain the 51% membership. The League in no way controls the internal workings of the local club nor do League officials in any capacity have any authority over such clubs.

What benefits does affiliation bring to the club? Of course it brings an official connection between that club and the League which represents the bulk of active amateurs and a fellowship with clubs throughout the United States and Canada.

While regular local radio clubs

make up the bulk of those that are affiliated, there is also a category for high school and college radio clubs who wish to affiliate.

In the case of these clubs only one member need be a member of the League since many members may be starting out and not have ready funds for League membership.

Also affiliated recently were radio nets covering wide areas such as WCARS and other nets of this type. Again, the League does not in any way control such nets which affiliate and these nets are not a part of the National Traffic System which is operated and controlled by the League's field organization.

While national recognition is perhaps the major benefit of affiliation, the League also offers a number of other programs for clubs. From time to time club bulletins are sent to all affiliated clubs by Headquarters. These newsletters give clubs tips on how to bring in new members, how to organize projects and programs and how to take part in a number of nationwide club programs.

One of the most important activities of a radio club is the good public relations for Amateur Radio that such a club can generate through active and positive programs in Amateur Radio.

In major problems that amateurs face with local governments over such matters as tower heights and TVI, it is the local radio club members who can best build a good public

image so necessary to win community support. While amateurs may have "rights", it is this good public support that will win the cases of tower height and local interference problems.

The local radio club is also the base upon which the League builds its leadership. While local club leaders are not League Officials, it is from the ranks of these club leaders that the SCMs, SECs and other LOs most often come.

It is the local radio club, or in many cases several clubs combined into a club council, who actually organize our divisional and national ARRL conventions since the League cannot be an actual legal participant in such events. Many would like to see the League organize a corporate structure for such events on a regional basis but this is not legally possible. Thus it is again the local club which is the base upon which we build our League conventions.

In the Pacific Division affiliation with the League gives radio clubs an added voice in League affairs since by tradition the Director holds a meeting of representatives of such clubs and the League Officials in the Division.

While the non-affiliated clubs in the Division as well as radio nets are invited to participate, only the affiliated clubs vote and thus club affiliation gives the clubs of the Pacific Division some say in what the Director (please turn to page 32)

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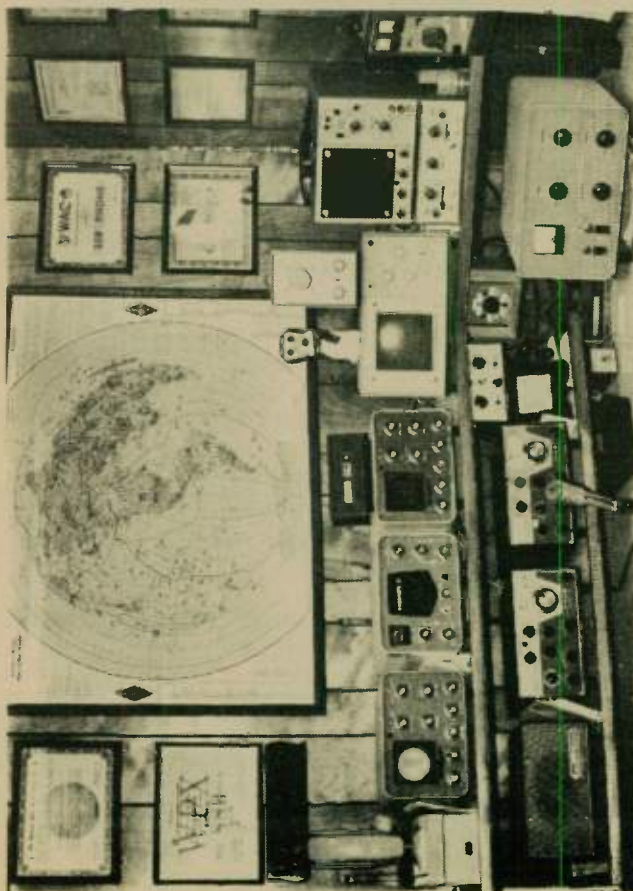
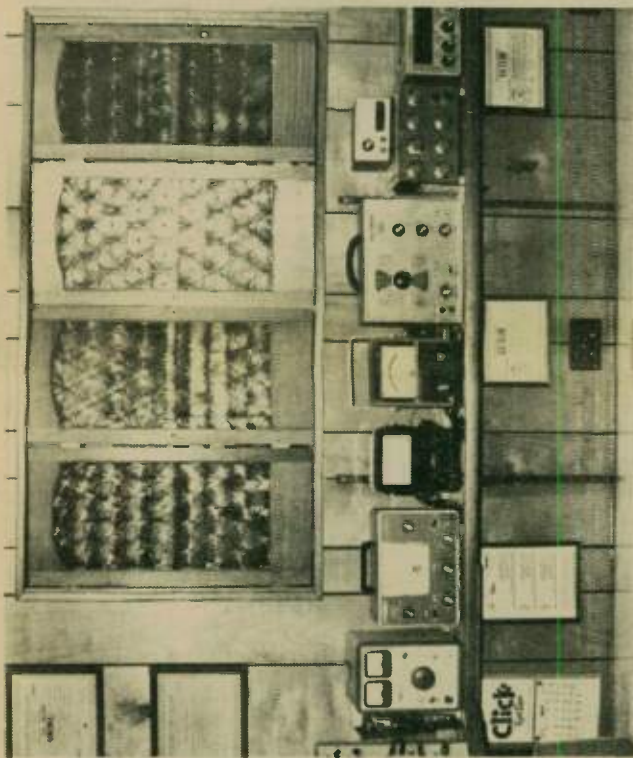
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# STATION APPEARANCE



It is with great pleasure that we grace this page with the outstanding station of Leon Milcarek, WB2DLF, of Millville, NJ.

The usual practice is to award a one-year subscription to this newspaper to those selected for the Station Appearance Award.

However, this one gets a two-year extension of his subscription. The reason for the extra prize is two-fold — the merit of the station and the fact that the pictures were sent in by Leon's wife!

There may be a lesson in there somewhere. Possibly more of the attitudes of the wives might be different if our stations didn't look like something put together by Jack the Spider.

Looking over Leon's station one thing is obvious. He is proud of Amateur Radio. If a neighbor should visit Leon and see that station you can bet the neighbor would think that Amateur Radio is something pretty terrific. Leon's setup certainly does a lot of good for the "image" of Amateur Radio.

We are noticing quite a phenomenon in that the stations that win our monthly award all seem to have monthly spots. It is obvious that they have real concern about a clean signal as well as a neat station.

Leon is the RACES Radio Officer for Millville, NJ. One of his main interests is the Civil Defense aspects of Amateur Radio.

The purpose of this series of Station Appearance Award features is to, hopefully, inspire more operators to upgrade the visual quality of their stations. You must admit that the certificates in their frames and neatly hung do give a certain amount of "class" to the appearance of this actual "communications center".

Leon has certainly taken his operation out of the "shack" category. Have you ever wondered how the term "shack" came into being? Here's the answer. When the laws came into being that required that radio be on ships (for safety), the ships had already been built. So they added a little tin room on the ship. It was indeed a "shack". But that day is gone and so should be the term "shack".

Stations like Leon's are the ones that elevate the status of Amateur Radio in the eyes of our neighbors. And, in these days of TVI, RFI, tower restriction laws, etc., we need all the status elevation we can get.

A tip of the Worldradio hat to Leon James Milcarek, WB2DLF, and to his XYL.

Will we be able to print the pictures of your station next?

## Clubs

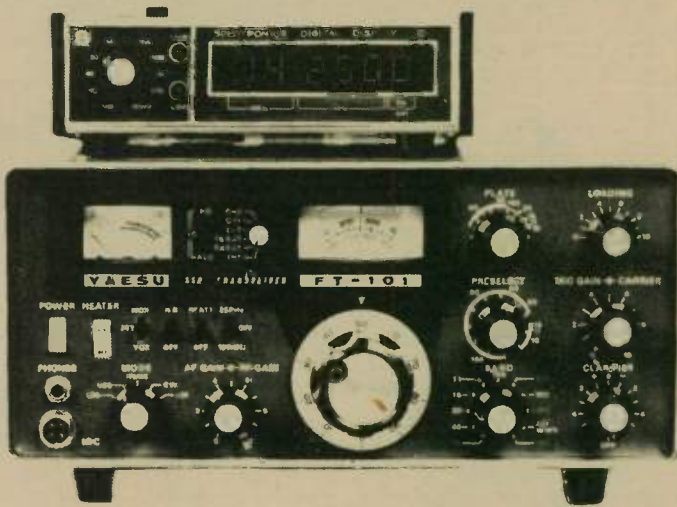
(continued from page 40)

the club play in the community. They are equally pleased with the positive response from the public to that role.

Other club officers include James Collinworth, WB2EDT, Vice President; Robert Phelps, WB2DPT, Secretary; Leonard Gessin, WA2ZNC, Treasurer.

For further information, contact Gene Molter, WB2-BAM, 170 Biltmore Drive, Irondequoit, New York 14617, telephone 716-342-6321.

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# Israel Radio



Efie, 4Z4NTI



Dave Schlacht, WA2KGY/4X

(continued from page 6)

electricity in the tents, and thus, no way to get on the air!

A quick scouting expedition around the camp showed me that only a few small huts and the kitchen had electricity. The huts were lived in by the permanent staff. One hut, however, was used as an infirmary. I slowly resigned myself to being off the air for a while. However, after the first day of work under that hot sun I had second thoughts.

Shortly thereafter the camp doctor, convinced that I had sunstroke, ordered me to the infirmary for three days. Within the hour WB4FDT/4X was back in business with a 60-foot-long wire to a telephone pole, swatting out 15-meter QSO's. Since my meals were served to me in bed, about the only time I left the rig, and looked sick, was when some of my colleagues would drop by to cheer me up!

During one of those days, I was surprised to hear some activity on 40 meters. Efie, 4Z4NTI; Uri, 4Z4RJ; and 4X4RC were in a three-way roundtable. I broke in on CW and told them the QTH. It turned out that they were all located in Beersheva and their first question was, "What are you doing now? Can we come over?" Within the hour a small Volkswagen came chugging up to the camp with its driver pounding out a CQ on its horn.

We had a great eyeball. Uri, 4Z4RJ, had even visited the United States. Dave, WA2KGY/4X, had told me that the annual meeting of the Israeli Amateur Radio Club (IARC) was coming up soon, so I asked them if they were going and if I could have a ride. It turned out that the meeting was that coming Monday night and all three were planning to go and, yes, there was always room for one more.

The IARC Meeting was much like any other Amateur Radio club meeting, only this club consisted of every amateur in the country! Almost 250 of the country's 700 amateurs attended. The meeting consisted of reports concerning the state of Amateur Radio in the country, appeals for more amateurs to get on the OSCAR satellite and to get on 160 meters. There were the usual arguments over increasing dues and awards were

given out for DX contests. The 4X4 QSL manager was there with thousands of QSLs for Israeli amateurs. Efie and Uri refused to let me help pay for gas (it costs over \$1.75 a gallon) and even treated me to pizza.

A few quick comments concerning Amateur Radio in Israel. There are three classes of Amateur licenses, each renewable. The Novice class is called Class "C". The power limit is 10 watts CW, with 80, 40, and 15 meter privileges only. The Class "B" license requires a 10 wpm CW test with an oral and a written examination. It is roughly equivalent to our General since it gives all amateur frequencies, with a 300-watt limit. The highest class, Class "A", requires an 18 wpm CW test, oral and written examinations, and enables the holder a power limit of 1,000 watts with phone-patch privileges. I understand that amateur examinations are given only twice a year and the passing rate is only around 35%. Almost every high school in Israel has an amateur station and it is here that most future Israeli amateurs become acquainted with Amateur Radio.

It is rather difficult for the average Israeli to get good



Israel Amateur Radio Club banner

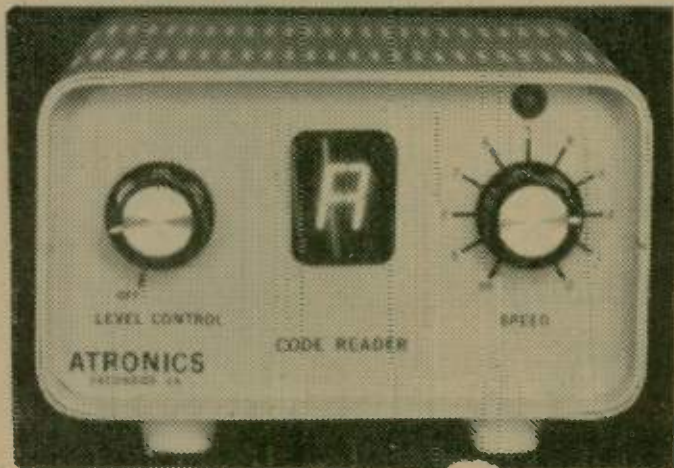
amateur equipment. For example, if a 4X4 wanted to buy a new Heathkit he must change his Israeli currency into American dollars. Since Israeli currency is rather soft, and is frequently devalued, it is very difficult to get dollars. Often-times the Israeli may pay well above the official exchange rate for the dollars. Then, when the equipment arrives, he must pay a 50% duty on it. Since Israelis generally make much less money than their American counterparts very few can afford good equipment. It is interesting to note that the 50% duty must be paid even if the gear is used and is being donated to an Israeli amateur.

I became fast friends with Uri (please turn to page 30)



Sam Goldwasser, WA3TUP/4X

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## EDITOR'S LOG *Armond Noble, W6AJY* *Editor, Worldradio*

Here is your invitation to the Worldradio open house, Christmas party and 41st birthday party of your editor.

The location is the site of our new offices, 2120 28th St., Sacramento, CA. It's the barn red building between "U" and "V" streets on 28th St.

The dates are Friday night, 19 Dec., Saturday, 20 Dec., and Sunday, 21 Dec. We spread it out so as to accommodate as many people as possible. We knew that the time of year would cause some conflicts with other holiday plans.

We are throwing the bash so we can meet you, you can meet us, and so you can meet each other. We think our readers are the greatest bunch of amateurs there are and we think you would enjoy the company of others like yourself.

We've already heard from "Mr. Gung-Ho," Chuck Towns, K6LFH, who will be coming from the Bay Area. (We've got some terrific ideas of his slated for the January issue.) Chuck is going to bring down some OSCAR literature that we'll pass out. Don't stand too close to Chuck; sparks fly off of him. You may find yourself getting

some of his energy induced and dash out to do something great in Amateur Radio. He is the driving force behind many projects. You'll read about them here.

We also invite a representative of the ARRL, AREC, RACES, WCARS, WPSS, ISSB, etc., local radio clubs, etc., to leave literature for people to pick up.

When you get here, don't expect to see the Taj Mahal. We put our money where it belongs, in the publication, rather than in super fancy digs.

We hope to have a station set up here in time so as to talk-in any stations coming from other points. We've got to get some antennas on the roof, and we've just been super-busy in getting this issue together. Look for us on WCARS and WPSS frequencies and we'll scan the common 2-meter frequencies. Call will be W6AJY/6.

Refreshments will be served. To add to the festivities we'll also have some door prizes.

Speaking of parties, and what we call the Christmas spirit...what is truly the Christmas spirit and what is it really supposed to stand for?

If one would look at the actual

philosophy of what we are celebrating, what conclusions would you come to? It really boils down to one's relationships with others. In fact, the same philosophy is what all the other major religions talk about. Buddhism, for example, is most concerned about how people interact with others.

Even away from the organized religions, look at the writings of the learned philosophers. All they are really talking about is how people get along with other people, and with themselves.

What we are getting at is, whatever one's particular beliefs may be, it all boils down to one thing.

And, if one should take seriously the teachings of the different faiths, and want to really practice what is taught, Amateur Radio could be a great vehicle.

Amateur Radio can be an outlet for whatever philosophical spirit you may possess. Does not the helping of others in emergencies go along with the teachings of whatever faith you may follow?

Does not helping with the local public service projects that may assist the fund raisings

(such as the walk-a-thons) come under the heading of "Christian Charity"?

With the Christmas season here is it not a time to reflect on what the spirit of it really means?

Should it be a time when one does some deep searching into what direction he is really going?

What does it all mean? Each different person will of course come up with a different answer. But, the overriding answer must be our attitudes toward others. The Golden Rule is a quick condensation of all the wisdom of the ages.

How could one practice what is preached? Certainly a most unselfish act would be to give one night a week to the teaching of prospective amateurs. It would be a fine thing to share with others the greatness of Amateur Radio.

Is not the spirit of this celebration...giving? As we reflect on our lives should we have more of the spirit of giving to others?

May Santa bring us all a nice new rig or tower. But, most important of all, may he bring us an outlook that truly reflects the Spirit of Christmas

## Public service event

On Columbus Day (celebrated 13 October) Local 3 Brotherhood of Electrical Workers organized a large Bicentennial celebration at the Electchester Housing complex. Marching bands, arts and crafts, Boy Scout events, speeches and the whole "magilla" were included.

As the most active radio club in the area we were asked to set up a demonstration Amateur Radio Station. Paul Mazer, WA2HGG; Jim Jaffe, WA2VOS; and Arnie, WN2YXB, set up a complete all-band HF station on the Mall at 161st Street and Jewel Avenue. Aided by other members of the club they operated the full day and at the least made thousands of Queens (NY) residents more familiar with Amateur Radio.

—News Fuse, Hall of Science RC

## Lightning idea

If any of you have severe lightning storms (and who doesn't in Texas?), try guying your antenna with barbed wire. The jagged edge of the barbs will discharge the clouds and air around the antenna. The chance of a hit are then very small. Try it; it really works.

