international friendship • emergency communications • local public service

THE WORLDRADIO NEWS

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W5QPX brings back Ham-Hop

Around 20 years ago there was an organization known as the "Ham-Hop" Club. The purpose was to bring together Amateur Radio Operators who were visiting in foreign countries and those who were willing to extend hospitality to the visitors.

While the idea was quite popular and well-utilized then, due to a later lack of volunteer coordination the effort ceased to exist.

Gil Baker, W5QPX, of Amarillo, Texas has been working for over a year to bring the idea back into reality. He has now announced the formation of the IARH (International Amateur Radio Hosts).

Baker says that each country will have a chapter in the organization and each overseas country will have an amateur serving as that country's coordinator.

At present the USA chapter has members in 11 states including two radio clubs. Overseas coordinators have volunteered in Germany, Denmark, Norway and Sweden. A newsletter will be distributed with items of interest to IARHers.

Baker explains the workings this way: If WB2ZZZ will be making a tour of OZ, DL and LA he will write directly to the coordinator in those countries and ask for a list of members in the cities he intends to visit. After he receives the list he will write to the members listed and make arrangements.

The country coordinator will also have necessary forms to apply for reciprocal licenses.

Baker will serve as acting coordinator for the USA, and he invites inquiries. For those who lack experience in foreign hosting or travelling Baker has prepared an information kit with hints, suggestions and "do's and don'ts."

Baker sent **Worldradio** a copy of the information kit. It is wide-ranging, in depth and should be extremely valuable to those interested in the project.

The purpose of the IARH is to foster friendship, mutual understanding and cooperation between peoples of all races, religions and background. Baker calls it our chance to be ambassadors.

Baker thanks the many amateurs who took their time and effort to offer advice, comments and support in bringing the effort into being.

This newspaper supports the goals of the IARH and will keep its internationally-minded readers informed as to the efforts of the organization.

Baker has travelled widely in Latin America and hosted European amateurs in his home.

He is inviting interested amateurs to contact him at 101 Rita Blanca Trail, Amarillo, TX 79108.

Bill Eitel, W6UF

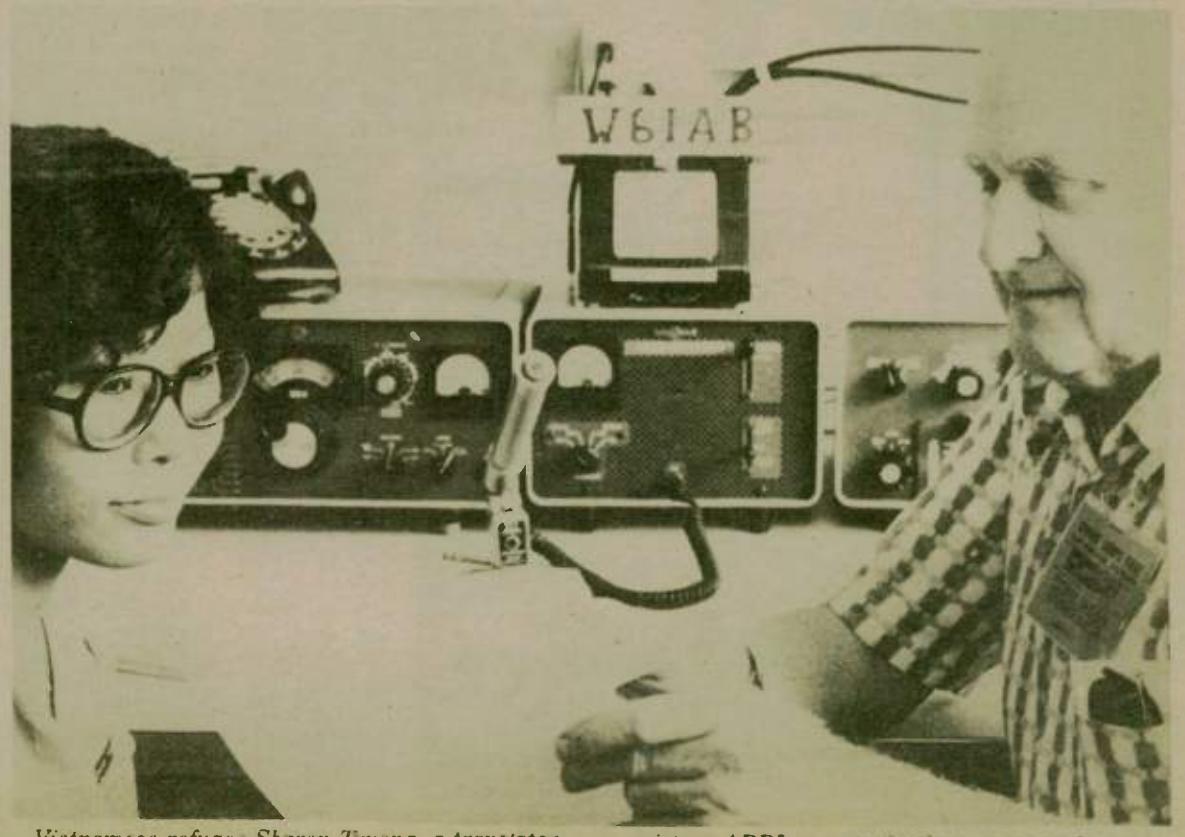
Bill Eitel W6UF candidate for ARRL office

[*Editor's Note: As Worldradio is non-political, the story below should not be read as an endorsement. It is a news story due to the stature of the individual.*]

"Amateur Radio is my whole life. It was my education, it led to my livelihood, it's my relaxation, it's where my friends are, it's even how I met my wife. Amateur Radio is everything to me. I feel I owe it something back."

Those were the words of Bill Eitel, W6UF/WA7LRU, candid-

(*please turn to page 2*)



Vietnamese refugee Sharon Truong, a translator and coordinator at the refugee center, Camp Pendleton, California, checks the wording of an outgoing message with Art Smith, W6INI, assistant ARRL communications manager for the San Diego section. The station, located at the center, is handling seventy-five messages a week for refugees.

Refugee traffic

Jane Rice, WA6OZS

Vietnamese refugee traffic is moving smoothly through station W6IAB, Camp Pendleton, California, according to Art Smith, W6INI, assistant communications manager for ARRL, San Diego section.

San Diego County amateurs, operating three days a week, are relaying about seventy-five messages a week on the twenty-meter Continental Traffic Net and the forty-meter Region Six Net.

Most messages are addressed to other refugees at Fort Chaffee, Arkansas, and Indian Town Gap, Pennsylvania. "These people are trying to find or keep track of friends and family who are in other refugee centers or who have moved after finding sponsors," Smith says.

There is a language problem in handling the traffic. "It's mostly the names. The Vietnamese language has few names, so each one is used over and over. This means that many Vietnamese have identical names," Smith explains. To lessen confusion and expedite delivery, messages include birthplaces and ages of addressees whenever possible.

A Vietnamese coordinator and translator works with the operators. Messages, translated into English for transmission and back into Vietnamese at the place of reception, are delivered to an official "locater" who makes sure the message reaches the proper person.

The station's Collins equipment and the W6IAB call are on loan from the MARS station at Camp Pendleton. For twenty-meter operation the 32S-3 goes into a Henry 2K2 linear.

Marines installed the fifty foot telephone pole that supports the four-band, three-element beam with forty meter extenders loaned by Les Clark, W6JSL. Contacts on seventy-five meters can be made with Smith's own special RACES inverted vee.

According to USMC sources, the Camp Pendleton refugee center will be closed by mid-October because the tent-city won't be habitable when rain comes. But as long as refugees are here the amateur station will be maintained.

Amateur Radio to exhibit at Smithsonian

Katashi Nose, KH6IJ

The Smithsonian's Museum of History and Technology will spotlight Amateur Radio in a bicentennial exhibit next year.

Elliott Sivowitch, K3RJA, historian and researcher at the Washington, DC, museum explains, "The entire exhibit will be called "Nation of Nations." It will essentially be a hall of immigration showing the struggles and upward mobility of immigrants to this country."

A section of the exhibit will stress the theme of interplay between the United States and the rest of the world. Here Amateur Radio will demonstrate a method of instantaneous communications that links nations.

Volunteers will man the museum station. They will operate a Collins KWM2A, a Drake 2C with shortwave crystals, a South African shortwave radio made by the Barlow Wadley Company, and a Yaesu FR101S. He admits that Japanese radios will predominate at the exhibit because "they make such excellent equipment."

Sivowitch says he hopes that the amateur radio section of the "Nation of Nations" exhibit will be able to contact stations from all over the world.

Honolulu Star-Bulletin

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Bill Eitel, W6UF-WA7LRU (*continued from page 1*)

ate for Vice-Director, Pacific Division, ARRL. He's known world-wide as the co-founder of *Eimac* and as the first amateur to make a transcontinental QSO on the 10 meter band.

Eitel was licensed at the age of 16. His interest was kindled at the age of nine when a friend's older brother showed him his spark transmitter. He went from there to eventually receive the highest decoration the U.S. government can bestow on a civilian, for his contribution to radar during WW II.

Eitel remembers loop modulation and burning the end of his nose with rf from the microphone. He was there during the first work on 80, 40 and 20. And he reminisces about John Reinartz, 1XAM and Ed Willis, 6TS, just beating him out to make the first transcontinental QSO on 20 meters.

The man who would eventually design such tubes as the 250-TL and the 4-125 started out by building his entire transmitter. He remembers using tin snips on stove pipe iron to make the transformer and getting his crystal from a stream bed in the Yosemite River. He says "those were exciting days."

Eitel tells that he was so intent on radio in those days that he never graduated from high school. He later was honored as a Fellow in the IEEE.

One could just about write the story of the development of amateur and commercial communications around Bill Eitel. His start in the radio business came through his friendship with Col. Clare Foster, 6HM. Eitel was at Foster's home in Carmel when Foster (besides his regular station) was running a 201A transmitter with 90 volts on the plate from a B battery. Foster had worked every continent except Europe on the rig. With Eitel at the key Europe was worked. On 40 meters the one watt made it to G5. Eitel would span the eras to later become the single largest financial contributor to the Amateur Radio Space Program.

Within a day of his 21st birthday, Eitel, with an introduction from Foster, had an interview with Ralph Heintz, W6RH, of Heintz and Kaufmann.

He went to work in the receiver shop. Of those days Eitel says, "Heintz was inspiring! We'd just work all night in the lab doing lots of experiments. Heintz became a second father to me."

"Later I was transferred to the tube development shop. It was a great place to work. The craftsmen there were real people and they took you under their wing. I learned a great deal about teamwork there.

"We did everything, not only did we build the tubes, we built the equipment to build the tubes with. We even slept in the place. When a new plant was built I hired Jack McCullough, W6CHE. We had been buddies on the air."

"What a man Heintz was, the more difficult things were, the more fun it was to solve the problems.

As in life, the son must eventually leave home and strike out on his own. Heintz and Kaufmann were but producing replacement tubes for Globe Wireless Co. and were not interested in going into consumer work. Eitel and McCullough wanted to build tubes for the amateurs.

At the bottom of the depression they went into business with a borrowed $5,000. And to get that they had to take in two partners who eventually sold their interests.

Eitel remembers, "The first display of our tubes was at the Fresno Hamfest. We came out with the 150-T, 50-T, 35-T and 300-T. Our market was the amateurs. The commercial people weren't sure we'd be around and wouldn't design anything around our tubes. You couldn't blame them.

"Bud Bane, W6WB, (now Bane Advertising, San Francisco) made up our first ad, which ran in *QST*.

"Our first break in the commercial market came in 1938 when an airline specified our tubes for their ground-to-air radios. Eventually every major airline used *Eimac* tubes.

"Prior to World War II we were working on radar. The cruiser *New York* was equipped with the first Navy radar which was built around our 100-TH. When Pearl Harbor hit we had 22 people, counting Jack and myself, working at *Eimac*. We had an order for 10,000 radar tubes. We worked straight around the clock. We gave those who had been with us for a while stock in the company. It was then worth about the paper it was printed on. Eventually it led to quite handsome rewards for them.

"But it didn't come from our war work. There was a lot of talk then about war profiteering. Well, we sure didn't see it. We made exactly one and three quarter percent profit. And that figure was set by the government.

"We sure made tubes. They had us build a plant in Salt Lake City. I went there and Jack stayed in San Bruno. We had about 1,800 employees at each plant. We made 24,000 304-TLs a month and the VT-127s, a thousand a day and VT-227s, a thousand a day. We even made the tungsten from raw materials.

"We made the tubes for the high power search radar and for the airborne radar. Other companies tried to make the tubes also. Theirs weren't as good as ours. They even used to come to our (*please turn to page 20*)

Worldradio

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

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The Worldradio News is an international conversation. You are invited to be a part of the action. This newspaper is written by its readers. Our goal is to be a valuable resource by distributing ideas and experiences.

We want to be beneficial to the Amateur Radio community. We publicize and support those who bring the flame of vitality to their efforts in this avocation. We feel Amateur Radio is of extraordinary significance.

We are positively-oriented and we ask your cooperation in assisting us to help develop the skill, potential and quality of Amateur Radio.

We see our mission as stimulating our audience and in that we ask your support.

The growth and future of Amateur Radio is one of our prime concerns.

Our readers/participants are an alliance of active radio amateurs who are concerned with reality. They use radio as a communication tool.

While we print all the news of this great activity, we particularly desire an input of stories dealing with the dramatic, the personal and the humanitarian uses of radio.

Through **Worldradio** you can make contact with other individuals who share your interests. And, this newspaper will be getting bigger and better.

Operation weather and AREC

It all started recently at about 12:25 p.m. when severe weather moved in to Dane County. An apparent tornado touchdown occurred on Madison's (WI) west side in the area of the Chapel Hill Apartments.

Red Cross teams were activated, along with Salvation Army units, police and fire departments. Of course, many amateurs also answered the call to assist in this disaster. MARA, Four Lakes ARC and CWRA all were represented in this emergency.

Ross Hansch, W9BG, was first to arrive at the scene of the Chapel Hill Apartments, while Ed Toal, K9QXY, and Flick, K3JYD/9, handled the command post and net control duties. The FLARC net frequency of 146.58 was used as the primary Red Cross traffic frequency. 16/76 was used for weather observations and communication between Salvation Army headquarters and units at the scene. 28/88 was also busy with weather observations and relaying reports from the Madison scene to the Weather Bureau via Sherm Carr. W9NGT.

The participants from MARA and FLARC were: Clyde Downing, W9HSY; Dennis Ruskin, WA9ZXA; Four Lakes ARC station, W9JZ; Ross Hansch, W9BG; Charles Johnson, W9OW; Elfred Lewis, WB9JLO; A. J. Cascio, WB9PVH; Dan Burrows, WB9DXC; Joe deMott, WB9FUY; Tom Doyle, WA9FTH; Bernard Heinemann WA9YDW; Matt Helt, WA9EKQ; Joe Androfski, WA9QGS; Bud Tandy, K9KNC; Clifton Lawson, WB9DKS; and Ray Richter, WA9AQT. Some of these units provided base station weather information while others worked in the field or at the scene of the disaster. All public service personnel were favorably impressed with the efficient handling of disaster traffic and the way the amateurs conducted themselves as communications people.

The whole operation closed down at about 7:30 p.m. Some units were needed the next day to help the Red Cross with some of their clean-up social work. Traffic was necessary between the disaster scene and Red Cross headquarters. A special letter of thanks from the Red Cross was published in the *Capital Times*.

While memories of this exercise lingered, only four days later another severe weather alert was sounded. Again many units such as Jim Aspinwall, WB9GVF; Clyde, W9HSY; Ralph Henes, K9VDD; A.J., WB9PVH; Ray, WA9AQT; Dan, WB9DCX; Richard Lust, WB9DWG; Mark Herro, WB9LSS; Glenn Miller, WA9VYE; Lewis, WB9JLO; John Tholen, WA9ITW; Ralph Shannon, WB9MGP; Stu Gurske, K9EYY; John Satterlee, WA9SAB; Robert Wagner, WØYLQ; and others were involved in weather observation information.

This time no damage was done to homes or dwellings that would require Red Cross services, so no disaster teams were sent into the field. Jim, WB9GVF, handled the net control duties and Clyde, W9HSY, was standby net control operator. Again information was gathered on .76 and forwarded to W9NGT via the .88 system. The weather watch was a success.

Two more times following these alerts the AREC went into action. Again our role was confined to just weather observation traffic. Red Cross personnel and some police personnel monitored these communications and were amazed at the expertise and efficiency with which these messages were dispatched.

A special hats-off salute to Sherm Carr, W9NGT, who collects all this weather information, tracks the progress of the various weather fronts and funnel clouds and reports this information in readable form to the National Weather Service. Sherm monitors several frequencies simultaneously and, using only one head, mind you, collects all this data and dispatches it to the weather bureau. A great job well done, Sherm W9NGT.

Another plug for the possible link-up of the two Madison repeater systems--it sure would make for some kind of emergency net!!

–MARA Newsletter, Madison, WI

Stop, look and read!

Polly Vincent, WN6LIY

Otho Jarman, WB6KYM, has overcome what can be considered a severe handicap in order to do his bit as a useful citizen.

At age 22 Jarman dove into a reservoir to save a drowning child. In doing so he injured his spine to the extent that he is not able to move from the neck down. With encouragement and assistance from the Barstow Amateur Radio Club, he has launched into Amateur Radio activities.

Using neck and face muscles to operate a system of controls, and tuning frequencies with a geared-down reversible motor controlled by neck pressure, he passed the FCC test for the General class license. Forming Morse code characters with breath sounds at first, he now transmits by voice.

This courageous individual spends long hours reaching out to other amateurs via his 15-meter beam antenna rotated from a three-position chin switch, turning power on and off with his lips.

Taking part in assisting travelers, emergency calls for help to the Highway Patrol, fire department, etc. is routine as Jarman also studies to upgrade his license to the Advanced class.

"The whole world has opened for me - there is nothing else like it," says Jarman.

YTARCer witnesses plane crash, notifies authorities

Clyde Hethen, W9HSY

W9HSY, mobile 9, was travelling westbound on I-94 near Hudson, Wisconsin, when he observed a low-flying private plane about 500 feet up just south of the highway.

The plane did a steep banking turn and then went into a spin and crashed. (Clyde says: "I thought to myself at the time, what's that guy trying to do, kill himself?") The plane smashed headon into the ground.

Clyde then got on 16/76 Minneapolis repeater with the words, "Break-break-break, W9HSY mobile 9". A station replied that the term "break-break-break" was not to be used in regular repeater communications unless it was an emergency.

Hethen explained that it WAS an emergency of the highest priority. A plane had crashed and was burning about 500 feet south of I-94 and one mile east of the Roberts-I-94 interchange.

They promptly notified authorities and by the time the fire department and police department arrived, the plane and occupants were completely burned. Four people died in the crash.

The emergency agencies came out the Interstate and simply cut the fence and drove to the crash site. In this case, it is unfortunate that no ambulance was needed.

Clyde, by the way, is a pilot.

"Smoke Signals", Yellow Thunder ARC, Inc., Baraboo, WI

An amateur with heart

Blind and handicapped people of the greater Kansas City area can now join thousands in other parts of the country in an enjoyable and educational avocation.

About two years ago, Capt. Leon C. Duggar, a communications-electronics engineer at Richards-Gebaur AFB (AFSC), MO, began developing courses and equipment modifications to make amateur radio operation by the blind and handicapped easier.

"I first realized the true value of amateur radio for the blind and handicapped shortly after helping a local blind amateur obtain his license," said Captain Duggar. "The idea blossomed in 1973 when a few of us decided to start an amateur radio club to encourage radio operation by the blind and handicapped."

The initial class subjects were Morse Code, radio theory and regulations of the Federal Communications Commission (FCC). By using Duggar's tape recordings, the blind were able to pass the FCC test and obtain their amateur radio licenses. In addition, Braille script helped acquaint students with the various techniques necessary for the operation of an amateur radio station.

With the assistance of other "sighted" radio buffs from clubs around the Kansas City area, an application for licensing the club was made to the FCC. Donations of funds and equipment poured in from area clubs and work parties were organized to assemble equipment, string transmission lines and raise antennas. Space for the new amateur radio station was provided by the Kansas City Association for the Blind Workshop.

Short-wave radio equipment in the facility is specially designed for the blind. The control knobs are outlined in Braille and the equipment produces audible sounds which aid the blind in short-wave radio operation.

The station is on the air, but Captain Duggar spends many hours teaching the new radio amateurs how to operate it. He isn't complaining though. "The satisfaction of the accomplishments of our club station has meant more to me than almost any other achievement in my life," said Duggar.

–"Airman," Official Magazine of the U.S. Air Force

RFI bill before Congress

Congressman Bennett answers NOFARS resolution on RFI

The North Florida Amateur Radio Society has received a letter from U.S. Representative Charles E. Bennett of Jacksonville regarding the resolution passed at the June meeting on radio frequency interference. A bill is presently before congress (H.R. 7052) which would give the Federal Communications Commission the authority to regulate the manufacture and sale of interference-prone home entertainment equipment. In addition, letters were sent to the Chairman of the Subcommittee on Communications, Rep. Torbert H. McDonald.

Here is the text of Rep. Bennetts letter to NOFARS:

"Thank you for your recent correpondence concerning legislation to regulate the manufacture of interference-prone types of radios and televisions. I appreciate learning of your organization's strong support for this type of legislation and I will certainly keep your views in mind. I have forwarded a copy of your letter on to the House Interstate and Foreign Commerce Committee which is considering this matter, so they will also be aware of your views.

With kindest regards, I am,
Sincerely,
Charles E. Bennett

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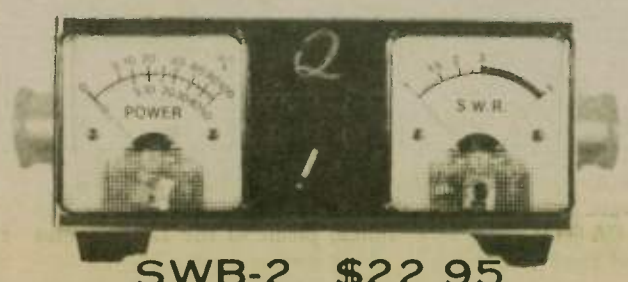

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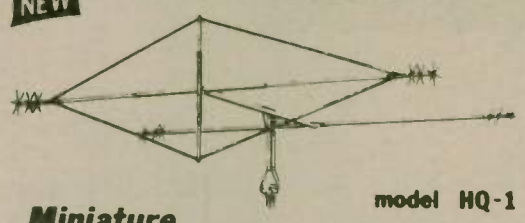

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Thelma Souper, ZL2JO

If Marcia, K6DLL, and Ted, W6SMU, Rast keep up what they're doing, you may be able to get "Branch" credit towards the New Zealand award by contacting their Fair Oaks, CA QTH.

For the second time in about a year they have hosted a Kiwi visitor. This time it was the well-known and extremely popular Thelma Souper, ZL2JO. (Last time it was Russ, ZL3AAA, and Zelda, ZL3AAB, Garlick.)

Thelma has held a license since 1931 and was the second YL ever to be licensed in New Zealand. While she has worked all bands, she is now most active on 20 meters and participates in the YLISSB System.

She likes CW and is quite a DXer with 270 DXCC countries and WAZ. She did express disappointment at not "getting Mt. Athos". Much of her activity is on SSB talking to her many friends around the world.

She arrived in Los Angeles on 30 July and stayed a couple of nights at the home of Carl Hoyer, W6FLA, who had previously visited Thelma in New Zealand.

Then it was over to the home of one of the most "international friendship" minded couples in Amateur Radio, Jessie, WA6OET, and Pete, WA6MWG, Billon, who had also visited with Thelma in ZL land.

Her next host was Joan McDonell, WA6QKC, in Thousand Oaks. Then Thelma stayed with Irma Weber, K6KCI. Prior to going to see the Rasts she was hosted by Clara Dishong, W6TDL, in Hemet.

Clara took her to Palm Springs where she had a "date shake" and experienced 120 degree weather. That was quite a contrast to her part of New Zealand (Otaki) where it never gets over 80.

This was Thelma's first trip to the U.S. She said, "I had so many, many invitations but the idea seemed but a dream. I'm still saying pinch me."

Her friends took her to the annual picnic of the Los Angeles Young Ladies' Radio League held at the home of Edith Nicols, K6AYJ), to the "Merv Griffin Show" and to Disneyland. Jessie, WA6OET, had a gathering of YLISSB members to her home to meet Thelma.

The Rasts took her around the California Gold Country and then to Lake Tahoe. Crossing over to the Nevada side she was able to see casinos for the first time and she played the slot machines "about four dollars worth".

About now her impression of the U.S. was, "Everything just overwhelms me; it's so large."

After leaving the Sacramento area her plans were to visit Buelah Barrick, W6NLM, in Santa Rosa and attend a meeting of the Bay Area Young Ladies' Radio Club. Then Veda Letcher, W6CEE, of Fort Jones, was going to take Thelma through the Redwood Country.

Her trip would conclude with Jessie, WA6OAT, taking her through the San Diego area.

Thelma was a bit overwhelmed by it all saying, "People have really made quite a fuss over me; everyone has been so nice."

(At that statement we must put in a comment: people are nice to nice people and Thelma is one of the most likeable people you'll ever meet.)

Marcia (at whose home this interview was conducted) has been talking to Thelma on 20 meters since about 1950 and they always look for each other during the YL anniversary parties. Thelma says the ISSB QSO parties begin at 1800Z, which is 6 a.m. for her. She's up and ready to go at it but she says most don't have their beams turned her way yet. But she can hear them.

Thelma was the founder of WARO (Women's Amateur Radio Organization) in New Zealand and was the first secretary. She was recently honored by that group by being voted in as their first Honorary Life Member.

Thelma said that more of the "girls" in New Zealand are getting interested in DX. She told that most would just get on 75 meters and talk to each other about their "homes and pets". But now they are finding out just how much fun Amateur Radio can be. Thelma credits Darleen Magen, HC2YL, with that.

She says that when Darleen came to New Zealand the YLs got to meet a DX person and a lot of them got on 20 meters for the first time just so they could talk to Darleen as she travelled around the world.

The interest in DX among ZL YLs has risen to the point that there was recently the first YL DXpedition and it was two ZL YLs.

Marion Lister, ZL1BKL, and Carol Johnston, ZL1ALE, went by themselves to Chatham Island. They are also working on plans to go to Kermadec Island.

Thelma said she was having an "exciting" time in the United States, and she thought no other visitor would have seen so much because of the way everyone was showing her the sights.

Actually, the way we see it, Thelma was just getting a little out of the Amateur Radio International Goodwill "Bank" that she has been making deposits into for many years.

Just to mention a few of the amateurs who have been hosted by her over the years: Nell Corey, G2YL, who visited her twice, ten years apart; Jessie, WA6OET, and Pete, WA6MWG, Billon, (Pete introduced Thelma to the electronic keyer) Joan, WA6QKC, and Duncan, K6LHA, McDonell; Carl Hoyer, W6FLA; Darleen Magen, HC2YL; Evelyn Scott, W6NZP; Felix Franchette, FK8AC; and Wayland "Soupy" Groves, W5NW, and his wife Beth.

Yes, Thelma has made friends all over the world. In contrast to the "you're 5 by 9 CUL" type of

Beth Taylor, W7NJS

QSOs, she has had hundreds of contacts with D. Bootman, G3MWG, in London, with skeds every Saturday night as band conditions permit.

Thelma is the kind of person you go out of your way to visit with. Also at the Rast's home was Beth Taylor, W7NJS, who took the bus from Portland to Sacramento. Beth has been talking to Thelma on 20 since 1965. Beth had also been visited by Nell Corey, G2YL, and she tells that during her trip to Europe Nell made hotel reservations for her. Without such help they would have been caught without a room.

Beth is active in YLRL and their DX "adoptee" program.

She tells about an incident when she was flying from Lisbon to Frankfurt. There was a big mix-up and no one knew which end of the terminal the plane would land at. She was to be met by Ursula Buerger, DL3LS. Ursula went to one end of the airport and sent Ella Grindel, DJ5UAC, (who didn't speak any English) to the other end of the airport. She stood there holding up a DL3LS QSL card until she was spotted and got everybody back together.

A couple of things that give Thelma a laugh are: Every year she sends a gift to the Los Angeles Young Ladies' Radio Club (she is one of their "adoptees") and they use her gift in a raffle. The first year it was a pair of earrings and it was won by Vada Letcher, W6CEE. Then the next year Thelma's gift was won by Vada. The third year, yep, it was again won by Veda, who now has been declared ineligible for the Thelma gift. Veda has written to Thelma each time about it and they feel it was meant that their paths should cross. And she gets a kick out of Rose Fishman, WA6LRW, who says Thelma talks like Hermione Gingold. (*please turn to page 27*)

TI9FAG Cocos Island story

Enos Schera, W4VPD

I was one of the operators on the Dxpedition TI9FAG, Cocos Island, which operated from 24 April to 7 May 1975. We all had a very terrific time on that nice beautiful island.

This was my second time on that island. I operated there on DXpedition with the call of TI9CF and TI9J in 1971 and I am the QSL manager for that 1971 DXpedition only.

For this recent TI9FAG DXpedition (24 April - 7 May 1975) QSLs go via QSL manager HB9AQM. The operators at TI9FAG were: Fernando, TI2FAG; Aldo, HB9AQM; Willy, HB9AHL; Fred, HB9AEE; and me, W4VPD.

This DXpedition was arranged about six months before going. It was arranged by HB9AQM who applied and received a legal license and permission to operate and land on Cocos Island. He received the legal call sign HB9AQM/TI9 to use there.

Meanwhile, some TI operators who are members of the TI Radio Club decided they did not want the HB9 crew to operate DXpedition on TI9, so they had Customs impound the equipment for three weeks when the crew landed at TI airport, it took many trips to Customs and we had to pay them $150 to release the equipment.

Next, the TI Radio Club called the Minister of Communications and told him HB9 does not have a reciprocal license agreement with TI-land and coerced him into revoking the license and use of call HB9AQM/TI9. So Fernando applied and received a legal license to use TI9FAG. We all had legal landing permission. TI Radio Club is now saying it was an illegal operation, but this is not true. The only thing I've come to the conclusion about all this is, apparently, some operators at the TI Radio Club are jealous when non-TI ops try operating TI9.