—NØQI, Navy MARS "Transmission Line"

# A Free Gift...



What do you do with junk equipment? Have you ever discarded equipment that just didn't do the job it was intended to do? Hams are noted for not discarding obsolete and worn out equipment; it goes to the junk box or gets traded at flea markets for something of greater use. However, the day finally comes when it becomes necessary to relegate the totally useless equipment to the burn pile.

A similar situation is presented to us in the Bible in the book of John 15:1-6. As long as we are useful to our heavenly Father we will be upgraded to become less obsolete and more useful. If the worn out equipment and junk in our ham shack had the same advantage we have as mentioned in Acts 16:31: "... Believe on the Lord Jesus Christ and thou shalt be saved . . .", the burn pile would not be necessary. "If anyone separates from me (Jesus), he is thrown away like a useless branch, withers and is gathered into a pile with all the others and burned." John 15:6.

We have such a wonderful opportunity to be removed from the pile being readied for burning and put into service for God. "Sin pays its servants: the wage is death. But God gives to those who serve him: His free gift is eternal life through Christ Jesus our Lord." Rom. 6:23. Don't find yourself on that burn pile when you have no need to be. Take advantage of this free gift now for we don't know what day the Lord is coming. Turn from your way and give yourself to Jesus and receive this free gift.

HAVE A **Blessed Christmas**  
AND BEST WISHES FOR AN ABUNDANT NEW YEAR

**MATRIC**

RD-1 • BOX 158A  
FRANKLIN, PA. 16323

Andy, Lee, Jane, Denny, Jan, Denny, Mary Jo and Clarissa

# TEN-TEC AT M-TRON

## TOMORROW'S TRANSCEIVER...TODAY!

The TRITON IV brings to Amateur Radio the inherent advantages of solid-state technology. High performance and convenience set new standards of excellence.

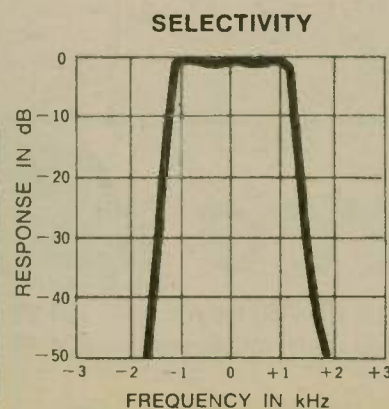
The receiver is a happy combination of low noise, high sensitivity and selectivity. Low audio distortion, less than 2%, provides cleanliness and reduces inter-modulation products. The internal speaker is compression loaded which enhances efficiency and speech quality.

The transmitting section requires no "tune-up". But best of all, it is the smooth, clean, articulate signal that will bring compliments from your fellow hams.

Of course, the TRITON IV has full CW break-in and an optional 150 Hz two stage CW filter for superlative CW. A pure delight to operate.

The TRITON IV is an ideal mobile rig. It is built to take rough service and vibration. The AC power supply is separate to reduce size and weight for mobile and portable work where 12VDC is available.

All in all, the TRITON IV is designed for pure operating efficiency and fun. We invite you to enjoy the benefits of modern solid state technology.



- RECEIVER SENSITIVITY 0.3  $\mu$ V  
For down under signals.
- HANDSOME APPEARANCE  
Brushed aluminum and black.
- "S"-METER AND SWR BRIDGE  
Electronically switched.
- PRE-SETABLE AUTOMATIC LEVEL CONTROL  
Optimizes output to required load.
- PLUG-IN CIRCUIT BOARDS  
For fast, easy field service.
- 25 kHz CALIBRATOR  
Pulsed for positive identification.
- CONVENIENT SIZE  
For best station layout.
- OPTIONAL VOX/AC POWER SUPPLY  
Eliminates need of anti-vox.
- BROAD WARRANTY  
Insures customer satisfaction.
- TOTAL SOLID STATE  
State-of-the-Art technology.
- INSTANT BAND CHANGE  
No transmitter tune-up.
- OFFSET RECEIVER TUNING  
Prevents "leap-frogging".
- FULL CW BREAK-IN  
For faster, more relaxed QSOs.
- EXCELLENT FREQUENCY STABILITY  
Individually compensated PTO.
- EIGHT POLE CRYSTAL I.F. FILTER  
For razor edge selectivity.
- FULL OUTPUT ON ALL BANDS  
To drive a high power linear.

### SOLID STATE HF



## Argonaut/'405' System

The Argonaut/405 System. There is nothing like it in Amateur Radio. One, it has broadband amplifiers. So changing bands is done in seconds, not minutes.

It can't be damaged by the wrong antenna — or even no antenna. Two, it is completely solid state. So the life and reliability are far greater than the old vacuum tube generation. It occupies less space with improved performance. It runs cooler with highest DC voltage 12 volts.

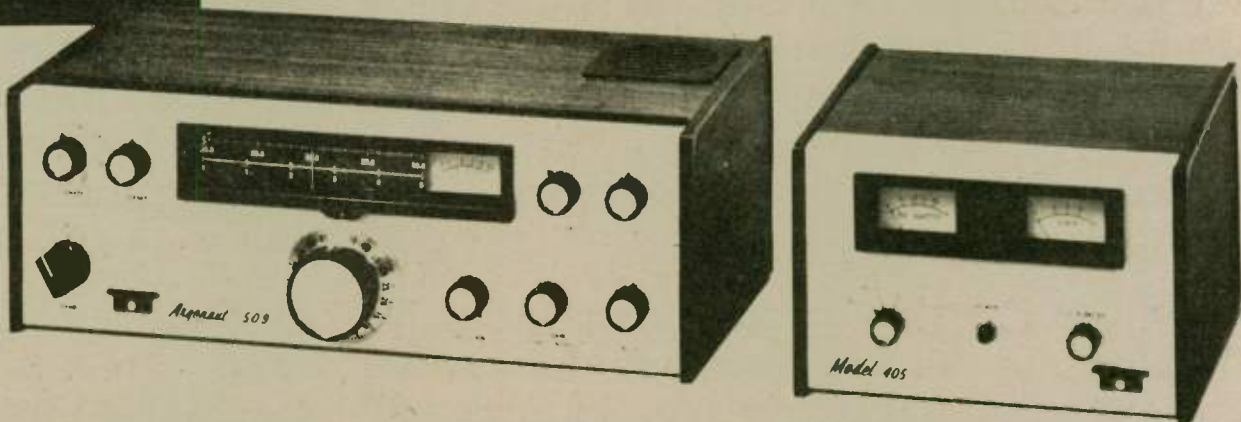
Three, it is extremely versatile — serving a broader spectrum of Ham activity.

The Argonaut, alone, is the ultimate in QRPp fun. It will operate for days with a 12 volt lantern battery. Great for traveling.

With the "405" it becomes a splendid mobile rig. Just plug into a cigarette lighter for power.

Add the "251" power supply and you have a fine home station with all the operating features you could want.

The Argonaut is a Ham Radio activity-expander for the years ahead. We invite you to enjoy it.



### THE NEW GENERATION IN AMATEUR RADIO

The TEN-TEC electronic keyers  
paddles, power supplies, vfo, mike,  
xtal calibrator, antenna tuner,  
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24-hr. 12" diameter clock  
sweep second hand, 110v - \$24.



The Ham Key  
twin lever keyer paddle \$29.95

## Instructions for Hams

- 1) Check off the items on your Christmas Wish List
- 2) Hand completed center page to XYC, YC or OM

## Instructions for Santa Claus

- 1) Circle gifts to be purchased
- 2) Mail with check to M-TRON  
(add shipping, CA residents ad tax)
- 3) Telephone (415) 763-6262 for COD,  
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### B & W coax stitches

2 position	16.50
5 position wall mount	18.95
6 position surface mount	18.95
TR switch, 117v ac or dc	16.50

### Baluns

HyGain	15.95
KE	9.95

### Cushcraft antennas

AR2	2-meter	3db	16.50
AR220	220MHz	3db	16.50
AR450	450 MHz	3db	16.50
ARX2	2-meter	6db	26.50
ARX220	220 MHz	6db	26.50
ARX450	450 MHz	6db	26.50
11-element	2-meter beam		23.95
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Touchtone pads—clean—14.95



### Omega-T noise bridges

1-100 MHz	29.95
1-300 MHz	39.95

### ARRL Handbooks

1976 edition 6.00

### Callbooks

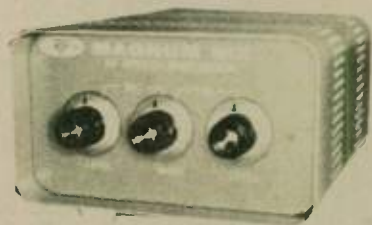
US 1976 13.95  
DX 1976 12.95

### Ameco Amateur Theory

Course 4.95

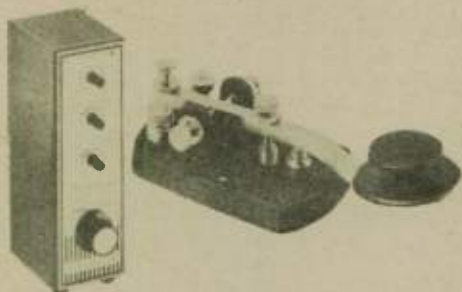
### Ameco Commercial Theory

Course 5.95



### Magnum 6 speech processor

Heathkit SB-100	SB-401
SB-101	HW-100
SB-400	HW-101
Specify model	was 150.00
	SALE 110.00
Swan 500 series	was 180.00
	SALE 138.00
Yaesu FTDX series	was 150.00
	SALE 114.00



Viking double knob key	8.20
Viking Hybrid phone patch	36.50

### CDE rotators

CD-44	was 109.95
	SALE 89.95
Ham II	was 159.95
	SALE 129.95
Curtis EK-430 Keyer	124.95
IK-440 instructokeyer	224.95



### SWR bridges

dual meter Midland 32.95

single meter Philmore 17.95

### Wattmeters/SWR bridges

Drake W4	3-30 MHz	62.00
Drake WV4	20-200 MHz	74.00
HyGain 421B	3-30 MHz	69.95
Antenna Specialists	VHF	
	25/50 watt scales	69.95
Dentron	2-30 MHz	
	dual meters	99.00



### Kriket speaker

External speaker  
specially designed for  
communications use  
14.95

### Larsen

5/8 wave 2-meter or 450	6db
mobile antenna	28.35
with gutter clip or magnet	
mount	35.00

### NPC regulated power supplies

12 volt 4 amp	reg. 49.00
	SALE 39.95
12 volt 8 amp	reg. 72.00
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### Ameco FET signal preamps

PLF for receivers	44.00
PT for transceivers	66.00

### Suporex headphones

good	5.95
better	15.35
best	28.50

### KLM 2-meter FM amps

2 watts in, 12 watts out	44.00
2 watts in, 70 watts out	149.00
10 watts in, 40 watts out	79.00

### COM

IC-22A 2-meter FM	249.00
DV-21 VFO	389.00
IC-230 2-meter FM	489.00

### Atlas

210X	649.00
matching transformer	44.00
noise blanker	48.00
AC modular ps	95.00
AC consul ps	129.00

### Newtronics

75-meter resonator	16.95
40-meter resonator	15.95
20-meter resonator	12.75
15-meter resonator	11.75
10-meter resonator	10.75
fold-over mast	15.95
HD bumper mount	24.95

### Low pass filters (2 kw pep)

Drake TV-1000	18.75
Drake TV-3300	19.75
Viking 20-001	19.50
B & W 425	32.50

### Drake

R4C receiver	549.00
T4XC transmitter	580.00
TR22C 2-meter rig	229.00
TR4C transceiver	599.00
MS4 speaker	24.95
SPR4 SW receiver	599.00
AC4 power supply	120.00
filters for R4C	.250
	.500 50.00
	1.500 ea.
noise blanker for R4C	65.00
noise blanker for TR4C	100.00

### Dentron tuners (2kw pep)

80-10 long wire	59.50
160m long wire	59.50
160-10 dipole beam	
or long wire	119.50
160m transverter	199.00

### Shure microphones

hand-held HiZ ceramic	14.10
hand-held HiZ controlled	
magnetic	16.80
hand-held miniature HiZ	
controlled magnetic	25.00

### Turner

desk mike HiZ 28.50

### KE Electronics

squeeze keyer	49.95
dual memory keyers	99.00
80-40 trap dipole w/balun	35.00
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TH6DXX	239.95
14AVQ/WB	67.00
18AVT/WB	97.00
TH3JR	144.50

# M-TRON

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Doug Murray, W6HVN (415) 763-6262 Art Mayoff, VE2AQV/W6



## DX DIGEST

Gary Stilwell, W6NJU

What constitutes a country for the purposes of the ARRL DXCC list? Country criteria is becoming quite popular these days as DXers have been on the move considering Sable and St. Paul Islands and Dry Tortuga. The DXCC country criteria is printed in the October, 1972 issue of *QST* but, for your information, we print it here.

**1. GOVERNMENT/ADMINISTRATION:** An area by reason of Government or a distinctively separate administration constitutes a separate entity.

**2. SEPARATION BY WATER:** An island, or a group of islands, not having its own distinctively separate administration, is considered as a separate entity under the following conditions:

a. Islands situated off shore from their governing or administrative area must be geographically separated by a minimum of 225 miles of open water. This point is concerned with islands off shore from the mainland only. This point is not concerned with islands which are part of an island group or are geographically located adjacent to an island group.

b. Islands forming part of an island group or which are geographically located adjacent to an island, or island group, which have a common government or administration, will be considered as separate entities provided there is at least 500 miles of open water separation between the two areas in question.

**3. SEPARATION BY FOREIGN LAND:** In the case of a country, such as that covered by Point 1, which has a common government or administration but which is geographically separated by land which is foreign to that country, if there is a complete separation of the country in question by a minimum of 75 miles of foreign land, the country is considered as two separate entities. This 75 miles of land is a requirement which is applicable to land areas only. In cases of areas made up of a chain of islands, there is no minimum requirement concerned with the separation by foreign land.

**4. UNADMINISTERED AREA:** Any area which is unadministered will not be eligible for consideration as a separate entity.

Any land area in the world, with the exception of such land that would come under Point 4, can be placed in one or more of the above categories. Where the area in question meets at least one of the points in the criteria it may be considered eligible as a separate entity, i.e., a country, for the ARRL Countries List.

Maybe we all need a further clarification or a set of criteria regarding Point 1. A great deal of discussion and a lot of questions arise now on the words 'distinctively separate administration'. It all started, of course with Kingman Reef, a United States possession 35 miles from Palmyra another United States possession. One was administered by the US Department of Defense and one by the US Department of the Interior. So, a Department with the authority to administer

within a governmental entity can qualify the possession as a DXCC country. Now come Sable and St. Paul Islands, administered by the Canadian government.

This all tends to bring up the question as to where the W6's are hiding with all the possible new countries at their doorstep? San Clemente is administered and operated by the Navy (Department of Defense) solely for naval purposes. And isn't Santa Cruz Island administered by the National Park Service — part of the Department of Interior? What fun it would be sailing out to San Clemente Island for a DX contest as a new country. By the way, the Editor of *Worldradio News* has offered the services of your DX Editor to go on the first DX-pedition so that we can have complete coverage of the historic event. What's that you say? Alcatraz Island is administered by the National Park System of the Department of the Interior. That's one Bob Thompson could personally get to without much trouble.

### DX Advisory Committee

As of mid-November there still was no official announcement from the ARRL regarding the country status of Sable and St. Paul Islands. Supposedly, ARRL had granted country status to these two islands prior to departure by the operators. There currently are rumors that these islands will not count after all and that the DX Advisory Committee had recommended against making them countries. Seems like the Advisory Committee may also be getting some blame on the decision that Dry Tortuga would not count.

The ARRL, to my knowledge, has never consulted with the DX Advisory Committee regarding decisions involving country qualification. If you will look at DXCC Rule 15 you will see the "Decisions of the ARRL Awards Committee regarding interpretation of the rules shall be final." It may be the Awards Committee but don't blame the

Advisory Committee.

Official word from ARRL is that Sable Island and St. Paul Island are official countries now added to the DXCC Country List. Announcement will be carried in January *QST* and cards will be credited beginning in February.

### Petaluma DX and Experimenter Society

Those interested in a DX Club in Northern California might find the Petaluma DX and Experimenter Society interesting. This group meets once a week, each Thursday, at the Petaluma High School. Contact Chuck Mathis, WB6UPV, 820 Crinella Drive, Petaluma, CA 94952 for more information.

### QSL Bureaus

Orm Meyer, K6QX, has taken over the World QSL Bureau. The new name is now the World QSL Bureau and new address is 111 Farm Hill Way, Los Gatos, CA 95030. Orm is currently Vice President of the Northern California DX Club. Rates are: .06 per card; 20 or more cards — .05 each; 100 or more cards — .04 per card.

Larry Ogren, W7IZH, has announced the W7IZH QSL Service. The address is 9051 East Palm Springs Place, Tucson, AZ 85730. Rates are .05 per card and Larry offers special rates to Amateur Radio Clubs.

### Basis and Purpose of Amateur Radio

Pete Hoover, W6APW, Chairman of the Basis and Purpose Committee of the FCC '79 WARC Amateur Working Group, has issued a progress report of his Committee. A copy is available from Pete if you will provide a SASE with your request.

The Task Force is requesting input from interested parties on the Basis and Purpose of Amateur Radio regarding the following four questions:

1. What is the Amateur Radio Service?

2. What has the Amateur Radio Service done to date?

3. What are the Amateur Radio Service goals for the coming 20 years?

4. What does the Amateur Radio Service need from the '79 WARC in order to achieve (3)?

While questions one and two are important, Pete is most interested in hearing from persons regarding questions three and four.