The TI Radio Club ops also learned we had signed a contract with the ship *Captain* to take us to TI9(long before the IT Radio Club operators decided to go) and even tried to bribe the *Captain* into not taking us but to take them instead. But the *Captain* refused to take them.

Meanwhile, since the TI Radio Club threw a monkey wrench into all our plans and it had us tied up for about three weeks or one month, they quickly rented another ship and beat us to TI9. They operated there about five days before we were able to get QRV at TI9FAG.

So now you know the true story of TI9FAG DXpedition, not rumors being put out by some members of the TI Radio Club. The HB9 ops had to waste over one month of extra expenses just trying to clear the troubles given them. I wasted a little over a week myself due to that trouble.

Here are some other facts of the TI9FAG DXpedition:

The ship took about 38 hours to reach Cocos from the TI mainland. Seas were rough and several operators got seasick. I'm glad I've got a castiron stomach. Hi! Along the way shipmates caught a 75 pound goldfish, about 4 feet long, and we ate it for chow that night.

When the helmsman changed watch he left the wheel and went below to wake up the next helmsman for watch. Meanwhile, the ship spun 180 degrees off compass heading. When the new helmsman took over and daylight came, the Captain noticed that we had been going in the opposite direction for three hours. Wow. We corrected the position, but that took three hours to get back to where we were, so the total mistake was six hours lost.

Along the way we saw many sea turtles, schools of flying fish, porpoise schools, a whale and a shark. When we finally reached Cocos Island, many dozen porpoises kept following by the bow of the ship and followed us into the harbor.

The ship anchored about 1/3 mile off shore and we got into a wooden dugout canoe and made a soft landing on the 150 ft. wide soft sandy beach. Just before dark, as we were about ready to put the rig on for the first time, a huge rain storm came and we had to bring all equipment inside the tent. Everyone got drenched.

First we had three rigs, but after a few days two rigs went out so that only left us with one rig to share. Every day about every few hours there was a huge rain storm and many times we had to shut the generator off and cover it up.

We all had a ball at night because one amateur would tell a story in Swiss. Then I would ask (in English) what was said. Then TI2FAG, who speaks Spanish, would ask what I said. Until it was over we had told each story in Swiss, Spanish, Italian, French, German and English and laughed our heads off.

One day Fernando, TI2FAG, shot two wild mountain goats which roam over the uninhabited island and we ate them for chow one night. TI2FAG and shipmates skinned the two wild goats on the rocks near the sea. After throwing the skins into the sea, they attracted dozens of sharks in a few minutes. Sharks can smell a thimble of blood in the sea from 1/4 mile off.

Shipmates caught a five foot long Wahoo and many Amberjack. Yellow Tail Tuna and Silver Tail Tuna, which make delicious chow.

Cocos Island is about three miles wide by five miles long and 1900 feet to the tallest peak. It has dense vines, bushes and trees all over the island and many wild goats and birds. I would take a guess that it would take two men two weeks to chop their way to the top of the mountain and get equipment to the top. Because of this, all DXpeditions settle for setting up operations on the base of the mountain next to the ocean (in the bay).

We had a 2-element beam about 21 feet high near the incoming ocean, which surrounded the beam every time the tide came in. Many times we got wet feet turning the mast by hand. We had two generators. We had to take one apart about four different times after it was not getting any oil, ran hot and froze its piston with excess carbon. We got it running each time after cleaning the carbon out. So when on DXpedition you've got to be a mechanic as well as an operator.

Several times TI2FAG and HB9AEE climbed to the top of the mountain. We set up tents between two nice cold springs flowing from the mountain. This is condensate water which forms on the thick foliage at the top of the mountain and makes terrific drinking water, bathing water, dish washing water and water to keep our watermelon and beer (and cold drinks) cold. All over the island you can see waterfalls running down the mountainside 800 and 900 feet long, crashing into the ocean at the base and looking like Niagra Falls.

Several nights we had radio blackouts on 14 MHz. Beginning about 0100Z or 0200Z the band went dead until about 1300Z next morning. But I want all of you to know, we did our best with all the troubles we had with that rig, generator, many big rainstorms that almost blew the tent over and the lousy band conditions. We tried our best to give everyone a new country.

We all really enjoyed that beautiful peaceful quiet tropical paradise island. I took many photos of the hundreds of boulders in the bay that have many names of ships, captains' name, crew names and dates on them. Some dated back to 1879. On my 1971 trip to Cocos one of the amateurs saw rocks which were carved with the names "Morgan" and "Drake" and dates back to 1731. The two famous pirates, Morgan and Drake, used to rob ships of their treasure and were supposed to have buried it all on Cocos Island. Because of this, about once a month, some scientific treasure hunting expedition obtains a landing entrance permit to dig for treasure there.

Before we left, TI2FAG chiseled all of our calls and the dates we were there. The HB9 operators also chiseled all their calls in a big boulder and I did the same. The calls I carved in a big rock in 1971 are still in good shape.

This ends another nice DXpedition and we enjoyed giving all a new country.

—The DXers Magazine

A35AK Tonga adventure

Mike Hitchcock, KS6FF

Two hours on watch and six hours off - not bad duty but the seas were rough and, honestly, I was happy to get off that tug after four days and four nights of rolling around.

My arrival in Nuku'alofa now established, I set about to find Mr. Simmons of the telegraph office who was to issue me a license. This was a Thursday and Friday. July 4 was the King's birthday so a three day weekend of celebration was to begin.To my horrors I found that Mr. Simmons was not in the office, nor was he expected. Yoiks! I took a chance and called him at his residence and luckily he was planning to come to the office late that day. So with $4.76 US. A35AK was born.

The next task was to find a place to stay. There seems to be only three hotels in Nuku'alofa. The "Dateline" was too modern for my tastes. Three times a week a band played at the "Dateline" and I could see myself coming over their

(*please turn to page 27*)

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Southland's AREC Rescue and Communications Vehicle

Neville Checketts, ZL4OX
photos by Stan Taylor, ZL4KU

Early in December, 1974, AREC Southland Section officially commissioned a Rescue and Communications Vehicle, the climax of almost a year's hard work by members of the Section.

The possibility of having a vehicle similar to Christchurch's had been discussed a number of times and first moves were made after our February meeting.

The major requirement was that the vehicle be similar in size to the Christchurch vehicle but because of ground conditions encountered in Southland it had to be a 4-wheel-drive vehicle. The possibility of obtaining a second hand vehicle was investigated but the availability of these was found to be very poor. We were advised to consider a new vehicle which, with a sales tax exemption, would give us a new unit at approximately the same price as a second hand one. We finally decided on a new International D1310 35cwt 4-wheel-drive cab and chassis on to which a body similar to the Christchurch body would be built. We obtained a price of $10,291 for the completed vehicle which, with the sales tax rebate, would reduce to $8200.

Service clubs in Invercargill were approached and support from these indicated that the project would be financially possible, so work commenced on raising the necessary funds. After many months of work the combined Queen's Park and Murihiku Round Table clubs raised $2260 and the Invercargill North Rotact Club $500. A grant of $1000 from Search and Rescue was received, thanks to the services of Doug, ZL2IY, and we also received $1000 from the Ministry of Recreation and Sport. The local Licensing Trust and Savings Bank donated $700 between them. The Section set to work and raised the balance of $2740 by cutting and selling fence stakes and asking business firms for donations.

The cab and chassis were supplied in October and work started on the body. We then received two set-backs. First we were informed by the Minister of Customs that we would not receive a sales tax refund on the vehicle as there was no provision for Communications vehicles to be exempted. This put the project in jeopardy as it meant an extra $2091 would have to be raised to pay the tax. After investigating all possibilities a fresh approach was made to Customs on the grounds that the vehicle was a Rescue as well as a Communications vehicle. After consideration, the Minister granted a sales tax exemption for the Rescue and Communications vehicle. While the tax problem was being resolved the supplier of the truck informed us that the price had increased $1000 and the body builder's price had also increased, but as it was now too late to turn back plans were made to raise the additional finance by running a color TV raffle.

The vehicle came out of the body builders on 22 November and AREC members started work on building cupboards, benches and all the internal work required on the vehicle as, because of the price increases, there were insufficient funds to have this work done professionally. This work had to be completed in 10 days as the vehicle was to be on display at the Royal Show on 3 December.

After many hours of working to midnight by the team all was completed and equipment installed for the show. All of the equipment installed was owned by the section prior to this project and we hoped to have some surplus funds left to upgrade some of this equipment, but this was not to be and the equipment on hand was installed with the thought of upgrading at a later date.

Equipment fitted in the vehicle, starting with the cab, is:

1 Heathkit HW12 80 mtr SSB Transceiver on DC supply and helical aerial.
1 Pye Reporter on the local utility channel, fire, traffic and ambulance.
1 Remote control unit from the rear Pye Reporter on Ch B AM Repeater.

In the rear of the vehicle we have:—

1 Heathkit HW12 on AC or DC supply.
1 Pye Reporter on Ch B AM Repeater.
1 AWA TR65 on 3680 kHz as well as CD Channels and 3885 kHz using helical aerial and DC supply.
1 Honda 1500 watt AC Generator with cables and lights.

A Pye Reporter on 119.1 MHz for ground to air and a CB Transceiver will be fitted in the near future when finance allows.

The DC supply in the rear is from a 12 volt battery which can be charged either by the vehicle or by battery charger when on AC power. All aerials terminate on a patching panel with outside access to allow external aerials which are carried to be connected to all equipment.

The well-being of the operators was considered by having a gas cooker, sink bench with water laid on, a bed which has a storage locker for aerial poles underneath and access from either outside or inside, and a folding bunk is above the bed for the second operator. Food supplies together with cooking and eating utensils enable the vehicle to leave town with out the delay caused in procuring food, sleeping gear and all the other bits and pieces needed for a few days in the bush. Also when arriving at the search area late on a rainy night the crew can have a meal and go to bed without having to erect a tent or awning in the rain.

The vehicle is painted yellow with a white roof on which a red flashing light and VHF aerials are mounted. An extra fuel tank is fitted to provide a range of 390 miles.

Maintenance and garaging is provided by the Invercargill City Council and the fuel is sponsored by Shell. This leaves very little in the way of financial burden on AREC in future years.

The Emergency Rescue and Communication vehicle will be of great benefit to Search and Rescue in the Southern Area as there are many searches in this area and police and others have stated before that they wished for a vehicle such as Christchurch's in this area.

Civil Defence here also welcomed having the vehicle in Southland as it can be used as a Mobile Headquarters or as a rescue vehicle in the forward area.

At the time of writing, late January, $1388 was still owing on the vehicle and it is hoped that this will be raised by the raffle.

In conclusion I wish to place on record the help received from the many private individuals and business firms who assisted the project with donations of finance

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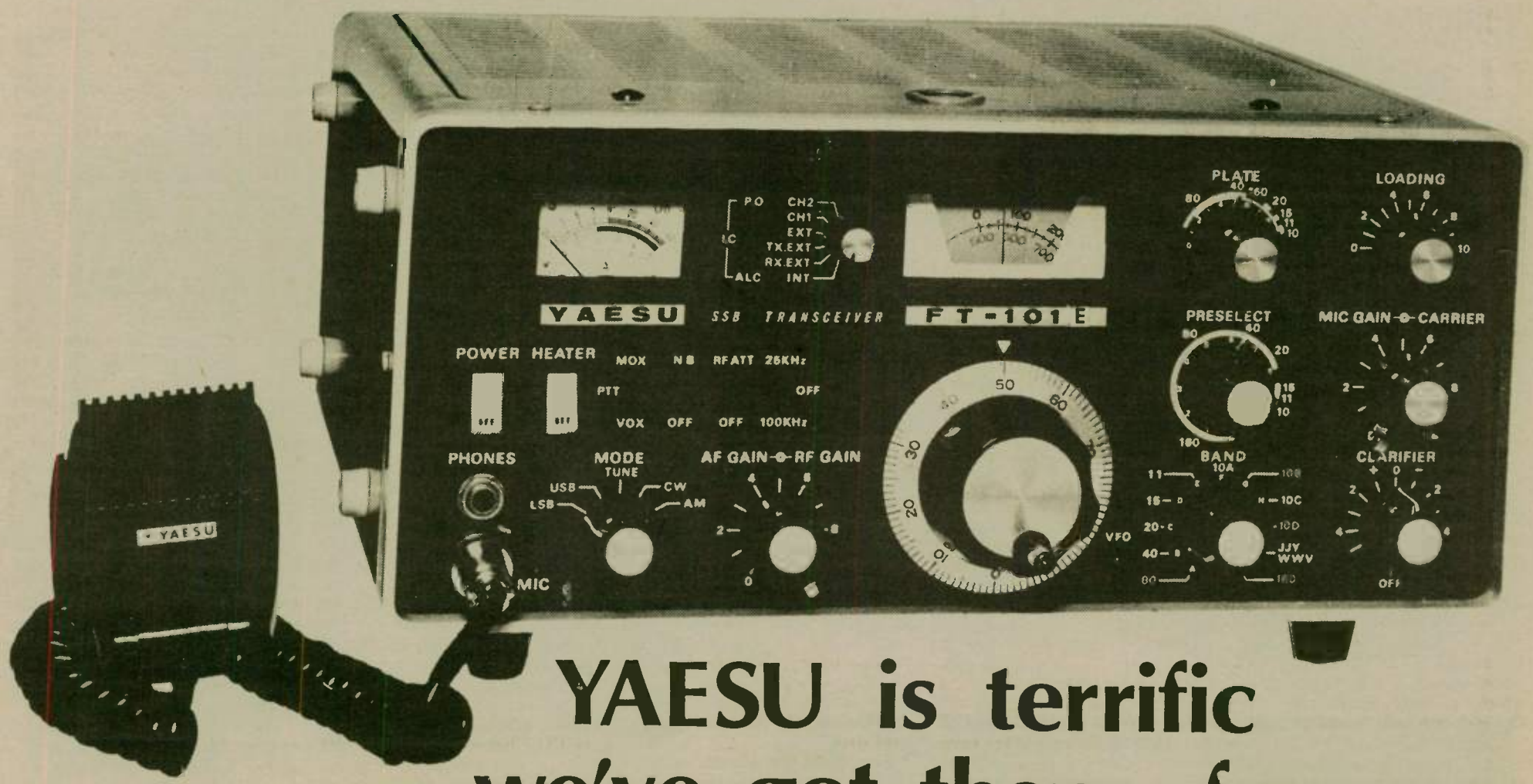

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Better return on DX QSLs

G.E. Hamilton, VE7AUE
[ex 5H3LV]

I thought I'd pass along the rules I use for a return of 75% or better on first try and almost 100% when I've sent 2 envelopes 7 days apart. My rules are primarily aimed at direct QSLs to stations in Asia and Africa. Here, even the stamps on your envelope, unless they are the most common ones, are valuable and mail will disappear just for the stamps.

1. Do not use any call signs on the envelope, either your own or his. If your are enclosing IRC's, once a postal employee discovers he can find IRCs in envelopes with these number letter groups your percentage drops to 50% or less of even reaching destination.

2. Use the most common type of stamps and as few as possible to make up value required. In many of these countries there are dealers who offer money for cancelled stamps at so much a gram weight. This money is a pitance to you and I, but a 1/2 kilo will probably purchase 2 days food for the person in these underdeveloped countries. He won't pick the common stamp as they are useless to him, only the pretty ones. Many of these people are those that work in the sorting rooms of the post office in these countries.

3. Never enclose any item which can be felt through the envelope, i.e. money [coins], souveniers, etc. Curiosity gets these people and they will open the mail just to see what's inside.

4. Never enclose foreign money bills in mail to Africa, Asia or Iron Curtain. In many countries of this world there are currency restrictions which make it illegal to receive foreign money through the mails. It could cost some amateur his station. Fortunately, most operators in these countries are involved in government or are big enough that they run through channels to find ways around this problem. In many of these countries the mail is searched periodically and many people are caught.

5. Use a fairly simple card with time in GMT, the date in GMT and your date in this sequence: day-month-year, In most of the world outside North America, and the percentage is 90+, this is the form the date is written in. Check your DX QSL cards and they will show you. If you keep your station log in GMT and have a clock on GMT you can't go wrong. If you work a DX-pedition and you are 1 hour out, the odds are only 50% you'll get your confirmation. One day out and its 10%.

6. To Asia and Africa use 4-5 IRC's if you want air mail reply plus a SASE. You think the burden is heavy upon you. Here is just one example and it's my own as a DX operator. While you pay 21 cents US or 15 cents Canadian for air mail per 1/2 oz., in my country the equivalent cost was 45 cents per gram and I received approx., 12½ cents per IRC. Even at this rate I paid a postage bill which averages between $300 and $600 a year to cover those cards received with 3 IRC's or less. This was over a period of five years. I also had a QSL manager during this period and fortunately he was a bit more ruthless than I because he would not answer QSLs unless they had enough in them to cover costs. Those showing short were placed in a file. As extra money accumulated from IRCs and $1 bills, he answered them. When I got home I spent $10 to clear them all out.

Another thing to remember when you complain about IRCs and their cost. As a DX station which has had over 5,000 QSOs a year outside of contests, and about 5,000 in contests each year, out of that I have had a 70-75% QSL request: 30% via the manager and 40% direct, with 5% hitting both. Just figure out the work load that represents. That's over 500 cards a month or 20 cards a day. The cost of the cards alone exceeds the total postage and IRC cost. But the most ardent DXers are those who complain the least.

A lot of this stuff you already know, but I included the background notes as I did for several other people who asked for QSL returns assistance. Use what you wish. As 5H3LV I worked 295 and got them all confirmed, but I had to scrounge around for the hard ones just as much as I do as a VE3 and a VE7 now. From 5H1LV I'm still waiting for four cards. As I have been unable to get my cards from Bud Kellam, K3RLY, who was the manager, I don't know if he got them or not. As a VE3 I have 205 for 205 so its somewhat consistent on returns.

I may be flying a PB4-5A from Victoria, BC to Sydney, Australia in early fall. Three months in VK and then back to VE7 for my company. It is still very if-if.

I fly a water bomber here for forest fire suppression. The aircraft is the Amphibious PB4-5A Canso which most Americans remember as a Catalina; however, a Catalina doesn't have wheels. Anyway, the Aussies are interested in a demonstration by two of our machines and the haggling over costs is going on now. Needless to say I am trying to see if I can hit two locations out bound and two on the way back. Any suggestions ? Clipperton is too far off our course, but VR3 is not. Will try contacting VE8ML, Ed as well. The odds are 5-1 against it, but I believe in being prepared! Hi!

—DXers Magazine

ASCII for OSCAR

FCC has granted special temporary authority for experimental use of the eight-level American Standard Code for Information Interchange, ASCII, by amateurs communicating through AMSAT Oscars 6 and 7 for the period ending 28 February, 1976.

Identification must be in accordance with FCC Rule 97.87. A record must be submitted to FCC by AMSAT at the end of the trial period. In turn, it will need reports from users before that.

AMSAT will consider specific projects for its Wednesday experimental periods of OSCAR use, if notified in advance.

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Norm Brooks, K6FO

MM

(*continued from page 32*)

woman crew member, became ill and medical attention was urgently needed for her.

The oceanographic survey ship *Thompson*, with K7LRA aboard, was about 80 miles away but unable to respond. Finally the super tanker *Mexico Gulf* indicated she could assist and that she was enroute to Honolulu. While W6MAB and K7LRA maintained contact, Ron Carpenter, WB6YID, contacted the Coast Guard at Long Beach who "came up" on the frequency. It was at about 0500Z when the *Mexico Gulf* arrived and sighted the emergency flares tied to the mast of the *Lucayo*.

The interesting point was that the crew of the *Mexico Gulf* was from Taiwan and didn't speak English, BUT aboard the *Thompson* was a scientist who was from the Orient and could communicate with the captain of the tanker *Mexico Gulf*. Messages had to be relayed from the *Lucayo* via the stations in California to K7LRA/MM2, then back to the *Lucayo*. As it worked out, WB6YID contacted the mother of one of the crewmen on the *Lucayo* and she was able to listen in on the exciting events as they unfolded out in the Pacific Ocean roughly 1500 miles from the coast of Mexico and about the same distance from Hawaii.

The *Lucayo* was brought alongside the *Mexico Gulf* and a check was made of the damage to the *Lucayo*. Due to additional damage caused by the heavy seas pounding the small *Lucayo* against the 700' super-tanker, she was losing more of her mast and the side rails were splintering. The crew of the *Lucayo* was given one hour to decide whether to stay with the *Lucayo* or go aboard the *Mexico Gulf*. The final words of the skipper (Larry) were copied with sadness on the part of every amateur who was standing by on the frequency, and all of our hearts were heavy when he announced that they were leaving the *Lucayo* and heading for Honolulu aboard the *Mexico Gulf*. The *Lucayo* was a part of these three hardy crewmembers, and Larry said over the air, "There goes $150,000.00." He did not have the heart to scuttle her, and he said that he'd come back later to pick her up.

When W6MAB and WB6YID lost direct contact with the *Lucayo*, an operator near San Francisco took over the job of maintaining contact with the *Lucayo*, Long Beach Coast Guard and KH6GE in Honolulu.

This was more evidence of the unity that exists in this grand fraternity we all share as Amateur Radio operators. I later talked to Larry's mother and she told me that on Friday, 24 May, she was heading for Honolulu to await the arrival of Larry, Donna and Ron.

We all take things like this in our stride and think nothing much about the part we may play in an emergency situation, whether it be actively participating or just standing by quietly on the frequency in case we are needed. Still in all, it sure raises a lump in your throat when you acknowledge the fact that, "It's great to be a part of this fraternity whose usefulness and availability are accepted facts...so be PROUD Old Man." **[Ron Carpenter, WB6YID]**

And from **HR Report**

Another marine "rescue" via Amateur Radio, this time with a 36-foot sailboat named *Aburah* owned by TI8FAG.

The craft was 200 miles west of Ecuador when a passenger came down with suspected appendicitus. TI8FAG called in on the Maritime Net and was put in contact with **USARSO MARS**, KZ5USA, which contacted the

(*please turn to page 14*)

Dr. Ronald Wood, W6CTQ, Chief, Microbial Diseases Laboratory, operating WB6WMI.

Department of Health to utilize Amateur Radio

A plan originally designed several years ago is finally coming to fruition through the continuing efforts of C.H. "Hank" Ostby, WB6CCJ, Emergency Welfare Services Coordinator for the California State Department of Health. The plan is an Amateur Radio emergency capability for Emergency Welfare Services under the California Disaster Plan.

After several attempts to bring the matter of an Amateur Radio net to the attention of high-ranking officials, WB6CCJ finally reached the ear of the Secretary for Health and Welfare in Governor Brown's cabinet. Secretary Mario Obledo had been requesting assistance of Health and Welfare Agency employees in seeking ways of improving departmental services. The net would link the Department of Health stations in Berkeley (WB6WMI), Los Angeles (K6TLT) and the Governor's Office of Emergency Services in Sacramento (W6JN) with a proposed station in Sacramento, headquarters for the State Health Department.

As a result of his suggestion, WB6CCJ was given a special award of recognition for his "contribution to better government." The Secretary's office has strongly suggested to the office of the Director of the State Department of Health that the organization follow through on the suggestion.

With California a state that is especially vulnerable to natural disasters, and with both responsibilities for emergency medical services and emergency welfare services charged to the State Health Department, a "back-up" Amateur Radio communications capability would seem to be a necessity.

This fact was emphatically pointed out on the afternoon of 1 August 1975 when an earthquake measuring 4.9 on the Richter scale struck the town of Oroville, CA, approximately 66 miles northeast of Sacramento. While the Health Department's Berkeley station, WB6WMI, was able to establish almost immediate contact with Oroville amateurs, the Department's Sacramento headquarters had considerable difficulty in making land-line contact with the scene even with the use of telephone load line control. Assessment of potential damage was first received through WB6WMI and then relayed to Sacramento.

For a number of years the headquarters of the California Department of Health was located in Berkeley. Only within the past three years has control of the Department been moved to the state capital. While centered in Berkeley, the State Health Amateur Radio Emergency Service (SHARES) was formed.

Equipment was first purchased by the members. Later, as the Director of the then State Department of Public Health recognized the value of Amateur Radio as an emergency communications link, he had the department buy the equipment from the group. Volunteer members of SHARES handled the mike and key.

Current officers of SHARES include Dick Mosley, WB6ILC, president; Charles Juels, MD, WA6GHL, vice-president; Hank Ostby, WB6CCJ, secretary-treasurer; and G. L. "Doc" Humphrey, DVM, WA6QVS, club trustee.

The organization envisions that in time there will be an emergency net linking all of California's 58 County Welfare Departments and the even more numerous city and county Health Departments. The welfare departments carry the responsibility for emergency welfare services while the health departments handle emergency disaster medical services.

Health and Welfare Secretary Mario Obledo [l.] presents award to Hank Ostby, WB6CCJ [c.]

Lunch time finds SHARES club members checking into WCARS.

SHARES members meet regularly.

Traffic

(continued from page 38)

message to those I have received. If you didn't figure it out, have one more try and we will present the results next month. Dale Diehl, K5WUF, in Oklahoma City has sent along another quiz we will try next month.

Kentucky Novice Traffic Net

Mark Frank, WA4NNG, sent the following information in a message: The Kentucky Novice Traffic Net meets on 3725 kHz at 0100Z Monday thru Sunday and at 1300Z on weekends. Mark would like to invite all Novices and Generals in the area to check in and learn how to handle traffic. Thanks Mark.

Virginia RTTY Net

The Virginia Radioteletype Net meets on 3625 kHz at 2330Z Daily. This net was reactivated in June. Perhaps you have RTTY capabilities but haven't checked in as yet. Do it now! RTTY can play an important role in emergency situations by providing methods for relaying volume health and welfare traffic. Chris Galfo, WB4JMD, is the net manager.

The Virginia Ham

Phil Sager, WB4FDT, edits one of the most complete monthly amateur papers we've ever seen. The July issue is 16 pages long complete with photos, statistics on all the Virginia nets and reports from each net manager. Drop Phil a SASE at 3827 N. Abington St., Arlington, Virginia 22207 for a copy of a great paper. If you are an active operator in Virginia you should be on the mailing list.

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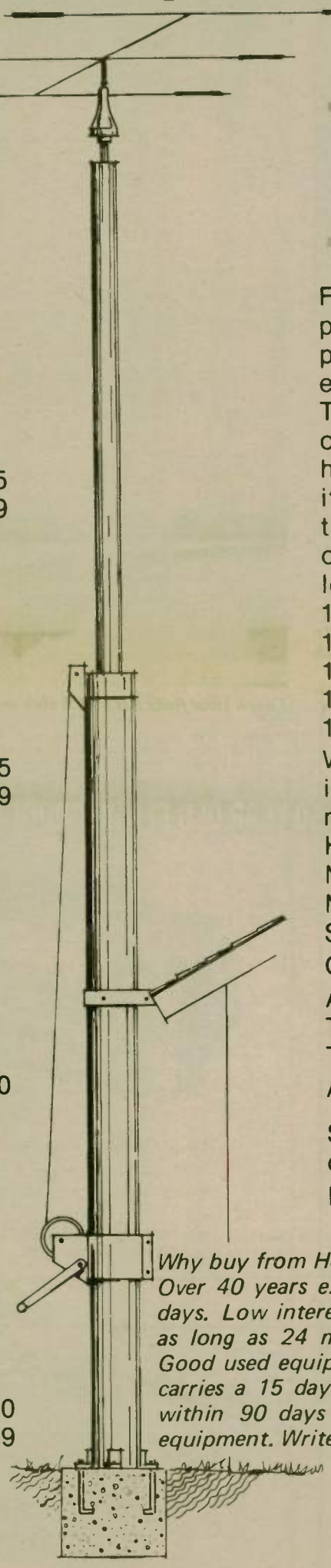

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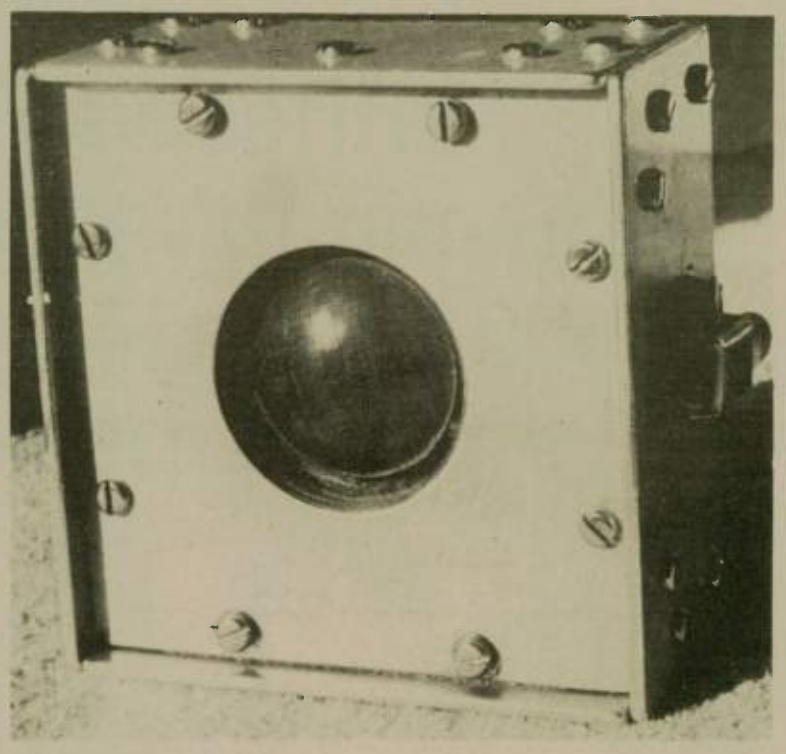

CW drive

Gayle Sabonaitis, WA1OPN

There have been other handicapped amateurs discussed in this paper, but who among deaf-blind operators took an Advanced class exam?

Dave, KH6BIH, has his Advanced class license, but he took the test when he still had a lot of hearing. As it turned out, I, Gayle, WA1OPN, who was a Novice class amateur in 1971, Technician class for a few months in 1973 and then General in the fall of 1973, jumped off my General class status in March of 1975 and took my Advanced class exam just before all this proposal fuss blew up. I passed the test at my first visit to the office and now have the new license.

The pictures below show my transducer and me at the station. I have been confined to 40 meters because I do not have access to other bands at the moment. I definitely will be on other bands in the near future.

But with a good setup as shown here I have enjoyed Amateur Radio to its fullest through my sense of touch. I can copy at the rate of 25 words a minute and send at 18 words a minute, but in heavy interference I ask amateurs to send at 18 words a minute to override interference.

If anyone wishes information on the transducer, please contact **CQ Magazine**. Also contact **Ham Radio** magazine because I have an article in both. **CQ** ran the first article in April and one in July on another device. **Ham Radio** magazine ran it in July and both articles are very easy to follow.

The other device discussed in **CQ** in July is about the pathsounder, which is a mobility device for blind and deaf-blind people. I will not risk redundancy here; I merely wish to bring amateurs' attention to them in case they would like to read up on these devices.

Many handicapped amateurs find fancy ways to tune their transmitters. I merely use the Drake 2NT to tune like a hearing and sighted operator because I found out many women are not keyed to fancy tuning aids. My methods have always been simple; therefore, even in Amateur Radio I remain a simple amateur.

•

MM

(*continued from page 11*)

Rescue Center in the Canal Zone. A C-130E with a surgeon and two paramedics was sent out and, still using Amateur Radio for communication, found the *Aburab*. The paramedics were dropped safely and subsequently successfully treated the patient.

Thanks to Alan Biddle, WA4SCA/5, co-pilot and radio operator of the C-130E, for the story.

Mail Barrel

As I scan the files I have come across a letter or two that has been put off for one reason or another. With hopes that the bilges are at last dry, here's Dave Nelson, K7RGE...

I've been reading your Maritime Mobile column in **Worldradio** for a while now and find it quite interesting. I've not yet had the opportunity to work MM but am considering it. Could you give me some background on the legal requirements?

Some of the outings are from California and others are in the sea of Cortez between mainland Mexico and Baja California. Essentially all of the trips are short and in coastal waters. I understand that Mexico does not have reciprocal operating agreements, so does this prohibit operation in their territorial waters?

I would appreciate any information you could give me on these and related matters. Keep up the column!

The rules for MM operation within the International Regions are fairly well defined in the ARRL license manual. Basically, 75-80 meter operation is illegal within Region II — a real hang-up, believe me! Calls are signed Mobile Region 2 when on the high seas or Mobile 6,7, etc., when in state waters. Maritime Mobile designations are not necessary. On CW your call /R2, or whatever, is sufficient. Some controversy exists as to the status when at anchor or moored. I've always maintained mobile status analogous to that of a parked car. Perhaps a reader will clarify this point.

Operation in Mexican territorial

(*please turn to page 15*)

Amateur's $35 QSLs are jammed by Secret Service

Even in these times of inflation a $35 bill can buy you a wealth of trouble with the U.S. Department of Treasury.

Willard S. Wilson, Sr., W3DQ/KP4DQ, a Wilmington amateur radio operator, electronics store proprietor, and Delaware's pioneer radio broadcaster (he founded Station WDEL) drew more than a passing interest from the Secret Service by sending out $35 bills, complete with his picture in the center, for a year and a half. The flip side of the funny money contains a QSL form for confirming radio contacts.

Among those who have received his calling card are the mayor, the governor, and former U.S. Sen. J. Caleb Boggs, a Delaware Republican.

A couple of months ago the Secret Service decided to get in on the action. More correctly, agents decided to stop the action by having Wilson turn in his bills.

On March 5, Wilson received a letter from James R. D'Amelio, special agent, stating "the opinion of the legal counsel of the U.S. Secret Service" that the bill was illegal "since it contains design features in sufficient similtude to portions of a genuine $20 Federal Reserve Note.

"This matter has also been discussed with the U.S. attorney's office, District of Delaware, and you are requested to cease and desist distribution of this type reproduction in the future. Kindly turn over all remaining reproductions to Special Agent Richard K. Rathmell."

Wilson said he complied with the directive. Well, almost. He turned in most of the remaining bills.

Maybe he held a few for what he liked to do occasionally in the past. He'd go into a bank and ask a teller for change. Then he'd hand over one of his $35 bills and request five sevens.

Wilson said he'd like to pursue the matter but doesn't want to spend a lot of money for a lawyer. "If I could find someone who would do the thing just for fun..."

Perhaps he can find a barrister strong on law but weak on economics. He could pay his attorney in thirty-fives.

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MM

(*continued from page 14*)
waters comes under the same jurisdiction as if you were ashore. My suggestion is to anchor way out and sign Region 2. Hopefully, the government's attitude will change in the future.

De Wayne Perry, W5YK...

"Please give me a good lash-up for a shipboard amateur rig to be used by a passenger and double for use in a small boat (new Atlas 200? Ant.?)"

Your thoughts on an Atlas are certainly valid. I would certainly go for a compact solid state design. Special attention should be given to protecting the circuits from corrosion. This will usually require some potting or sealing of the components. In a future issue I'll disclose some techniques by the oceanographic people at Scripp's Institute. Next issue will feature a QRP rig specially designed for life raft, emergency, portable type operation. Antennas generally end up in the vertical category although beams, "cat whiskers" and inverted "V"s have been used on larger vessels.

Antenna tuners are almost essential for multiband operation. I have used *ARRL Handbook* designs with good success. As always, a good ground is essential for efficiency. In the commercial line I really like the little SST unit. Why pay a lot of money for a bulky unit when the SST unit will do the job for less money and a third the size.

A nifty package using a typewriter case can be fabricated to house both a small solid-state rig along with a small tuner. In the lid is contained some wire for an antenna and some braid for grounding.

As another month goes by, I thank those who have supported the column with their contributions. Til next month, 73, Bill

•

SSTV

(*continued from page 30*)
column (evidently a printer's error). My XYL is Sandra, WB4OEE, and I do not know Bob Campbell--do you? At least this correction proves how fast info can appear in **Worldradio News.** I don't think many other magazines or newsletters could give a similar "month turnaround." If you want the latest info as it happens, **WRN** is "where it is at."

So much for this month's activities — now what about you? Why not drop me a note on your SSTV activities or plans and include a photo or two. The photos will be promptly returned if desired. My address is Eastwood Village #604N, Rt. 11 — Box 499, Birmingham, AL 35210.

•

ARRL

(*continued from page 16*)
100% communications.

Oh yes, an amateur will tell you that every day (well almost every day) during a period of months in a particular time of year, on a particular band, he can maintain communications.

But the problem is that disasters seem to like to strike at a time of day when no communications path is possible to a certain point, or during the wrong time of year.

The only answer one has during such time is radio relay between points which can establish contact since land lines, the most reliable system other than satellites, will be down. A system of relay prepared in advance is the best way to handle such situations.

Part 6 continued next month

The American Radio Relay League

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

Continued from last month
No. 6 in a series

One of the major functions of the Communications Department of the League is the Amateur Radio Public Service Corps, the major public service organization in the areas of traffic and emergency communications.

While the Amateur Radio Public Service Corps, better known as ARPSC, is relatively new, the actual operations have been carried on throughout the history of the League under different names and titles.

When ARPSC was first formed it combined the Amateur Radio Emergency Corps, first started in the 1930s, and the National Traffic System, which started operation in 1949.

Later RACES was also added to ARPSC, giving a three-division organization which covers the major organizational structures in these areas of Amateur Radio public service.

Perhaps no other area of the League's operation is so often misunderstood as are the branches of ARPSC,so let's look at each of them for background and organizational functions.

The Amateur Radio Emergency Corp is the oldest branch of ARPSC (although the trunk line traffic system which led to the National Traffic System is older), and it was started during the 1930s to bring together the many kinds of Amateur Radio emergency planning out in the field.

AREC was started on the theory that the real emergency planning and organization would be by independent clubs and groups in the field at the local or at the most regional level.

Leadership of AREC is by the local Emergency Coordinators who are appointed by the Section Communications Managers. The local EC signs up members in AREC. Any interested amateur can join whether he is a League member or not. The local EC will also, in most cases, design a plan for local emergency operation and will often be the leader of the emergency group for a club or other amateur organization.

The local AREC groups in many cases will be closely aligned with the local chapter of the American Red Cross and may even have a club station located at the Red Cross Headquarters. The Red Cross cannot operate an amateur station under their own name since only individuals or bona fide Amateur Radio clubs may obtain licenses.

The ARRL has an agreement of cooperation with the American Red Cross signed by the presidents of the two organizations. But this agreement does not mean that local chapters must work with local amateurs or maintain an amateur club station.

Such agreements at the local level must be worked out between the local organization and Red Cross chapter. This is where the leadership in the AREC can do the best public relations and emergency planning work.

The League has "suggested" emergency operating plans, organizational models and other materials available to the local club and Emergency Coordinator.

Also serving at the section level is the Section Emergency Coordinator who coordinates the efforts of the local ECs in his section, encourages growth and participation in the AREC at the local level and travels to various clubs and organizations to give any help that he can in organizational matters.

While the SEC works with local clubs (as does the SCM) and is coordinating the efforts of the local ECs in his section, he has no authority to tell the local group how to run their show. Nor does Headquarters have any more authority over the local group than to make sure that the name of the League is used only for good Amateur Radio organization.

There are many thousands of amateurs who have signed up as members of the AREC either as full or supporting members. Those who are full members take part organizationally, while those who are supporting give what time they can, especially during an emergency or disaster.

AREC members have given yeoman service in countless disasters, often under adverse conditions where all planning and organization seems to "go like the wind." It is this ability of the American and Canadian amateurs to maintain communications when "all else fails", including our own plans and organization, that has given us such a high name in the radio service.

The National Traffic System replaced the original ARRL Trunk Line System in 1949. The Trunk Lines had become rather unwieldy in operation due to the fact that amateur communications capability allowed very wide coverage and relays for short distances were no longer needed.

The NTS, as it is called, is an official ARRL organization. Basic control is through the Communications Manager at ARRL Headquarters. The basic structure is through area, regional and section level nets, with each performing a specific function. Let's look at each level.

The basic net in the NTS is the section net and in theory it is the only net where there are members. Each ARRL section should have a section net, although in practice this is not always true.

In sections where the section covers an entire state there will most often be a section net, but in states where there are several sections, such as California, several sections will combine to form a combined section net. The Northern California Net and the Southern California Net are examples.

The reason that there is a need for combined section nets is a lack of participation on the part of amateurs in a given section. While amateurs do not always have an interest in traffic work, the handling of messages is one of the best ways that we can perform a public service to justify our frequency bands.

Section nets can be either on phone or CW and, in fact, there can be one on each mode, or any other legal mode for that matter. The Route Managers are often in charge of the CW nets and the Phone Activities Managers are in charge of the phone nets at this level.

The next NTS level is the Regional Net which covers a number of sections. As an example, the Sixth Regional Net (RN6) covers California, Nevada and Hawaii (Pacific Section). There are ten sections in RN6, although only two section nets participate at present, NCN and SCN.

Each section net sends representatives to the region net with traffic for other regions and to pick up traffic for their sections. Thus no one is really a member of the net at the regional level since this is just a point of relay between sections.

As with the regional net, the area nets are made up of representatives from the regional nets in an area. There are three areas in the NTS: Eastern, Central and Pacific. There are three regional nets making up the Pacific Area Net for example, the Sixth, Seventh and Twelfth.

Also involved in the operation at the area level are the stations making up the Transcontinental Corps, the TCC. These operators handle traffic between the area nets on a scheduled basis.

The flow of traffic is inter-section through the region, intra-region through the area, and area to area via the TCC.

There are many critics of the NTS who complain that the system is slow and involves too many relays. To an extent this is true, but the answer to the problem the critics give is to establish large area nets only, plus point-to-point stations who claim they can handle traffic faster than a system. This may be true, but such stations are limited.

The difficulty is in misunderstanding the basic theory that the NTS is built on. One must first answer the question of how you can handle a large amount of traffic between a large number of cities.

Let's assume that you have many sections, each with at least 25 large cities or towns. If there was only one station from each location with one or two messages for some location within the section, as well as outside, one has a problem of how to handle the traffic as quickly as possible. If a system is set up nationwide on one net, and stations have traffic for locations all over the country, it would be almost impossible to handle traffic in a reasonable amount of time.

In fact, if there are 73 sections involved then the total number of stations active is 73 times 25, or 1,825 STATIONS. A net of this many stations would be almost impossible to handle.

Thus it is impossible to have a direct-contact system where one station sends all its traffic directly to the cities involved, even if propagation conditions would allow this on a daily basis.

Again critics will point out that there are near nationwide nets now operating on, say, 20-meters. But there are not stations on these nets from every one of the major towns and cities in the country. Thus when you check in with a message for "Podunk" you are told that there is no station in Podunk so they can't handle, go to another net or someone will take the message for "relay" to another net or schedule, or something like this.

The key word here is relay. We must accept the fact that at times we can only handle traffic by relay.

Of course our problem is that, unlike Western Union, we don't have stations on to handle traffic in every city 24-hours a day. Thus we do the best we can with what amateurs we have on a volunteer basis.

It's interesting to note that Western Union is set up like NTS with connections going through sectional, regional and area offices. And they have about the same kinds of problems as NTS.

A personal example involves a message I received from Santa Barbara that took over 24 hours for delivery and this was not a night message either.

Another problem that critics often do not understand is the fact that in any system using the high frequency bands (3-30 MHz), propagation conditions are never

(*please turn to page 15*)

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Hope Cliver, WA6AWV, and Louise Evans, WN6AUK.

Effort

Bill Ellis, WB6USB

I was very happy to see Hope Cliver's picture in **Worldradio** (see page 1, August 1975 issue). She worked very hard for the license and as a student was a delight. Her code was letter perfect and brought a round of applause from the class when she was given a class "final exam". Her parents both attended the class and received their Generals also. They have since passed the Advanced - Hope missed it by a whisker I was told.

As hard as Hope worked for her license, the real award for "worked the hardest" must go to the lady who is pictured here with Hope - Louise Evans of Palm Springs, CA.

Louise will admit only to being "over 21", but her application shows her to be 68 years young. She came to class with no background in electronics. She had never heard Morse code. She has no friends or relatives who are amateurs or received any extra help.

She jokingly admits that she lived in isolation for 20 weeks while she took the class and studied the necessary material. She and Hope went to the FCC together and she passed on the first try. I say "hats off" to Louise Evans. While I was instructing her I thought a hundred times, "You're trying to do the impossible," but by gosh she did!

I teach a class in Culver City, starts 16 September 1975, 7:00-9:00 p.m., about 20 weeks in length. Interested persons can contact me at National Sales Audit, 4252 Overland Blvd., Culver City, CA 90230, or the Culver City Parks and Recreation Department, Culver City. The class is taught for the General or Advanced class licenses only. No background is necessary.

Station Appearance

Robert W. Myers, WA2JZX

Here is my entry for the "station appearance" award. I had to drag the camera out the other day because, after going through the trouble of putting together a station that I would be proud to show, I realized that I had no picture of it.

About a year ago I found myself in the position of having a spare room in my house. My station had always been located at a spot in the basement near my workshop. When a visitor would come I would apologetically show the "ham shack," and it certainly looked the part of a shack. At the suggestion of my wife, Marge, plans were made to move the gear out of the basement into the spare room.

We looked at several possibilities for an operating console and found that an "L" shaped desk purchased in a local office equipment company would be our best bet in the type of room available. The room is paneled in a light colored paneling which brightens the room and is a definite improvement over the basement decor.

In the other parts of the room not shown in the picture are a sofa that converts to a bed for overnight visitors, a carpet on the floor and several pieces of furniture that make the room into a den.

For summer operation, a wall mounted air conditioner keeps the room at a comfortable temperature. At the operating position one can look out the window and the temperature in centigrade can be read off a thermometer mounted just outside.

On the wall immediately in the area of the station are awards earned over the period of station operation. Directly in front of the operator is the low band station and directly to the right is the two-meter FM rig. The various drawers in the desk provide storage for stationery, logs, Callbooks, QSLs, etc., keeping the station as neat as the picture shows at all times.

The station is now always referred to as an Amateur Radio Station and is never called a shack anymore. I now have a station that I can be proud of and I don't have

Please turn to page 44

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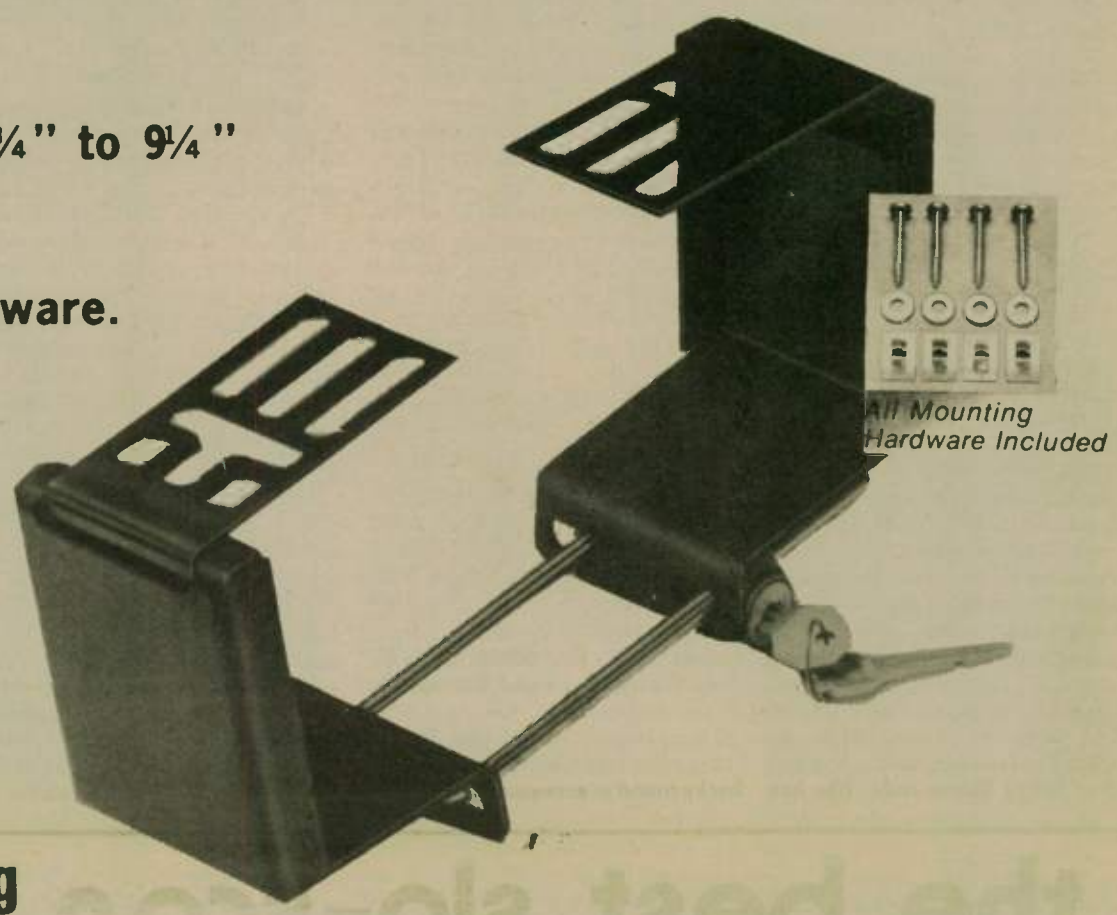

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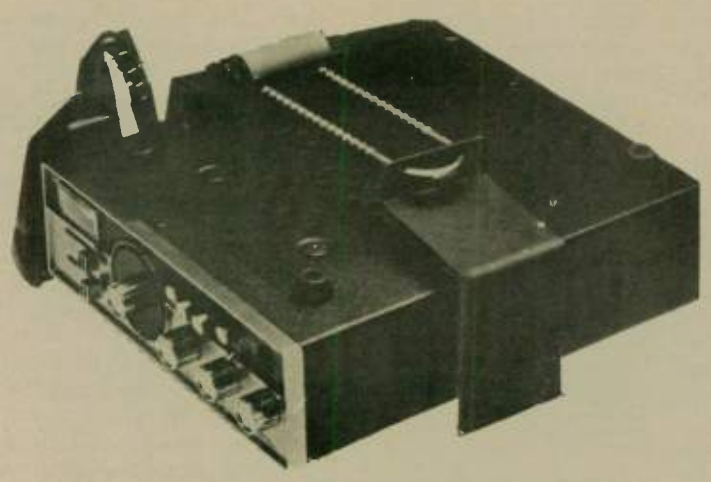

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Envoy's radio days recalled

Ray Meyers, W6MLZ

Among the many many U.S. Ambassadors to foreign countries around the world, at least three are licensed radio amateurs who operate stations on foreign soil.

One such ambassador is Armin H. Meyer, W3ACE, who holds the Extra class license. It was Ambassador Meyer who appeared at the Dayton Ham-vention as the banquet speaker on 26 April.

Meyer, known to his thousands of amateur friends as "Hank," operated in Iraq as YI2AM in 1946-48, in Lebanon as OD5AX in 1952-55, and had hoped to again resume operations there after his appointment as ambassador to that country by former President Kennedy in 1961. However, just prior to his arrival, an attempted coup d'etat resulted in a ban on all amateur operations. While making his traditional protocol call on the Minister of Communications, Meyer mentioned his interest in amateur activities and the Minister graciously gave him a license with the unique condition that he would not make contact with any other Lebanese amateurs. While ambassador to Iran from 1965 to 1969 his call was EP3AM.

Assigned to Japan in 1969, it took a year before the Japanese government could be persuaded to grant him a station license with the call JH1YDR, which he used until 1972. Upon Meyer's departure from Japan, the Emperor spent a good portion of their conversation inquiring about this fine avocation of Amateur Radio - observing that it had a great potential for building international friendship.

Educated at Lincoln College, Capitol University and Ohio State, Meyer is director of the Ferdowsi Project at Georgetown University.

In his Dayton speech he claimed that coming back to Ohio was a cause for much nostalgia, bringing back memories of when he operated his amateur station W8QXM at Capitol University in Columbus prior to completing his graduate study at Ohio State.

Because of Amateur Radio his own career was radically altered. When the war clouds appeared over our country he gave up his position of dean for men to accept a proposal, even before Pearl Harbor, to take on a civilian project in North-eastern Africa. When Gen. Rommel was driven from the gates of Egypt, and the project was no longer needed, he took on the task of serving Egypt as News Editor for the Office of Information.

Although by no means an electronics engineer, his amateur background was sufficient for his serving as Navigation and Communications officer aboard a DC-3 aircraft engaged in ferrying engines from an Eritrean airbase to allied forces in the Western Desert.

In the first three months of this year he twice visited the Middle East and noted some dramatic changes, pointing out that Iran is rapidly advancing toward becoming a Middle Eastern super-power.

When Meyer was ambassador to Iran in 1969 he mentioned that there were only 5,000 Americans in that country compared to more than 17,000 today, all of whom, in some way, are connected with Iran's program for modernization.

Ambassador Meyer, his wife, the former Alice James, and their daughter, Kathy, 25, have had some wonderful experiences while serving our country abroad. He would be an ideal person for the American Radio Relay League and our State Department to serve as a delegate at the upcoming Tele-Communications Union conference in 1979 when the fate of amateur operations in the various bands will be at stake.

With his experience in the diplomatic field, and his many friends in Africa, the Middle East and Far East, he could be a great asset.

Each nation attending the conference will have one vote in deciding the various issues and, without doubt, Ambassador Meyer, W3ACE, could certainly get over some important points on Amateur Radio activities and importance, in the best interest of all concerned.

Los Angeles Herald-Examiner

Subsequent to my article for the Los Angeles Herald-Examiner, the genial subject of the column — Ambassador Armin H. Meyer, W3ACE — sent in an application for membership in OOTC. He is now member No. 1587.

Along with his application comes the following letter, which to me is something that ARRL should jump on, and take advantage of his offer to be of assistance during the upcoming ITU conference.

As all of the delegates, with the possible exception of one or two at the most, will not be amateurs, or even interested in Amateur Radio, here is where this diplomatic gentleman, Armin H. Meyer, W3ACE, could be of great assistance, particularly with the delegates from Africa, which, as the League has pointed out, will be a problem for the U.S.

Dear Ray,

First off, my heartfelt thanks for that FB article. In content and sentiment it was generous indeed. Secondly, thank you for the invite to the AFCEA gathering in early June. As you no doubt surmised, I was off on my third safari to the Middle East in five months. This time it was in connection with the heading of a delegation of 10 Georgetown professors involved in a project for cooperation with the Ferdowsi University in Mashhad. I was sorry to have missed the AFCEA affair, but even sorrier not to have had the opportunity for an eyeball with you.

Thank you, too, for the invitation to join the OOTC. My application is enclosed. There is a special source of pride in being able to look back over nearly a half century of association with what I consider to be one of the most exciting of hobbies. Unfortunately, I fear our younger generation does not have the same sense of thrill of being part of a phenomenon in its infancy, as we did. That schematic of a simple receiver, printed in the *Spark Gap Times*, rekindled memories of that first five-tube Pilot radio which I built, and, although it did not work as it should, by straining we could hear on the earphones the news about Herbert Hoover's election in 1928. Similarly, the younger generation cannot experience the thrill of contact with the Byrd expedition to the Antarctic. All such activities are commonplace these days.

But I am convinced we must do something to rejuvenate Amateur Radio. That we Old Old Timers are the backbone is great, but somehow there ought to be a way to get the upcoming generation more actively engaged. It is one of the most fertile soils for training human resources, and, as I tried to say at Dayton, particularly in the developing countries.

Although I had not really focused on it, your suggestion about my making a contribution in developing foreign attitudes vis-a-vis the 1979 conference is not without some merit. I do not wish to be immodest, but I would like to help. Just three weeks ago I had a most productive discussion, of all places in Iraq, with the key authorities there. I will not push myself forward, but if you can persuade others that I might play a useful role I would like to try.

Right now, aside from my Georgetown project and a half dozen other professional interests, I am trying to help stricken ZP5KK. Following a stroke he is in George Washington Hospital, with his wife in Paraguay. His right side is completely paralyzed and it's going to be a long uphill fight, but the only real friends he has on the scene are a few of us Washington amateurs. So we visit him daily and report to his XYL via Amateur Radio.

—Hank, W3ACE

– Spark Gap Times

Eitel *(continued from page 2)*

factories to see how we did it. Several companies just gave up. Some kept with it but we used to hear how the navy boys would throw the others overboard and just use ours.

"I cringe when I hear people say the war made us. The war just about destroyed our company. When the military dumped all the tubes on the surplus market at ten cents on the dollar it completely, and I mean completely ruined our market. All the commercial companies all over the world were buying and using our surplus tubes. It couldn't have been much darker for us then.

"Then McCullough and I personally designed the 4-125, the 4-250, the 4-1000A and the 3X2500. Those saved our bacon because they made all the other tubes obsolete.

"Jointly and individually, Jack and I have about 100 patents. One of the things we're proudest of is that Armstrong used our tubes in all his experimental transmitters. There was the most inspiring man. For many years he used to call us every Sunday morning.

"We built the first highpowered Class C amplifier modulated with Class B in push pull. Before that they used Class A modulators.

"I've known the greats. We used to visit with Ross Hull and Jim Lamb. Bill Halligan is a great buddy of ours. I asked him to help our satellite program and he gave us $10,000. Most of the Collins early equipment was designed around *Eimac* tubes. I just spent a day with Art in Texas. And then there was John Reinartz, K6BJ, one of the greatest men who ever lived. He was an unsung hero because of his own modesty.

"And then one of our major contributions was when Lee Norton designed the 4X150. That had more effect on VHF transmitters than any other tube in that power class.

"Later we made the 19 inch metal round picture tubes for RCA. We were making 1,000 of them a day. That turned out to be as successful an operation as our war work as unsuccessful.

"With that we were able to start development of the ceramic tube. First was the 2C39, then 4CX250 and the 4CX1000A. We were and are the leaders in ceramics. We also went into klystrons heavily.

"And don't forget that the first Amateur Radio two-way moon-bounce contact was made with the *Eimac* Radio Club on one end.

"At about that time Jack and I realized we were getting along and we had to do something with the company. We wanted to offer opportunities to our people. We developed a strong management and then merged with Varian. That made it the largest tube company in the world, and in the top 500 companies in the U.S. We grew while others shrunk. We supply practically all the high power tubes in the world. Look at your amateur amplifiers, Heath, Henry, ETO all built around *Eimac*. In the high power broadcast field the Dutch and Germans were dominant but now all the modern equipment is designed around *Eimac*. We had a great team.

"But after a gradual retirement I completely retired at 66, two years ago. Varian threw two retirement parties for us and what parties. Everyone was there, including the bankers who supported us in the thin days.

Eitel retired to a cattle and sheep ranch near Dayton, Nevada where he promptly put up the first Nevada station to work through OSCAR VI. His wife La Neil, WA7LUN is Secretary of Project OSCAR and on the HF bands works CW at about 40 wpm. He calls her "a great help." Both he and La Neil are Life Members of the ARRL.

Asked why he decided to run for office in the ARRL he said, "Now that I'm retired I have the time to devote to it. I'll do anything and go anywhere that would be of benefit to Amateur Radio."

Eitel said, "We're running out of time, the problems are mounting.

"With my experience and background I know the doers. People come to me with ideas, I can bring them together.

"First we have to expand the Amateur Radio Service. Most people don't realize the importance of this. We don't have a choice. There are other services that could snow us under, swallow us, or be a thorn in our side forever. We must increase our strength. But we don't want 500,000 rag-tags calling themselves amateurs.

"We should get an educational program in every high school in the country. The satellite program is the most attractive aspect of Amateur Radio to science-minded

[*please turn to page 45*]

EDITORIAL

Armond Noble, W6AJY
Editor, Worldradio News

Is Amateur Radio "for real"? We ask that question in comparison to other groups.