### Macao

Look for Bob Ferrero, K6AHV, (Kingman Reef fame) and Don Schliesser, W6MAV, to make an all out effort from Macao and CR9AK. The operation will be sponsored by the Northern California DX Foundation, will cover all bands and take place from December 3rd to December 7th.

Operations will be around the clock. CW will be 25 kHz inside the lower edge of the bands and SSB will be on the usual DX frequencies, above 14.190 and around 21.295. They will have a beam for the higher frequencies and dipoles for 40 and 80.

### Sable/St. Paul

The Canadian DX Association was successful in activating both Sable and St. Paul Islands. VY0A is to be now QSLed to VE3MJ (instead of VE3GMT) in order to ease the incoming QSL problem. Remember the Canadian mail strike; no mail will get through until the strike is terminated.

### Anguilla

Terry Appleton, W5GSM, will be on Anguilla, VP2E, for a couple of weeks starting December 21st. The trip should terminate on January 8th.

### Awards

The members of Club SK5IM have introduced a book, "COUNTIES IN MAPS". This book should be of great help to anyone working for the USA-CA award. The complete set of maps contains 103 pages with 50 maps

### SUPER CW FILTER

The IMPROVED CWF-2BX offers RAZOR SHARP SELECTIVITY with its 80 Hz bandwidth and extremely steep sided skirts. Even the weakest signal stands out.

Plugs into any receiver or transmitter. Drives phones or connect between receiver audio stage for full speaker operation.

- Drastically reduces all background noise
- No audible ringing
- No impedance matching
- No insertion loss
- 8 pole active filter design uses IC's
- Bandwidth: 80 Hz, 110 Hz, 180 Hz (selectable)
- Skirt rejection: at least 60 db down one octave from center frequency for 80 Hz bandwidth
- Center frequency: 750 Hz
- 9 volt transistor battery not included.

- 400 Hz or 1000 Hz center frequency available add \$3.00.

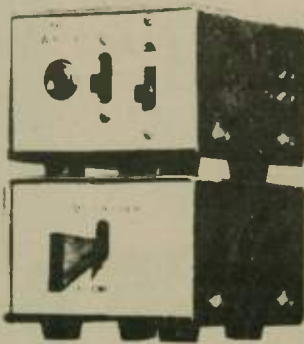
IMPROVED CWF-2BX, assembled . . . . . \$27.95

CWF-2, PC board, includes 4 position selectivity switch. . . \$18.95

CWF-2, kit . . . . . \$15.95



A STACK FOR CW MEN



4 x 3 1/4 x 2 3/16 inch

Dealer Inquiries Invited

### CMOS ELECTRONIC KEYS

Feature for feature the CMOS-440RS gives the most for your money: • State of the art design uses digital CMOS ICs and NE555 sidetone • Built-in key with adjustable contact travel • Sidetone and speaker • Adjustable tone and volume • Jack for external key • 4 position switch for TUNE, OFF, ON, SIDETONE OFF • Two output jacks: direct relay, grid block keying • Uses 4 penlight cells (not included) • Self completing dots and dashes • Jam proof spacing • Instant start with keyed time base • Perfect 3 to 1 dash to dot ratio • 6 to 60 WPM • Relay rated 250 VDC, 1 1/2 amp, 30 VA

CMOS-440RS, Deluxe . . \$39.95

Write for FREE catalog and CW filter test reports. Please include \$1.50 per unit for shipping and handling. Money back if not satisfied. One year UNCONDITIONAL guarantee.



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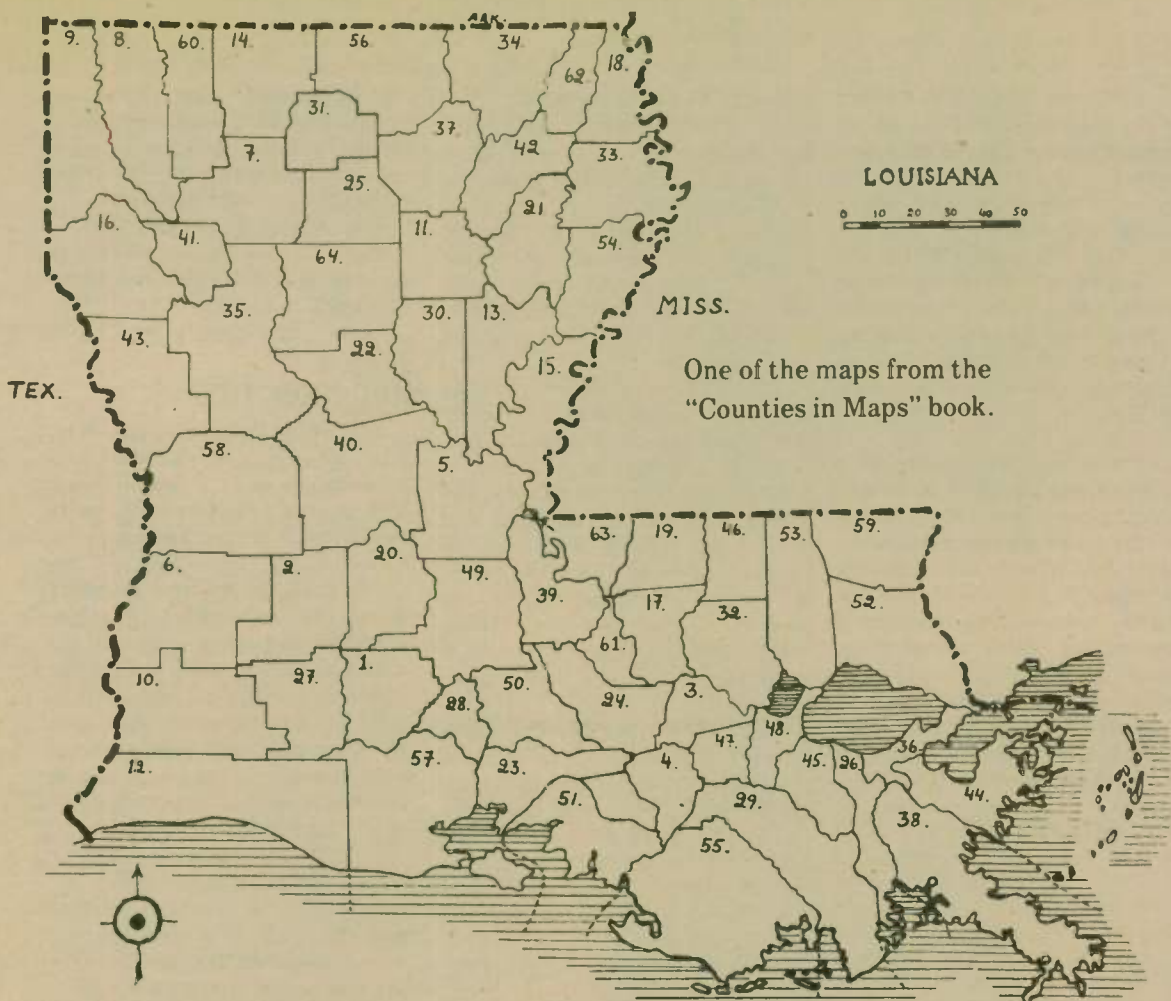
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3 Quarterly Supplements

QTH's for each manager

# DX Publications

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and lists of all counties in the USA.

This book can be obtained from Clut K5IM, P.O.Box 443, S-591 04 Motala 4, Sweden and costs \$5.00 USA or the equivalent sum in any other currency or 20 IRCs. The price includes postage to anywhere in the world.

Trans-Atlantic and Trans-Pacific 160 meter DX Tests

Don't forget the 160 meter

Trans-Atlantic and Trans-Pacific DX Tests. The Trans-Atlantic tests will be on Sundays, November 16th, December 21, January 11 and February 8th at 0500-0730 GMT. W/VE stations call CQ-FTDX for the first three minutes of each 15 minutes period, starting on the hour and listening for the remaining 12 minutes.

The Trans-Pacific tests will be December 20th, January 10th

and February 7th from 1330-1600 GMT. W/VE stations call CQ DX during the first 2 1/2 minutes of each odd 5 minutes period and listen the other 2 1/2 minutes.

Thanks for information to QST, West Coast DX Bulletin, Southern California DX Club Bulletin, Geoff Watts News Sheet and Northern California DX Club DXer.

## DXCC-CW Only No. 14

World traveler Josephine Clarke, WB6ZUC, returned recently from a trip which took her to India, Greece, Turkey, Egypt and England to find she had earned DXCC-CW Only Certificate No. 14 issued by the ARRL for having worked 100 confirmed DX stations since January 1 of this year.

One highlight of the trip was meeting Nelson Ranasingha, 4S7NE, from Sri Lanka off the tip of India, whom she had met in her DXing on the amateur bands. Another comment was that Russian signals are really loud in that area.

This certificate is anti-climactic in a way as Jo had previously confirmed more than 250 such contacts, but they don't count. Her equipment is a barefoot Drake 4C so her operating skill has to overcome lack of a more potent signal.

—Marin Amateur Radio Club bulletin

## Comment

A.G. GODFREY, ZL1HV

Although the majority of the active amateurs are now using commercially produced and serviced equipment, they come from a minority of the countries represented in the International Telecommunications Union. A stock jibe from those countries which do not encourage the Amateur Service is that all an amateur does is to buy a piece of expensive gear of which he knows little or nothing and talk — something which requires no extraordinary skill.

We know this is an oversimplification of the issue but, unfortunately, it is the impression they have gained. We know too that in these countries the technical ability is there and is increasing. Why then is there no Amateur Radio activity?

From opinions given by those who have lived in and operated from such countries there seem to be two major reasons. One is economic. Those technically capable of becoming radio amateurs just cannot afford to buy expensive equipment, and components are not available for home construction. The other reason is that their national administration has yet to be convinced that an Amateur Radio movement is of sufficient value as a technical and emergency force to be encouraged.

How can we ensure that the votes of these countries are to the advantage of the Amateur Service at the WARC by 1979?

(please turn to page 46)

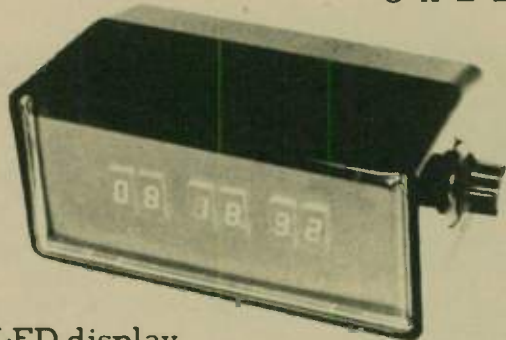
## Wanna work more DX?

Subscribe to THE WORLDS ONLY weekly DX Magazine. Strictly DX news in depth. I give you upcoming events, dates, times, freqs, DX QSL info, contest info, DX articles, etc. SUBSCRIBE NOW and work EM ALL! DX NEWS GALORE! \$6.00 for 6 mo. or \$12. per yr. to W/K, VE, XE, First Class mail. THE DXERS MAGAZINE, (W4BPD) Drawer "DX", CORDOVA, S.C. 29039.

DXing is great using our info!

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5 x 2 1/2 x 3



- 6-digit LED display
- super accuracy
- selectable 12/24 hour
- 117 vac P.S. built in
- your choice of gray or black

**34.95**  
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Bob, K6AHV  
Howard, W6SC  
Paul, W6EQB  
Mac, WB6MBB  
John, W6JZH

## Who else has all of these?

★ Northern California's largest new and used ham equipment inventory



KWM-2A Collins — \$1760  
80 thru 10  
AC/PS 516F2 — \$220



TR4C Drake — \$599  
80 thru 10  
AC/PS AC4 — \$120



Atlas 210X — \$649  
80 thru 10



FT101E Yaesu — \$749  
160 thru 10  
EE less processor — \$659



TS520 Kenwood — \$629  
80 thru 10



Triton IV TenTec — \$699  
80 thru 10  
AC/PS 252 — \$99



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10:00 a.m.  
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## REPEATERS

Hap Gladish, WA6WPP

Remember your first radio transmission? Most of us experienced the phenomenon known as "mike fright." We were intensely aware that we were addressing a vast multitude of listeners. We knew that a thousand seasoned old-timers were judging our qualifications to join the ranks of Amateur Radio. The sensation was somewhat akin to standing naked in the Astrodome and addressing the assembled teams of the NFL on the finer points of football.

With growing confidence our mental image of the multitude evaporated. We became oblivious to the silent listeners and aware only of the familiar voice that responded to our comments.

The listeners are still there. They still pass judgement—on you as an individual, and more important, on Amateur Radio. You create a public image of your hobby and yourself every time you key the mike.

As amateur radio operators we have been critical of the CB image. Perhaps each of us should join the silent multitude for a few minutes every day and objectively evaluate our own public image. What impression are we making on the critical observer with our manners, our operating procedures and our general conduct?

Could a casual observer distinguish between the usage on the 2-meter band and the 11-meter band?

How does the cutting jest directed at a buddy sound to the outsider?

What impression does the CBER/prospective amateur get from his first exposure to 2-meters?

What is the reaction of the visiting operator when his attempts to break are ignored?

Why are many of our members frequenting other repeaters and simplex frequencies?

The rules of conduct are simple. If you did not learn them at your mother's knee, Bert has outlined them often enough.

Just remember, your hobby puts you in a goldfish bowl. Be courteous, be respectful, use and enjoy.

Let's return some professionalism to Amateur Radio. *Mt. Wilson Repeater Association Newsletter*

### Speaking of tower work

JOE HANDLEY, K3LLL

But for the grace of God and an acute safety conscious attitude instilled in me by my employer, there would most assuredly be someone else writing this column and K3LLL would have been in the Silent Keys.

While installing the hardline I was part of the ground crew hoisting the coax up the tower. Just after getting the second of three to the top, we had stopped back a pace or two to catch our breath when a shout from the top sounded, "Look out below!"

I ducked the wrong way —

moving away instead of toward the tower — and was struck on my hard hat by a large ball peen hammer, which really had no business being up the tower without some form of lashing. Be that as it may, the \$5 I spent for that hard hat has got to be the best investment I ever made. Of the five or six people helping on the ground and the three on the tower, mine was the only hard hat.

I vote here and now, as a MFMA Director, that no one be allowed on any more tower projects without proper safety equipment — not just climbing equipment but hard hats for the ground crew and the climbers if someone is working above them. I came out with just a bad bruise on my arm where the handle of the hammer struck after the hat deflected the head. My head and the hat came through fine.

Making sure the power is off is not the only safety aspect of Amateur Radio. One must look at all aspects of what one is doing and act accordingly. As you can tell from the above, that experience got me just a little. I hope my description of my lesson gets to all of you and you profit by my experience.

—Auto-Call

Kenneth F. Isbell, W5QMJ

As trustee and licenseholder for the repeater station I have received written notice from the FCC concerning their growing concern over improper use of autopatches, particularly on two meters. More and more conversations are monitored which, if not questionable, are outright business calls.

The FCC has reiterated that the very existence of Amateur Radio is predicated upon the fact it is a non-business service, a hobby-type thing, to serve in the public interest, convenience and necessity. When business is transacted on the amateur bands we are endangering our existence, for the very thing which keeps Amateur Radio a separate service is being compromised.

Next time you use the autopatch ask yourself if the call you are about to make has anything to do with what you do for a living. Then ask yourself if it has anything to do with what the person you are going to call does for a living. If the answer is yes to either question, then obviously you should not make the call.

It is convenient, true, but we must live with some inconvenience or may lose some of the freedom we now enjoy.

Plainly stated was the alternative the FCC will consider if we do not put a stop to such mis-use of autopatches. New rulemaking will result in a restricted use of autopatches.

First, we are given a chance to remedy the situation ourselves. If we do not the FCC will, and we won't like their way of doing it.

### Repeater tips

DO keep transmissions short. Emergencies don't wait for monologues to be finished. If you talk to hear your own voice, what you want is a tape recorder, not an FM rig.

DO think before you transmit. When you can't think of anything worth saying, stop.

DO pause between exchanges. Someone with a high-priority need for the repeater may want to break in; also repeaters are configured so that a pause in transmissions is necessary to reset the timer.

DO identify properly. "W8 . . . mobile" is not enough. "W8 . . . mobile 8" is required. You must give the call of a station with whom you were in contact only at the end of the contact.

DO be courteous. A repeater is like a telephone party line and requires the same kind of cooperation in its use.

DO use simplex when possible. Leave the repeaters available for those who can't communicate simplex.

DO try to use the minimum power necessary to maintain communication.

DO support your repeater. Maintaining a good machine is an expensive undertaking and continual "dead-beats" are stealers of others' investment in the repeater.

DON'T abuse autopatch privileges. Business messages are not permitted. Don't force the control operator to terminate your call.

DON'T break into a contact unless you have something to add. Interrupting is no more polite on the air than it is in person.

DON'T forget: Amateur Radio exists because it is a service, not just a hobby. Contribute to public service aspects of VHF FM communications, such as accident reporting, emergency preparedness, etc.

DON'T try to prove what a great operator you are by criticizing the operating techniques of others on the air. Instead, set the example for others to follow.

DON'T monopolize a repeater. The competent repeater users are the ones who do a lot of listening and limited transmitting.

DON'T forget that what you say over a repeater can be heard over hundreds of square miles by anyone with an inexpensive "public service band" monitor. Some are potential amateurs; if they like what they hear they will want to get licenses and join us. Don't leave bad impressions by making thoughtless or off-color remarks.

DON'T give specific locations when leaving your mobile gear unattended at shopping centers; "Hamburglars" may be listening. The same warning goes for vacations, trips, etc.