Looking at the publication of the *Partners of the Americas* we find the following statement:

"Partners of the Americas sponsor technical assistance projects and exchanges between the United States and Latin America. Partner volunteers support self-help projects in agriculture, public health, education and other areas of development while building humanitarian understanding throughout the American Hemisphere."

Is there any group in Amateur Radio with such lofty ideals?

Partners of the Americas is similar to *Sister Cities* in that areas in the U.S. and overseas are "matched". For a partial example of "Partners": Delaware & Panama, Kansas & Paraguay, New York & Jamaica, Vermont & Honduras, Wisconsin & Nicaragua, Texas & Peru, Minnesota & Uruguay, Louisiana & El Salvador, Alabama & Guatemala, etc.

Partners of the Americas has about 9,000 members. Their national convention will be held 13-16 November in Albuquerque, NM. At the opening ceremonies will be the mayor of Albuquerque and the Governor of New Mexico. The Keynote address will be by the Secretary-General of the Organization of American States.

Would such show up at a convention of Amateur Radio? Also, the delegates to the Partners convention are paying a registration fee of $37.50.

Some of the subjects to be covered are: Project and committee development, Utilizing outside organizations, Fund raising and publicity, Sharing cultural arts, Sports development, Community Education, Improving health services, Rehabilitating the handicapped, etc.

And remember, these are all volunteers who are undertaking such heavy projects, utilizing their "hobby time". The theme of their convention is "Making a Good Idea Work".

The Partners have been going now for 11 years, and for a group with only nine-thousand members they have an impressive list of projects. To mention but a few: volunteer technicians going to Latin America, students and teachers on eight-week exchange programs, scholarships, sports exchanges and on and on.

The Massachusetts Partners are now working on obtaining a 35-foot ambulance boat. It would be used on a 45-mile area of the Cauca River and a 55-mile area on the Nechi River (northern Columbia) to provide transportation to the only hospital within a hundred miles of the riverside towns. The U.S. Navy has volunteered to take the boat to Colombia.

Now, remember this volunteer organization has but 9,000 members. On 3 May President Gerald R. Ford met with the members of the Brazilian wheel-chair basketball team that was brought to the U.S. by the Partners organization. They gave him a team T-shirt with *Partners of the Americas* emblazoned across the front. (Maybe we could give him a License Manual).

On 13 May President Ford met with the Partners Chairman, Vice-Chairman and an executive committee member. Mr. Ford said he was quite familiar with the Michigan Partners program with Belize and the Dominican Republic and he accepted the post of Honorary Chairman of the Partners.

The point we are getting to with all of this is — Here we are, a great communications facility with the world at our fingertips, and there is nothing in Amateur Radio that even comes close to what the Partners are doing.

It seems that with our instant communications ability, our constant contact with all the peoples of the world, that we could be a bit more concerned with "reality."

And the really sad part of it all is that what good works we do never seem to get out into the public knowledge. We do hide our light under a bush.

Amateur Radio has always played an outstanding role during disasters. But what do we do as an on-going operation? The programs to send parts and rigs overseas have just about fallen flat. Every so often an organized hosting program starts (remember Ham-Hop?) and then dies through lack of interest.

The real question is: With all our resources, do we look as good to the outside world as do the Partners of the Americas, Rotary, Sertoma, etc.?

Are we internationalists? Do we care?

Richard Baldwin, W1RU, General Manager of the ARRL, has been going to conventions lately and saying essentially (because of the upcoming WARC) that we've got to "shine our shoes". He's quite right. The real pity is that we're scurrying around trying to find our good points to present in a manner resembling the troops cleaning up the barracks because they heard there will be an inspection.

Sometimes we wonder just what amateurs are thinking. Hold in your mind what the Partners of the Americas are doing (and the recognition they are getting, which Amateur Radio could sorely use) and we shall relate the following:

In last month's editorial we disagreed with some points made in one of the bulletins regarding traffic and Sister City involved amateurs. The reply to our comments in the bulletin, said in part....."We noted that one valiant took umbrage over the assertion"....The bulletin was mimeographed and we could see that "valiant" was typed over on the stencil which originally had the words "do gooder" in its place.

The term "do-gooder" is one of mockery and ridicule suggesting naivete, clumsiness and general ineffectiveness.

Unfortunately, among amateurs the term "do-gooder" has been flung around quite a bit in quite a derisive manner. However, we have yet to hear the recipient of any of this "do-goodism" complain.

Whatever your present attitude is, for the sake of this discussion, pretend for a moment — Let's say, for example, that you live in Wisconsin and your daughter has just gone to Managua, Nicaragua to visit your son who is a Marine guard at our Embassy there. You hear the news of the devastating earthquake. You are worried.

The phone rings and it's a radio amateur telling you that your son and daughter are all right. What would you do, say to him "But out of this you do-gooder; keep your nose out of my business."?

To get the proper perspective on Amateur Radio and "do-gooders", just pretend that one of your loved ones was in Nicaragua or Honduras.

There is an amateur here in Sacramento who, whenever the guys are working on the Simulated Emergency Test or an emergency preparedness project, sneers "emergency types". I wonder what happens to him, or someone like him, if, say, he gets caught in a Rapid City Flood where over 200 were killed.

What happens to such an attitude if you lived in Xenia, Ohio. All of a sudden your car has disappeared, your wife has been

(*please turn to page 32*)

Southwestern Division CONVENTION

OCTOBER 24-26, 1975

Holiday Inn
VENTURA, CALIFORNIA

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The network's leading expert on aerospace coverage, Mr. Neal has been present at every one of America's major space flights. He was recently NBC-TV Correspondent for the Soviet-US space link-up from Mission Control in Houston.

Contests

1. T-Hunt on 146.52.
2. VHF/UHF Antenna Measurement. The highest gains measured on 144, 432, 1296 and 2300 MHz will receive prizes. Test antenna will be receiving 1000 Hz modulated vertically polarized signal.
3. QSL, CW and other contests, too!

Amateur of the Year Awards

Three Southwestern Division amateurs will be recognized for outstanding service or acts in three categories. Write for details.

1. Action or service to amateur radio not involving an emergency
2. Action in Public Service
3. Action in Emergency Communications

Prizes

1. The Early Bird prize will be a major prize drawn from the first 35% registered. Over 15% have already registered, so hurry!
2. All registrations received prior to October 10 will be eligible for the big pre-registration prize.
3. The main door prize will be given away at the banquet.

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FCC Forum with the Commissioner
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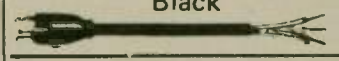

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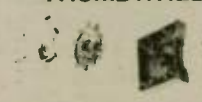
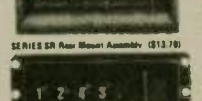


THUMBWHEEL SWITCH ONLY
SF – Front Mount SA – Rear Mount

Part No.	Description	Price
SF 12	Single Pole 10 Position	$2.50
SR 12	Decimal	3.00
SF 21	10 Position BCD only	2.50
SR 21		3.00

Snap together – No Hardware

SERIES SF Front Mount Assembly ($11.70)

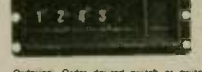


Note: Picture to the left has the following 4 ea. SF 12, 1 ea. SF EP, 1 ea. SF BB, 1 ea. SF OP and 1 ea. SF MB

ACCESSORIES

Part No.	Description	Price
SF EP	End Plate (Pair)	$.50
SF DP	Divider Plate (each)	.40
SF BB	Blank Body (each)	.40
SF MB	Half Body (each)	.40

SERIES SR Rear Mount Assembly ($13.70)



Note: Picture to the left has the following 4 ea. SR 12, 1 ea. SR EP, 1 ea. SR BB, 1 ea. SR OP and 1 ea. SR MB

ACCESSORIES

Part No.	Description	Price
SR EP	End Plates (pair)	$ .50
SR DP	Divider Plate (each)	.40
SR BB	Blank Body (each)	.40
SR MB	Half Body (each)	.40

Ordering: Order desired switch or switches and add necessary accessories for your particular application.

NEW PROTO BOARD-100

Here's a low cost, big 10 IC capacity breadboard kit with all the quality of QT Sockets and the best of the Proto Board series . . . complete down to the last nut, bolt and screw. Includes 2 QT-35S Sockets; 1 QT-35B Bus Strip; 2.5 way binding posts; 4 rubber feet; screws, nuts, bolts, and easy assembly instructions.

COMPLETE KIT . . . *Special $17.95

DISPLAY LEDS

FND70	Com. Cath.	.250	.69
MAN 1	Com. Ano.	.270	$1.95
MAN 2	5x7 Matrix	.300	3.95
MAN 3	Com. Cath.	.125	.39
MAN 4	Com. Cath.	.187	1.95
MAN 7	Com. Ano.	.30	1.50
DL33	Com. Cath.	.125	1.95
DL747	Com. Ano.	.625	2.50

DISCRETE LEDS

MV 10	Red	5/$1.00
MV 50	Red	6/$1.00
MV 5024	Red	5/$1.00
MV 5024	Green	4/$1.00
MV 5024	Yellow	4/$1.00
MV 5024	Orange	4/$1.00
MV 50*	Red 1¼" Leads	5/$1.00

IC SOLDERTAIL – LOW PROFILE (TIN) SOCKETS

	1-24	25-49	50-100		1-24	25-49	50-100
8 pin	$.17	.16	.15	24 pin	$ .38	.37	.36
14 pin	.20	.19	.18	28 pin	.45	.44	.43
16 pin	.22	.23	.22	36 pin	.60	.59	.58
18 pin	.29	.28	.27	40 pin	.63	.62	.61
22 pin	.36	.37	.36				

SOLDERTAIL STANDARD (TIN)

14 pin	$.30	.28	.26	28 pin	$ .99	.90	.81
16 pin	.33	.31	.29	36 pin	1.39	1.26	1.15
18 pin	.42	.39	.37	40 pin	1.59	1.45	1.30
24 pin	.59	.54	.49				

SOLDERTAIL STANDARD (GOLD)

8 pin	$.30	.27	.24	24 pin	$ .70	.63	.57
14 pin	.35	.32	.29	28 pin	1.10	1.00	.90
16 pin	.38	.35	.32	36 pin	1.55	1.40	1.26
18 pin	.52	.47	.43	40 pin	1.75	1.59	1.45

WIRE WRAP SOCKETS (GOLD) LEVEL #3

10 pin	$.45	.41	.37	24 pin	$1.05	.95	.85
14 pin	.39	.38	.37	28 pin	1.40	1.25	1.10
16 pin	.43	.42	.41	36 pin	1.59	1.45	1.30
18 pin	.75	.68	.62	40 pin	1.75	1.55	1.40

50 PCS. RESISTOR ASSORTMENTS $1.75 PER ASST.

ASST. 1	5 ea:	10 OHM	12 OHM	15 OHM	18 OHM	22 OHM	1/4 WATT 5% = 50 PCS.
		27 OHM	33 OHM	39 OHM	47 OHM	56 OHM	
ASST. 2	5 ea:	68 OHM	82 OHM	100 OHM	120 OHM	150 OHM	1/4 WATT 5% = 50 PCS.
		180 OHM	220 OHM	270 OHM	330 OHM	390 OHM	
ASST. 3	5 ea:	470 OHM	560 OHM	680 OHM	820 OHM	1K	1/4 WATT 5% = 50 PCS.
		1.2K	1.5K	1.8K	2.2K	2.7K	
ASST. 4	5 ea:	3.3K	3.9K	4.7K	5.6K	6.8K	1/4 WATT 5% = 50 PCS.
		8.2K	10K	12K	15K	18K	
ASST. 5	5 ea:	22K	27K	33K	39K	47K	1/4 WATT 5% = 50 PCS.
		56K	68K	82K	100K	120K	
ASST. 6	5 ea:	150K	180K	220K	270K	330K	1/4 WATT 5% = 50 PCS.
		390K	470K	560K	680K	820K	
ASST. 7	5 ea:	1M	1.2M	1.5M	1.8M	2.2M	1/4 WATT 5% = 50 PCS.
		2.7M	3.3M	3.9M	4.7M	5.6M	

PRIME INTEGRATED CIRCUIT ASSORTMENTS

ASST 8	3 ea	SN7480	7401	7402	7403	7408	SSI/TTL	$5.95 ASST.
		SN7410	7430	7438	7440	7472		
ASST 9	2 ea	SN7447	7490	7491	74100	74121	MSI/TTL	$9.95 ASST.
		SN74145	74175	74180	74191	74193		
ASST 10	2 ea	CD4001	4002	4011	4012	4013	CMOS	$7.95 ASST.
		CD4016	4017	4019	4023	4030		
ASST 11	2 ea	LM301T	301N	302T	307T	309K	LINEAR	$10.95 ASST.
		LM311T	565T	567T	741T	741N		

Satisfaction Guaranteed. $5.00 Min. Order. U.S. Funds.
California Residents — Add 6% Sales Tax
Write for FREE 1975 F Catalog — Data Sheets .25¢ each

JAMES

P.O. BOX 822, BELMONT, CA. 94002
PHONE ORDERS — (415) 592-8097

POCKET CALCULATOR KIT

5 function plus constant – addressable memory with individual recall – 8 digit display plus overflow – battery saver – uses standard or rechargeable batteries – all necessary parts in ready to assemble form – instructions included. 3" x 5¼" SPECIAL $12.95 each

OPTIONS –
115VAC Transformer . . . . . 4.95 each
6 each "N" Alkaline Batteries . . . . . 1.95 lot

.394" DIAM. TRIMMER

STANDARD RESISTANCE VALUES
MODEL 100Ω 500Ω 1K 2K 5K 10K 20K 100K 200K 1Meg

SPECIAL Model TRII

RESISTANCES (OHMS)	1–9	10–24
STD 100Ω 1 MEGΩ	4/$1.00	

1/16 VECTOR BOARD

P Pattern
0.1" Hole Spacing

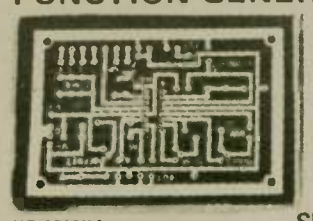
MATERIAL	STOCK NO.	LONG	WIDE	PRICES 1	PRICES 20
PHENOLIC	04P44 062XXP	4.50	6.50	1.72	1.54
	108P44 062XXP	4.50	17.00	3.88	3.42
EPOXY GLASS	04P44 062	4.50	6.50	2.07	1.88
	04P44 062	4.50	8.80	2.56	2.31
	108P44 062	4.50	17.00	5.04	4.53
	108P44 062	8.80	17.00	8.23	8.28
EPOXY GLASS COPPER CLAD	108P44-062C1	4.50	17.00	8.80	6.12

WALL or T.V. DIGITAL CLOCK

12 or 24 Hour
25' VIEWING DISTANCE
Walnut Case 6" x 3" x 1"
Hr. & Min. 6" High
Seconds 3" High
115 Vac
KIT All Comp. & Case $34.95
Wired & Assembled $39.95

IC'S EXAR KITS

FUNCTION GENERATOR KIT



features sine, triangle and square wave. THD 0.5% typ. AM/FM capability

XR-2206KA SPECIAL $17.95
Includes monolithic function generator IC, PC board, and assembly instruction manual.

XR-2206KB SPECIAL $27.95
Same as XR-2206KA above and includes external components for PC board.

TIMERS		
XR-555CP	Monolithic Timer	SPECIAL $ .69
XR-320P	Precision Timer	1.55
XR-556CP	Dual-555 Timer	1.85
XR-2556CP	Dual Timing Circuit	3.20
XR-2240CP	Programmable Counter/Timer	SPECIAL 3.25
PHASE LOCKED LOOPS		
XR-210	FSK Demodulator	5.20
XR-215	High Frequency PLL	6.60
XR-567CP	Tone Decoder (mini DIP)	1.95
XR-567CT	Tone Decoder (TO-5)	SPECIAL .99
STEREO DECODERS		
XR-1310P	PLL Stereo Decoder	3.20
XR-1310EP	PLL Stereo Decoder	3.20
XR-1800P	PLL Stereo Decoder	3.20
WAVEFORM GENERATORS		
XR-205	Waveform Generator	8.40
XR-2206CP	Monolithic Function Generator	SPECIAL 4.49
XR-2207CP	Voltage-Controlled Oscillator	3.85
OTHER EXAR IC'S		
XR-1468CN	Dual + 15V Tracking Regulator	SPECIAL 2.95
XR-1488N	Quad Line Driver	5.80
XR-1489AN	Quad Line Receiver	4.80
XR-2208CP	Operational Multiplier	5.20
XR-2211 CP	FSK Demodulator/Tone Decoder	6.70
XR-2261	Monolithic Proportional Servo IC System w/4 ea. Driver Transistor	3.79

Special Requested Items

RC4194	Dual Track v Reg	$5.95	N8T97	$3.00	2533	$7.95
RC4195	±15V Track Reg	3.25	4024P	2.25	8263	5.95
F9368	Decoder	3.95	2513	11.00	8267	2.75
LD110/111	DVM Chip Set	28.00	2518	7.00	8288	1.15
CA3130	Super CMOS Op Amp	1.49	2524	3.50	8826	3.00
MC14408L7	A/D	9.95	2525	6.00	8880	1.35
F3341	FIFO	8.95	2527	5.00	7497	5.00

ZENERS–DIODES–RECTIFIERS

TYPE	VOLTS	W	PRICE	TYPE	VOLTS	W	PRICE
IN746	3.3	400m	4/1.00	IN4003	200 PIV	1 AMP	.10
IN751A	5.1	400m	4/1.00	IN4004	400 PIV	1 AMP	.10
IN752	5.6	400m	4/1.00	IN3600	50	200m	6/1.00
IN753	6.2	400m	4/1.00	IN4148	75	10m	15/1.00
IN754	6.8	400m	4/1.00	IN4154	35	10m	12/1.00
IN965B	15	400m	4/1.00	IN4734	5.6	1w	.28
IN5232	5.6	500m	.28	IN4735	6.2	1w	.28
IN5234	6.2	500m	.28	IN4736	6.8	1w	.28
IN5235	6.8	500m	.28	IN4738	8.2	1w	.28
IN5236	7.5	500m	.28	IN4742	12	1w	.28
IN456	25	40m	6/1.00	IN4744	15	1w	.28
IN458	150	7m	6/1.00	IN1183	50 PIV	35 AMP	1.60
IN485A	180	10m	5/1.00	IN1184	100 PIV	35 AMP	1.70
IN4001	50 PIV	1 AMP	.09	IN1186	200 PIV	35 AMP	1.80
IN4002	100 PIV	1 AMP	.10	IN1188	400 PIV	35 AMP	3.00

TRANSISTORS

MPS-A05	5/1.00	PN3567	3/$1.00
MPS-A06	5/$1.00	PN3568	4/$1.00
2N2219A	3/$1.00	PN3569	4/$1.00
2N2221	4/$1.00	PN3704	5/$1.00
2N2222A	5/$1.00	PN3705	5/$1.00
2N2369	5/$1.00	PN3700	5/$1.00
2N2369A	4/$1.00	PN3707	5/$1.00
FN2415	5/$1.00	PN3711	5/$1.00
2N2484	4/$1.00	PN3724	$.65
2N2906A	4/$1.00	PN3725	$1.00
2N2907A	5/$1.00	PN3903	5/$1.00
2N2925	5/$1.00	PN3904	4/$1.00
2N3053	2/$1.00	PN3905	4/$1.00
2N3055	$.89	PN3906	4/$1.00
MJE3055	$.89	PN4013	3/$1.00
2N3392	5/$1.00	PN4014	3/$1.00
2N3398	5/$1.00	PN4249	4/$1.00
		PN4250	4/$1.00
		2N4400	4/$1.00
		2N4401	4/$1.00
		2N4402	4/$1.00
		2N4403	4/$1.00
		2N4409	5/$1.00
		2N5086	4/$1.00
		2N5087	4/$1.00
		2N5088	4/$1.00
		2N5089	4/$1.00
		2N5129	5/$1.00
		2N5138	5/$1.00
		2N5139	5/$1.00
		2N5209	5/$1.00
		2N5951	5/$1.00
		C106B1 SCR	2/$1.00

CAPACITOR CORNER

50 VOLT CERAMIC DISC CAPACITORS

	1-9	10-49	50-100		1-9	10-49	50-100
10pf	.05	04	03	001	.05	04	035
22 pf	05	04	03	0047	05	04	035
47 pf	05	04	03	.01	05	04	035
100 pf	05	04	03	022	06	05	04
220 pf	05	04	03	047	06	05	04
470 pf	05	04	.035	1	12	09	075

100 VOLT MYLAR FILM CAPACITORS

.001mf	.12	.10	.07	.022mf	.13	.11	.08
.0022	.12	.10	.07	.047mf	.21	.17	.13
.0047mf	.12	.10	.07	.1mf	.27	.23	.17
.01mf	.12	.10	.07	.22mf	.33	.27	.22

± 20% DIPPED TANTALUMS (SOLID) CAPACITORS

1	35V	.28	.23	.17	1.5	35V	.30	.26	.21
1.5	35V	.28	.23	.17	2.2	25V	.31	.27	.22
2.2	35V	.28	.23	.17	3.3	25V	.31	.27	.22
3.3	35V	.28	.23	.17	4.7	25V	.32	.28	.23
4.7	35V	.28	.23	.17	6.8	25V	.36	.31	.25
6.8	35V	.28	.23	.17	10	25V	.40	.35	.29
10	35V	.28	.23	.17	15	25V	.63	.50	.40

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Axial Lead					Radial Lead				
.47	50	.15	.13	.10	.47	25	.15	.13	.10
1	50	.16	.14	.11	.47	50	.16	.14	.11
3.3	50	.15	.13	.10	1	16	.15	.13	.10
4.7	25	.16	.14	.12	1	25	.16	.14	.11
10	25	.15	.13	.10	1	50	.16	.14	.11
10	50	.16	.14	.12	4.7	16	.15	.13	.10
22	25	.17	.15	.12	4.7	25	.15	.13	.10
22	50	.24	.20	.18	4.7	50	.16	.14	.11
47	25	.19	.17	.15	10	16	.14	.12	.09
47	50	.25	.21	.19	10	25	.15	.13	.10
100	25	.24	.20	.18	10	50	.16	.14	.12
100	50	.35	.30	.28	47	50	.24	.21	.19
220	25	.32	.28	.25	100	16	.19	.15	.14
220	50	.45	.41	.38	100	25	.24	.20	.18
470	25	.33	.29	.27	100	50	.35	.30	.28
1000	16	.55	.50	.45	220	16	.23	.17	.16
2200	16	.70	.62	.55	470	25	.31	.28	.26

nets

PREAMBLE

This Net Directory lists all nets that have registered with ARRL since the latest printing of this directory. Annual registration is required for listing. Nets are registered on form CD-85, available from ARRL. Only those nets on frequencies inside the amateur bands, and whose primary function is public service, are listed. Listing does not give any net the right to prior or exclusive use of a frequency at any time.

Information listed in the columns in Part I is as follows:

Net Name — Listed in alphabetical order. A double asterisk (**) indicates that the net is part of the ARRL National Traffic System (NTS). Nets are not listed as NTS unless specifically registered as such. Nets alleging to be part of NTS but not indicating proper liaison or coverage are not following the system concept and as such are not indicated as parts of NTS. Refer to the Public Service Communications manual for further information on NTS.

Freq. — The net frequency or frequencies in kHz. When a repeater call was given, it is listed below the frequency.

Days — Days of operation. M = Monday, T = Tuesday, W = Wednesday, Th = Thursday, F = Friday, S = Saturday, Sn = Sunday, Dy = Daily (7 days per week), H = Holidays, 1/3 Sn = first and third Sundays of each month, etc. Days of operation are per GMT, not local time.

GMT [UTC] = Time net starts in GMT per daylight savings time. An asterisk (*) indicates that the net does not change time (per GMT) when states revert to standard time.

Purpose — E = Emergency preparedness; T = Traffic handling; L = NTS Local; S = NTS Section; R = NTS Region; A = NTS Area; W = Weather; O = Other. All NTS nets have both E and T purposes.

Coverage — Area the net covers or serves. States and provinces are abbreviated with standard 2-letter abbreviations.

Mgr. — Call of net manager or other amateur to whom correspondence can be directed.

Net Name	Freq.	Days	GMT [UTC]	Purpose	Coverage	Mgr.
Green Thumbs RTTY Net	50,500	Dy	2200/0200*	ETW	Eastern MA RI Southern NH	WA1OWQ
Grey Bruce Net (GBN) **	3645	Dy	2230	S	ON	VE3DPO
Gulf Coast Amateur Radio Emergency Net	50,400	T	2300	ET	Pasco Co., FL	W4ZY
Gulf Coast Sideband Net (GCSBN)	3925	Dy	2330	ET	AL FL GA LA MS TX	W5JHS
Gulf Coast Shrimp Net	146,520	Th	0000	E	Mississippi Gulf Coast	WB5DCY
Hastings ARC Net	3990	Sn	1905	T	South Central NE	WBØSP
Hit & Bounce Net (HBN)	7070/3600	Dy	1230	T	W1-2-3-4-5-8-9 VE2-3	W2OE
Hit & Bounce Slow Net (HBSN)	7140/3640	FSSnM	1200	T	Eastern USA	W8IBX
Huntington RACES/AREC Net **	28,730	T	2300	L	Huntington Twp., NY	W2TBI
	145,590					WB2KCT
	(in) 147,810					WA2NFF
	(out) 147,21					
Idaho Post Office Net (ID PON)	3930	TThS	0130*	ET	ID	W7ESH
Idaho Montana Net (IMN) **	3582	T-S	0030	S	ID MT	W7GHT
Illinois Novice Net (ILNN) **	3720	Dy	2315/0100	S	IL	WB9GSS
						WB9HEG
Illinois Phone Net	3915	M-S	2045	ET	IL	WA9VGW
		Sn	1230			
	145,500	T-ThS	0000			W9NEW
Illinois Section Net (ILN) **	3690	Dy	0200/2230	S	IL	W9NXG
Indiana Post Office Net (IPON)	3714	Dy	0000	ET	IN	WB9AHJ
	3910	Sn	1300/2130*			
	3910	S	2000*			
	50,200	Dy	0200*			
	50,700	MTh	0200*			
	50,700	MWF	0100*			
Indiana Traffic Net (QIN)**	3656	Dy	0000/0300	S	IN	WB9LHI
Indiana Traffic Net (ITN)**	3910	Dy	1330/2130	S	IN	W9FWH
		M-S	2300			
Indian Wells Valley Emergency Net	145,350	T	0130	E	Ridgecrest-China Lake,CA	WA6KZV
Intercontinental Traffic Net	14,313	M-S	1100/2300	ET	World wide	W4BOX
International Mission Radio Association Net	14,280	M-S	1800	ET	World wide	W9LII
		T-S	0000			
Inyo Emergency Net (IEN)**	3935	1Th	0030	L	Inyo Co., CA	WA6YWS
Iowa Post Office Net (IA PON)	3697	M-F	2330	ET	IA	WAØRIN
	3915	T-Th				
Iowa 75 Meter Net**	3970	M-S	1730/2300	S	IA	WAØVZH
						KØDDA
Jacksonville Training Net (JTN)	21,120	M	2330	T	Duval, Co., FL	WA4VZF
JFK Net	3923	Dy	2230	ET	NC SC South Eastern USA	WA4YTQ
Jefferson County AREC Net	146,940	T	2330	ETW	Jefferson, Co., TX	W5APX
Jumpsuit Net	14,270	SSnh	1900	TW	USA	W2HU
Kansas Zone 1 75-Meter AREC Net	3925	Sn	1730	ET	North Eastern KS	WAØSRR
Kansas Zone 1 2-Meter AREC Net	146,940	T	0200	T	North Eastern KS	WAØSRR
Kansas Zone 5 AREC Net	3920	Sn	0130	ET	Wyandotte, Co., KS area	WØMCH
Kansas Zone 10B AREC Net	3913	Sn	1245	E	South Central KS	WBØHBM
Kansas Zone 14 AREC Net	(in)146,340	Sn	0200	ET	Salina, KS area	WAØYXK
	(out)146,940					
Kansas Zone 15A AREC Net	3910	Sn	1330	ET	North Western KS	WØWOB
Kansas CW Section Net (QKS)**	3610	Dy	0000/0300	S	KS	KØMRI
Kansas Post Office Net (KS PON)	3955	Sn	1330	ET	KS	WØLXA
	7255	M-S	1730			
Kansas Slow Speed Net (QKS SS)**	3735	Dy	2200	S	KS	WBØGVR
Kansas Weather Net (KWX)**	3920	Dy	2300	S	KS	WØFIR
Keesler ARC Net	(in)146,340	Th	0100*	ETW	Mississippi Gulf Coast	WA6IZT/5
	(out)146,940					
	K5TYP					
Kenai Peninsula Preparedness Net (APPN)	3905	Th	0400*	ET	South Central AK	KL7EKO
Kentucky CW Net (KYN)**	3600	Dy	0000	S	KY	K4UNW
Kentucky Novice Training Net (KNTN)**	3725	Dy	0000	S	KY	WB4ZML
Kentucky Post Office Net (KPON)	3945	S	1700	T	KY	WA4AVV
Kentucky Rebel Net (KRN)	3960	Dy	1030	T	KY	W4BEJ
Kentucky Slow Speed CW Net (KSN)**	3600	Dy	0100	S	KY	K4UNW
Kentucky Traffic Net (KTN)	3960	Dy	2245	S	KY	WB4EOR
King County AREC Net	50,850	M	0400*	ETW	King Co., WA	WA7EBH
Kingston Amateur Radio Net (KARN)	(in)146,340	M	2330	T	Kingston, ON 10 mile rad.	VE3EW
	(out)146,940					
	VE3KER					
Knox County AREC Net	146,520	F	2230	ET	Knoxville, TN area	WA4ZBC

160 XV 160 Meter Transverter

ENJOY "TOP BAND" OPERATION WITH YOUR PRESENT AMATEUR STATION.

- Full 1.8 - 2.0 MHz coverage
- Receiver sensitivity .35 microvolts for 10 db ratio
- Transmitter power 100 watts D.C. input
- 5 watts of drive ample for full input
- Built in power supply for 110/220 v 50/60 Hz
- 6146B Final tube
- Matches 50 - 70 ohm antenna
- No modifications to existing equipment
- Input drive overload protection
- 3.8 to 4.0 MHz input (75 meter band) SSB, CW, AM
- Heavy steel construction of cabinet and chassis
- Printed circuit design
- Transverter — bypass control circuit
- Wt. — 18 lbs.
- W. 12", H. 6¼", D. 10"
- 1 year parts warranty, 90 day labor **$199.50**

SUPER TUNER 160-10 AT

HERE IS ANOTHER DENTRON FIRST, A SIX BAND ANTENNA TUNER DESIGNED TO SOLVE VIRTUALLY ANY MATCHING PROBLEM YOU MAY HAVE.

- Covers all bands 160 through 10 meters. (1.7-30 Mc. continuous)
- Handles maximum legal power
- Matches coax feed, random wire and balanced line
- Includes heavy duty balun for balanced line (Tuned feeders 240-600Ω)
- Transmatch circuit
- 12 lbs.
- W. 10", H. 6¼", D. 10"
- Black wrinkle finish **$119.50**

Be ready for restructuring — Special Supertuner handles 3 KW PEP amplifiers **$229.50**

$59.50

160 AT TUNER

160 Meters

SOLVE YOUR 160 METER ANTENNA PROBLEMS THE EASY WAY

- Use your present antenna on 160 meters
- Combination series-parallel circuit
- Load any random wire from a short whip to an extra long wire
- Handles maximum legal power
- 5 lbs.
- W. 7", H. 6¼", D. 8"

DenTron

80-10 TUNER

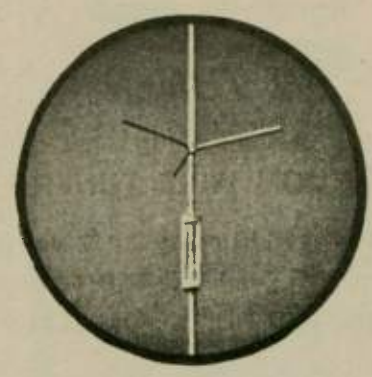
RANDOM WIRE TUNER

- Covers 80-10 meters (3.2-30 Mc. continuous)
- Handles maximum legal power
- Great for vacation trips
- Match almost any random length wire
- Dentron quality and value
- 5 lbs.
- W. 7", H. 5", D. 8" **$59.50**

The Brand New 160-40V VERTICAL ANTENNA

ANOTHER EYE OPENER FROM DENTRON, THIS NEW VERTICAL ANTENNA WILL SOLVE YOUR 160, 80 AND 40 METER PROBLEMS. **$79.50**

- 1.7-9 Mc. tunable — Mono Band Vertical
- Efficient Vertical Design
- Self Supporting Heavy Seamless Aluminum
- Weatherproof, Wind Survival 80 mph
- Quick & easy one man installation
- Cover complete 40 or 80 meter band or ½ of 160-meter band with one adjustment
- 2 KW DC Power Rating
- Steel Gold Anodized Base
- Capacity Hat
- 24'7" H.



FOR THE SERIOUS LOW BAND DX'er

Dentron Radial Kit for use with 160-40V Vertical Antenna **$14.95**
Also . . . Phasing kit for two 160-40V antennas . Write for details

Get your Dentron at M-TRON

BOOM!

MAGNUM SIX : You've heard them come out on top in the pile-ups. Now here's your chance to have one with M-TRON Specials. (specify model)

Heath:HW-100, HW-101, SB-102, SB-400, SB-401, Regular at $150. Sale-$110

Drake TR-4, Reg. $180-Sale at $138.

Yaesu: FTDX400, 401, 560, 570, Regular $150, M-TRON for $114

Swan: Reg. $180, Sale $138

Kenwood: Reg. $150, Sale $110

The Magnum Six in the above rigs gives 400% more SSB output.

M-SPECIALS:

ROTORS:
CD-44 reg. $109.95, sale $89.95
Ham II reg. $159.95, sale $129.95

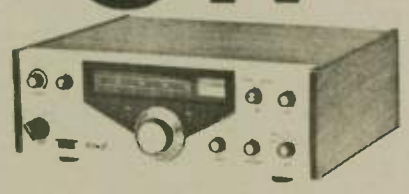
POWER:
NPC 4 A 12V regulated $49 now $39.95
NPC 8 A 12V regulated $72 now $59.95

MICROPHONES: Shure Hi-Z
444 desk reg. $54.50, sale $32.70
444T transistor amp in mike gives it max poop. reg $62.50, sale $37.50
201 mobile, reg. $23.50, sale S14.10
202 mobile, reg. $25.75, sale $15.45
401A mobile, reg. $28, sale $16.80
Turner-360 mobile NC-350C, noise cancelling, reg. $32.50, sale S19.50
T-SR90D mobile, reg. $50, sale $30

Superex headphones D-48 keep peace in the home reg. $7.65, sale $5.95

Dress up the shack with 24-hour wall clock-12 inch face, sweep hand. neat mention this ad....$24.20 get it.

CW



The Triton series is the CW man's transceiver. You haven't lived till you've used Ten-Tec's Triton. The break-in is so good that the first time you use it you'll swallow your gum in amazement.

Triton I 100W $579
Triton II 200W $669
(all solid-state-w/CW filter & RIT)

KR-20 keyer $67.50
KR-40 squeeze keyer $99.00
KR-50 deluxe squeezer $110

Also, New-Improved Argonaut QRP transceiver...$329

And, back by popular demand-the 315 receiver. No one else has a SSB/CW receiver with the selectivity, sensitivity and stability of this one for...$249

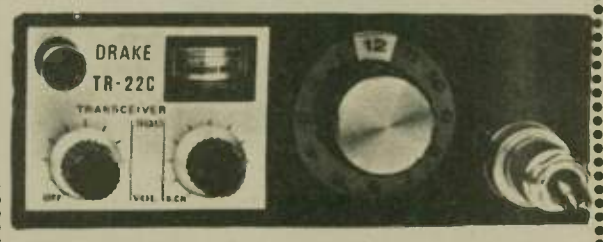
My, that Ten-Tec makes gud stuff.

Used

Used special of the month: Henry 2K-Ultra w/ps. This is so close to being new that it squeaks...$695

Collins 32S1 transmitter...$349
Collins 75S1 receiver...$349
Collins 516F2 spkr/ps...$115
Collins MT1 12v mobile ps ...$49.95
Swan 500C w/ac ps spkr...$429
SBE SBE-33 transceiver...$179
National NCX-3 clean...$149
Spectronics digital frequency counter for the Yaesu FT-101B ...$99
Hammarlund HQ-180 w/spkr...$295
Ameco 50-144-22 vfo #421 ...$39.95
Hammarlund HQ-145X clean ...$175
Dycomm 10 in/50 out 2M amp...$49.95
Swan VX-2 VOX...$24.95
Lafayette HA-600 SWL rcvr...$119
Hallicrafters HT-44 xmtr/ps...$225
Linear Systems 12v DC/ps...$75
Grundig 11-band LF-VHF rcvr w/ bfo. Hear everything...$175
Magnum Six for Heath...$89
Xtal osc. for GT-550...$18

Compare!



We want you to get the most for your hard earned dollar. So, we have compared the features of two radios. This is what we found.

(Call us the Consumer Reports of Amateur Radio if you wish.)

In comparing two radios of close to the same price:

One offers 6 channels, the other has 12.

One has a plug for external spkr. the other does not.

One comes with a high-quality hand held mike. The other charges for it.

One comes with a full-size built-in antenna you can't lose.

One comes with a SO-239 plug for external antenna. The other has some weirdo kind of plug.

One has a built-in charger. The other charges $37 for it.

One gives you a DC cord. The other does not.

Compare! We did! We recommend the Drake TR-22C.

By the way, it's available at M-TRON. Complete for $229.

Many other good features on the Drake. Example: you get the Monolithic filter. The other one charges $10 extra for it. Get the Drake TR-22C. Best for the dollar.

Master Charge, Bankamericard-OK
Write for package deals. Our Hours: Mon.-Fri. 10 a.m. to 5 p.m. Sat.-10-4. DX ops-we ship to the world.

ANTLERS

We have the entire Cushcraft line. Long Yagis & pow! stacking kits. Ringos, Rangers, 2-220-440. For mobile VHF go Larsen mag mount. OH! we almost forgot, 12 button TT pads, $14.95. Blast! we're running out of room, so many other good values to tell you about. Phone us. Bye. Be sure and join us next month for another exciting adventure of M-TRON. Trade in your S-40. Now.

M-TRON

2811 Telegraph Ave. - Oakland, CA 94609

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

DX DIGEST

Gary Stilwell, W6NJU

Rule 12 of the DX Century Club rules reads: "Operating Ethics: Fair play and good sportsmanship in operating are required of all amateurs working toward the DX Century Club Award."

There have been problems, talk and criticism during the years on the operating habits of DXers. Not too long ago a major DX association sponsored a contest of sorts to come up with a code of ethics. DX clubs usually have some sort of good operating ethics clause in their organization papers.

A DX club recently published a complete list of all stations in a particular call area that worked a recent DX-pedition. 190 stations were listed. Talk has generated that of the 190 station call signs worked, the total number of actual operators contacted was much less. Stations were worked where the licensee was actually stationed permanently in Europe. Stations were worked where the licensees are currently residing in other parts of the country. Is it fair play and good sportsmanship for one station and one operator to generate contacts under 10 or more different call signs?

Looking over the list one can readily see the advent of another problem. Many people have taken advantage of two letter call signs and been able to keep their old three letter call sign, or for other reasons hold more than one call sign. One can wonder when the same person holds two call signs under locations 400 miles apart how they can be in two places at the same time.

Under the pressure of an instant situation that will, with time, fade away, is this any different than the operator who works a station running over the legal power limit? Is it any different than the guy on the east coast who calls someone on the west coast to listen to a weak station over the telephone?

If DXers were to decide what was fair and what was right or adopted a code of ethics, then who is going to be the judge and the enforcer? Do we look to the ARRL DXCC program or do we look to DX organizations? Do we need to look further into the problem or is it an accepted way of life?

Aldabra

Dick Barnes, VQ9D; Ron Miles, VQ9M; and Bill Pomeroy, VQ9BP, are considering an operation from Aldabra and aiming for the September/October period.

Upper Volta

XT2AA has returned from his holiday in France and is evidently getting back on the air. Operation appears between 14.200-14.270 around 2200Z. Contact W1AM for further information.

CE9AT

CE9AT now has a new QSL Manager in CE2MZ, Box 1137, Valparaiso, Chile.

Liechtenstein

HB9NL will be traveling to Liechtenstein again and plans to sign HB9NL from 6 October through 19 October.

Tunisia

The OH group arrived in Tunisia planning to operate as 3V8DX and 3V8CW, but no permission to operate could be obtained. It takes great fortitude to sit with your gear in a country for 10 days trying to get a license.

Brazil

Effective 6 June 1975, the PY district call areas are changed as follows: PY1, Rio de Janeiro; PP1, Espirito Santo; PY2, Sao Paulo; PP2, Goias; PT2, Distrito Federal; PY3, Rio Grande do Sul; PY4, Minas Gerais; PY5, Parana; PP5, Santa Catarina; PY6, Bahia; PP6, Sergipe; PY7, Pernambuco; PP7, Alagoas; PR7, Paraiba; PS7, Rio Grande do Norte; PT7, Ceara; PY8, Para; PP8, Amazonas; PR8, Maranhao; PS8, Piaul; PT8, Acre; PU8, Amapa; PV8, Roraima; PW8, Rondonia; PY9, Mato Grosso; PYØ, Fernando de Noronha, Atol Rocas, St. Peter & Paul Rocks, Trindade Island. Suffix Z indicates foreign operator; suffixes W, X and Y indicate Novice operator Class C. Portable operation is to be indicated as PY1AAA/PR7/P, maritime mobile as PY1AAA/PP5/MM and car mobile as /MT with air-mobile as /MA. SWLs will use ZZ followed by the district and 4 digits (ZZ-7-0001).

To promote interest in all DX matters, the PY-DX-Group (President, PY7AOR) has been founded and wishes to receive bulletins from DX clubs and organizations world wide. Their address is PY-DX-Group, Caixa Postal 37, 55100 Caruaru (PE), Brazil.

Canadian '76 Olympics Awards

The Listowel School Radio Club is making two awards available for the '76 Olympics. The Canadian '76 Olympics Award is for working the 10 Canadian call areas during the period 1 August, 1975 to 31 July, 1976. Contacts must be with special prefix stations using XJ or XN. A contact with XJØ/MM or with the Olympics '76 station CZ20 will be allowed as a substitute for any missing call areas.

The World '76 Olympics Award is for working stations in any 50 countries competing in the 1976 Olympics in Montreal and must include XJ or XN. Special seal for working the Olympics '76 station CZ20.

For either award send log data, $1.00 or 7 IRC's to VE3LSS c/o G. Hammond, 155 Maitland Ave So., Listowel, Ontario, Canada N4W 2M4.

New England DX Meeting

The New England DX Meeting will be held at the Holiday Inn at Waltham, MA on October 4th. The banquet will feature the KC4NI-Navassa effort. Cost ranges from $8.50 to $11.00. Contact Tony Berg, W1VAH, 11 Vanderbelt Road, Acton, MA 01720 for further information.

Northern Florida DX Association

The Northern Florida DX Association has a unique requirement for their members. Each club member must operate and submit official entries to at least three approved (by the club) contests to fulfill membership requirements. The club will submit logs on behalf of their members and the club is considering a move to pay all the postage costs out of the club treasury. The club is talking about another DX-pedition for the **CQ** Worldwide DX Contest in October after four previous successful NFDXA journeys.

Many thanks for information to the Northern California DX Club, Southern California DX Club, Geoff Watts News Sheet, West Coast DX Bulletin and the Northern Florida DX Association.

Pacific DXpedition

Jan Ridpath, VE3EZM

(The following is an edited version of a letter sent to us recently by Jan, VE3EZM.)

Last year in March my wife, daughter and I had an opportunity to travel around the world on an 84-foot yacht. I would have been the radio operator and electronics maintenance man and my wife would have helped in the galley and have done a lot of correspondence.

As it turned out, it involved too much work and we declined the opportunity. I was disappointed and my wife suggested that we take a trip ourselves. Keeping Amateur Radio in the back of my mind, I made a suggestion of seeing the Pacific Islands and Australia. We finally decided on going to Hawaii, Johnston Island, Majuro in the Marshall Islands, Nauru, Gilbert Islands, Fiji, Australia, New Zealand, Cook Islands, Tahiti and a few of the Caribbean Islands.

I wrote letters to all these places to inquire about Amateur Radio operation and obtain a general idea of what there was in the way of medical facilities, accommodations, etc. At the end of June, the day that I was leaving, a letter arrived from one of the amateurs to whom I had written. I knew from that point on that we were going to actually make the trip a reality. As it turned out, many of the people to whom I had written were themselves in charge of issuing licenses and I received assurances that there would be no problem in operating from nearly all the places on the route. There were a few people that I did not hear from. This led us to make a decision to eliminate these spots from our itinerary.

I sent Mac McLeod, ZL1KN, a letter and his reply verified about operating in ZL. All seemed set now except we still had a house to sell. The housing situation in Canada was like it was in ZL when we were there and so the house was sold quickly. Notice was given at work and we took off from Toronto for Los Angeles on September 16.

Our luggage consisted of our suitcase for clothes, one small one for personal and medical supplies, an FT-101B, a vertical antenna and a push-chair for our two-year-old daughter.

We flew out of Honolulu, after five days there, to land at Majuro to operate as KX6ZZ. During the five days there we talked with many ZLs including Mac who assured me of a warm welcome to Kiwiland.

Upon arriving on Guadalcanal, Selwyn Wathne, VR4BS, gave me the call VR4AZ, which in the next

fortnight made 1200 QSOs. On Guadalcanal I talked with Raj Singh, 3D2ER, who set up a flat for us in Suva, Fiji, our next port of call. In Nadi we stayed at hotel Taoa, managed by Fred Carter, 3D2CC. I was issued the call 3D2DD and had a ball operating from Suva. I worked 1100 QSOs, many with ZLs. I especially enjoyed talking to the many stations that followed me around. Vicki Shaw, ZL1OC, kept close tabs on us, as did Mac of course.

From Fiji it was across Australia, where we spent seven weeks and had our first Christmas in the Southern Hemisphere, operating as VK2BZM. At this point our luck changed for us, permission granted to operate from Norfolk Island, a thrill that I will never forget. Norfolk is my paradise and I wish to return sometime if at all possible. As VK2BZM/VK9 I was kept busy by many people wanting a contact with the island.

The 14th of January found us in Auckland, where we were met by David Johnston, ZL1AMN, and XYL Aola, ZL1ALE. We had only spoken with them a few days earlier yet they came out and met us, inviting us to stay over. Aola and Dave took us into Papakura to pick up a van which was to be our method of seeing ZL for the next six weeks. Carol Johnston, ZL1AJL, whom I had talked with from Fiji, told us much about her expedition to Chatham Islands.

Our stay in New Zealand was beautiful and made so pleasant by all ZLs. We finally met up with Mac, ZL1KN, and his family. Mac was my anchor man in ZL and took in mail for us. We visited him again on our way out of the country and as an added bonus met Shorty MacDonald, VE7AZ, who was also visiting Mac at the same time. I had met Shorty here in Toronto three years ago when he made a cross-Canada trip. During our ZL stay I had the call ZL1BCG and met over 60 ZL amateurs all the way from Auckland to Invercargill, and wish to thank Keith Weill, ZL4PD, and his XYL for their hospitality while in the Dunedin area.

On the 23rd of February we left ZL for Rarotonga where I was given the call ZK1DD. We were there about two weeks and thoroughly enjoyed our stay. From Rarotonga we flew to Tahiti and were entertained by Yves Shan, FO8DP.

Well, we finally made it home after a glorious six months in the Pacific. I cannot express enough gratitude to all the amateurs that we met on the route, especially the ZLs. I can only say that our experience has changed our outlook toward people from being slightly pessimistic to completely optimistic. The people in the south have a rare gift of sincerity that I am afraid is a vanishing commodity in the world today.

—Breai In

Tonga *from page 6*

speakers with my "wap wap", so that was out. Of the two hotels remaining I chose the "Beach House" for there were at least some trees from which to hang antennae.

Oh, I might tell you that they were quite happy to see me. They still remembered Gene Souligny, WA6IDKU, several years before who died there while on vacation. He was buried in Tonga and the funeral was conducted right in the living room of the "Beach House." I was told that it was a superb funeral - a big feast - and much cheaper than in the States.

My quarters were a little hut which was spartan, a desk, a bed, a lamp and an electrical outlet (240/50 cycle). It was perfect! We had three meals a day, tea brought promptly at 7 a.m., an 11:30 a.m. tea and a coffee in the evening. This plus the room was $12. 70 US a day - not bad! Oh, their address is PO Box 18, Nuku'alofa, Tonga. It's a good place to stay.

My working conditions were as follows: A Kenwood TS-520 with matured finals, a ZL-special which ZL1BTU/KS6 and I built, and a 40-meter dipole. Both antennae were extended from the top of the "Beach House" to a rather young palm tree. The maximum height of the antennae was 14 feet above the ground. I didn't suspect that I was going to blast the world to pieces with this setup.

The results of the Tongan operation were fair. Conditions were poor and propagation, for me at least, was to the States only. 95% of the contacts made were from the USA. The only solid opening on 20 meters was from 3:00 to 5:00Z so there wasn't much time to operate. There was nothing on 20 in the direction of Japan so with the closing of 20 meters we went to 40 meters and "zap", right back into the States again. We made a total of 2302 contacts in 15 days of operation and worked all states on our 13th day. That was a lucky day.

We are appreciative of the cooperation and the patience from all the operators and wish we could have contacted all who heard us. Our thanks go also to the Tropac Company who brought me to Tonga, the tourism bureau in Tonga who provided the pamphlets, my wife who let me go on this adventure, the Government of Tonga who issued me the license, and certainly to Bruce Giunta, W6KLJ, whose superb handling of the QSLs make it possible for you to have confirmation from Tonga.

Thelma

(continued from page 5)

Thelma's coming to the States was not only a long way around but again Amateur Radio was involved. It seems the daughter of an old school friend of hers went to Jamaica. The daughter, Elaine Scott, became the first licensed YL in Jamaica as 6Y5ES. Thelma would run weekly skeds with the daughter so her mother could talk to her. This went on for some years. Then Elaine moved to Canada. She operated from the University of British Columbia station, VE7UBC, for awhile, then got her own VE7 call. Her mother wanted to visit her and asked Thelma to come along. So, the mother continued on to Canada and Thelma got off in Los Angeles. They'll fly back together to New Zealand.

Thelma says she would have liked to travel before but she didn't have anyone to travel with. Her husband passed away a few years ago.

She says Amateur Radio has meant even more to her now that she lives alone. She calls it real company.

Asked what she thought of Amateur Radio after these 43 years on-the-air, Thelma said, "It's a way of life."

OCTOBER 1975
Maximum Usable Frequency from Burbank, CA

The numbers listed in each column are the Maximum Usable Frequencies (in Megahertz) for contacting five major areas of the world

OCTOBER 1975

UT	AFRI	ASIA	EURO	SOAM	SPAC
01	13.8	21.2	9.0	17.3	24.4
02	10.0	18.3	8.6	13.5	24.8
03	8.8	15.6	8.2	11.4	20.6
04	8.1	14.7	6.9	11.0	16.4
05	8.2	12.7	7.1	11.7	13.6
06	8.3	11.7	8.9	12.7	12.5
07	8.7	11.1	10.2	13.8	12.4
08	8.3	11.0	10.4	13.5	12.3
09	7.8	10.9	10.2	14.2	12.3
10	7.4	11.7	9.8	13.6	12.8
11	7.5	11.6	9.4	11.7	13.5
12	8.6	11.2	9.8	11.8	13.0
13	10.7	10.6	12.0	14.9	11.8
14	11.9	11.3	14.1	19.2	12.6
15	13.6	12.9	16.6	22.3	14.4
16	14.7	13.5	17.4	23.6	12.2
17	15.5	12.0	16.1	24.3	10.2
18	16.1	12.1	14.8	25.3	10.7
19	16.8	14.2	13.4	26.8	14.0
20	17.4	15.5	11.8	27.9	17.7
21	17.7	18.5	10.3	28.4	19.9
22	17.6	21.6	9.4	27.9	20.8
23	17.2	22.4	9.6	25.9	21.7
24	16.0	22.7	9.1	21.9	23.2

REPEATERS

A word to the wise

Gary Hendrickson, W3DTN

The FCC recently amended its rules to permit automatic control of repeaters, where a control operator is not required to be on duty at a control point. Two options are available to the repeater operator as adopted in Docket 21102. They are:

First, regular "open" repeaters can use automatic control if all transmissions are recorded so that they can be reviewed within 72 hours. The recordings must be retained for at least 30 days.

The second option allows "closed" repeaters (where usage restricted to persons specifically authorized by the control operator or station licensee) to operate without the recording and review requirement.

In order to operate a repeater or an auxiliary link station as part of a repeater system by automatic control, the station must first be licensed in the conventional manner for either local or remote control. Then the licensee may use any or all of the various options permitted to monitor and control the operations.

Automatic control will only work where repeater users cooperate fully in their proper use of the machines. Repeater control operators and licensees are responsible for proper operation of the repeater, including proper usage. Without complete cooperation and adherence to the rules, the repeater licensee cannot allow the machine to continue to operate in the automatic mode.

Auto-call

BREAK

Dick Altman, WA6AXV

I'd like to make like a politician and start a little campaign. Haven't been able to come up with a good sounding acronym yet, though. Hm-m-m, maybe BRAKE for Beautiful Richard's Knotheaded Endeavor would do...that should entitle me to some kind of federal funds.

But, my thoughts on our long (?) established (?? again) use of 'break' and/or 'break-break' for emergency use. I just cringe when a newcomer to 2-meter FM comes on using the same method he may have been using for more years than some of us are old—and getting thoroughly chastised (or chewed out royally) by some upstart. (Ya listening, Don?)

For heaven's sake acknowledge him (yeah, I know, we all do!) then welcome him!!! Let's eliminate the use of the word 'Break' COMPLETELY. I can say **emergency** as fast as you can say **break-break.**

A couple of weeks ago such a situation occured. The newcomer (2 letter call) was still at the dealers where he had just purchased his 2-meter FM rig and told us as much in his first transmission. It wouldn't surprise me (and I wouldn't blame him) if he turned the rig back for a refund after the first come-back to his first transmission on 2-meters. And he probably went away muttering □ □ □ of which the only intelligible thing heard was "CBers".

Why do we have to be different from the majority of amateurs? We are supposed to work at increasing amateur activity - not the other way around, fellows!!!

So-o-o, let's give it a try. Just pass it to the breaker(as we are supposed to do) then...if it's an emergency...handle it! If he just wants to chat, for heaven's sake, accept him. He will soon learn that he can get in with just his call during the three-second squelch tail. Don't harass the poor guy over such a silly rule that should have never been started in the first place, of which he certainly had no way of knowing.

Incidentally, fellows, most of the above should apply when somebody calls "CQ" on 2-meter FM. Can you remember YOUR first time on the mike?

Obviously such a person is new to 2-meter FM. Think about it...Now I'll step off my soap box — have to hurry — it's almost 5:00 o'clock.

—The Repeater, Grizzly Peak VHF Amateur Radio Club

Universal tone squelch –

Universal Tone Squelch a solution to our crowded channels

15 kHz splits is not the only solution to overcrowded channels. Bill Mengel, WA8PIA, president of the Ohio Amateur Repeater Council, presented a plan that would make more efficient use of at least our underutilized channels, if not every two-meter repeater channel.

Very simply the plan calls for every repeater to go to tone-coded squelch (it's called "PL" around here), with two PL decoders. One of the PL decoders would respond to a specific frequency designated for that area (and all the repeaters in that area would use the same PL frequency). The other decoder in those repeaters, and every repeater in the country, would respond to a "universal" frequency (Ohio recommends 100 Hz, 1z). All the repeaters in an adjacent area would respond to 100 Hz and some different code.

In practice it would work like this:

Base stations - a base station working a local repeater would select the local PL code; thus, he would not key the nearby repeater sharing the channel, only the local machine. If he wanted to use the other nearby repeater he would select that repeater's local code, and he would not key his local repeater. This would require multi frequency PL for base stations wishing to work more than their local repeaters.

Mobiles - when a mobile is near its local repeater it uses the local PL code. In other areas the mobile switches to the "universal" 100 Hz code. The mobile would need only a 2 freq PL board.

Portables - portables would all use the "universal" 100 Hz tone since their low power would usually not key up more than the local repeater.

This plan would allow much closer spacing of repeaters than is possible with carrier or tone burst access, but the "universal" PL code would not shut out transient mobiles from repeaters outside their local area. It would work well for the less busy repeaters, though wide area, highly active systems would probably still need clear channels for some distance.

"Universal" tone squelch is worth considering as an alternative to 15 kHz channels.

"Squelch Tale", Chicago, IL

I'm portable fixed, mobile 6, at the moment

Lou Roux, W6GRR

Here you are, straight from the FCC. Now you can solve that identity crisis that keeps bugging you. The following definitions and examples are taken from a letter written by C.A. Higgenbotham, Chief, Safety and Special Radio Services Bureau of the FCC, published in the September issue of the San Diego Repeater Association's newsletter, "Squelch Tales".

"Fixed Operation" is communications conducted at the address shown on the station license. All operation at that location, including using a hand-held in the back yard or a mobile unit while sitting in the driveway, is still "fixed".

"Portable Operation" is communications conducted at a specific location other than that shown on the station license. Typical examples are operating at a hotel during a convention, within the limits of a park at a Hamfest or on a friend's private property.

"Mobile Operation" is communications conducted at an unspecified location, in transit from one specific location to another or during brief stops while in transit. Station operation on the street in front of your residence, in a boat on a lake or in an airplace while airborne are considered "mobile".

Mt. Wilson Repeater Association Newsletter

Vehicle

(continued from page 8)

and materials. Also record should be made of the unfailing enthusiasm and sacrifices made by AREC members, perhaps more by their XYLs than anyone, who worked so hard and well to obtain this Emergency Rescue and Communications Vehicle.

Break-in, Official Journal of the New Zealand Association of Radio Transmitters, Inc.

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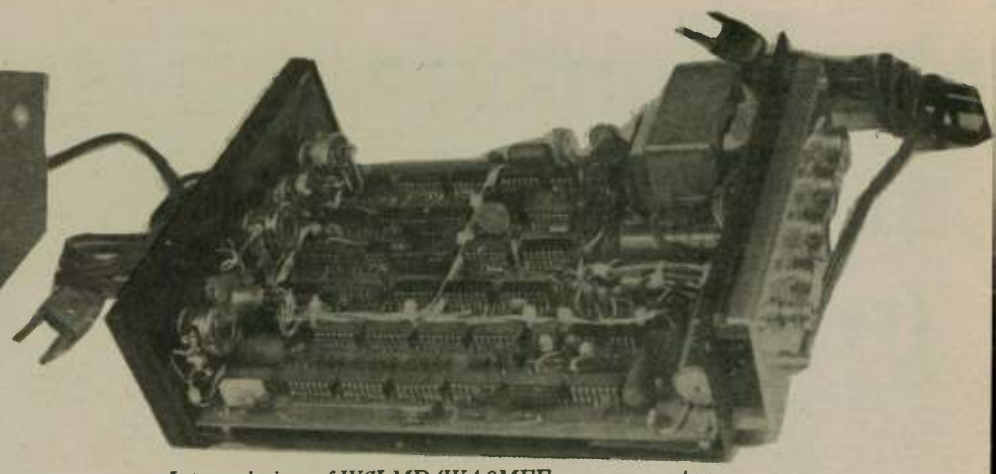
TELEVISION

Dave Ingram, K4TWJ

Exterior view of WØLMD/WA9MFF scan converter.



Internal view of WØLMD/WA9MFF scan converter.

Each new aspect of Amateur Radio tends to prove itself during times of emergency and crisis.