*Greater Cleveland Repeater Newsletter via Rocky Mountain "QRZ"*

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## SSTV

Dave Ingram, K4TWJ

Season's Greetings and I trust this issue finds you engrossed in all the festivities of a wonderful holiday season. Slow Scan Christmas cards will soon be gracing the airwaves and international brotherhood will again be predominant as we enter this special time of year. I sincerely hope that each of you will find the ensuing times especially meaningful and that 1976 will hold all the good things for which you strive. Meanwhile, this month let's discuss some activity in the world of SSTV.

There are quite a few innovations presently transpiring and 1976 is looking like another outstanding year for SSTV. A set of proposed standards which will coincide with new Slow Scan evolutions are being developed — motion SSTV is beginning to gain notice — a microprocessor may soon be linked with the Washington, DC ATV repeater — new areas of color SSTV are developing — high resolution pictures are gaining interest, and much more.

Ralph Taggart, WB8DQT, is reportedly building a monitor for both SSTV and weather satellite copy. This makes sense as he's also reported to be writing a book on weather satellite picture copy. Ralph Van Jindelt,



This Slow Scan picture of K4TWJ wearing the lampshade is fair warning: send in your SSTV photos or I may run more!

WB6JKW, recently devised a couple of modifications for existing Slow Scan gear which should prove interesting to many of you. One modification allows the W0LMD SSTV Keyboard to update data on a single line basis rather than erasing the full display and starting again from scratch. He also added switchable keys which select either three or five different character sizes. This flexibility is advantageous for titling and DX work. Another added keyboard switch allows transmission of either 128 or 256 line pictures. The 256 line pictures are compatible with Robot's Model 300 converter. The second "WB6JKW modification" allows a Robot Model 70A monitor to display either conventional 128 line/8.5 second or 256/34 second pictures. Ralph says the 256 line pictures work fine with this P-7 monitor provided subdued room lighting is used. Schematics for the previously mentioned modifications are available from WB6JKW, 17 California Street, Arcadia, California 91006. Ralph

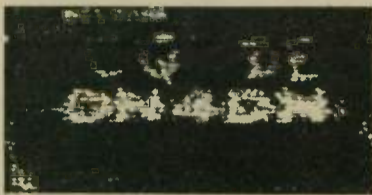


Hawaii calling! This ID from Henry Cremer, KH6DEH, was snapped recently during an active period on 20 meters. The palm tree on right barely made the picture.

asks that interested parties include an SASE plus one dollar to cover Xerox costs with their requests.

There appears to be a substantially lower number of flying spot scanners being used on Slow Scan during the last two years. I can't understand this situation because flying spot scanners are an ideal way to get started in SSTV. These units are easy and inexpensive to build and they produce high quality pictures which often exhibit more video swing than commercially available cameras. Moreover, studio area and bright lights (with their associated

heat) are not required for use with a flying spot scanner. Station effectiveness is further enhanced by using a FSS for transmission of photos and slides, thus freeing the Slow Scan camera for "live" work. Although these units are not presently available commercially, several outstanding construction articles have been published recently in magazines. Ralph Taggart, WB8DQT, described a high quality flying spot scanner in July 1972 73 Magazine which used one's existing Slow Scan monitor for



This ID exemplifies the effectiveness of using white letters on a black background. Yes, Ghislain Detemmerman, OH4DN, received an answer to the CQ.

the scanning cathode ray tube deflection. I described a very simple "add-on" type flying spot scanner, which should interest SSTV newcomers, in March 1973 73 Magazine. The Slow Scan TV Handbook published by 73 Magazine featured two nice flying spot scanners plus "scanning box" dimensions. If you're considering a winter project why not try one of the previously mentioned "goodies". I'm sure you will be pleased with the results.

One of the most outstanding aspects of Slow Scan Television is its potential in personal experimentation. Some of these experiments might prove rather interesting if they were ever applied to (egad!) commercial tv. For example, can you imagine Channel 2 televising a group of 3-D programs? This could be easily accomplished by employing two cameras and separating them by a few inches. A red filter is used to cover one camera lens while a green filter covers the other lens. When the output from both cameras are combined, the three dimensional effect is produced. Then, the 3-D image is transmitted, received and displayed as usual. The resultant color-separated picture is viewed through red/green color polarized glasses thus reconstructing the 3-D image. If this system were actually used

on programs like children's cartoons the viewing glasses might be included as promotion in the sponsoring breakfast cereals. Tsk Tsk — some dreams, eh?

While on the subject of Fast Scan Television, I wonder if any of you have schematics for the electronic tv games which are becoming quite popular. These "games" (which connect to a conventional tv via the antenna terminals) appear to consist of digital character generating circuitry driving a simple VHF tv oscillator. The decreasing cost of these units seems to indicate that only simple circuitry is utilized. Maybe we could start a distribution network of schematics for interested parties.

Finally, I, on behalf of the entire Worldradio News Staff, would like to wish all of you a very Merry Christmas and I look forward to seeing you at either SAROC, Dayton, Reston or Atlanta during 1976. 73. Dave, K4TWJ, Eastwood, Village #604 No., Rt 11-Box 499, Birmingham, AL 35210.

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### 'Barnyard' gathering

The Barnyard Net met at the International Dunes Motel off I-5 in Sacramento, CA, 14 November for a three day series of informal meetings at which Doug Eudaly, WB6EEH, hosted.

The Barnyard Net is comprised of over 100 "cacklers" who live in the western USA. The net operates on 3995 kHz from 1500 hours until the wee hours of the morning.

It is an informal, open get-together, a large QSO of fellow amateurs enjoying each others company.

## Israel

from page 22

and Efi and several times each week, in the evening a small grey Volkswagen would suddenly tear thru the camp, with its driver pounding out a CQ on its horn, scaring dogs, camels and amateur archeologists who were trying to catch up on their sleep. I was always happy to see them since it meant an evening away from the mosquitoes around the camp. They showed me their shacks and I visited other Israeli amateurs in Beersheva including the Secretary of the IARC, Shalom Bakalu, 4X4BS. It also meant a hot shower and some good home-cooked food, neither of which were available at the camp. Also, 15 meters usually died at sundown and 40 wasn't any good until around midnight so my evenings were fairly free.

What was it like operating in Israel? Generally, when the sun spot cycle is down the only band is 20 meters. One works piles and piles of Europeans, especially Eastern Europeans, anytime of the day or night. Since the 1973 war Israel seems to be on the Russian "banned QSOs list" since Russian amateurs would not work Israeli amateurs. However, the Russians will work reciprocals so everytime I got on I had a constant pile-up of Russian stations. USA could be worked most evenings on 20 meters around midnight (2300Z) Israeli time. I was able to have two fine phone patches with my parents.

The rarest CQ zone is generally considered to be zone 34 which is Egypt. According to John Kanode, W4WSF, who is a member of the CQ Advisory Committee, the Israeli-held Sinai is part of that zone. Regretfully I was not aware of this while I was in Israel. I understand that it is very easy for Israeli amateurs to receive permission from the Military Governor of the Sinai to operate there and I expect DXpeditions to go there in the future.

QSLing can get to be quite a problem for Israeli amateurs. I have often heard, since returning to the States, that Israeli amateurs are poor QSLers. There is some truth in this. Israel is not a very common country and (please turn to page 39)

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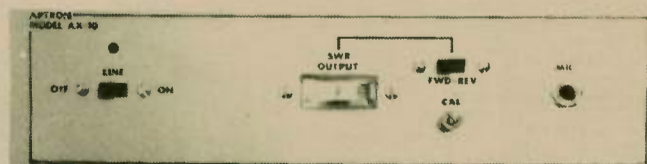
**WORLD RADIO NEWS**

Please see page 11.

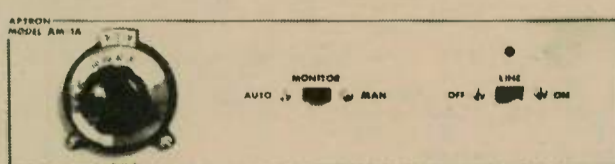
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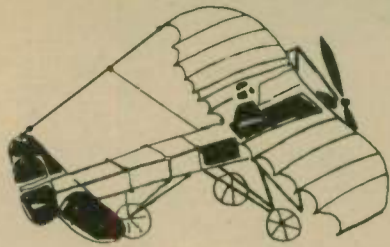


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# AERONAUTICAL MOBILE

Vern Weiss, WA9VLK



Fliers are funny people. They will think nothing of spending 35 dollars on an hour in a Cessna 182 for no other reason than to "go up." But when it comes to saving a dollar, they will spend two just to do it. I am no exception.

Pilots and radio operators share this credo, I believe. How many times have you spent a sizeable sum to convert a particular piece of equipment when it can be bought at a fraction of the amount you laid-out? Likewise, as a radio operator (some may question this presumption) I fall into this category.

So let me don my robe and step into the pulpit because children, I'm-a gonna speak. And in-a this speech, I'm-a gonna save you a crisp, green one dollar bill.

(say you believe)

All of us have seen in magazines (both high class and low class) the advertisement for a firm in Pennsylvania advertising government surplus bargains. In a carefully worded ad, this company leads you to believe that you can purchase airplanes for something like a hundred and forty-nine dollars and radio transmitters for five dollars and jeeps for twenty dollars. For a one dollar bill, they a-gonna send you information on how you... YOU...can buy all these things and more!!! (say you believe)

So, gullible Vern yanked a dollar bill out of the hands of his trusting wife and sent it away to bring him fortunes abound. As soon as my letter hit the bottom of the mailbox I began planning my hangars for my fleet of \$149 T-6 trainers.

One month passed. Then two. Then three. "H-m-m-m," I said. "Something smells awful bad in Denmark."

To make a long and extremely tiresome story short, I wrote to the Department of Defense Surplus dispersal headquarters in Battle Creek, Michigan and requested information on how someone as I could have a crack at some of the goodies they throw out.

The DoD rushed me a catalogue with a whole bunch of classes of property sold by the agency as well as information on how to bid, what is required of a bid and applications to get on the DoD mailing list for lists of equipment one is interested in receiving the availability of. Not only can a person make himself available to bid on airplanes and radio equipment but minesweepers, hearses and guided missile launchers are included. Small items are also available like tools, rope, wire etc. etc.

To become eligible to bid you select the categories of items you wish to receive information on as

well as the geographical location you are able to transport items from should a bid be accepted. Upon receiving the application the DoD will send you lists of the property you are interested in in the geographical regions you are interested in. The drawback however is that if after five lists or so and you have not offered any bid, you will be dropped from the eligibility roles. Therefore it is best to limit your categories of property to one or two and your bid-regions to one or two states at best.

So finally, after three and a half months (by now on the DoD bidders roles) the firm in Pennsylvania sends my dollar's worth of bargains: A Xeroxed copy of the procedure to apply for bidding rights that the DoD sends out and a surplus catalogue with such interesting items as bilge pumps and old ignition parts out of who-knows-what-kind of aircraft. In other words, junk.

If you are interested in learning

more about the actual surplus equipment situation write: DoD Surplus Sales, P.O.Box 1370, Battle Creek, Michigan 49016. You save a dollar.

Now that the snow and ice will be on the runways and taxiways, keep in mind the poor old antennas sticking-out. Transponder and marker beacon old antennas are usually placed on the underside of lightplanes and can easily be damaged. Before flight, check these areas, too.

Each year, wintertime yields a number of weather-related "incidents." These range from dropping out of the sky enveloped in ice to disorientation in snow showers or fog. This is dumb.

I wish I had a nickel for every time a flight instructor told me to plan my flights carefully and guard all the facilities available. Even on a beautiful, cloudless day tracing a familiar course over the ground to some not-so-far aerodrome, it is a good idea to listen to enroute VORs or even the standard Flight Service Station frequency of 122.2. You won't find this frequency marked on your sectional maps, fellas, because EVERY FSS has it. Make it a habit to not only ask for information from the FSS but give them pilot reports, too. Let them know ceilings and visibilities and conditions along the way so that you can help other pilots. And if you get into any trouble, LET THEM KNOW. please turn to page 32

## PORTA-PAK



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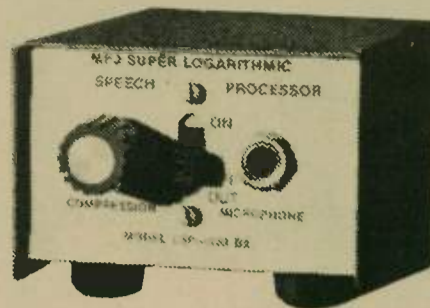
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Fig. 1 SSB signal before processing. See the high peaks and the low valleys. Our NCX-3 is putting out only 25 watts average power.

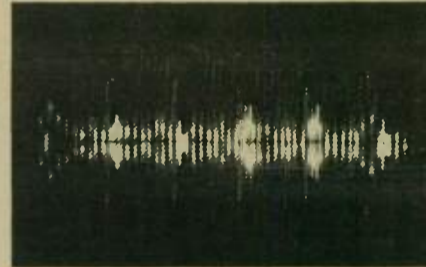


Fig. 2 SSB signal after processing with LSP-520BX. The once weak valleys are now strong peaks. Our NCX-3 now puts out 100 watts of average power.

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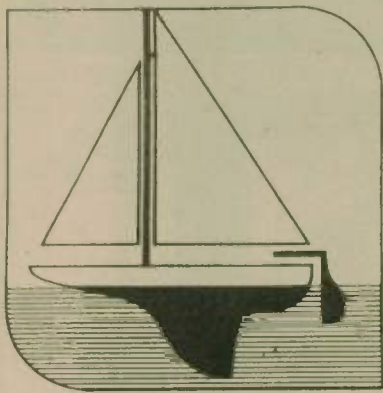
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# MARITIME MOBILE



Bill Yost, WA6PIU

## Batteries

"You'll get a big charge out of this," said the man as he handed me the transformer. I was in the process of building up a 12-volt power supply which would double as a charger aboard. Unfortunately, battery storage, requiring frequent recharging, is the mainstay of electrical energy at sea. As a boating amateur (radio type) reliant on such a source, I've always yearned for a better way — at least a better battery.

For years we have utilized the lead-acid for the bulk of our electrical needs. I should say we've put up with the lead-acid source. With its inherent unsanitary habits of corrosion, hydrogen gas discharge, bodacious weight and poor longevity, it's no wonder that recent research has been devoted to improvement.

New battery developments are prevalent both in primary (non-rechargeable) and in secondary (chargeable) cells. In looking at the primary cells one finds the old zinc-carbon fast being replaced by alkaline, zinc chloride, silver oxide and lithium.

The zinc-chloride cells offer a cheaper more efficient replacement for the zinc-carbon and even the alkaline. Higher current output, no leakage problem, low temperature operation and longer life prove this battery most attractive.

The lithium cell, in addition to providing more power for its size and weight, will operate in great temperature extremes, has greatest shelf life and maintains its voltage to the end. Presently

lithium cells are used in emergency locator beacon transmitters and other applications where weight per volume and shelf life are concerned. The main "hang up" is price which does limit their use.

Among secondary (rechargeable) batteries the new gelled electrolyte lead-acid cell with its lower price is becoming a serious competitor to the expensive nickle-cadmium battery. At any rating over 1 amp-hour lead cells cost only 1/2 to 1/4 that of a nicad without some of the problems.

Nicads have always been plagued with the "memory" effect. Cells which have been used repetitively at low discharge levels become conditioned to that level. When a greater demand is suddenly required it "forgets" its rated capacity. To their credit, however, they still give a good current output, have a high energy density and can be recharged over 1,000 times. Recent quick charge designs make them even more favorable.

Back to the gel-cell. By taking the advantages of the lead-acid cell — highest voltage/cell, lowest cost per watt hour storage, etc., — the gel cell was introduced in 1965. No water requirement allows the battery to be completely sealed from leakage, thus easing installation and eliminating the hassle of spillage — a real concern at sea.

More recently a significant cell improvement, said to compete directly with nicads, comes from Gates Energy products. Not a gel-cell but a dampened electrolyte (electrolyte combined with absorbent material), it is claimed to cost one-half that of a

comparable nicad. The specs are fantastic with the advantages of: less sensitivity to charger characteristics, longer standby and shelf life and no "memory" effect. Over the conventional lead-acid wet cell, a 25 amp-hour Gates can provide over 1000 amps starting current compared to only 650 by a larger 84 amp-hour car battery. It can be charged over 200 times, has a flat voltage-discharge curve and has a very low leakage rate (shelf life) — a very definite advantage over nicads. A nail can actually be shoved through the entire battery with no effect on its performance. Presently they are only manufactured in small 2.5 amp hour sizes (D cells). However, automotive, aircraft and marine renditions will soon be available.

With Christmas only a few kHz away it's time to start some strategic maneuvers aimed at getting some radio gear for Christmas. Since I usually get clothes (no toys) I can't be relied upon for advice. However, if any of you are looking for ideas in terms of what to get your boating-radio spouse, write the MM hot line. Just give a brief rundown on what he/she already has and what you want to spend. I'll provide you with a concise list of what I didn't get last year. Actually, I can probably provide information on the best deals, etc.

A few of our readers are interested in building some ELT units (Emergency Locator Transmitters). These hand-held units, when activated, transmit a warbling tone on 121.5 and 243 MHz (aircraft emergency frequencies) indicating "May Day" with each warble. While they are required equipment aboard aircraft, their use aboard boats, especially life rafts, is just becoming popular. Since these frequencies are monitored by transoceanic flights, good

coverage is provided. Any information on ELT circuitry would be appreciated.

In my work as a marine biologist I have many occasions to spend some time at the University of California campus at Davis, CA. Whenever I hear someone discussing an upcoming archeological, anthropological or other scientific expedition going south of the border or anywhere else, my first question (with some self-interest, I must admit) is, "Who are you taking as radio operator?"

It always turns out that radio communication (not just amateur, but any kind of communication) had never entered their minds. I always counter with "How would you get help if someone fell off a cliff or became seriously ill?"

That is just greeted with a blank look. It is very surprising that our most educated people have very little idea of what communications (on any frequency) has to offer. Are we possibly to blame?

All of us have friends in the boating field who go wandering off to sea, which can be a perilous experience. Do we make any effort to get them into Amateur Radio? It is negligent if someone takes others out to sea and has no means of effectively communicating. It is beyond foolish; it is criminal. Should we be to blame if a friend of ours is lost at sea, or a person should die because of no access to medical advice, if we never even mentioned that Amateur Radio exists?

Do we have a responsibility, yes, even an obligation, since we are fortunate enough to be a part of the Amateur Radio Service, to inform others that it could mean their survival? If they refuse the opportunity it offers, we shouldn't feel remiss, but remember that the majority of people don't even know Amateur Radio (and what it can offer) even exists.

Have a good Christmas.  
73, WA6PIU/R2

## Aeronautical

(continued from page 31)

FSS facilities for the most part are very busy places and unfortunately some aviators have conjured the opinion that it is no longer available to them. Nothing is further from the truth. They honestly want to help you out in anything from giving an altimeter setting to an ASR engine-out approach to an airport when your lost, hypoxic and dry on fuel. Remember 122.2 as well as the 'ol stand-by 121.5.

So again we find ourselves cleared for the approach. Next month we are going to add something new to AERONAUTICAL MOBILE and that is a Q & A section. If you've got any questions about aero-hamming or just flying in general (a good non-fliers question might be "What do you do when the wings fall off?") jot them down and send 'em in. You need not sign your name if you feel your question is silly. In any case let's hear from you! And till next column Happy Holidays kids!

## ARRL

from page 18

will present at the Board meetings.

In the Pacific Division a recent survey shows that only about 25% of the League members are active in local radio clubs. This is unfortunate since the activities of such clubs are of the greatest importance to Amateur Radio.

Often club programs are not as successful as they might be if there were more members to participate. And in many cases clubs do concentrate more on social events than on public service activities. This means that emergency communications planning and public relations become secondary to social events.

While the League in no way interferes with the club's right to make any activity their prime interest, it does encourage the clubs to keep active in those areas important to keeping a good image for Amateur Radio.

Are you a member of a local club? Do you support those activities of the club which build our best public image? How can you best help in keeping Amateur Radio before the public eye in a positive way?

Let's hope so. If not, please give some consideration for making such support of the radio club.

The League has done so through the affiliation program, but the success of the local radio clubs rests only with the willingness of the membership to build a good and active radio club.

## WR

Not just a periodical but your chance to explore the whole splendid world of this great Amateur Radio.

If you aren't a subscriber we invite you to join us. This publication is a forum for discussion and the exchange of information. Its for people who want to know what's happening. We discuss the problems and possible solutions.

Worldradio is a network of involved and knowledgeable radio operators. Here you may recount your experiences and what you have learned.

## Old Time Radio



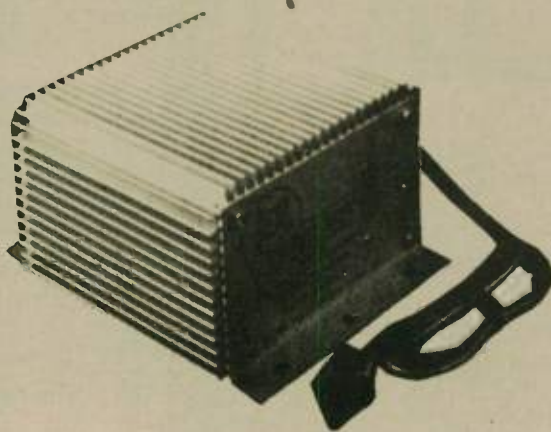
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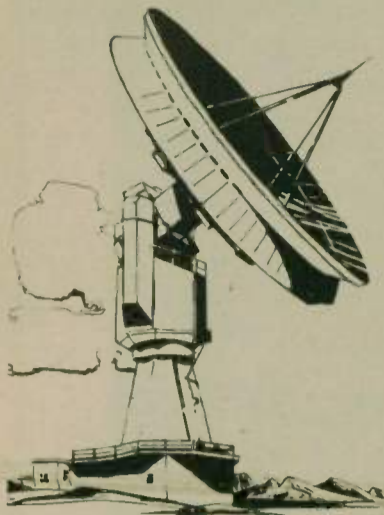
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*Season's Greetings from the gang at Atlas*

# VHF-UHF

Lou Anciaux, WB6NMT



The big news for November was the 432 MHz EME Tests on the 23rd conducted by the gang at WA6LET using the 150' SRI dish. A most impressive accounting was obtained: 102 completed two-way QSOs, 16 of which were two-way SSB; 11 countries including USA; 20 states; all continents except S. America and Antarctica.

A dozen hardy souls ran the 12 hours of tests, not to mention the considerable set-up and tear-down time. Under the guiding hands of Victor Frank, WB6KAP, and Brian Westfall, K6OJM, the following were the mainstays in the operation: Bruce Clark, K6JYO; Ed Teyssier, WA6LCZ; Robert Sutherland, Jr., WA6QCD; Bob's father Robert Sutherland, W6PO; Doug Westover, K6TZX; Arne (the big Dane) Gjerner, K7CAD/6; Loren Hodapp, WA6BMR; Bob Melvin, W6VSV; and Bob Stein, W6NBI, was again caught at the key. A very special thanks must go to Bob Foss, WN6DIA, who ran the dish for the entire stint.

Needless to say, SRI must also be extended; all of our deepest thanks for allowing these operations to take place. Literally, operators from the entire world have benefitted from these operations.

The list of non-US calls is quite interesting and gives one some insight as to where the 432 users are: ZE5JJ, I5MSH, SK6AB, F9FT, SM5LE, F2TU, LX1DB, F6CKF, PA0MS, LX1FX, SM6CKU, SM6ESQ, PA0DCB, PA0SSB, PA0HWE, VK2AMW, JA1VDV, VE4JX and VE7BBG. WA0FLS/KL7 also heard the LET signal but was unable to xmit.

The list of alligator stations (fall mouth - no ears) is also rather informative: DJ8QL, F5SE, G3VZI, W5LOK, WA4IPI, and K1PXE who was QSOed, but nearly not. To all the above mentioned Bruce passes the following along: "Get a new RECEIVER"

Also during this test series the first apparent EME QSO by a YL (XYL of Fred Telewski, WA7TZY) took place. WB7BST was the lucky gal. If any other gal wishes to claim the first YL-EME QSO, speak up.

The even hours during the operation were marked with low power receiving tests. A series of letters was sent at each power level. The lowest power at which the test text was copied will identify that power and hence ERP transmitted. Those who did copy these, or any low power tests, are requested to send this info to Victor Frank, WB6KAP, 12450 Skyline Blvd., Woodside, CA 94062. Vic will send you confirmation, plus indicate the lowest power you were able to copy. From this it is also possible to deduce one's system performance.

Future tests probably will not occur until May '76 or later. The next tests might include both 222 and 1296 MHz bands. As details are firmed up we will endeavor to keep you informed with adequate lead time. Vic requests: anyone who has a KW amplifier for 1296 that the LET gang might use for such an endeavor, please contact him at the above address.

The possibility of future 432 tests is also very good. Those who tried so hard and did not make it, the LET gang sends their regards for the fine effort. Many times they tried to dig the weak ones out without success. Future 432 tests will allow you another chance so keep the faith.

Tom Bishop, K0TLM, writes of his EME activity. Recent additions were VE4JX and WA6LET via the Lunar route. Tom also worked K5MWH in Arkansas, adding another new one on 432. This brings Tom's EME QSO total to an even dozen.

Joe Reiser, W1JAA, wrote a long letter bringing us up to date on the past few month's activities. Sporting a new 100' tower, he's seeing a 12-15 db increase in signal levels from his previous height. Joe complains of apparent decline in VHF activity in the Eastern part of country.

That had been the case in the West up until this past year. However, since the introduction of the multi-moded rigs, activity has been on the increase at least here along the West Coast. Most evenings, and on weekend mornings as well, considerable long-haul QSOs are being had in addition to plenty of local rag-chewing. This type of work is strictly point-to-point on CW/SSB with an occasional AMer as well.

Jay Schaffer, W6BWB, in Santa Cruz has been blowing guys' minds from San Diego to San Francisco. Jay is running one of the ICOM IC-202 rigs. This might best be described as

an SSB H-T. It runs a bare 3W output. I've managed about 10 QSOs with Jay over the past month or so. Most are on CW and couple have been SSB, but it really kind of boggles the mind when one thinks that the 400 mile QSO is being accomplished with just that 3 watts.

Bill Tynan, W3KMV, was in town and we did manage a lengthy phone call late one night. One thing we did get to Bill was the revised 220 MHz EME DX record data. After much leg work by Joe, W1JAA, both Jud Snyder, K2CBA, and I have recalculated the distance. We all now agree the DX record should be 2555 miles. The main reason for correcting this error is that the previous 2650 miles precluded many stations from breaking the record. Now the corrected distance will allow several stations to get in and fight for the record title, even though it will be just a few miles further.

The main problem with the 220 band of course has been the lack of international users. Not too many countries do have use of this band for their amateurs and without this, apparently, the rest of the world has dropped it from primary consideration.

Although the better propagation usually greets the users of this band as compared to 144, even this has not brought many to explore the possible treats to be had. Should more of the world's operators gain even part of this band we could see a tremendous up-wing of long-haul tropo work.

This past month brought to my attention something which could be of considerable significance to all of us. As most of us are aware, the present influx of Class D license applications to the FCC has reached phenomenal proportions. Each month twice as many applications are received as there are presently paid ARRL members, and then some.

That there are so many users of the Class D service appearing should indicate to us that we had best get hot and get on the band wagon before we get left in the dust. What I'm alluding to is not that we should all run out and get our Class D tickets, but, rather, we must cease the petty name-calling, Rabelaisian commenting and general derision of users of this service so many of us have been guilty of in the past.

Significantly, the 1979 ITU means the quantity of users might have some chance to sway a few votes. To this end, if we amateurs could have as large a community of users as the D service does we might also have some chance of keeping our freqs.

Now, to effect this, we might consider the Communicator Class as proposed by Docket 20282. When this might ever come to pass is anyone's guess, and don't hold your breath waiting. Also, the modifications as proposed by the ARRL Board of Directors would modify the original FCC description to the point that in all probability very few would be inclined to attempt the new license.

Not that I'm condoning the full use of the amateur bands to users whose qualifications are nil. Rather I do believe such a service would do us considerable worth. That the users could be trained to operate as effective, and what we want to refer to as decent law-abiding amateurs, is really up to us. The example we set for these newcomers is what they will attempt to emulate. Lord help us if they stumble across the wrong two-meter repeater channel.

There are a great many of the D service users who would like to become amateurs. Unfortunately, there are several things going against them. Many feel that being associated with the D service, to most amateurs, is not unlike being afflicted with leprosy. It usually isn't inflicted upon another person, but how many are willing to take the chance? Too many D users feel they cannot approach an amateur without feeling he will be put down and/or laughed out of the building.

That there are classes to assist newcomers to our avocation is fact. That a vast majority of these classes are not well publicized within D user circles is another fact. Some concerted effort on our part now to get out and actively seek participation from the local D-user club will go a long way on both parties' behalf.

We amateurs have been looking down our noses at this playful kitten we disdainfully call CB. The cat has grown and we have a tiger by the tail. The only advantage we have at the moment is that the tiger isn't aware just how big it is yet compared to its puny tail-yanker. There's still a little time left to get them on our side before we get gobbled up because we didn't try.

This past month I gave a talk on VHF and I covered the above subject in the latter half in place of any technical talk. I received many comments in agreement with what I had said. The one comment I did receive which might be considered contrary came from an amateur whose business is strictly for the CB market.

His main comment was that it is too late for the amateurs to do anything. The CBers are just too

big and they will get it all in the end. I'm not sure how to take that comment in its entirety. And I'm damn sure it's not too late. If we can get it up and all of us work together we can make a go of building a better tomorrow. If we don't, well, the loss of our freqs, or the prospects of, speak for themselves.

Besides your VHF activities let me know what and how you and your area are doing in recruiting and training the class D user to be a true amateur.

## lightning hazard

LEWIS SIECK, K4NE

So you feel safe after you have disconnected or grounded the antenna feed line? Not necessarily!

If you have a rotatable beam or quad there is usually an 8 or 4 wire cable connecting the rotor mechanism with the rotor control box. This cable leads down the mast or tower into the control or operating room. Unless there is some form of disconnect between this cable and the rotor control box, part (usually too much) of the lightning surge at the antenna or tower will find its way into this cable. Very often this cable runs parallel with the coax used as an antenna feed or transmission line. This enhances the chance of capacitive pickup from the braid of the coax since the rotor cable is usually unshielded.

In one case nature added to a July 4th local fireworks display when lightning struck the upper tip of a fiberglass quad spreader holding the 20-meter feed element of a quad at K4NE. The last six inches of the spreader disappeared, leaving a "puffball" of fiberglass resembling a feather duster or cotton candy cone such as one finds at carnivals. The eyebolt holding the antenna wire was unharmed but dropped down since its support was lost. There was no damage to the antenna or coax transmission line.

All the antenna feeds were disconnected and grounded outside the shack. Yet the lightning surge entered the house thru the rotor cable, burned out the CDR control box, entered the strip-line 120 volt ac connection strip thru the control box ac cord, passed into the receiver and exciter which had their ac cords plugged into the stripline and caused considerable damage to the receiver and exciter. Some of this could have been avoided had the ac cords been disconnected, but the best preventative measure would have been to disconnect the rotor cable.

There is an eight-pin Jones plug disconnect in the rotor cable outside the shack now which can be connected to a ground plug, all eight connections strapped together and wired to a ground rod. Truly a few ounces of prevention are worth a few pounds of replacement parts! -SPARC GAP

We want to publish more news, articles, photographs, features, columns and the like. We count on you to encourage us. If you have comments or suggestions - let 'em rip.

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# Smithsonian Institute, 2001 AD

KURT MEYERS, W8IBX

"On your left, ladies and gentlemen, you see an Amateur Radio station. Around 1960 there were 14 million in the United States, but the number began to drop off and the Amateur Service was discontinued in 1980."

Preposterous? Maybe. And maybe not. In case you aren't aware of it, Amateur Radio is being blown off the map so far as public knowledge is concerned.

Ponder these recent events: the Cleveland Plain Dealer "Ohio's largest newspaper" cancelled the "Ham Antenna" feature in its 16th year citing lack of audience as the reason. Following the flood of early August Cleveland CBers were showered with plaudits for participating in the vain effort to rescue a 12-year-old girl sucked into a sewer by strong current, but radio amateurs who spent hours surveying damage house-to-house and providing other emergency communications were unheralded.

WJW-TV, Channel 8, Cleveland, in its 11 pm newscast, Saturday, 20 September, devoted 60 seconds to the growing "CB craze." Noting the liberalizing of regulations by FCC, one merchandiser of CB equipment projected the sale of 800,000 units in the next fiscal year.

Time Magazine, Sept. 22, pp. 48 and 52, devoted more than two page-length columns to CB.

The article includes a comparison between CB and Amateur Radio: "Unlike 'ham' radio which calls for considerable expertise and costs at least \$700 for a good set, a CB takes no more skill to operate than a telephone and costs only about \$120. No exam is needed for the \$4 FCC-required CB license, but only a minority of buyers bothers to get one in any case."

There you have it. Amateur Radio is for rich expert technicians. CB is for "the people." No matter that many of you readers plus this writer obtained General, Advanced and Extra Class licenses without benefit of any professional instruction and never made a dime in the electronics field. No matter that a number of us have a pile of junk on the air that nonetheless puts out good signals.

On my right is an HW-12A and power supply that will do more than any CB rig, on different frequencies of course. Cost: \$90.

Several issues ago, I urged every operator to report fully his/her activities to the respective SCM each month. That isn't enough. We've got to BOMBARD the media with news releases telling what radio amateurs are doing.

A psychiatrist, himself an ex-amateur, once told me that amateurs as a group are introverts, preferring to deal with people at a distance, as over the air, rather than face-to-face. If

that is true then we are not a group to seek the limelight. We're simply going to have to change that if we don't want to become museum pieces. People in traffic, emergency and other public service work are going to have to lead the way.

—Hit and Bounce Report

## Amateur radio in national plan

Did you know that Amateur Radio is mentioned in the National Communications System Plan for communications support in Emergencies and Major Disasters? Well, we are!

Thanks to the pushing by ARRL Officials we amateurs are in the National Emergency Plan. This plan covers ALL GOVERNMENT AGENCIES from the White House Office on down.

Here is what they say about us... "AMATEUR RADIO. — Amateur Radio networks — systems with volunteer licensed amateurs are capable of performing both daily and emergency public service communications during Emergencies and Major Disasters. The American Radio Relay League (ARRL) sponsors the Amateur Radio Public Service Corps (ARPS) and includes the combined facilities of the Amateur Radio Emergency Corps (AREC), the National Traffic System (NTS),

and recognizes the Radio Amateur Civil Emergency Services (RACES) and the Military Affiliated Radio Service (MARS). Other licensed amateur activities and Citizens Band (CB) groups also provide public communications during Emergencies and Major Disasters."

Isn't that nice? Now let's live up to it! Join the AREC with your County Emergency Coordinator and get active in your local emergency net or some phone or CW net. Get off your duffs; be of some use to Amateur Radio.