This has been evidenced during the 1950 s with SSB and again more recently with FM. I think you will agree that any new mode of communication must be utilized by a substantial number of amateurs before it evolves as an effective communications tool.

Now let's consider how Slow Scan TV fits into these categories. Approximately five years ago there were only three or four hundred SSTVers throughout the world. Today there are several thousand active Slow Scanners and this number is increasing daily. The time when SSTV will make its debut as a vital emergency communications aid is rapidly approaching. Each of us can prove beneficial in this respect by being prepared with SSTV gear ready for use when the need arises. Think about that. If the thought of providing assistance during crisis appeals and you would like to do something **now**, consider volunteering your assistance to the world hunger situation.

Several underdeveloped countries are presently facing starvation because they do not have ample food or a knowledge of modern farming techniques. While religious organizations, CARE, etc. are working to alleviate the immediate problem (starvation), other engineering groups are designing water distribution systems and establishing cultivation methods to make these areas self-sustaining. What an opportunity for Slow Scanners to help mankind! Through proper coordination and planning, programmed amateur radio transmissions on subjects like contour farming, irrigation, hydraulics, etc., can be directed to missions in these areas. The best way I have found to learn who and what areas might be interested in Amateur Radio assistance is through religious organizations. The Catholic Diocese groups are usually most instrumental in this respect. If these humanitarian efforts succeed, I may be coordinating activities, so be sure to keep me informed on your work.

Printouts from the Sumner Electronics and Engineering hard copy unit.

The WØLMD (Bob Suding) Fast to Slow Scan converter originally described in August, 1974, *73 Magazine* is now available in pc board and kit form from Larry Pryor, WA9MFF, of 5940 Carrollton Avenue, Indianapolis, IN 46220. This unit utilizes approximately 40 ic's and 3 transistors to convert the output from a conventional Fast Scan TV camera directly to Slow Scan. All circuitry is mounted on a seven by eight inch double sided pc board which fits snugly in a Heathkit "function generator" cabinet. This scan converter is one more prime example of how SSTV technology is increasing. If you look at the initial circuit in *73*, its complexity is apparent. However, the WA9-MFF circuit board of this item can be assembled more easily than many jigsaw puzzles. Only a few pots and four transistors external to the board complete construction. Simplicity indeed!

Sumner Electronics and Engineering Corporation, PO Box 572, Hendersonville, TN 37075 has been developing a couple of new SSTV items which may be released in the near future.

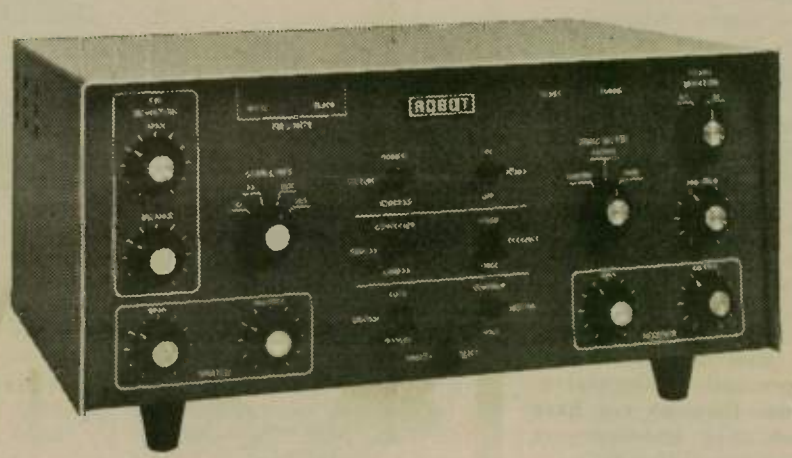
One of these is a scan converter which incorporates both digital and charge coupled devices in its circuitry. This unit was displayed at the recent Atlanta Convention and it produced some nice, sharp pictures. Yes, scan converters appear to be rapidly growing in popularity (although P-7 type monitors are still the least expensive way to operate SSTV). The other SEEC unit is a hard copy SSTV reproducer which prints an SSTV picture every eight seconds. These hard copies can be used for instant QSLs, schematic exchanges, police "mug shots," etc. If color ink can be integrated with this system, color SSTV hard copies may also be possible. I will try to bring you more information on the previously mentioned units as it's available.

Thanks to coordination among Slow Scanners, those popular SSTV keyboards are now easy for practically anyone to build. John Meshna Company of East Lynn, Maine has good quality ASCII encoded keyboards available for 35 dollars each and Russ Sievert, W8OZA, is producing pc boards of the unit (you can get either boards alone or boards and parts from Russ). Armed with these two items you only need to fabricate a simple power supply, and Russ includes a schematic for that. Bravo!

Incidentally, I would now like to correct a small discrepancy which somehow crept into last month's

(please turn to page 15)

Now get commercial TV picture quality on Amateur SSTV operation



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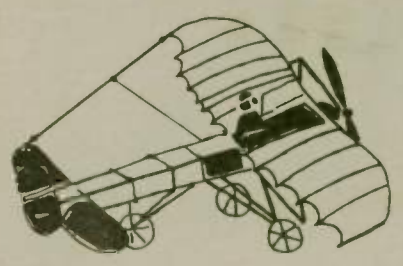
AERONAUTICAL MOBILE

Vern Weiss, WA9VLK



Thank you. It has been one year that **Worldradio News** has brought you "Aeronautical Mobile" and I would like to deeply thank all of you for the interest and response which it has received.

When any publication takes on a new regular feature, both publishers and writers walk on eggs for a while. But you have made it a wonderful experience and I shall hope to do whatever it is I do in this column in the coming year. Good 'ol Armond deserves a slap-on-the-back, too, as I have pulled just about everything possible to make his job impossible...from submitting copy with ink resolution nearing the point of a stencil to sending my next column later than normal press deadlines require. In fact, I imagine the whole **Worldradio** Staff (who are all great people) has obtained Doctorate degrees in Patience. Well, all this babble is making me sleepy, so let's get on with the real meat of why I'm here.

Good bunches of mail have been arriving concerning my pilot's calling frequency proposal. These have ranged from total agreement to threats of having me committed. Again, the results are half and half. Some are saying keep it off the simplex (two meters) frequencies while others say establish it on popular simplex frequencies. Then there are others asking the question, "Two meters?...What's that?" So you see, it is still up in the air. I do have one consolation and that is that the amateurs wishing that the calling frequencies be in the low bands pretty much agree that 7270 kHz (727...get it?) is OK. Let's get some more comments and we'll tally them up and present the plan in next month's "Aeronautical Mobile". One writer wrote that we should pick 122.8 MHz (Unicom) as the official amateurs/pilots calling channel. Smart aleck.

Several times in past months we have been talking about the FAA's ban on those handy pocket calculators on IFR flights. True, they do interfere with some radio frequencies. . . .especially LF (ADF)-type channels, but LO AND BEHOLD...(Ta-Ta-Dah!), they have officially ruled that the computers may be used on IFR flights so long as the pilot is aware of the interference-potential and makes the necessary corrections. By "corrections" I think they mean going back to the good old E6-B if that's what it takes.

Happy Flyers

Members of a California-based Amateur Radio and pilot organization, the Happy Flyers, are putting the finishing touches on an inexpensive direction finding unit for the amateur band, suitable for use in such things as airplanes as well as less sophisticated means of transportation. (I understand there are a few people still driving cars.(The Commander of the organization, Hart Postlethwaite, WB6CQW, of Belmont, CA entered the Western States Sheriff's Squadron Competition whereby competitors attempted, by aircraft, to locate a simulated downed aircraft. Hart did it in six minutes. The closest anyone came to Hart was an old turtle swimming in Vermont molasses who took 14 minutes. FOURTEEN MINUTES!!! Good gracious, have some people no pride?

Anyway, I understand WB6CQW uses a DF locating device with his TR-22 and has very good success. Working in conjunction with Hart is Bob Broadway, WA6CZJ, who is the master designer and builder of the prototype unit. According to *Happy Flyers*, the monthly publication of the group, Bob is about ready to release the design of the DF unit as soon as he works out a slight problem of excessive current drain from the sniffer. We will try to get the plans for the unit as soon as they're released. In any case, next month "Aeronautical Mobile" will carry some of the technical details of this Phase Sensitive DFer.

Judy Yost, WA6RAN, teacher, **Worldradio** staff member and wife of Bill Yost, WA6PIU, writer of "Maritime Mobile" here in WRN, is beyond the forehead sweat of her first solo and, I understand, narrowing in on the final hours for her Private. Good luck, Judy.

The Happy Flyers newsletter recently told of a particular non-radio operator flight instructor who serves in that capacity for many of the amateur/pilots in the Fresno area (including WB6CQW). It seems he lost a piston in his Cessna Centurion at 9000 feet over Fresno. Fresno tower begged and begged him to declare an emergency but he didn't and landed flawlessly. Tower then had to ask him to slowup so the fire trucks could catch-up. Poor Fresno Tower.

Our prayers to the family of Joe Horne, WB6IKK, of Redwood City, CA, pilot and radio operator, who became a Silent Key on the 22nd of June. The air will miss him.

My latest Aeronautical activities have been on six-meter AM. Since the band and mode are getting a dab here and there of activity, I decided to try it and it has been a ball. Most of the fellows around here are picking up Sixers, which should work suitably in the aeroplane. Myself, I use a Lafayette HA-460 and a Squalo on the underside of the plane. What great fun! As for TVI...our local Cable TV operation boasts "Never Any Interference to Television Reception." Heh heh heh.

As we change over to Approach Control I would like to put in one more plug to hear from you. Let me know what you're doing in the air. Send news to me at 533 South Lincoln Avenue, Kankakee, Illinois 60901. And as the loan company said to the airplane owner who worked eighteen hours a day, seven days a week, went without lunch, sacrificed meals for his family and medical care for his wife, sold his car and moved in with his in-laws to make his airplane . . . "See you next month."

Editorial

(*continued from page 21*)

killed, your child is missing, you are pinned in the wreckage of what's left of your house. Your leg is broken, you have heavy internal bleeding, and a concussion. You are about to depart. Up to the house comes an amateur with his little hand-held 2-meter rig. He yells into the wreckage, "Anyone in there?"

Would you weakly groan back, "Get out of here you emergency type; I'm not going to give you the satisfaction of saving my life."

The question arises, are all the "do-gooders"paying the "dues" so the others can enjoy the "fun" of Amateur Radio.

There are two statements by Pablo Casals that we like, "I feel the capacity to care is the thing which gives life its deepest significance." And, "The main thing in life is not to be afraid to be human."

In a recent issue of *Spark Gap Times*, Dady Major, VU2MD, who has been through two wars and more, said, "I think amateurs will make better politicians and ambassadors and will usher in a decade of peace."

Hopefully, he is right. To get there must Amateur Radio evolve? Must we increase our global understanding to match the growing interconnectedness that we are experiencing? Is intellectual laziness one of our problems? Are we shallow? Should we start earnestly searching for the contributions we can make to human society?

MARITIME MOBILE

Bill Yost, WA6PIU

Rescue

Last month's column devoted its emphasis on the efficient rendering of marine rescue. An episode or two is perhaps in order to demonstrate the service. Thus, from the *LERC Amateur Radio Club Bulletin*....

On 20 May 1975, while monitoring the frequencies on the 20-meter band, Ron Carpenter, WB6YID, came upon an emergency situation involving the sailing vessel *Lucayo* (using the call HP9LXH/MM2); E. C. Baker, K7LRA/MM2; and John Stagnaro, W6MAB.

The pleasure vessel *Lucayo* is quite well known to amateurs the world over. For more than a year the owner and crew have been enjoying a dream-type trip, traveling from Florida, where they bought the boat, through the Carribean waters, through the Panama Canal, then down the west coast of South America to Equador and the Galapagos Islands. Leaving the Galapagos they headed for Tuamotu Archapelazo and Tahiti. Working "patches" for the crew (Larry, Ron and Donna) was always a pleasure for amateurs throughout the whole United States.

After leaving Tahiti, the *Lucayo* encountered a storm and lost part of her rigging. Salt water entered her motors making them useless. The crew requested help via Amateur Radio. For a couple of days they were becalmed, waiting for assistance. On top of everything else, Donna, the

(*please turn to page 11*)

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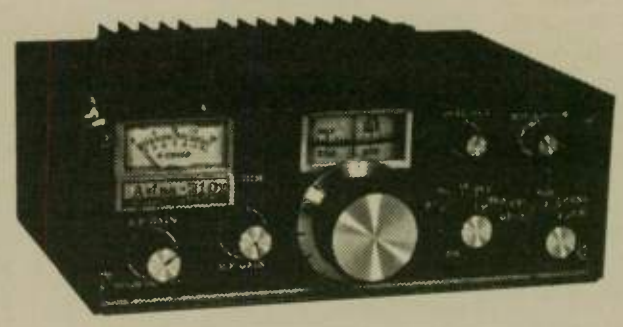

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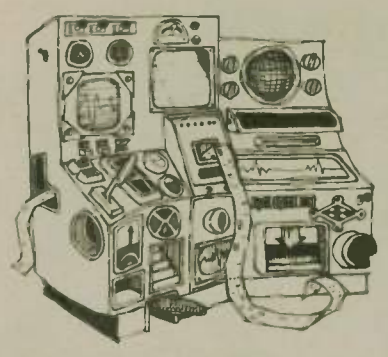
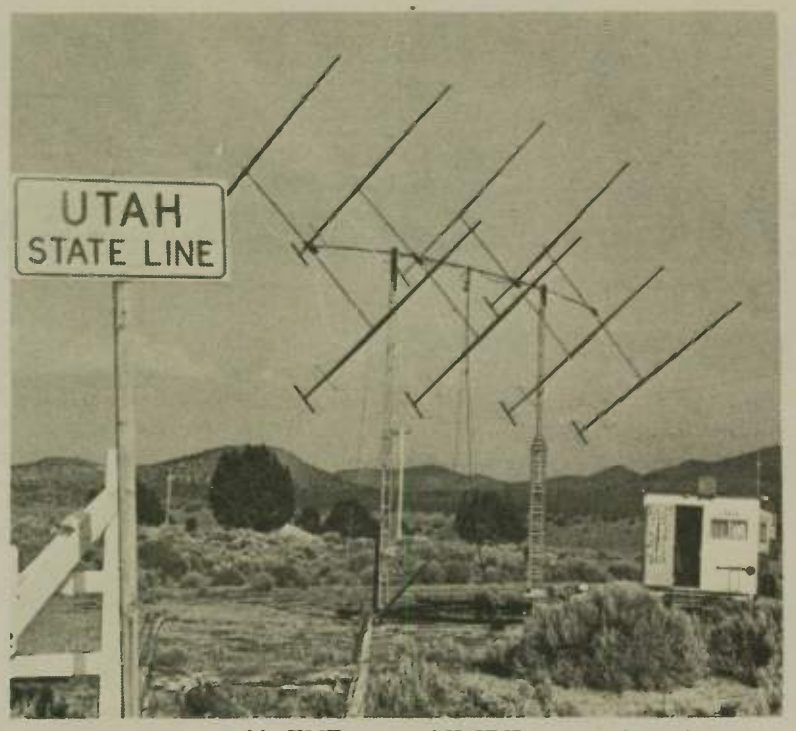


VHF-UHF

Lou Anciaux, WB6NMT



10 August 1975 portable EME array of K6YNB/7 — eight 8-el Quagis.

14 July 1975 portable EME array of K6YNB/7. Will Andersen, WB6RIV, viewing CØWS, XYL & harmonics . . real MOOOON-BOUNCERS.

The $400 QSO

August saw Wayne Overbeck, K6YNB/7, on the trail of mobile/portable EME again. He straddled the Nevada-Utah border, and managed to work Dave Olean, K1WHS, Gerry Ford, WA7KYZ, and Kevin Lesh, K3RYL. He also copied EME signals without QSOing K2RTH, WA2BIT, WAØCHK, VE2DFO, WA7BJU & SM7BAE.

In addition to the three QSOs above, he previously worked Bob Sutherland, W6PO, on the July venture. In all, he spent the greater portion of the summer building and re-building antennae, and the array, the array supports, travelling over some 3000 miles (at 8 mpg), spending about $1,500 in the course, and not to mention the hours of toil, frustration, heartache and the physical suffering from WX and long hours.

Needless to say, remarks like 'you must go back again' are not being met with much in the way of kind words in response. Although a few of us did also manage to QSO Wayne via tropo (he gave me state #5 on 220 MHz from San Diego); even at that, some serious thoughts about portable EME operation in the future will be met by some considerable thoughts about trying to maximize the QSO quantity.

Another disappointing DX venture was the attempt by members of the San Bernadino Microwave Society to extend the DX records on the microwave bands over the Labor Day weekend. Several of the members, including Chuck Swedblom, WA6EXV, Bill Burns, WA6QYR, Ed Munn, W6OYJ, Dick Kolby, K6HIJ and others ventured to sites near Redding and Mt. Pinos. Gear for the bands 2.3 to 10 GHz was set up at each end, and not one peep was to be heard over the 400 plus mile path.

Not to be deterred from the quest, a future attempt is assured. Next time, better site selection ought to help in achieving the goal. Mother Nature and her wind storm near the northern end did no good to efforts.

On July 20th, one supurb Es opening occurred in the Eastern portion of the USA. This opening lasted for some two hours or more, with most of the 144-148 MHz band being utilized for DX QSOs. Information on this opening is sorely needed by Mel Wilson, W2BOC, in order to complete his studies of this event.

Please send any info you might have, log notes, QSOs had, heard, times, beam headings, frequencies etc. Especially, if you heard a station working another, and could or could not hear the far end, is very vital info. Please send any and all info on this opening to Mel at: 17 Van Cortland Dr., Pittsford, NY 14534. As Mel mentions, he gleans almost as much info from your comments, as he gets from specific log info.

The Aug. Perseids proved to be an exciting shower this year for many. Some sad faces among the crowd as well. Gary Frey, W6KJD, working from his K6-QEH QTH bagged Wyoming to complete the 7 area & his state #18. Ed Kimber, W7VEW, was the Wyoming end. He also provided several others this rare catch. Gary caught a two minute burst on 144, working Hal Goodell, W7DNU, and Don Roberts, W7FN, both in Wash. On another Blue Whizzer, Gary worked Al Ward, WA5LUA, in Texas for his first Calif. The burst came at the beginning of the sked, and the QSO was over before it really began.

I even broke down, and for the first time worked 144 meteors. Previously, had only worked 50 and 220 MHz meteors. Racked up four new states, and almost got bit by the bug. But, will be back onto 220 in future showers. Although not via showers, Bruce Sternstein, K2RTH, indicates he is in process of gearing up for the 220 band on EME. Any others care to try? Might even get me on again, in a bigger hurry.

The apparent first US to JA 144 MHz EME work took place on 29 Aug., when Bob, W6PO, worked Tahashi Kumamoto, JA6DR. The array in Japan is 16 nine el Yagis very closely spaced. On 31 Aug., Lucky Whitaker, W7CNK, also managed a QSO with the JA. If the array can be spread to proper spacing, the number of QSOs between Japan and the rest of the world should soar to even make an HFer envious.

As I've reported in this column in the past, tropo duct extensions into the OSCAR 7B have been possible. On July 28, Bud Schultz, W6CG, and G3IOR completed a QSO on OSCAR 7A. Apparently some tropo assist must have been at work to allow these two fellows to complete this 5500 (8842 KM) QSO. This superb effort surely indicates we need more fellows looking into this mode.

During the past month, I have been able to obtain tropo assist of 200-800 miles with considerable regularity on those passes well out over Pacific. The most significant pass of 7B was orbit #3359 on 10 Aug. The only QSO was with VE6JX, and was not unique. However, after signing, at 2004 GMT, I kept the satellite signal until 2014:10. If my info about the location of 7B is correct, this put it over about 173° W10° N. From my 117°.2486 W 32°.7077 N QTH, this figures out to be about 4210 miles or 6770 KM out. This equates further to about 1700 miles (2700 KM) tropo duct. Needless to say , tropo tests with the KH6 gang were started on a nightly basis. No results unfortunately.

I mention these tropo duct assists to OSCAR 7B primarily to try and stir a few of you 7B users into trying it. Even listening to the beacon will indicate some sort of path may exist. An goodly amount of DXing is available via this bird if you will just give it a go.

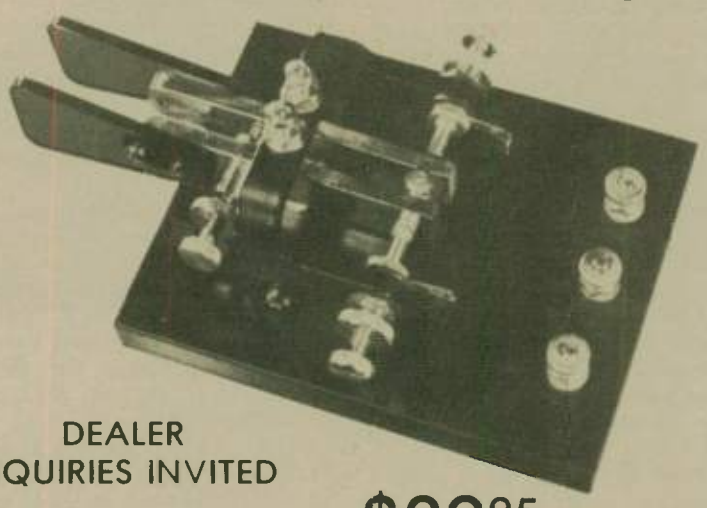
For the 432 MHz EME gang, get your gear ready. The next WA6LET tests using the 150' dish at SRI may take place on the weekend of 25-26 October. Vic Frank, WB6KAP, indicates they

[*please turn to page 41*]

You have asked for them - now available - the paddle/squeeze key that outweighs them all

Acclaimed by many - highly accepted by many CW operators!

"The Black Beauty"



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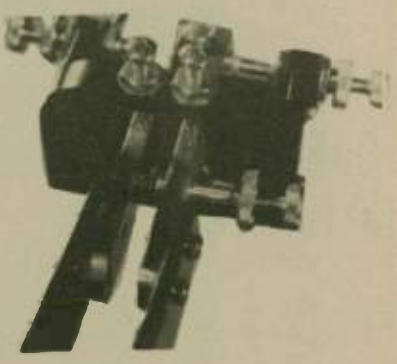
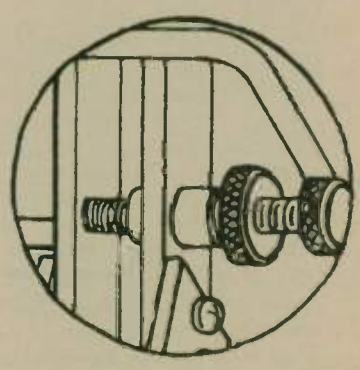
* coin silver 3/16" contacts that align as a precision instrument should!
* satin black finish with bright nickel finished parts.
* 3½ x 4½ x ½", weighs 3.1 pounds



For those who prefer to mount their keys directly to the table, or on a separate board, the "Black Beauty" is offered as an option, without base . . . $34.95 prepaid, Cont. USA.



The "controlled adjustment chamber" is a feature using selected spring steel to give just the right touch for real operating pleasure.

$69.95 PREPAID, CONT. USA

Model 33-A keyer is designed with a keyed master clock using discrete transistors. The logic gives a fixed 3 to 1 dash to dot ratio.
Built-in side tone monitor, tone setting internal---strapping for external side tone on rear panel.
115 vac operation
manual key connection
output relay — contact rating 12va at 0.25 amp or 100 vac
speed adjustable 5-50 wpm
tune in off position

The RG-5 Keyer - a modern keying device with deluxe features.

1) self-completing dots and dashes
2) dot and dash memories
3) iambic operation
4) dot and dash insertion
5) auto. ic character space (may be switched out)
6) 5-50 wpm speed range
7) tone and volume controls on front panel
8) test position always available when power switch in off position
9) relay output

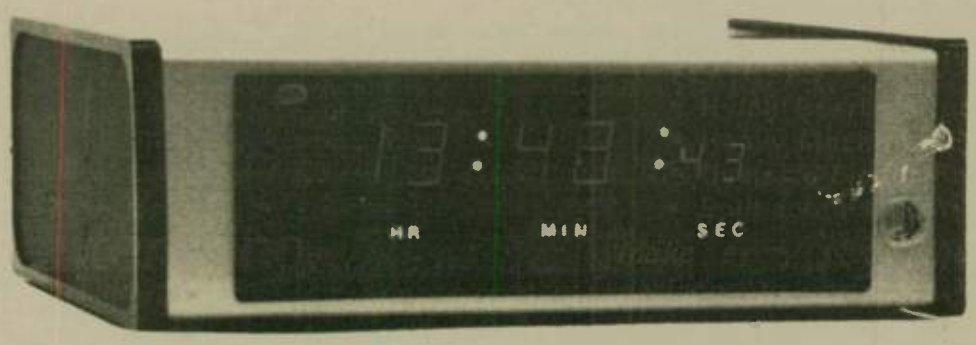
$99.95 PREPAID

SATISFACTION GUARANTEED

A syncronized clock provides uniform starting for constant-width characters. Also the dot-dash decision is made at the end of the space following the bit, allowing maximum leeway in paddle operation.

Contains present bit and next bit memories . . . next-bit memories allow following operation:

1) If the dot memory is on, the keyer will start a dot.
2) If the dash memory is on, the keyer will start a dash.
3) If both are on, the keyer will produce the opposite bit from the one it is sending.
4) If neither is on, the keyer will assume a missing bit and automatically give two additional spaces.



- 24 hour 6 full digits
- gas discharge display
- all electronic
- automatic dimming circuit
- noise suppression added

$89.00 PREPAID

Model - R-24
Gray and black cabinet 6 15/16 x 5 5/8 x 2½ in. high . . . wt. 1 lb. 8 oz. display characters .55 in. high (seconds .33) controls include two push buttons on back, fast and slow set, one toggle switch for hold . . . display automatically dims in low ambient or dark room light to be less distracting and yet easily readable in high ambient light. Noise suppression has been added to reduce interference from fluorescent lights, r. f. fields, etc. Guaranteed for one full year.

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OSCAR AMSAT

Results of the AMSAT-OSCAR Experimenters Conference

Perry Klein, K3JTE

AMSAT-OSCAR builders from Australia, Canada, Germany and the East and West Coasts of the United States convened recently in Washington for the 1975 International AMSAT-OSCAR Experimenters Conference.

The purpose of these meetings was to define the next satellite(s) and the responsbilities of the several AMSAT affiliate organizations in developing these spacecraft. Representing WIA-Project Australis was Dave Hull, VK3ZDH; from AMSAT-Canada were Larry Kayser, VE3QB; Bob Pepper, VE2AO; and Ernie Welling, VE3HD; Karl Meinzer, DJ4ZC, attended from AMSAT-Deutschland; Dick Kolbly, K6HIJ, and Chuck Swedblom, WA6EXV, travelled from the San Bernardino Microwave Society in California; and Jan King, W3GEY; Perry Klein, K3JTE; and several others of "AMSAT International" attended.

"AMSAT Phase III" is the term used to refer to a new series of AMSAT spacecraft designed for drifting synchronous or high-altitude elliptical orbits. Phase I of the amateur satellite program constituted the flight of short-lived OSCAR satellites that were used to stimulate amateur interest in satellite tracking and communication techniques, while Phase II is represented by the AMSAT-OSCAR-B series of longer-lifetime transponder satellites intended for flight in orbits below 1,000 miles altitude. The new planned series of higher-altitude, long-lifetime AMSAT Phase III spacecraft offer the significant advantage over the previous low-orbiting OSCARs of providing improved coverage over longer periods of time and over vastly greater distances.

Dr. Meinzer presented notes on his studies of orbit considerations for Phase III spacecraft. He pointed out that for Amateur Radio applications, geostationary or even drifting synchronous satellites are far from optimum in terms of the coverage provided. From the standpoint of users at higher latitudes, far more suitable would be highly elliptical orbits having a near-synchronous apogee occurring over the north pole. In terms of usage times, such an orbit would be five times better than for a synchronous spacecraft, and long-range capabilities would be much improved. The key problem is that about 100 times the ERP is needed both on the uplink and downlink for Phase III spacecraft as compared with AMSAT-OSCAR 6 or 7. This implies that a stabilized spacecraft will be required with about 100 watts ERP of transponder output power and antenna gain. Considering the launch opportunities in the time period envisioned (1978-1979), it also appears that a kick motor will be required aboard the spacecraft to achieve the desired orbit.

The Experimenters Conference included a lengthy session on the choice of best frequencies for the transponder uplink and downlink. Several of the experimenters felt that 435.1 MHz should be used for the uplink and 145.9 MHz for the downlink, while others felt that 145.9 MHz should be employed for the uplink and 435.1 MHz for the downlink. It was finally decided to leave the final choice of uplink and downlink frequencies to the designer of the Phase III transponder, Karl Meinzer, especially considering that he is responsible for further spacecraft design tradeoff studies which will affect the final choice of Phase III frequencies. It was agreed, however, to invite the comments of AMSAT members on this matter to obtain inputs from the user community.

Several sessions were held on the subject of command and telemetry spacecraft data handling. The Phase III spacecraft command, telemetry and experiment control functions are all expected to be accomplished by means of an onboard C/MOS micro-computer which can be reprogrammed by ground telecommand. All were certainly impressed with the potential of the microprocessor for the Phase III application. It should be possible, for example, to load commands for automatic execution by the spacecraft hours or perhaps days later depending upon how the spacecraft is programmed. It should also be possible to obtain Morse code telemetry, teletype telemetry, Codestore and other forms of telemetry and stored messages simply by reprogramming the microcomputer via telecommand. The telemetry data can be formatted and commutated as desired, and even transmitted directly in engineering units if desired. Formatting can also be done so that the spacecraft telemetry can be displayed on a television screen.