—Florida Skip

## Weather watch

CAROL GAMEL

"W5SUH, this is Tulsa Weather." With those words, Ron Gamel, W5SUH hurried over to his desk and turned on every radio he had. One radio, the one the call had come over, was on a Tulsa repeater frequency. An amateur radio operator sat at a station only a foot away from the weather radar at Tulsa International Airport, watching the radar for "hook echoes" signifying possible tornados.

A second radio was tuned to the Muskogee repeater, a third on a frequency monitored by local radio operators. The fourth radio was a small, multi-band unit on

which Ron can hear the police and ambulance calls. Ron was in instant communication with any of these stations. The Civil Defense coordinator called...had Ron had any word on a storm?

And storm it did! Tulsa had winds up to 75 miles an hour. Checotah had 40 mile-per-hour winds. Tulsa had homes damaged but no injuries. Checotah had no damage reported. Thunder and lightning were rolling all around us and many of our friends and neighbors ran for basement shelters, but Ron had to stay at the radio "just in case." Thank God, this storm brought no tornado.

Ron is on "weather watches" here. It is reassuring to know that somebody hears you and is standing by to help — even though you are connected only by radio waves.

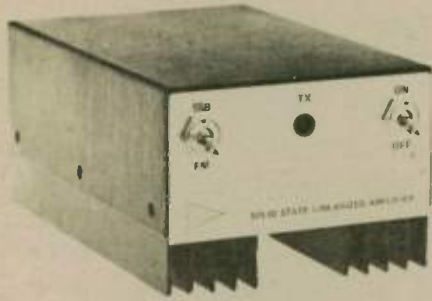
—Capstan News

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* 50-54	10	100	\$169.95
*144-148	2	70	159.95
144-148	10	70	139.95
144-148	25-30	140	179.95
144-148	10	140	199.95
220-225	10	60	159.95
220-225	25-30	120	199.95
220-225	10	120	219.95
420-450	2	10	119.95
420-450	10	35	139.95
*420-450	2	35	169.95
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- All solid state-microstripline design
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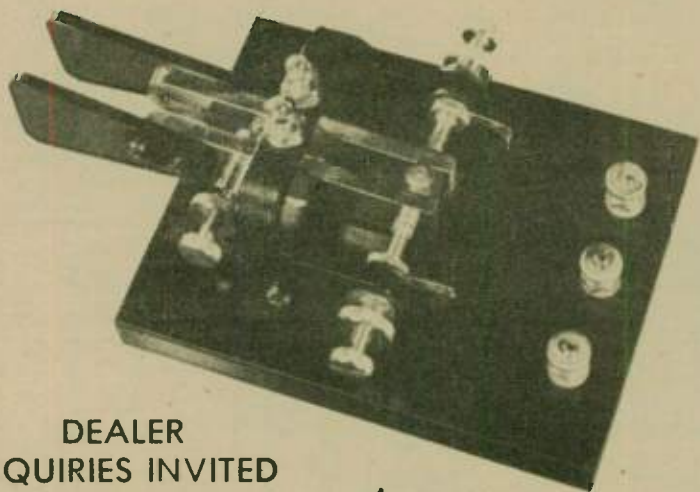
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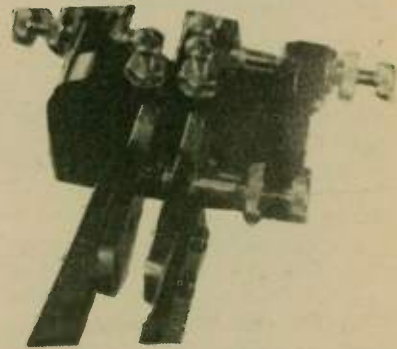
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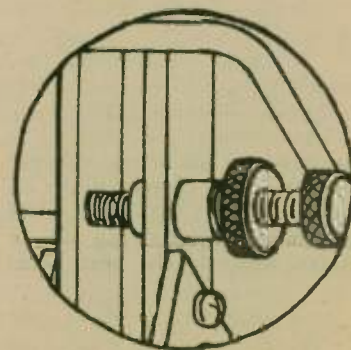


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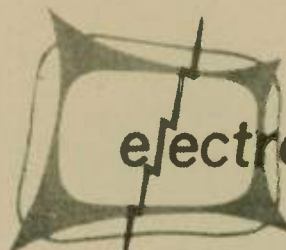


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# TRAFFIC

Paul Gagnon, WA6DEI

## Daytime National Traffic System (DNTS)

Up to now we have been concentrating primarily on CW traffic nets and their operation in the National Traffic System. In reality there is an extension of the system operating during the daytime on frequencies in the phone bands. This does not mean that you can't check in on CW; it means that it is in the band where phone can be used as well. DNTS has been in operation for approximately three years now and is slowly but surely expanding. The liaison spots are filling up and the net controls are becoming available.

The manager of the Daytime Region Six Net (DRN6) is Warren Dilley, WB6PVH. In the latest issue of the DRN6 Operating Notebook he provides the following information. Figure one provides a diagram of the present DNTS setup. The times and frequencies are provided in the cases where they were available. If your case isn't provided please contact the net manager for the meeting times.

The typical cycle of operations is shown in figure 2 using the DRN6 to DPAN to DCTN cycle. A similar scheme is used for nets in the Central (DCAN) and

Eastern (DEAN) areas. The Daytime Continental Traffic Net (DCTN) is the place where everyone comes together to exchange inter-area traffic. This net meets daily on 14.317 MHz at 1930Z. Briefly, the cycle shown indicates that traffic flows from the Region Net to the Area Net to the Continental Net. DRN6 provides liaison to the Area Net which is attended by all three of the regions in the Pacific Area (DRN6, DRN7, and DTWN). Each Region Net will send two stations to the DPAN, one to transmit and one to receive traffic.

If you do not know what region or area you are in, consult a copy of "The Radio Amateurs Operating Manual" printed by the ARRL, 225 Main Street, Newington, CT 06111. This is an excellent reference book for net operation. If you are available during the daytime hours, please check in on your local net and lend your support. The daytime net is partly a result of requests by operators who wanted to participate but couldn't do so in the evening for one reason or another. Here is your chance!

### Radioteletype

It must be rather obvious to anyone who has worked in the National Traffic System that in times of simulated emergencies and in times of real emergencies our system tends to get clogged up. There is a simpler way to process our traffic during these times of extra heavy load.

New ideas have to be introduced into a system before they become necessary. One idea that has not been tried systematically is the use of RTTY on the more crowded

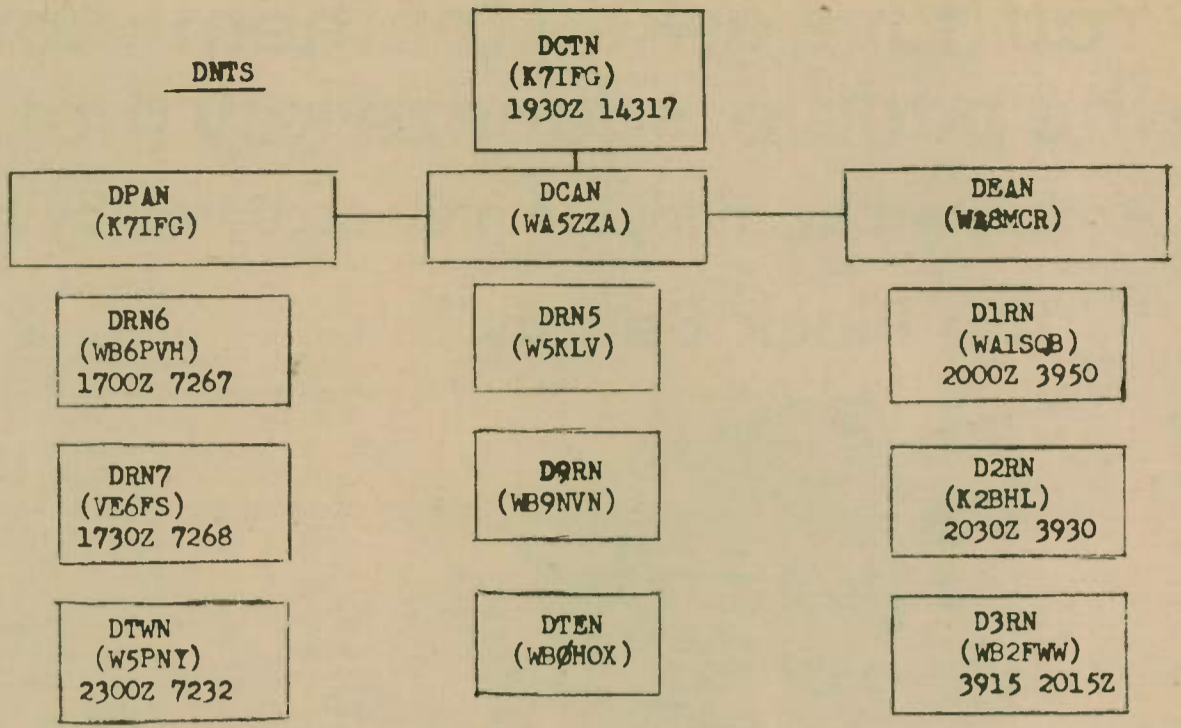


Figure 1

circuits. This would probably be the transfer functions between area nets in the existing system or on a new coast-to-coast RTTY network. Peak traffic times such as the Simulated Emergency Test in January, or the Thanksgiving and Christmas holidays would provide an excellent opportunity for the use of such a system.

RTTY is taking a heavy load off the CW nets in some local areas by utilizing teletype to handle the health and welfare traffic in disaster areas to agencies like the Red Cross. A station in a nearby area can collect all the H and W traffic and, when time permits in the disaster area, it can be sent in by RTTY as fast as it can be handled.

I would like to compile a list of people with RTTY capabilities at present and those who would like to start a RTTY network. Do you have any ideas on how to operate such a system? Drop me a message or a note.

### Simulated Emergency Test

The annual Simulated Emergency Test is right around the corner. It is usually held sometime late in January of each year. This is a test of our emergency communications capability including our ability to provide communications for the local agencies as needed and our ability to tie in the National Traffic System to provide long haul traffic capabilities as needed. All system nets will be holding special sessions and will therefore need extra net controls and liaison stations. Do your best, to help out this year. Consult the January issue of QST and see how you can assist. Contact your local emergency coordinator or local net manager and ask how you can help. After he gets up off the floor he will put you to work.

### Traffic Notes

1. The quiz in the October issue of Worldradio has brought in quite a few messages. The correct lineup of the equipment is Keyer, Receiver, Transmitter, Speaker, Transmatch and Amplifier. Did you figure it out? Do you have an interesting quiz that others might enjoy working? If so, please send it along.

2. When you deliver a

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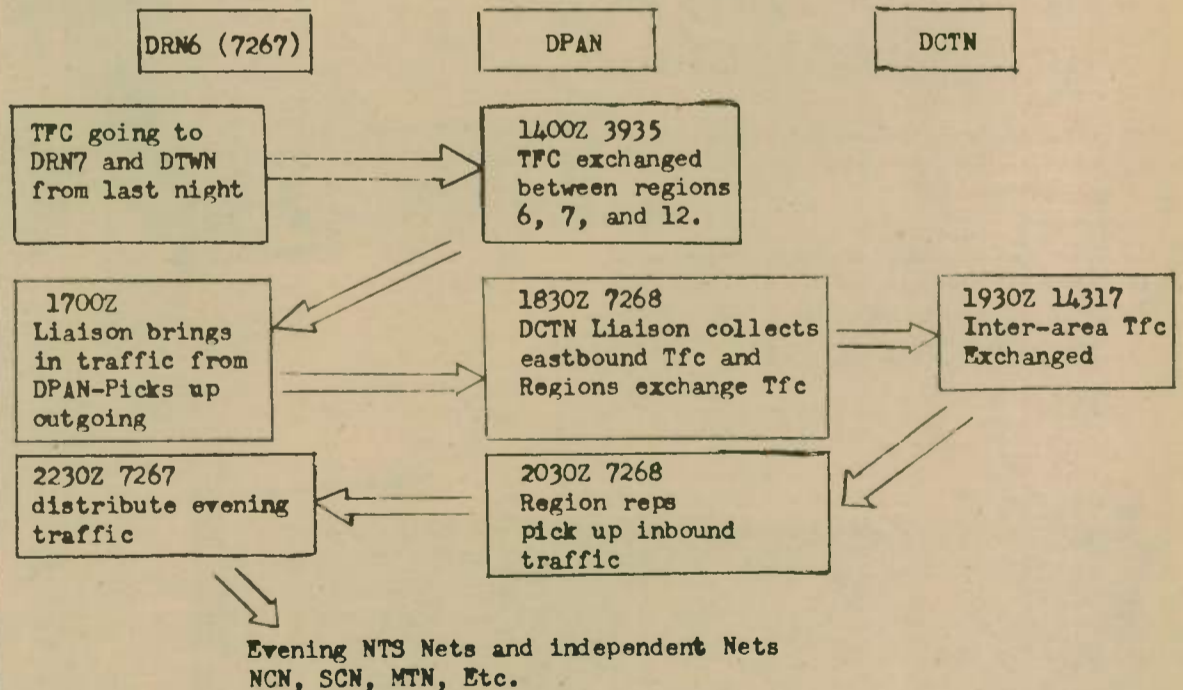
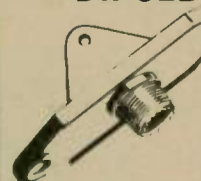


Figure 2

## DIPOLE ANTENNA CONNECTOR



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message do you use the good looking ARRL message blanks? If you don't, you should. They present a nice appearance to the station receiving the message and they also have a PR pitch on what the message really is and about Amateur Radio in general. You should also use the forms when mailing a confirmation of a phone call delivery.

3. Jim Aldrich, K7TQM, the manager of the Montana Traffic (please turn to page 47)

# TEACHER



The most important person to the future of Amateur Radio is the teacher of the license class.

Today, more than ever before, he (or she) holds the future of this great activity in his hand.

Those who spend their time making their contribution to Amateur Radio in this manner are so important because the periodicals devoted to another radio service are trumpeting the fact that the numbers in the Amateur Radio Service are dropping at about 300 per month.

This indictment of our service is then coupled with the statement that the other radio group should get more frequencies.

Yes, the sorry truth is that we are not keeping up with the number who pass away or do not choose to renew their licenses.

The propaganda effort by the forces who covet our bands is rising in pitch. And the only persons with their fingers in the dike are the (few) persons who volunteer to teach the license classes. Thank goodness there are at least the few of you that there are.

The abysmal situation is this: Each month we bring in about one thousand new amateurs. This is obviously not enough. This is not even one new amateur per month per city in the United States. Ridiculous! More people are, for example, getting pilot's licenses than are getting radio licenses. And, flying and the courses are far more expensive than the radio effort.

We may be facing a real tragedy and the majority just shrug their shoulders. Why is this? Why is there so much apathy to the real problems facing Amateur Radio?

There is something painfully wrong when people will call up an FCC office asking where there are classes, or who can give them a Novice test and the FCC employees say they don't know.

Is Amateur Radio wandering around in a fog? Any organized radio club that does not sponsor a licensing class should examine their collective conscience.

Any club that runs a class and doesn't tell the SCM, the FCC, put notices up in the local radio stores, get a notice to the newspaper, etc., should hang its head in shame.

Lest you think we are just barking at the moon or something let us emphasize that the growth of Amateur Radio is essential to its continuance as you presently know it. And, the average sized city produces but one new amateur a month. That does not replace the losses.

If there were no demand for frequencies we could ignore the statistics. But please know that there are heavy pressures that exist.

Yes, there are those among us who will always cry out, "I got my ticket by myself; nobody helped me," and all that. But this is a different era and there are more things competing for a person's attention. Call it spoonfeeding if you will but a rise in numbers is essential to the preservation of what we have.

Sticking one's head in the sand like an ostrich will not make the problem go away.

We plead, for the sake of this great avocation, that more people become instructors and, just as important, that we become more publicity conscious. We must communicate.

Every month we mail a copy of this newspaper to every newly licensed amateur. The big feedback from Novices is, "Is there a class for getting your General in my area?" So we have asked in this column that the instructors send in the information about their classes so we can list them here. Nearly 12,000 copies of this paper go out every month and we have, in the past few days, received but a couple of listings. (They'll be in the next issue.)

An example of just how bleak the whole situation is — the radio stores get a great number of the curious dropping in. They often ask if there are classes in the town (which there usually are not).

Why is it that the stores conduct classes? They must enjoy some masochistic glee in complaining about business being bad. What do they do to improve it? What are they "putting back" into Amateur Radio. If any place should be a center of information about what is going on in Amateur Radio in the local area it should be the radio store.

Instead, we drink of the poison of inertia, sinking ever slowly into the ooze of "I don't have the time, why should I do it, I can't be bothered," etc.

We've got to bring some snap and crackle, some spirit, some gung-ho attitude back into our activity.

—W6AJY

## Surplus *from page 43*

that is required is to the present values and work toward a definite goal.

**Conclusion**  
This article deals in general terms of what to expect in conversion of government surplus equipment to Amateur Radio use. Actual conversions of specific equipment will be covered in subsequent columns.

Your participation by way of comment and suggestion is requested: 9410 Walhampton, Louisville, KY 40222.

## Israel *from page 30*

Most Israeli amateurs receive QSOs. Also, due to language barriers, many QSOs are of the "Ur 599 hr Warsaw pse QSL" variety. Thus QSOs are quite short and many active Israeli amateurs receive literally thousands of QSLs each month. Naturally it is quite difficult to keep up with that sort of QSL load. Israeli amateurs realize this and they do have a free outgoing QSL bureau. Also, many have stateside QSL managers.