It was agreed that AMSAT Deutschland would be responsible for the Phase III spacecraft design and engineering, and that AMSAT-DL would turn over working breadboards of each subsystem, one at a time, to AMSAT-Canada for fabrication into an engineering test model of the spacecraft. The first subsystem, the completed telecommand system, was turned over to AMSAT-Canada at the meeting for fabrication. The microcomputer and experiment control logic subsystem is the next portion of the spacecraft slated for transfer to AMSAT-Canada, and this is scheduled for August 1975, followed by the transponder later in the year. Project Australis, at the same time, will begin ground system equipment design and development work, which includes the fabrication of command generating and telemetry decoding equipment, and the development of the software required to program the spacecraft microcomputer. AMSAT Hdg. will prepare the Phase III spacecraft specifications and coordinate the activities of the engineering, fabrication and ground system equipment groups. This includes the tasks of obtaining space-qualified hardware, such as integrated circuits, transistors, nickel-cadmium batteries, solar cells, a suitable spacecraft boost motor and arranging the launch and licensing. The San Bernardino Microwave Society representatives discussed the desire to develop a new, higher power 2304 MHz beacon for the Phase III project, a beacon that may play an important role during the launch phase in determining the spacecraft orientation before firing of the boost motor.

It is expected that there will be a Phase III design review around the end of the year when the basic design and breadboard work should be completed. The schedule calls for the completion of the engineering test model of the spacecraft by November 1976, and the completion of fabrication of the flight spacecraft one year later, followed by six months of pre-flight testing. This schedule is predicated on the basis of a mid-1978 launch opportunity, the view being expressed that it would be highly desirable to have the Phase III spacecraft in orbit and operating well in advance of the 1979 World Administrative Radio Conference.

—AMSAT Newsletter

I am interested in hearing from anybody that has FAX uplink capability, and would be interested in running OSCAR-FAX experiments with me. I have OSCAR-FAX downlink capabilities for the OSCAR 6 or 7 2/10 meter transponder.

Jerry Robinson, III, WB4TNB
107 Norwood Avenue
Asheville, N.C. 28804

Dennis Grinerod, WA1EHF, 288 Grand St., Bridgeport, CT 06604, is serving as U.S. AMSAT QSL Manager in the following manner:
(a) All users to send him several SASE's which will be filled by incoming cards and mailed when full.
(b) DX QSLs incoming and outgoing: Outgoing cards will be forwarded at a rate of 6c per card or 20 cards for a dollar.
(c) Domestic QSLs: Send him your U.S. and Canadian cards in bulk. These will be sorted and placed in the SASE's.

For OSCAR Tracking Data, call:
(Washington) Joe Kasser — (301) 622-2194
(Baltimore) Gary Tater — (301) 465-1751
For Information: Write AMSAT, Box 27 Washington, D.C. 20044

[Photos now available]

8 by 10-inch full-color photographs of AMSAT-OSCAR 7 (artist's conception in space) are now available for $3 U.S. (overseas orders please add $1 for postage - IRC s accepted) from:
Alan L. Bridges, WB4VXP
2754 Pine Hill Dr. NW
Kennesaw, Georgia 30144
USA
Please make your check or money order payable to AMSAT.

AMSAT-OSCAR 7 35mm color slides are now available. These are ideal for amateur radio club shows and telling civilians about the amateur radio space program.
Send $5.40, check or money order to:
Norm Chalfin, K6PGX
P.O. Box 463
Pasadena, CA 91102 USA

Can You help? Please contact AMSAT, PO Box 27, Washington, DC 20044 if you can assist in any of the following areas:
- Modify 144 MHz and 450 MHz equipment for use on 145.9 and 432.1 MHz with AMSAT-OSCAR 6 and 7. (This equipment is to be used as loaner equipment.)
- Assemble portable OSCAR user terminals for deployment in a disaster zone in the event of an emergency.
- Shipping of loaner equipment for short-term use in various parts of the world. (We have a dozen Skyphones for Mode B use and two Ameco TX-62's for Mode A, but need a volunteer to handle the shipping and any maintenance required.)
- Ordering of components as required for the Phase III spacecraft project. (Integrated circuits, transistors, resistors, capacitors, etc.)
- Donation or long term use of Disk drive suitable for Nova minicomputer...Contact S. Kayser, VE3QB, direct.
- Help in Programming Microprocessors in sophisticated environment for control of AMSAT-OSCAR's 6 and 7 and in conjunction with the Phase III spacecraft. Contact VE3QB.

AMSAT-OSCAR 6

OCTOBER

Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday

OSCAR 6 OPERATING SCHEDULE

Present schedule calls for Oscar 6 to be operational (145.9-146.0 MHz to 29.45-.55 MHz) on Sunday morning and evening, Wednesday and Friday evenings local time (Monday, Thursday, and Saturday mornings and Sunday evening GMT). Do not use Oscar 6 at other times even though it may be turned on. Latest information may be obtained on the AmSat nets, Sunday 1800 GMT on 14.280 MHz and 1900 GMT on 21.280 MHz from the Washington, D. C., USA area.

WED 1 OCT 1975 (274)

ORBIT	ASCENDING TIME	NODE LONG
13529	01:51:27	79.7
13530	03:46:26	107.4
13531	05:41:26	136.2
13532	07:36:26	164.9
13533	09:31:25	193.7
13534	11:26:25	222.4
13535E	13:21:25	251.2
13536E	15:16:24	279.9
13537	17:11:24	308.7
13538	19:06:24	337.4
13539	21:01:24	6.2
13540	22:56:23	34.9

THUR 2 OCT 1975 (275)

ORBIT	ASCENDING TIME	NODE LONG
13541	00:51:23	63.7
13542	02:46:23	92.4
13543	04:41:22	121.2
13544	06:36:22	149.9
13545	08:31:22	178.7
13546	10:26:21	207.4
13547	12:21:21	236.2
13548	14:16:21	264.9
13549	16:11:21	293.7
13550	18:06:20	322.4
13551	20:01:20	351.2
13552	21:56:19	19.9
13553	23:51:19	48.7

FRI 3 OCT 1975 (276)

ORBIT	ASCENDING TIME	NODE LONG
13554	01:46:19	77.4
13555	03:41:18	106.2
13556	05:36:18	134.9
13557	07:31:18	163.7
13558	09:26:17	192.4
13559	11:21:17	221.2
13560	13:16:17	249.9
13561E	15:11:16	278.7
13562	17:06:16	307.4
13563	19:01:16	336.2
13564	20:56:15	4.9
13565	22:51:15	33.7

SAT 4 OCT 1975 (277)

ORBIT	ASCENDING TIME	NODE LONG
13566	00:46:15	[illegible]
13567	02:41:14	[illegible]
13568	04:36:14	[illegible]
13569	06:31:14	[illegible]
13570	08:26:13	[illegible]
13571	10:21:13	[illegible]
13572	12:16:13	[illegible]
13573	14:11:12	[illegible]
13574	16:06:12	[illegible]
13575	18:01:12	[illegible]
13576	19:56:11	[illegible]
13577	21:51:11	[illegible]
13578	23:46:11	[illegible]

SUN 5 OCT 1975 (278)

ORBIT	ASCENDING TIME	NODE LONG
13579	01:41:10	74.1
13580	03:36:10	104.9
13581	05:31:10	133.6
13582	07:26:09	162.4
13583	09:21:09	191.1
13584	11:16:09	219.9
13585	13:11:08	248.6
13586	15:06:08	277.4
13587	17:01:08	306.1
13588	18:56:08	334.9
13589	20:51:07	3.6
13590	22:46:07	32.4

MON 6 OCT 1975 (279)

ORBIT	ASCENDING TIME	NODE LONG
13591	00:41:07	61.1
13592	02:36:06	89.9
13593	04:31:06	118.6
13594	06:26:06	147.4
13595	08:21:05	176.1
13596	10:16:05	204.9
13597	12:11:05	233.6
13598	14:06:04	262.4
13599	16:01:04	291.1
13600	17:56:04	319.9
13601	19:51:03	348.6
13602	21:46:03	17.4
13603	23:41:03	46.1

TUES 7 OCT 1975 (280)

ORBIT	ASCENDING TIME	NODE LONG
13604	01:36:02	74.9
13605	03:31:02	103.6
13606	05:26:02	132.4
13607	07:21:01	161.1
13608	09:16:01	189.9
13609	11:11:01	218.6
13610	13:06:00	247.4
13611E	15:01:00	276.1
13612E	16:56:00	304.9
13613	18:50:59	333.6
13614	20:45:59	2.4
13615	22:40:59	31.1

WED 8 OCT 1975 (281)

ORBIT	ASCENDING TIME	NODE LONG
13616	00:35:58	59.9
13617	02:30:58	88.6
13618	04:25:58	117.4
13619	06:20:57	146.1
13620	08:15:57	174.9
13621	10:10:57	203.6
13622	12:05:56	232.3
13623	14:00:56	261.1
13624	15:55:56	289.8
13625	17:50:55	318.6
13626	19:45:55	347.3
13627	21:40:55	16.1
13628	23:35:54	44.8

THUR 9 OCT 1975 (282)

ORBIT	ASCENDING TIME	NODE LONG
13629	01:30:54	73.6
13630	03:25:54	102.3
13631	05:20:53	131.1
13632	07:15:53	159.8
13633	09:10:53	188.6
13634	11:05:52	217.3
13635	13:00:52	246.1
13636E	14:55:52	274.8
13637E	16:50:52	303.6
13638	18:45:51	332.3
13639	20:40:51	1.1
13640	22:35:51	29.8

FRI 10 OCT 1975 (283)

ORBIT	ASCENDING TIME	NODE LONG
13641	00:30:50	58.6
13642	02:25:50	87.3
13643	04:20:50	116.1
13644	06:15:49	144.8
13645	08:10:49	173.6
13646	10:05:49	202.3
13647	12:00:48	231.1
13648	13:55:48	259.8
13649	15:50:48	288.6
13650	17:45:47	317.3
13651	19:40:47	346.1
13652	21:35:47	14.8
13653	23:30:46	43.6

SAT 11 OCT 1975 (284)

ORBIT	ASCENDING TIME	NODE LONG
13654	01:25:46	[illegible]
13655	03:20:46	[illegible]
13656	05:15:45	[illegible]
13657	07:10:45	[illegible]
13658	09:05:45	[illegible]
13659	11:00:44	[illegible]
13660	12:55:44	[illegible]
13661	14:50:44	[illegible]
13662	16:45:43	[illegible]
13663	18:40:43	[illegible]
13664	20:35:43	[illegible]
13665	22:30:42	[illegible]

SUN 12 OCT 1975 (285)

ORBIT	ASCENDING TIME	NODE LONG
13666	00:25:42	57.1
13667	02:20:42	86.1
13668	04:15:41	114.8
13669	06:10:41	143.6
13670	08:05:41	172.3
13671	10:00:40	201.0
13672	11:55:40	229.8
13673	13:50:40	258.5
13674	15:45:39	287.3
13675	17:40:39	316.0
13676	19:35:39	344.8
13677	21:30:38	13.5
13678	23:25:38	42.3

MON 13 OCT 1975 (286)

ORBIT	ASCENDING TIME	NODE LONG
13679	01:20:38	71.0
13680	03:15:37	99.8
13681	05:10:37	128.5
13682	07:05:37	157.3
13683	09:00:37	186.0
13684	10:55:36	214.8
13685	12:50:36	243.5
13686E	14:45:36	272.3
13687E	16:40:35	301.0
13688	18:35:35	329.8
13689	20:30:35	358.5
13690	22:25:34	27.3

TUES 14 OCT 1975 (287)

ORBIT	ASCENDING TIME	NODE LONG
13691	00:20:34	56.0
13692	02:15:34	84.8
13693	04:10:33	113.5
13694	06:05:33	142.3
13695	08:00:33	171.0
13696	09:55:32	199.8
13697	11:50:32	228.5
13698	13:45:32	257.3
13699	15:40:31	286.0
13700	17:35:31	314.8
13701	19:30:31	343.5
13702	21:25:30	12.3
13703	23:20:30	41.0

WED 15 OCT 1975 (288)

ORBIT	ASCENDING TIME	NODE LONG
13704	01:15:30	69.8
13705	03:10:29	98.5
13706	05:05:29	127.3
13707	07:00:29	156.0
13708	08:55:28	184.8
13709	10:50:28	213.5
13710	12:45:28	242.3
13711E	14:40:27	271.0
13712E	16:35:27	299.8
13713	18:30:27	328.5
13714	20:25:26	357.3
13715	22:20:26	26.0

THUR 16 OCT 1975 (289)

ORBIT	ASCENDING TIME	NODE LONG
13716	00:15:26	54.8
13717	02:10:25	83.5
13718	04:05:25	112.3
13719	06:00:25	141.0
13720	07:55:24	169.7
13721	09:50:24	198.5
13722	11:45:24	227.2
13723	13:40:23	256.0
13724	15:35:23	284.7
13725	17:30:23	313.5
13726	19:25:22	342.2
13727	21:20:22	11.0
13728	23:15:22	39.7

FRI 17 OCT 1975 (290)

ORBIT	ASCENDING TIME	NODE LONG
13729	01:10:21	68.5
13730	03:05:21	97.2
13731	05:00:21	126.0
13732	06:55:21	154.7
13733	08:50:20	183.5
13734	10:45:20	212.2
13735	12:40:20	241.0
13736E	14:35:19	269.7
13737E	16:30:19	298.5
13738	18:25:19	327.2
13739	20:20:18	356.0
13740	22:15:18	24.7

SAT 18 OCT 1975 (291)

ORBIT	ASCENDING TIME	NODE LONG
13741	00:10:18	53.5
13742	02:05:17	82.2
13743	04:00:17	111.0
13744	05:55:17	139.7
13745	07:50:16	168.5
13746	09:45:16	197.2
13747	11:40:16	226.0
13748	13:35:15	254.7
13749	15:30:15	283.5
13750	17:25:15	312.2
13751	19:20:14	341.0
13752	21:15:14	9.7
13753	23:10:14	38.5

SUN 19 OCT 1975 (292)

ORBIT	ASCENDING TIME	NODE LONG
13754	01:05:13	67.2
13755	03:00:13	96.0
13756	04:55:13	124.7
13757	06:50:12	153.5
13758	08:45:12	182.2
13759	10:40:12	211.0
13760	12:35:11	239.7
13761	14:30:11	268.5
13762	16:25:11	297.2
13763	18:20:10	326.0
13764	20:15:10	354.7
13765	22:10:10	23.5

MON 20 OCT 1975 (293)

ORBIT	ASCENDING TIME	NODE LONG
13766	00:05:09	52.2
13767	02:00:09	81.0
13768	03:55:09	109.7
13769	05:50:08	138.5
13770	07:45:08	167.2
13771	09:40:08	195.9
13772	11:35:07	224.7
13773	13:30:07	253.4
13774	15:25:07	282.2
13775	17:20:06	310.9
13776	19:15:06	339.7
13777	21:10:06	8.4
13778	23:05:06	37.2

TUES 21 OCT 1975 (294)

ORBIT	ASCENDING TIME	NODE LONG
13779	01:00:05	65.9
13780	02:55:05	94.7
13781	04:50:05	123.4
13782	06:45:04	152.2
13783	08:40:04	180.9
13784	10:35:04	209.7
13785	12:30:03	238.4
13786E	14:25:03	267.2
13787E	16:20:03	295.9
13788	18:15:02	324.7
13789	20:10:02	353.4
13790	22:05:02	22.2

WED 22 OCT 1975 (295)

ORBIT	ASCENDING TIME	NODE LONG
13791	00:00:01	50.9
13792	01:55:01	79.7
13793	03:50:01	108.4
13794	05:45:00	137.2
13795	07:40:00	165.9
13796	09:35:00	194.7
13797	11:29:59	223.4
13798	13:24:59	252.2
13799	15:19:59	280.9
13800	17:14:58	309.7
13801	19:09:58	338.4
13802	21:04:58	7.2
13803	22:59:57	35.9

THUR 23 OCT 1975 (296)

ORBIT	ASCENDING TIME	NODE LONG
13804	00:54:57	64.7
13805	02:49:57	93.4
13806	04:44:56	122.2
13807	06:39:56	150.9
13808	08:34:56	179.7
13809	10:29:55	208.4
13810	12:24:55	237.2
13811E	14:19:55	265.9
13812E	16:14:54	294.7
13813	18:09:54	323.4
13814	20:04:54	352.2
13815	21:59:53	20.9
13816	23:54:53	49.7

FRI 24 OCT 1975 (297)

ORBIT	ASCENDING TIME	NODE LONG
13817	01:49:53	78.4
13818	03:44:52	107.2
13819	05:39:52	135.9
13820	07:34:52	164.6
13821	09:29:51	193.4
13822	11:24:51	222.1
13823	13:19:51	250.9
13824	15:14:50	279.6
13825	17:09:50	308.4
13826	19:04:50	337.1
13827	20:59:50	5.9
13828	22:54:49	34.6

SAT 25 OCT 1975 (298)

ORBIT	ASCENDING TIME	NODE LONG
13829	00:49:49	63.4
13830	02:44:49	92.1
13831	04:39:48	120.9
13832	06:34:48	149.6
13833	08:29:48	178.4
13834	10:24:47	207.1
13835	12:19:47	235.9
13836	14:14:47	264.6
13837	16:09:46	293.4
13838	18:04:46	322.1
13839	19:59:46	350.9
13840	21:54:45	19.6
13841	23:49:45	48.4

SUN 26 OCT 1975 (299)

ORBIT	ASCENDING TIME	NODE LONG
13842	01:44:45	77.1
13843	03:39:44	105.9
13844	05:34:44	134.6
13845	07:29:44	163.4
13846	09:24:43	192.1
13847	11:19:43	220.9
13848	13:14:43	249.6
13849	15:09:42	278.4
13850	17:04:42	307.1
13851	18:59:42	335.9
13852	20:54:41	4.6
13853	22:49:41	33.4

MON 27 OCT 1975 (300)

ORBIT	ASCENDING TIME	NODE LONG
13854	00:44:41	62.1
13855	02:39:40	90.9
13856	04:34:40	119.6
13857	06:29:40	148.4
13858	08:24:39	177.1
13859	10:19:39	205.9
13860	12:14:39	234.6
13861E	14:09:38	263.4
13862E	16:04:38	292.1
13863	17:59:38	320.9
13864	19:54:37	349.6
13865	21:49:37	18.4
13866	23:44:37	47.1

TUES 28 OCT 1975 (301)

ORBIT	ASCENDING TIME	NODE LONG
13867	01:39:36	75.9
13868	03:34:36	104.6
13869	05:29:36	133.4
13870	07:24:35	162.1
13871	09:19:35	190.8
13872	11:14:35	219.6
13873	13:09:34	248.3
13874	15:04:34	277.1
13875	16:59:34	305.8
13876	18:54:34	334.6
13877	20:49:33	3.3
13878	22:44:33	32.1

WED 29 OCT 1975 (302)

ORBIT	ASCENDING TIME	NODE LONG
13879	00:39:33	60.8
13880	02:34:32	89.6
13881	04:29:32	118.3
13882	06:24:32	147.1
13883	08:19:31	175.8
13884	10:14:31	204.6
13885	12:09:31	233.3
13886E	14:04:30	262.1
13887E	15:59:30	290.8
13888	17:54:30	319.6
13889	19:49:29	348.3
13890	21:44:29	17.1
13891	23:39:29	45.8

THUR 30 OCT 1975 (303)

ORBIT	ASCENDING TIME	NODE LONG
13892	01:34:28	74.6
13893	03:29:28	103.3
13894	05:24:28	132.1
13895	07:19:27	160.8
13896	09:14:27	189.6
13897	11:09:27	218.3
13898	13:04:26	247.1
13899	14:59:26	275.8
13900	16:54:26	304.6
13901	18:49:25	333.3
13902	20:44:25	2.1
13903	22:39:25	30.8

FRI 31 OCT 1975 (304)

ORBIT	ASCENDING TIME	NODE LONG
13904	00:34:24	59.6
13905	02:29:24	88.3
13906	04:24:24	117.1
13907	06:19:23	145.8
13908	08:14:23	174.6
13909	10:09:23	203.3
13910	12:04:22	232.1
13911E	13:59:22	260.8
13912E	15:54:22	289.6
13913	17:49:21	318.3
13914	19:44:21	347.1
13915	21:39:21	15.8
13916	23:34:20	44.6

OSCAR 6 TELEMETRY AT 29.45 MHz

AMSAT-OSCAR 7

OCTOBER

Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday

OSCAR 7 OPERATING SCHEDULE

Present schedule calls for Mode A (145.85-.95 MHz to 29.40-.50 MHz) on odd-numbered days of the year, Mode B (432.125-.175 MHz to 145.975-.925 MHz) on even-numbered days. Mode is indicated in the orbit number. An "X" in the orbit number indicates that the satellite is reserved for experiments and educational use. Users are requested not to transmit on X-orbits even though the satellite is turned on. Latest information may be obtained on the AmSat nets, Sunday 1800 GMT on 14.280 MHz and 1900 GMT on 21.280 MHz from the Washington, D. C., USA area.

WED 1 OCT 1975 (274)

ORBIT	ASCENDING TIME	NODE LONG
4001BX	01:15:56	68.8
4002BX	03:10:53	97.6
4003BX	05:05:50	126.3
4004BX	07:00:47	155.0
4005BX	08:55:43	183.8
4006BX	10:50:40	212.5
4007BX	12:45:37	241.2
4008BX	14:40:33	270.0
4009BX	16:35:30	298.7
4010BX	18:30:27	327.4
4011BX	20:25:23	356.2
4012BX	22:20:20	24.9

THUR 2 OCT 1975 (275)

ORBIT	ASCENDING TIME	NODE LONG
4013A	00:15:17	53.7
4014A	02:10:14	82.4
4015A	04:05:10	111.1
4016A	06:00:07	139.9
4017A	07:55:04	168.6
4018A	09:50:00	197.3
4019A	11:44:57	226.1
4020A	13:39:54	254.8
4021A	15:34:50	283.5
4022A	17:29:47	312.3
4023A	19:24:44	341.0
4024A	21:19:41	9.8
4025A	23:14:37	38.5

FRI 3 OCT 1975 (276)

ORBIT	ASCENDING TIME	NODE LONG
4026B	01:09:34	67.2
4027B	03:04:31	96.0
4028B	04:59:27	124.7
4029B	06:54:24	153.4
4030B	08:49:21	182.2
4031B	10:44:17	210.9
4032B	12:39:14	239.6
4033B	14:34:11	268.4
4034B	16:29:08	297.1
4035B	18:24:04	325.9
4036B	20:19:01	354.6
4037B	22:13:58	23.3

SAT 4 OCT 1975 (277)

ORBIT	ASCENDING TIME	NODE LONG
4038A	00:08:54	52.1
4039A	02:03:51	80.8
4040A	03:58:48	109.5
4041A	05:53:44	138.3
4042A	07:48:41	167.0
4043A	09:43:38	195.7
4044A	11:38:35	224.5
4045A	13:33:31	253.2
4046A	15:28:28	281.9
4047A	17:23:25	310.7
4048A	19:18:21	339.4
4049A	21:13:18	8.2
4050A	23:08:15	36.9

SUN 5 OCT 1975 (278)

ORBIT	ASCENDING TIME	NODE LONG
4051B	01:03:11	65.6
4052B	02:58:08	94.4
4053B	04:53:05	123.1
4054B	06:48:02	151.8
4055B	08:42:58	180.6
4056B	10:37:55	209.3
4057B	12:32:52	238.0
4058B	14:27:48	266.8
4059B	16:22:45	295.5
4060B	18:17:42	324.3
4061B	20:12:38	353.0
4062B	22:07:35	21.7

MON 6 OCT 1975 (279)

ORBIT	ASCENDING TIME	NODE LONG
4063A	00:02:32	50.5
4064A	01:57:29	79.2
4065A	03:52:25	107.9
4066A	05:47:22	136.7
4067A	07:42:19	165.4
4068A	09:37:15	194.1
4069A	11:32:12	222.9
4070A	13:27:09	251.6
4071A	15:22:05	280.4
4072A	17:17:02	309.1
4073A	19:11:59	337.8
4074A	21:06:56	6.6
4075A	23:01:52	35.3

TUES 7 OCT 1975 (280)

ORBIT	ASCENDING TIME	NODE LONG
4076B	00:56:49	64.0
4077B	02:51:46	92.8
4078B	04:46:42	121.5
4079B	06:41:39	150.2
4080B	08:36:36	179.0
4081B	10:31:32	207.7
4082B	12:26:29	236.5
4083B	14:21:26	265.2
4084B	16:16:23	293.9
4085B	18:11:19	322.7
4086B	20:06:16	351.4
4087B	22:01:13	20.1
4088B	23:56:09	48.9

WED 8 OCT 1975 (281)

ORBIT	ASCENDING TIME	NODE LONG
4089AX	01:51:06	77.6
4090AX	03:46:03	106.3
4091AX	05:40:59	135.1
4092AX	07:35:56	163.8
4093AX	09:30:53	192.6
4094AX	11:25:50	221.3
4095AX	13:20:46	250.0
4096AX	15:15:43	278.8
4097AX	17:10:40	307.5
4098AX	19:05:36	336.2
4099AX	21:00:33	5.0
4100AX	22:55:30	33.7

THUR 9 OCT 1975 (282)

ORBIT	ASCENDING TIME	NODE LONG
4101B	00:50:26	62.4
4102B	02:45:23	91.2
4103B	04:40:20	119.9
4104B	06:35:17	148.7
4105B	08:30:13	177.4
4106B	10:25:10	206.1
4107B	12:20:07	234.9
4108B	14:15:03	263.6
4109B	16:10:00	292.3
4110B	18:04:57	321.1
4111B	19:59:53	349.8
4112B	21:54:50	18.5
4113B	23:49:47	47.3

FRI 10 OCT 1975 (283)

ORBIT	ASCENDING TIME	NODE LONG
4114A	01:44:44	76.0
4115A	03:39:40	104.7
4116A	05:34:37	133.5
4117A	07:29:34	162.2
4118A	09:24:30	191.0
4119A	11:19:27	219.7
4120A	13:14:24	248.4
4121A	15:09:20	277.2
4122A	17:04:17	305.9
4123A	18:59:14	334.6
4124A	20:54:11	3.4
4125A	22:49:07	32.1

SAT 11 OCT 1975 (284)

ORBIT	ASCENDING TIME	NODE LONG
4126B	00:44:04	60.8
4127B	02:39:01	89.6
4128B	04:33:57	118.3
4129B	06:28:54	147.1
4130B	08:23:51	175.8
4131B	10:18:47	204.5
4132B	12:13:44	233.3
4133B	14:08:41	262.0
4134B	16:03:38	290.7
4135B	17:58:34	319.5
4136B	19:53:31	348.2
4137B	21:48:28	16.9
4138B	23:43:24	45.7

SUN 12 OCT 1975 (285)

ORBIT	ASCENDING TIME	NODE LONG
4139A	01:38:21	74.4
4140A	03:33:18	103.2
4141A	05:28:14	131.9
4142A	07:23:11	160.6
4143A	09:18:08	189.4
4144A	11:13:05	218.1
4145A	13:08:01	246.8
4146A	15:02:58	275.6
4147A	16:57:55	304.3
4148A	18:52:51	333.0
4149A	20:47:48	1.8
4150A	22:42:45	30.5

MON 13 OCT 1975 (286)

ORBIT	ASCENDING TIME	NODE LONG
4151B	00:37:41	59.3
4152B	02:32:38	88.0
4153B	04:27:35	116.7
4154B	06:22:32	145.5
4155B	08:17:28	174.2
4156B	10:12:25	202.9
4157B	12:07:22	231.7
4158B	14:02:18	260.4
4159B	15:57:15	289.1
4160B	17:52:12	317.9
4161B	19:47:08	346.6
4162B	21:42:05	15.4
4163B	23:37:02	44.1

TUES 14 OCT 1975 (287)

ORBIT	ASCENDING TIME	NODE LONG
4164A	01:31:59	72.8
4165A	03:26:55	101.6
4166A	05:21:52	130.3
4167A	07:16:49	159.0
4168A	09:11:45	187.8
4169A	11:06:42	216.5
4170A	13:01:39	245.2
4171A	14:56:35	274.0
4172A	16:51:32	302.7
4173A	18:46:29	331.5
4174A	20:41:26	.2
4175A	22:36:22	28.9

WED 15 OCT 1975 (288)

ORBIT	ASCENDING TIME	NODE LONG
4176BX	00:31:19	57.7
4177BX	02:26:16	86.4
4178BX	04:21:12	115.1
4179BX	06:16:09	143.9
4180BX	08:11:06	172.6
4181BX	10:06:02	201.3
4182BX	12:00:59	230.1
4183BX	13:55:56	258.8
4184BX	15:50:53	287.5
4185BX	17:45:49	316.3
4186BX	19:40:46	345.0
4187BX	21:35:43	13.8
4188BX	23:30:39	42.5

THUR 16 OCT 1975 (289)

ORBIT	ASCENDING TIME	NODE LONG
4189A	01:25:36	71.2
4190A	03:20:33	100.0
4191A	05:15:29	128.7
4192A	07:10:26	157.4
4193A	09:05:23	186.2
4194A	11:00:20	214.9
4195A	12:55:16	243.6
4196A	14:50:13	272.4
4197A	16:45:10	301.1
4198A	18:40:06	329.9
4199A	20:35:03	358.6
4200A	22:30:00	27.3

FRI 17 OCT 1975 (290)

ORBIT	ASCENDING TIME	NODE LONG
4201B	00:24:56	56.1
4202B	02:19:53	84.8
4203B	04:14:50	113.5
4204B	06:09:47	142.3
4205B	08:04:43	171.0
4206B	09:59:40	199.7
4207B	11:54:37	228.5
4208B	13:49:33	257.2
4209B	15:44:30	286.0
4210B	17:39:27	314.7
4211B	19:34:23	343.4
4212B	21:29:20	12.2
4213B	23:24:17	40.9

SAT 18 OCT 1975 (291)

ORBIT	ASCENDING TIME	NODE LONG
4214A	01:19:14	69.6
4215A	03:14:10	98.4
4216A	05:09:07	127.1
4217A	07:04:04	155.8
4218A	08:59:00	184.6
4219A	10:53:57	213.3
4220A	12:48:54	242.1
4221A	14:43:50	270.8
4222A	16:38:47	299.5
4223A	18:33:44	328.3
4224A	20:28:41	357.0
4225A	22:23:37	25.7