Since returning to the States I have heard some people say that they are hesitant to visit Israel due to the political situation there. I regret to say that frankly I would rather spend a year living in Israel than to spend one hour walking the streets of some of the USA's larger cities. I found many of the incidents reported in the world press to be greatly exaggerated. Come to Israel and find out for yourself.

After 6 weeks I left the Tell (dig) and came back to the States. It took several weeks before I quit sending that extra /4X on my callsign. I came back from Israel with a much deeper appreciation of Amateur Radio. I had often heard about Amateur Radio being an international fraternity but I guess I never believed it until I went abroad. Believe me, when you're 12,000 miles from home, in the middle of the desert, the words "What are you doing? Can we come over?" are music to one's ears.

## Baja *from page 5*

the incredibly rough and crooked roads. What had been a quiet spot in the Baja desert has become an instant community complete with barbecue grills, 8-deck tape player and girls dressed for the warm Baja California weather. All this vanishes as quickly as it arose and tranquility once more resumes.

So it was, after 38 hours of continuous operation with a radio tent full of scrap paper, sand and tire operators that permission came from net control to secure and a weary but rewarded group of radio amateurs packed their gear, trying to remember where everything had been packed only a few days before. Then they found their way from checkpoint 4 to their homes to contemplate the extravagant tabloid of events to which they had just contributed.

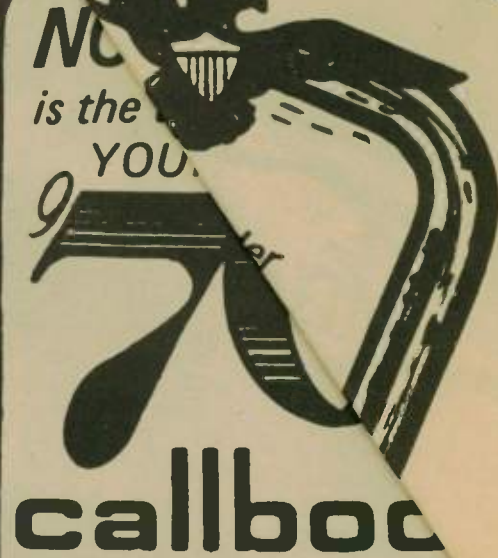


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# CLUBS

## Public service — a byword in Rochester Amateur Radio

Dedicated to assisting the public and advising them of services and functions provided by amateur radio operators, the Rochester (New York) Amateur Radio Association (RaRa) is completing another full year in the public-service field, according to club president William March, WA2CER. March related some of the significant events of 1975 conducted or participated in by RaRa.

special call of the RaRa club station during the International Sister Cities Convention in Rochester last August. Contacts were made worldwide as conference participants were put in touch with home or friends. Many of them were witnessing Amateur Radio in operation for the first time and all were quite impressed with what they observed and heard. Organizers of the convention so appreciated RaRa's efforts that the club was presented with an engraved appreciation plaque. What's more, Amateur Radio is now an official part of the Rochester Sister Cities group and is organized such that one Amateur Radio station will be assigned to maintain communication with each of Rochester's sister cities. Amateur Radio has now become an integral part of this international program.

March commented that WH2-SCI also participated in the Monroe County Fair shortly after the Sister Cities event. Hundreds of persons saw amateur radio operators working stations, were given informational brochures, saw a motion picture film and in general got a "taste" of the real thing—some for the initial time. Once again Amateur Radio came to the community and was assisted in its efforts by the local print and

broadcast news media which presented comprehensive coverage not only of the Fair activities but of Sister Cities as well.

It was late in the year that the Rochester Amateur Radio Association was contacted to assist in providing emergency communications for a simulated "disaster" to test the effectiveness and efficiency of the area's emergency services. Two meters was utilized and RaRa amateurs provided the major means of communication from the site of an airplane crash to surrounding hospitals. Not only were simulated disaster organizers able to observe the capabilities of emergency services such as ambulance and fire, but they witnessed an efficient handling of emergency "traffic" to and from the crash site.

Club president March noted that these are but some of the major public-service efforts of 1975. The club's 450 members are concerned about public awareness of Amateur Radio and the needed service it provides to their community at no charge.

Their efforts did not go unrecognized. Both the County of Monroe and the City of Rochester proclaimed separate Amateur Radio Weeks in May.

The Rochester Amateur Radio Association is proud of its members and the role they and

(please turn to page 19)



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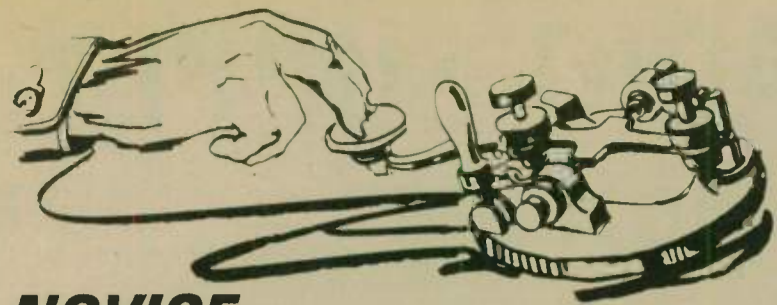
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## NOVICE

Well, we certainly have been getting a lot of input into the Novice mailbag. Glad to see it; keep it coming. We pretty well got bowled over by it all but it did furnish a lot of insight into what Novices are thinking.

We shall approach what most of them are commenting about.

I'm not so old or been around so long that I can't look back and remember and see the validity of what you all are talking about. The main point being, "It all seems so overwhelming...how do you learn it all...is there any way to learn it?"...and so on.

OK, First remember that a good number of amateurs are employed in the electronics field. That means they have had some formal training in the field, and someone who has studied in earnest will have a leg up on someone who just looks at it in his spare time.

Many of them, this op included, were fortunate enough to have our good Uncle Sam send us to one of his radio schools. You learn there. You might call it incentive licensing... 'cause you know if you flunk out of radio school you are back to lugging an M-1 around.

So if you don't have a background in electronics you can feel as helpless as an electronics person would if he

suddenly were plunged into whatever it is you do.

First, be patient. It takes time. It takes time just like it took time for you to learn the ropes in whatever field you are engaged in. There is no way to rush it.

We are speaking of learning on your own. Of course one can go to the various Amateur Radio classes around (if you can find one) or take a basic electronics course offered by the junior college or adult education facility in your area.

Now, there are a lot of amateurs around whose knowledge is excellent who are not employed in electronics. But it didn't come to them overnight either. It just takes time.

Lots of times you'll see letters to the radio magazines from some who complain that the technical articles are far too involved. Well, the only way you make any progress is to tackle that which is unknown. You'll never learn to swim if you never get in the water. Sure, you won't understand a lot of it at the beginning. But a little sampling here and a bit more sampling there, and pretty soon the pieces will fall together.

Can you name any subject in which there is "instant knowledge"? Can someone get into a plane the first time he sees

one and take off and get from here to there and safely land? Does a stamp collector know all the countries and all the stamps on the first day? We could carry this out to ad infinitum ad nauseum but I'm sure that you get the point.

Have patience. In time it will all come. Don't get discouraged. Remember, hundreds of thousands of amateurs before you have all gone through the same thing and somehow it all worked out.

Just thumb through *QST* every month. After awhile, like osmosis, you know more than you knew before. The *ARRL Handbook* makes great bathtub reading. And if you have one of the ubiquitous Radio Shack stores near you the book "From 5 watts to 2000" is an excellent book for the beginner. It is actually one of the very best books for the beginner we have ever seen. We well imagine that there are some very embarrassed people around with the knowledge that a company not exactly known for its involvement in Amateur Radio could come out with such a great book. There must be some red faces.

Speaking of books, unfortunately so many of them treat the radio subject in a manner as dry as dust. They throw formulas at people in the first few pages that you not only will never see again but will never use in your lifetime. Too bad, a lot of people are turned off because of such. But that Radio Shack book put it all in a bright, sprightly way that is outstanding. Bravo for them, as surprising as it may be.

Back to the main subject. Our advice is just to hang in there. Rome wasn't built in a day and all that. A lot of it is just unfamiliarity with the terms. If you hang around at the local radio club and hear the same words over and over again, and where and how they are used, it will all fall into place. It has for all the rest of them and it will for you.

Also, don't think that you have to end up a big engineer either. Keep some balance. Some guys go so far out that all they know about and all they talk about and all they think about is electronics, and a lot of the technical whiz-bangs couldn't tell you the name of their congressmen. So don't go overboard either.

To another subject. We'd like to tell you about something that is so good it is almost unbelievable. But I can assure you that everyone I know (and I know lots of Novices) who has tried this is wildly enthusiastic about it. It is probably the most effective, for the dollar, part of your station that you will ever find.

We're talking about the audio filter that you connect between your rig and your earphones. Oh! What a difference it makes. Like night and day. They range in price from 28 to 53 dollars and what they do makes them worth twice or more what people ask for them. They improve selectivity like you couldn't believe. Interfering signals drop completely out. Hiss and splatter go away. Signals you can just about tell are in there pop right up to full copy.

It may sound like we're going overboard and nothing could be that good. But we kid you not! These filters will give you the feeling of breathing fresh air after being in the chicken house.

I know we've talked about these filters before but we're also aware of the many new Novices who join us each month and I'm afraid that many of them don't know about them and won't hear about them. I run the one I have while listening to the 80-meter Novice band, and switching it on is like the way a man dying of thirst in the desert must feel when someone comes by and gives him a glass of ice water.

Next month we'll go into how to send QSLs...and how to get them, and anything else that you may bring up and want discussed. This is your column so let's hear from you.

## Invisible popsicle stick antenna

PAUL MAZER, WA2HGG

And you thought that used popsicle sticks were good for nothing. Well, let me tell you that with a batch of used recycled popsicle sticks, a recycled TV yoke and a small can of contact cement I made an antenna that gives me reports of S9 plus in all directions and is completely invisible to the naked eye.

I live in a city project where the very thought of an antenna for tx purposes is the biggest of all no-no's. For years I have been operating with a "hidden antenna" going up the side of the building matched with my faithful "murch". The big problem was that the wire went up the west side of the building and my "ears" were dead to the east and parts of north. The European DX was nonexistent.

My friend Jim Jaffe, WA2VOS, was nudging me for months to let him put up one of his secret antennas around the coping of the roof extending about 500' and had promised me that I would get out like a "bandit". Two weeks ago we got together on a rainy Sunday afternoon. With the pop sticks as insulators and using contact cement instead of nails we stretched the contents of an old TV yoke 365 degrees around the coping of the roof.

Monday night on our 15-meter net the reports came back that I was being heard east, west, south, north — all over the town. Signal strength readings of better than S-9 were reported. So it just goes to show what you can do with a little recycling of TV yoke and popsticks.

Don't sell the old long, random length, kinky wire antenna with a transmatch short.

— News Fuse, *Hall of Science RC*



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# GOVERNMENT SURPLUS

Col. Wayne Russell



[article three of a series]

Now that you know how to identify and obtain Government Surplus communication equipment (refer to Oct. and Nov. issues) we will cover the requirements of utilizing this equipment for Amateur Radio purposes.

### Original military use

As originally intended, most surplus equipment provides a specific function over a limited frequency range. Typical uses are: communications, direction finding, gun direction, navigational aids, meteorological recording, identification, etc. Generally, basic equipment does not provide a power supply, speaker or control circuits. Very little military communication equipment will operate efficiently within amateur frequencies without some modification.

### Conversion for Amateur Radio use

Innovative amateurs will enjoy modification of equipment

as substitution and making-do are necessities. Amateurs will find conversion of government surplus equipment an interesting and rewarding hobby, resulting in high quality gear at an economical price. Most modifications will not require extensive circuit changes or a degree in electronics. However, tedious circuit tracing and considerable time is involved. Basic electronic knowledge and following common sense procedures will pay off.

### Power requirements

Little surplus military equipment is designed for 115 volt 60 cycle power requirements. A lot of 115 volt 400 cycle equipment is available. Be careful because plugging in a 400 cycle transformer to a 60 cycle supply will ruin the equipment in short order. Other military equipment is designed for battery and/or dynamotor operation. As a result, the first consideration is converting the equipment for and construction of a conventional power supply.

### Technical manuals & schematics

Surplus conversion instructions and military technical manuals are recommended to make your purchase of surplus equipment practical. Technical manuals and schematics are valuable tools, eliminating boring wire by wire circuit tracing and wasted time. Try to obtain the technical manual or at least the schematic when purchasing your equipment. Aside from obtaining the technical manual with the equipment, or directly from the various military branches, we have

found Sam Consalvo, 7218 Roanne Dr., Washington, DC, 20021, and Quaker Electronics, PO Box 215, Hunlock Creek, PA, 18621, to be reliable sources. As a last resort, we may provide a limited amount of technical information from our library or direct you to the proper source.

### Test equipment

Required test equipment is simple and not expensive. Most amateurs will have available a volt-ohm-milliammeter and a grid-dip oscillator which are the basic test instruments. A signal generator and an oscilloscope will prove valuable when required for final alignment.

### Selecting the surplus

When the Surplus Bug bites make sure you are getting a bargain. Careful study is recommended in choice of equipment for Amateur Radio conversion. It may sometimes actually prove cheaper to buy commercial amateur communication equipment. Some surplus equipment just doesn't lend itself to conversion, although even this equipment provides an economical source of usable parts. Every amateur needs a full "junk box". Sometimes it pays to buy a piece of equipment to use only a particular part or section.

When you obtain the equipment is the best time to get all the plugs, control boxes and replacement parts you might need. Be prepared to furnish your own conventional power supply, speaker or other type of indicator and control circuits. Select the surplus equipment with a definite end result in mind. Stay close to your desired frequency as circuit construction will allow only a slight shift in frequency without major surgery. Much consideration

should be given before converting surplus which performs only one special function.

### Getting the equipment working

Before attempting any changes get the equipment working as it was originally designed. It is disappointing to be far into a conversion and find a critical component to be defective. After the equipment is operating properly, as originally intended, you can modify with a lot less effort. Modify by sections and check each change as you go by simply turning on the power. Remove or disable unnecessary circuits and add circuits to your personalized requirements.

### Plan conversion

Refer to handbooks, magazines, this column and experiences of other amateurs to decide what to convert and how to go about the conversion. Combine these sources to develop a complete unit meeting your requirements. Use the part of a conversion from one source you need, combined with the parts of other sources, to suit your particular needs. Disregard conversion sections that are not required, and do only what you

want to accomplish. Keep in mind that FCC Rules and Regulations must be observed in transmitter conversions. Mechanical ability is useful in dressing-up and tailoring bulky equipment to a more convenient arrangement.

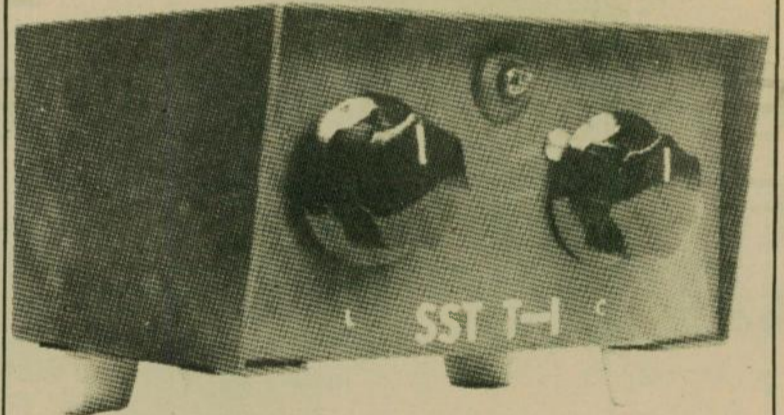
### Safety

Electronic equipment is capable of emitting ionized radiation, high voltage and current, and other potential sources of injury, disability and death. Use extreme caution and observe all safety precautions when working with any electronic circuits.

### Keep a record

Log the changes you make during the modification. Later you may need to refer back to your changes and find you have forgotten exactly what changes you made. Verify your modifications. Check for correct wiring and apply proper voltages as each section of the modification is completed. After the circuit is operating properly, align and peak each stage for optimum performance. Experiment and substitute freely for improved performance. All (please turn to page 39)

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2N3458	1.05	2N5465	0.90	MFE2009	3.20
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2N3821	1.30	2N2608	1.50	MFE3004	1.20
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2 to 5	4 to 30
2 to 6	4.5 to 20
2 to 8	5 to 15
2 to 9	5 to 25
2 to 10	5.1 to 50
2.5 to 9	5.5 to 18
2.5 to 11	5.9 to 40
2.5 to 20	6 to 60
2.8 to 10	6 to 70
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Thordarson TR-2	7.5KZ ct to 5KZ	

## RF connectors

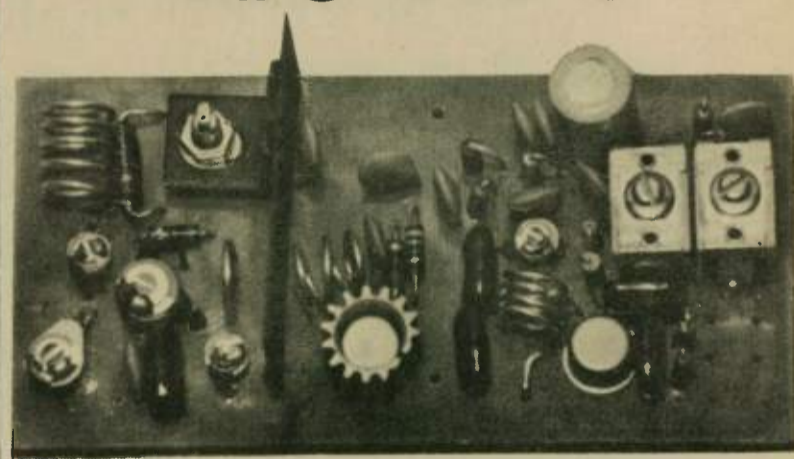
M358	3.35	PL-259	.65
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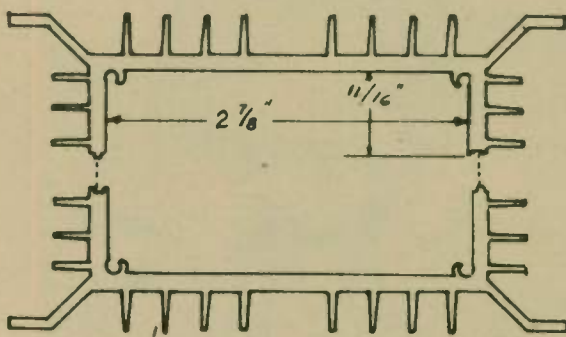
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2N6080	12.6 v.	4 watts	12 dB gain	300Mhz	5.45
2N6081	12.6 v.	15 watts	6.3 dB gain	300Mhz	8.60
2N6082	12.6 v.	25 watts	6.2 dB gain	225Mhz	11.25
2N6083	12.6 v.	30 watts	5.7 dB gain	225Mhz	12.95
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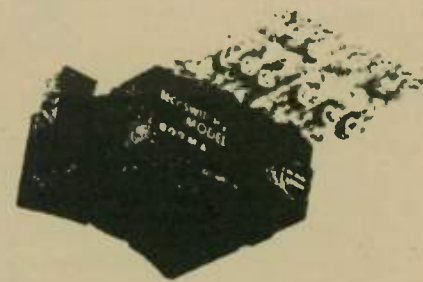
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Tiny 1"x1"x1/2" BCD and compliment thumbwheel switch made by EECO model 805M. Has diode board complete with diodes for both BCD & Comp. Removed from equipment. Excellent Condition.

1 to 10 1.95, 11 to 25 1.55, 26 up 1.15



# INTERFERENCE

Dr. Theodore Cohen, W4UMF

## RFI Bill gaining support

Support for HR 7052, the RFI Bill introduced by Congressman Charles A. Vanik in May, 1975, is apparently growing as a direct result of letters congressmen are receiving from their constituents. To date seven congressmen have joined with Mr. Vanik in sponsoring the bill, with two additional congressmen considering co-sponsorship at this time. We have also learned that the RFI Bill had been scheduled for a hearing not long ago, but that the schedule was changed due to other matters pending before the Sub-committee on Communications.

Regardless of the fact that no hearing has been held to date, the fact that eight congressmen are now co-sponsoring the bill, and that it had been scheduled for a hearing, virtually assures that the matter will be brought up again when the Congress reconvenes in January, 1976. For this reason it is absolutely necessary for amateurs who have not written Mr. Macdonald or their own congressman on HR 7052 to do so immediately. The Amateur Service must make known its position on the bill... a bill of paramount importance to us all. Write today! Write:

The Honorable Torbert H. Macdonald, Chairman  
Subcommittee on Communications, Room B331  
Rayburn Office Bldg.  
U.S. House of Representatives  
Washington, DC 20515

And don't forget to write your own congressman or congresswoman. They're going to have to vote on the measure

when it reaches the House floor!

RFI Packets assembled by the American Radio Relay League are once again available. Updated to include such items as Hal Richman's (W4CIZ) list of people to contact in various companies when RFI problems occur, the packet may be obtained by sending a large (9"x12") self-addressed Manila envelope with sufficient postage for 5 ounces to:

RFI Packet  
ARRL  
225 Main Street  
Newington, CT 06111

The ARRL RFI Task Group notes that it is receiving letters regarding interference to amateur operations as a result of radiation from entertainment devices. While such radiation must be suppressed in accordance with Part 15 of the Commission's Rules and Regulations, several manufacturers apparently are not producing equipment in conformance with Part 15. Be especially watchful for incidental radiation from the less expensive small-screen television receivers marketed today. If you experience interference from a home-entertainment device, file a complaint with the FCC being sure to include the manufacturer's name, the model number of the device and description of the interference being experienced.

In line with the above, reports are also being received describing cases where incidental radiation from television receivers is being reradiated by cable TV distribution systems. Again, if you experience interference of this type immediately notify the cable TV company and the FCC

requesting that action be taken to bring the level of incidental radiation into conformance with Commission standards.

If you have an RFI problem involving an audio device with external speakers, Al Markwardt, W5PXH, recommends the following "fix." Wrap each set of speaker leads around a ferrite rod (.5" diameter x 7" long, for example) in a jumbled fashion so that the wire covers the full length of the rod two or three times. Tape the wire covered rod so that it will not unravel and you will have an RFI choke that, according to Al, is successful in eliminating RFI almost 98% of the time!

We have recently obtained a copy of a form letter used by the FCC field office in Dallas, Texas to answer consumer RFI complaints. Aside from the thorough manner in which the letter discusses the RFI problem, it also notes that the Commission hasn't the time to personally investigate the thirty or so complaints it receives daily from northern Texas and Oklahoma. In a year's time, then, this FCC District Office receives almost 8000 complaints. Certainly the time has come for the manufacturers of home-entertainment devices to redesign their equipment so that the consumer, the radio operator and the Commission can be free of this monster called RFI!

In closing this month's column I want to thank the following amateurs from the San Antonio area for making our recent trip to their city so enjoyable:

Ray Clark, K5ZMS; Tex Kennedy, W5QDB; Roy Albright, W5EYB; Jim Wright, K5CDT; Les Essington, W5BE; Bruce Woodard, W5OSJ; Bill Parry, K5TSR; and Ray Wangler.

This group is very active in Amateur and RFI matters and

their efforts on HR 7052 are most commendable. San Antonio is truly one of America's unique cities, if only for the nice people who live there!

## Cousins

from page 12  
come from all around trying for the horseshoe pitching trophy. During the net session members comment on their local weather, some item of interest to the other members, or just say howdy and listen for awhile.

On any night some 50 to 75 check in and some contacts are made for an off-frequency rag chew with an old friend not heard for awhile. Membership is permanent; no dues or regular check-ins are required. An initial fee of two dollars brings a handsome certificate, membership card and a decal. To qualify for membership you must check in when "strikers" are called for by the net control on four out of five nights on the same night of the week.

Drop in some evening; they're a nice bunch of people.

-The Call Letter, Poway ARS

## Comment from page 27

Mainly by setting a good example in the maintenance of an efficient emergency service, preserving our reputation as technical innovators and keeping to the letter and spirit of the radio regulations so that our representatives can point with pride to our record when they meet the representatives of other countries.

Another way would be to return to the Morse key, using simple equipment to demonstrate a skill that the others lack and to show that expensive commercial equipment is not necessary for efficient communication. As an association we might well consider making available to overseas amateurs kit sets of such equipment as the direct conversion receiver described by Bruce Durdle, ZL2BAM, in the December issue of *Break-In*.

Time is not on our side. We have but four years in which to convert a lot of countries to our way of thinking about the Amateur Service.

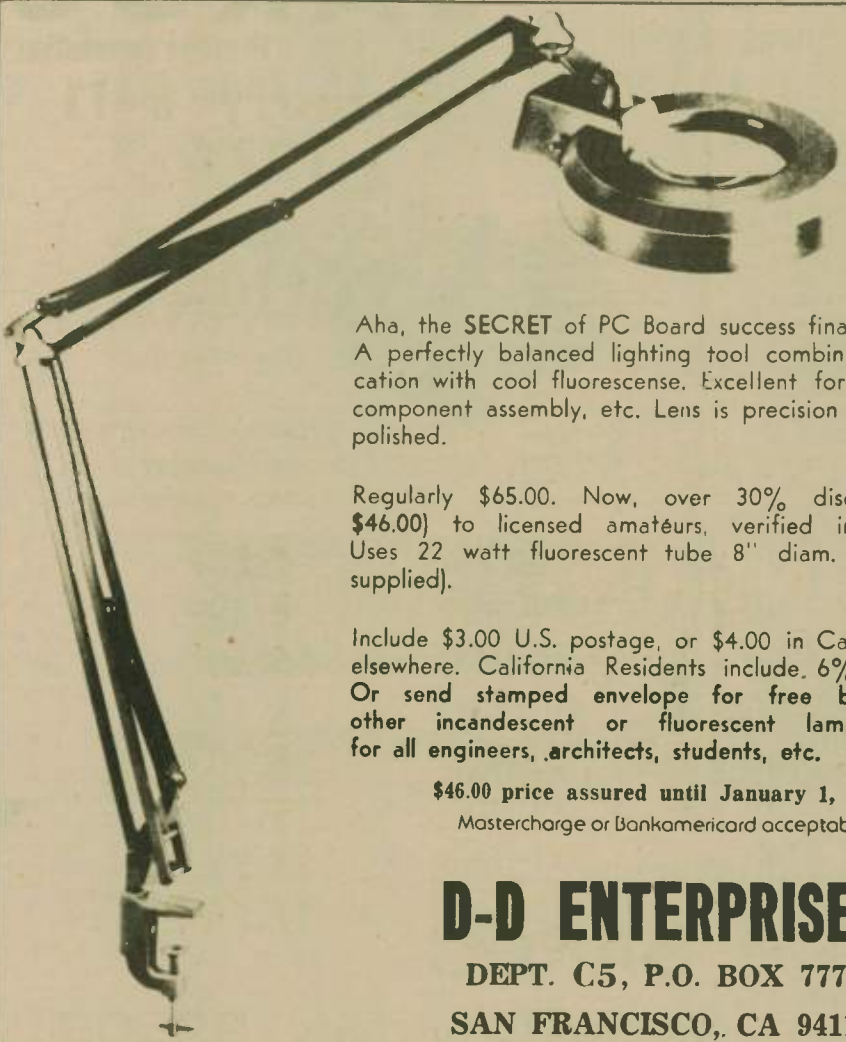
-Break-In, NZART

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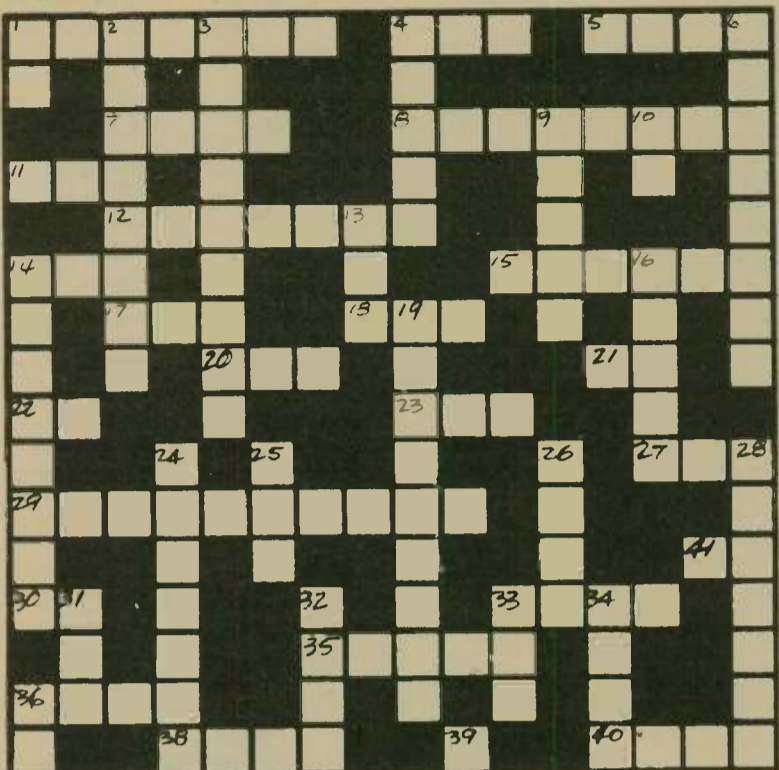
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SAN FRANCISCO, CA 94119

**Traffic**



(continued from page 38)

changed its time to 0030Z Monday thru Friday. The net meets on 3910 kHz.

4. Camp Hays, WA5IQU, is the new manager of the Fifth Region Net. Camp is in net control on the Daytime Continental Traffic Net so he keeps busy.

5. If you use the handling instruction HXD on a message make sure you give enough information for it to be carried out. HXD requests a reply message indicating when and from whom you got a message and when and to whom you sent it. If you only give your call it may not find its way back to you. Be sure and give your address too.

Included this month is a Traffic Crossword Puzzle to test your knowledge of traffic matters. Give it a try and we will print the answers next month. If it is too easy we can come up with one that will tax the best of you.

**Traffic Crossword ACROSS**

1. Comes after the preamble in a message.
4. "I got it."
5. Report time of delivery to originator and get reply from addressee (handling instruction).
7. Same time/same frequency
8. QRQ
11. When will it get there?

12. What you pull from the QRM.
14. Traffic \_\_\_\_\_
15. Local, Section, \_\_\_\_\_, Area
17. Area net covering Ohio (abbrev)
18. "The System" (abbrev)
20. Representatives from 9RN check into \_\_\_\_\_
21. Go Ahead (prosign)
22. Handles CW net activities (abbrev)
23. No (American Morse)
27. Official appointee that sends QSTs.
29. Phone Man
30. All Before
33. "I'll QSL when I get your card"
35. Central, Pacific, Eastern
36. 50 year club
38. \_\_\_\_\_/West
39. Invitation to transmit
40. South Pacific Net (abbrev)
41. North Carolina

**DOWN**

1. End of message (prosign)

2. Most important communications
3. This precedence is always spelled out.
4. Used to shorten net time
6. Most nets meet at this time.
9. Civil Defense amateur corps
10. All After
13. Louisiana CW Net
14. This state checks into CAN
16. State in RN7
19. State in RN5
24. Public \_\_\_\_\_
25. If you live in New Mexico you would check into the \_\_\_\_\_ area net.
26. Military Traffic System
28. SCN is a \_\_\_\_\_ net.
31. To copy CW on an AM receiver \_\_\_\_\_ add a \_\_\_\_\_ (abbrev)
32. Faster method of traffic handling \_\_\_\_\_ uses \_\_\_\_\_ (abbrev)
33. I can hear you between dits.
34. Third party traffic must be retained in \_\_\_\_\_ for one year.

**FREE**

Free service. As a magazine collector I have files of most amateur and electronics magazines and will be glad to provide free photocopies of any item available. Presently in the "archives" are *QST* 1921-1975; *CQ* 1947-1975; *73 Magazine*, *Popular Electronics* and *Electronic Illustrated* complete; *Ham Radio* except 1974 and 1975; numerous *Callbooks* 1940-1965; most *ARRL Handbooks* 1935-1965. Also available is a complete set of Perpetual Troubleshooter's Manuals, Radio Receivers, 22 volumes. There is no cost and, please, no postage or envelopes; they only slow things down. For fastest service phone afternoons or weekends. Don Erickson, 6059 Essex Street, Riverside, CA 92504, (714) 687-5910.

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  - b. Control signals
  - c. Data flow
4. Microcomputer memory
  - a. Types of memory: RAM, ROM, and PROM
  - b. ROM-RAM tradeoffs
5. Microcomputer Input/Output
  - a. Device addressing
  - b. Control of Input/Output
  - c. Communication with the outside world
6. Microcomputer interrupts and flags
  - a. Hardware vs software
  - b. Advantages and disadvantages of interrupt schemes
  - c. Timing
7. Microcomputer software
  - a. As a replacement for hardware
  - b. Modular approaches
8. Microcomputer peripherals and I/O port implementation
  - a. UARTS and communications chips
  - b. FIFOs and buffer storage
  - c. PPI chips
  - d. I/O port chips
9. Microcomputer software development
  - a. Machine language
  - b. Assembly language and editor/assemblers
10. How do I get started?
  - a. Equipment and materials
  - b. Tests
  - c. Costs, predictions of time and money

Each presentation of this course will be taught by one of the following instructors:

- |   |   |
|---|---|
| David G. Larsen, WB4HYJ*<br>Instructor, Department of Chemistry<br>Virginia Polytechnic Institute & State University  | Mr. Jonathan A. Titus*<br>President, Hamstron, Inc.<br>Microcomputer consulting firm<br>General manager, Tychon, Inc. |
| Dr. Peter R. Rony*<br>Professor, Department of Chemical Engineering<br>Virginia Polytechnic Institute & State University<br>*One of the authors of the Bugbook series | Mr. Christopher Titus<br>Consultant   |

Two dates and locations are currently scheduled. For your convenience they have been planned to take place during major Amateur Radio Conventions.

January 9, 1976  
SAROC Convention  
Hotel Sahara  
Las Vegas, Nevada

January 24, 1976\*\*  
Tropical Hamboree  
Miami, Florida  
\*\*Exact location to be announced

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We suggest that you not delay as registration will be limited in all cases. Cancellation will be accepted up until one week prior to the Seminar.

**ham radio** GREENVILLE, NH 03048 603-878-1441



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**Medical:** Any licensed amateur radio operator in the medical or paramedical field should join MARCO (Medical Radio Council). Contact: Stan Carp, M.D., K1EEG, 44 Main St., Saugus, MA 01906, (617) 233-1234.

**Editing a Club Paper?** Need some help? Amateur Radio News Service would like to hear from you. For info. write: Sybil Allbright, W6GIC, 8658 Encino Ave., San Diego, CA 92123.

**Revolutionary!!!** Learn or improve CW ability the easiest way. Developed by Russ Farnsworth, W9SUV. 13 wpm in half the time. 3 LP records, \$9.95, CA + tax. DANA RADIO, 2704 16th St. Sacramento, CA 95818.

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