SUN 19 OCT 1975 (292)

ORBIT	ASCENDING TIME	NODE LONG
4226B	00:18:34	54.5
4227B	02:13:31	83.2
4228B	04:08:27	111.9
4229B	06:03:24	140.7
4230B	07:58:21	169.4
4231B	09:53:17	198.2
4232B	11:48:14	226.9
4233B	13:43:11	255.6
4234B	15:38:08	284.4
4235B	17:33:04	313.1
4236B	19:28:01	341.8
4237B	21:22:58	10.6
4238B	23:17:54	39.3

MON 20 OCT 1975 (293)

ORBIT	ASCENDING TIME	NODE LONG
4239A	01:12:51	68.0
4240A	03:07:48	96.8
4241A	05:02:44	125.5
4242A	06:57:41	154.3
4243A	08:52:38	183.0
4244A	10:47:35	211.7
4245A	12:42:31	240.5
4246A	14:37:28	269.2
4247A	16:32:25	297.9
4248A	18:27:21	326.7
4249A	20:22:18	355.4
4250A	22:17:15	24.1

TUES 21 OCT 1975 (294)

ORBIT	ASCENDING TIME	NODE LONG
4251B	00:12:11	52.9
4252B	02:07:08	81.6
4253B	04:02:05	110.4
4254B	05:57:02	139.1
4255B	07:51:58	167.8
4256B	09:46:55	196.6
4257B	11:41:52	225.3
4258B	13:36:48	254.0
4259B	15:31:45	282.8
4260B	17:26:42	311.5
4261B	19:21:38	340.2
4262B	21:16:35	9.0
4263B	23:11:32	37.7

WED 22 OCT 1975 (295)

ORBIT	ASCENDING TIME	NODE LONG
4264AX	01:06:29	66.4
4265AX	03:01:25	95.2
4266AX	04:56:22	123.9
4267AX	06:51:19	152.7
4268AX	08:46:15	181.4
4269AX	10:41:12	210.1
4270AX	12:36:09	238.9
4271AX	14:31:05	267.6
4272AX	16:26:02	296.3
4273AX	18:20:59	325.1
4274AX	20:15:56	353.8
4275AX	22:10:52	22.5

THUR 23 OCT 1975 (296)

ORBIT	ASCENDING TIME	NODE LONG
4276B	00:05:49	51.3
4277B	02:00:46	80.0
4278B	03:55:42	108.8
4279B	05:50:39	137.5
4280B	07:45:36	166.2
4281B	09:40:32	195.0
4282B	11:35:29	223.7
4283B	13:30:26	252.4
4284B	15:25:23	281.2
4285B	17:20:19	309.9
4286B	19:15:16	338.6
4287B	21:10:13	7.4
4288B	23:05:09	36.1

FRI 24 OCT 1975 (297)

ORBIT	ASCENDING TIME	NODE LONG
4289A	01:00:06	64.9
4290A	02:55:03	93.6
4291A	04:49:59	122.3
4292A	06:44:56	151.1
4293A	08:39:53	179.8
4294A	10:34:50	208.5
4295A	12:29:46	237.3
4296A	14:24:43	266.0
4297A	16:19:40	294.7
4298A	18:14:36	323.5
4299A	20:09:33	352.2
4300A	22:04:30	21.0
4301A	23:59:26	49.7

SAT 25 OCT 1975 (298)

ORBIT	ASCENDING TIME	NODE LONG
4302B	01:54:23	78.4
4303B	03:49:20	107.2
4304B	05:44:17	135.9
4305B	07:39:13	164.6
4306B	09:34:10	193.4
4307B	11:29:07	222.1
4308B	13:24:03	250.8
4309B	15:19:00	279.6
4310B	17:13:57	308.3
4311B	19:08:53	337.1
4312B	21:03:50	5.8
4313B	22:58:47	34.5

SUN 26 OCT 1975 (299)

ORBIT	ASCENDING TIME	NODE LONG
4314A	00:53:44	63.3
4315A	02:48:40	92.0
4316A	04:43:37	120.7
4317A	06:38:34	149.5
4318A	08:33:30	178.2
4319A	10:28:27	206.9
4320A	12:23:24	235.7
4321A	14:18:20	264.4
4322A	16:13:17	293.2
4323A	18:08:14	321.9
4324A	20:03:11	350.6
4325A	21:58:07	19.4
4326A	23:53:04	48.1

MON 27 OCT 1975 (300)

ORBIT	ASCENDING TIME	NODE LONG
4327B	01:48:01	76.8
4328B	03:42:57	105.6
4329B	05:37:54	134.3
4330B	07:32:51	163.0
4331B	09:27:47	191.8
4332B	11:22:44	220.5
4333B	13:17:41	249.2
4334B	15:12:38	278.0
4335B	17:07:34	306.7
4336B	19:02:31	335.5
4337B	20:57:28	4.2
4338B	22:52:24	32.9

TUES 28 OCT 1975 (301)

ORBIT	ASCENDING TIME	NODE LONG
4339A	00:47:21	61.7
4340A	02:42:18	90.4
4341A	04:37:14	119.1
4342A	06:32:11	147.9
4343A	08:27:08	176.6
4344A	10:22:05	205.3
4345A	12:17:01	234.1
4346A	14:11:58	262.8
4347A	16:06:55	291.6
4348A	18:01:51	320.3
4349A	19:56:48	349.0
4350A	21:51:45	17.8
4351A	23:46:41	46.5

WED 29 OCT 1975 (302)

ORBIT	ASCENDING TIME	NODE LONG
4352BX	01:41:38	75.2
4353BX	03:36:35	104.0
4354BX	05:31:32	132.7
4355BX	07:26:28	161.4
4356BX	09:21:25	190.2
4357BX	11:16:22	218.9
4358BX	13:11:18	247.7
4359BX	15:06:15	276.4
4360BX	17:01:12	305.1
4361BX	18:56:08	333.9
4362BX	20:51:05	2.6
4363BX	22:46:02	31.3

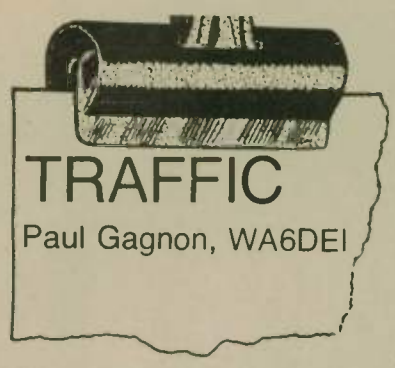
THUR 30 OCT 1975 (303)

ORBIT	ASCENDING TIME	NODE LONG
4364A	00:40:59	60.1
4365A	02:35:55	88.8
4366A	04:30:52	117.5
4367A	06:25:49	146.3
4368A	08:20:45	175.0
4369A	10:15:42	203.8
4370A	12:10:39	232.5
4371A	14:05:35	261.2
4372A	16:00:32	290.0
4373A	17:55:29	318.7
4374A	19:50:26	347.4
4375A	21:45:22	16.2
4376A	23:40:19	44.9

FRI 31 OCT 1975 (304)

ORBIT	ASCENDING TIME	NODE LONG
4377B	01:35:16	73.6
4378B	03:30:12	102.4
4379B	05:25:09	131.1
4380B	07:20:06	159.9
4381B	09:15:02	188.6
4382B	11:09:59	217.3
4383B	13:04:56	246.1
4384B	14:59:53	274.8
4385B	16:54:49	303.5
4386B	18:49:46	332.3
4387B	20:44:43	1.0
4388B	22:39:39	29.7

OSCAR 7 TELEMETRY AT 435.10 MHz and either 29.50 MHz (Mode A) or 145.975 MHz (Mode



TRAFFIC

Paul Gagnon, WA6DEI

"Net Controlling is an Art"

Net controlling is an art. It takes know-how and experience. There are far too many net members who have never net controlled and there is no reason for it except that they have never taken the time to sit down and learn. Last week on the local net the regular net control station did not show up. The net didn't get started for 15 minutes until some brave soul finally decided he would reluctantly take the job. He was the only one who had done it before...years ago! Doesn't this sound familiar? It happens everywhere. Perhaps you were one of those who were afraid to assume the responsibility. Why? Because you had never done it?

Well, let's provide a basic "how to" lesson on net controlling in hopes you will take the information and use it to get you over the hump and into the NCS arena.

We will talk primarily about the CW net control since it is the more complex. Why? Because NTS nets have a time schedule to follow each evening to enable liaison stations to make higher level nets, and because there is usually a higher volume and rate of traffic flow. Also, traffic is handled off of net frequency on several frequencies at once and as NCS you must keep track of where everyone is and what they are doing.

Let's assume you have volunteered to take net control of your Section net for a friend who couldn't make it at the last minute. The first thing to do is make sure you have the necessary materials in front of you. You will need a Routing Guide. These are usually published by the net manager and all regular net controls have one. You should obtain one from the manager to keep on hand even if you aren't a regular NCS. These guides list the regular net members and the cities they can deliver traffic to. They are often broken down by **ZIP** Code or phone prefix and may contain cross reference lists. These are indispensable since they save time by making it so you don't have to ask everyone if they can deliver the message. You need a network sheet. Often NCS s use a page from the regular log book and simply adopt column headings as needed. Others use a special net form that includes places for stations checking in, time in and out (QNI and QNX), liaison function being performed (if any), traffic listed and location of stations off frequency (up 5, down 10, etc.). In addition, since this sheet must become part of your regular log book, it must contain info on the frequency, mode, starting and ending times (QND, QNF), power, etc. Also handy is a space to indicate you have sent a net report to the net manager.

If you are not very familiar with the area covered by the section net it will help to have a map handy. If someone checks in with traffic for a small town you never heard of, you can look it up quickly. If no one checks in from there you can spot who is the closest station that did check in and can route it to him for mailing or a small toll call. You need a listing of stations that frequent the net. Most nets have a net roster mailed out by the manager with a monthly bulletin. It gives the net a personal touch if you call everyone by name sometime during the net. If the net has any size at all you won't be able to remember all the names of the check-ins.

You will need a couple of pencils and a good clock, and check the time. Your pre-net preparations should be complete. Now simply relax and get your rig tuned up and on frequency. Listen to the net frequency for any QRM. As net control it is your prerogative to pick the net frequency. Now don't get carried away and move it 25 kHz or no one will ever hear you. But if the assigned frequency is not useable you can go plus or minus two or three kHz to get clear of the QRM. Hopefully people will tune that far looking for you. You should not have your 200 Hz filter in the receiver either. No matter how hard we try we never seem to get everyone exactly zero beat so with a wide receiver you can hear those that are off frequency a bit.

Pick a comfortable speed for you and when it's time, call up the net. Speed is always a question. You want to be able to handle all the traffic you can as soon as you can to meet other net commitments, but you also want to use a speed that everyone can copy. Many newcomers will not even check in if you go much over 10 wpm, but if you go 10 wpm the net will take forever. Too high a speed can cause instructions to be missed and therefore waste time repeating. You must pick a speed that is comfortable for the majority of the members and then slow down when a slow check-in comes along.

Net call-ups differ from net to net. By now you should know what your standard net procedure is. An article several months ago dealt with how to check in to a net and gave sample call-ups.

It is a good idea to get the traffic moving as soon as possible. The stations you know will have traffic are the liaisons to other nets. Ask for them to QNI first. Once they have checked in and listed their traffic, then you can ask for general check ins. As soon as someone checks in that can handle traffic you have listed, move them off frequency. A quick glance at your log sheet should tell you where the frequencies are open and you can send them there (up 5, down 10, etc).

After 15 minutes or so you should have most of the traffic listed and know who can handle it, so you can start checking stations that are QRU out of the net. If time permits it is nice to say a few words of greeting to each station. If it is a new check-in it is nice to introduce yourself and obtain his name and QTH. A good practice is for the net manager or his substitute to take the new station off frequency and have a short QSO and welcome him to the net. If more nets did this the percentage of returning newcomers would be much higher.

After all net business is complete you declare the net QNF and sign off. It is wise to defer long QSO s listed during the net until after QNF, so if several QSO s are waiting you may designate who should keep the frequency and who should move off slightly.

When the net is finished you must total up all the numbers: total QNI, total traffic and time in session. Include the list of stations that checked in, calls of liaison stations, the total traffic and time in a net report to the net manager. It is a good idea to do this by message as soon as possible.

After you have been a net control for a while the ingenuity inherent in amateurs will come to bear and you will seek ways to make the job easier. The greatest of these to come along lately is the memory keyer. Utilizing random access memory integrated circuits, these keyers can be programmed prior to net time for the net call up and for the more common repetitive calls made during the net. Then by simply pu hing a button the net is called up automatically while the operator is busy logging and deciding who will send traffic to whom in what order.

Another useful gadget is the Spectrum Analyzer (or Scanalyzer). By properly adjusting the display so that 5 kHz divisions can be read out easily, you can immediately see if the frequencies to each side of the net are clear. If busy, send the stations somewhere else to send their traffic. Once you identify the stations you have sent off frequency, there is no need to call for them since you will be able to see when they are through. Occasionally one station will go up and one will go down when sent off frequency together. When you see the two signals start on opposite sides of you, you will know they will be back shortly.

I hope this information sheds enough light on the subject to encourage you to try your hand at net control duties. We need more good net controls! Try a dry run by following along with the regular NCS and make your own net log. It's fun to keep track of everything all at once.

Who Owns the Drake?

The riddle to find out who owns the Drake gear and who operates FAX that appeared recently has brought quite a few message responses. I have replied with a

(please turn to page 12)

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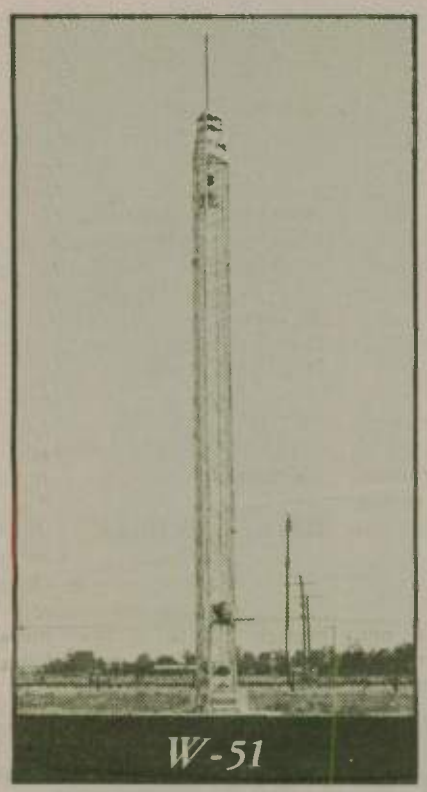
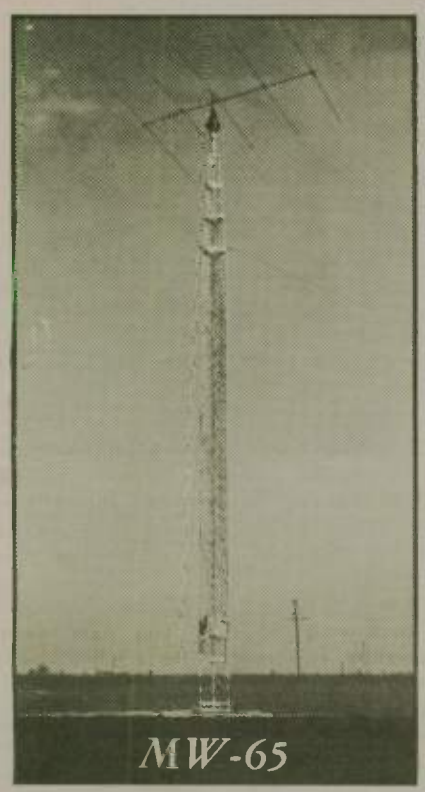
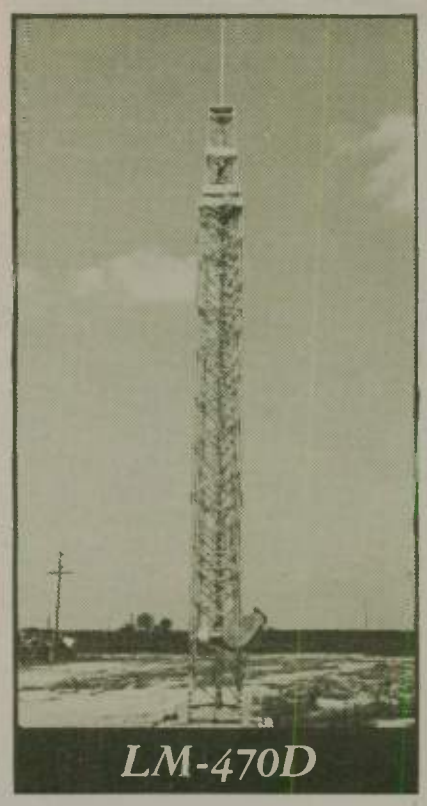


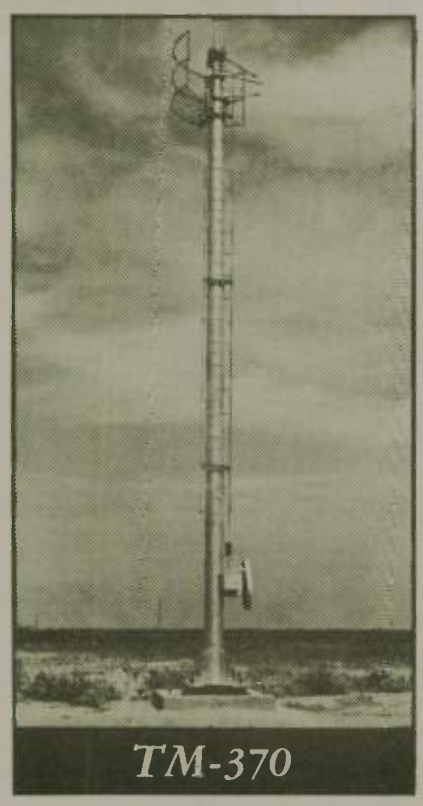
W-51



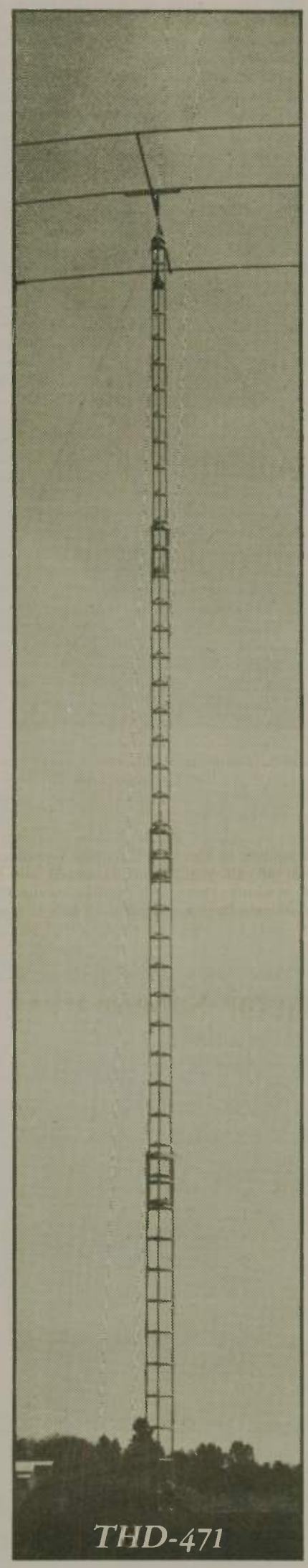
MW-65



LM-470D



TM-370



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CLUBS

A group of ostrich was standing around. A low-flying plane frightened them and they all stuck their heads in the sand.

Coming up over the hill was an ostrich who belonged to the group. He saw them all hiding (or so they thought) and said, "Hey, where is everybody?"

While many clubs (which are of course a group of individuals) are sticking their heads in the sand regarding the problems buffeting Amateur Radio, one club isn't hiding.

The Wheaton Community (IL) Radio Amateurs, Inc. have produced a four-page 8½ x 11 pamphlet. In big letters it says Amateur Radio, and then is subtitled "the most exciting hobby in the world". It is extremely well done and we intend to, in next month's issue, reprint it in its entirety so other clubs may use it for a model to produce their own such pamphlet.

We're pleased to see that there has been a great deal of response, both in letters to **Worldradio** and write-ups in club bulletins, to our idea of local radio clubs being chapters of the ARRL rather than just loosely affiliated clubs. (See **Worldradio,** July 1975, March 1975 and December 1974). We'd like to go into a bit more detail here.

Many times the local Amateur Radio Club is represented before the public. This could be at a fair, in front of Civil Defense officials or at the City Council dealing with a tower case, etc. It certainly would give the group a bit more "image" and "clout" if, instead of standing out there as the Glomp Radio Club with all its 20 members, they could represent themselves as the "Mayfield Chapter of the ARRL, a 100,000 member organization."

This is the day of "numbers" and "PR" and we need all we can get of both.

In whatever we do we have to look "big". Having been in the news game for many years before working for **Worldradio,** I can tell you that when organizations call up a news agency or a government official they get listened to more if they are big than if they are small.

More response goes to, let's say, someone who identifies himself as the commander of the local American Legion Post than someone who might say, "We're a bunch of guys who used to be in the Army." The presidents of Rotary, Kiwanis, Optimists, etc. get your attention.

Let's say you're trying to get some radio equipment surplussed out by a government agency, or a generator for your van, or whatever. Coming off as part of a national organization is going to make a greater impression than saying you're from the East Snowshoe Beer-Drinking and Antenna-Raising Wireless Experimenters Club.

If someone you're trying to make an impression on should be invited to a meeting, wouldn't it look nice to have a great big ARRL banner hanging on the wall (like just about every other group known to man). Speaking of that, why don't more clubs have dinner meetings? Invite people that you want to make an impression on to your meeting as your guests. (Free space at a fair to demonstrate your public service type of activity, etc.)

To heighten the identity of the local clubs, we'd like to see the club name given as the exchange in Field Day rather than the section. (It's not a multiplier such as in Sweepstakes, so what does it matter what you give?) Make your club famous.

Let's get the clubs to feel more like "teams", make that "winning teams". Foster competition between the clubs that are geographically nearest each other.

[*please turn to page 44*]

Visit your local RADIO STORE

R.M.S. Corp
The Electronics Store
675 A Great Road
Littleton, MA 01460

Atkinson & Smith, Inc.
17 Lewis Street
Eatontown, NJ 07724

Arcade Electronics
7048 Columbia Pike
Annandale, VA 22003

Everhart Electronics
116 Sidney Street
Lexington, NC 27292

Electronics 21
21 East Derenne Avenue
Savannah, GA 31405

Hollister Electronic Supply
1747 Pearl Street
Jacksonville, FL 32206

J & H Electronics
1615 West Waters Avenue
Tampa, FL 33604

Universal Service
114 N. 3rd Street
Columbus, OH 43215

Purchase Radio Supply
327 E. Hoover Ave.
Ann Arbor, MI 48104

Electronic Distributors
1960 Peck
Muskegon, MI 49441

Conley Radio Supply
101 South 31st St.
Billings, MT 59101

Heights Electronics
835 Halsted St.
Chicago Heights, IL 60411

Ham Radio Center, Inc.
8342 Olive Blvd.
St. Louis, MO 63132

Henry Radio
211 N. Main St.
Butler, MO 64730

Radio, Inc.
1000 South Main Street
Tulsa, OK 74119

Electronics Center, Inc.
2929 N. Haskell
Dallas, TX 75204

Manwill Supply Company
2780 So. Main Street
Salt Lake City, UT 84115

Henry Radio
11240 W. Olympic Blvd.
Los Angeles, CA 90064

C & A Electronics
2527 East Carson St.
Long Beach, CA 90810

Electronic Emporium Int'l.
Communications Electronics
7895 Clairemont Mesa Blvd.
San Diego, CA 92111

Henry Radio
931 N. Euclid
Anaheim, CA 92801

Webster Radio
2602 East Ashlan
Fresno, CA 93726

Ham Radio Outlet
999 Howard Avenue
Burlingame, CA 94010

M-Tron
2811 Telegraph Avenue
Oakland, CA 94609

Quement Electronics
1000 South Bascom Avenue
San Jose, CA 95128

Selectronics
2204-06 Del Paso Blvd.
Sacramento, CA 95815

Oregon Ham Sales
409 West First Avenue
Albany, OR 97321

Radio Supply Company
6213 13th Avenue South
Seattle, WA 98108

Advanced Electronics
804 Dupont Street
Bellingham, WA 98225

Progress Electronics
852 Commerce Avenue
Longview, WA 98632

NOVICE

OK, Novices. This column is your chance to weigh in on anything you wish. Is there something that outrages you? Do you want to brag, moan, propose, give tips or ask questions? This is the place to do it.

If you have any questions about Amateur Radio, just send them to **Worldradio** (2509 Donner Way, Sacramento, CA 95818) and you will receive a personal reply. Your question and answer will also be reprinted here so as to help others who have the same query but are too bashful to write.

There is no doubt that to a newcomer all of this radio stuff can be complex and confusing. (It's still that way for many who have been in it for years.) Before you get frustrated, just look at all the other things that you started which at the beginning were difficult to latch onto. Remember your first struggling steps on a musical instrument, or learning to drive a car, or learning to type, or whatever? So just hang in there; all things come with—and in—time.

Every month we mail a copy of this newspaper to every newly licensed amateur (say thanks to the **Callbook**; they help us do it). The biggest feedback we're getting from Novices is the question, "Where are classes for getting your General in my area?"

So, here's your chance to help out your fellow amateur. If you know of a General class in your area, let us know and we'll list it here.

Another question we get is, "Do you know an amateur in this area who will give a test?" That is from those who want to get a Technician or Conditional ticket. And, unfortunately, the letter often tells of trying to find a volunteer examiner and being rebuffed with, "I don't want to be bothered." Or, "I've never done it and don't know how," or whatever. Many Novices are being put off by such an attitude and there seems to be more of it (judging from the letters) than one would like to think.

About that. It would certainly be nice if all amateurs were warm, outgoing and stalwart knights. Such is, of course, not the case. We have our "bad apples" just as there are the less than good in medicine, law, police and even the ministry. On the whole, though, we feel the best group are radio amateurs, so don't be discouraged by one or two bad experiences. Better days are coming your way.

Speaking of tests. If you have to travel a distance to take the test for General, your CW is good and you want to make sure your theory is up to par before you travel a great distance or take a day off work, here's a tip.

Have an amateur send off for the Technician examination for you. It's the same theory test you'll get for General. Here you can get the chance to see a test and find out just how much you really know. So it costs you a few bucks (four). Sure beats spending the time and money to go to the FCC office and find out that you were not as prepared as you thought.

Now, here's something they won't tell you at all the FCC offices. (Fortunately we have one of the better ones in our area, San Francisco.) If you take the General CW test and don't pass it, but you did get 25 letters in a row right, you have passed the Technician CW test. You then are allowed to take the theory test. When you pass that you will be issued a Technician license but minus the (C). What this does for you is show that you have passed the theory test at a Commission office and all you have to do now is go back and pass only the CW test to obtain your General privileges. That's not a bad way to go.

Let's say that you go to the FCC and either flunk the CW or pass the CW and flunk the theory. Oh, well. Don't be discouraged. Just tough it out and hike yourself back there again after 30 days. (Actually, we're luckier than the commercial radio aspirants. They have to wait 60 days.)

We know personally of people who have taken the test seven times and have heard of one case where it took someone 17 times. You've got to admire that kind of dogged determination.

If you should not do as well as you hoped, it isn't the end of the world. Look at the great number of people who spend three or four years of their life studying law, take several "baby bar" exams, pass them and yet go and fail the bar exam. Such is life.

Never quit. Anybody can quit. What does that show? Muster up your courage and go back. Go back as soon as you can. You've got to be like the pilot who gets back in a plane as soon as he can after a crash. Don't brood about it or get moody. And don't put it off and put it off and put it off until you think, "I'm really ready."

Just go back. One friend of ours took the CW test and just scribbled away. He had no idea of what he was writing or had written. No words were in his mind or anything. He turned in his paper figuring he had failed. He passed. Maybe you'll luck out. Sometimes reflexes are better than thinking.

To the theory test. Don't rush. You've got a whole day to do 50 questions. Take your time. Relax. There is no prize for being the first one done, except possibly a "sorry 'bout that" notice.

One school of test taking says go through and do all the easy ones first, then go back and tussle with the hard ones. But, make absolutely sure that you don't get the answers in the wrong slot on the IBM sheet. Double check that the answer to a question is in the proper slot. Here's how you can goof it up. Let's say the answer to a question about amplifiers is Class C. What you do is mark the "C" on the answer sheet when really the Class C answer is "A" or something else on the answer sheet.

It's also quite easy to slip a decimal place. Since you've got all the time you could ever want, after you go through the test go back and check the math again. And yes, you can take a calculator with you.

In fact, it won't hurt a bit to go back through the whole test again. Remember, better safe than sorry. Or, what's the rush? When you do the formulas don't hurry and start putting down the numbers. The "really smart" guys will first put the formula down, then underneath that in the place of the formula put the numbers. Slow and easy does it. Don't forget it was the turtle that won the race.

Here's another useful tip. Instead of waiting months to find out how you did, take a post card to the FCC with you. You can put a Special Delivery stamp on it if you wish. Address it to yourself and on the back put your name and the class of license you were going for. Put "Pass" or "Fail" and ask them to circle one. You'll usually get it the next day. Neat, huh.

A word of caution. If you get a higher grade of license, let's say going from Tech to General (so there is no N in your call), you can NOT go on the other bands until the license has arrived. Be patient.

Another point. When you take the General, take the Advanced. It doesn't cost you a penny more. Who knows, you may pass. Whatever, at least you get a look at the test, for free. You'll know what you need to know. Lots of people say the Advanced is easier than the General. I sure don't know where they get that. I thought it was a "bear" compared to the General, but I'm not going to argue with anybody. It wasn't all that hard either, if you studied the license manual.

In the next few months 10 and 15 meters will be getting better. And when they are open they're terrific bands. Sadly, on those bands people do a lot of listening and not much calling and good band openings go by unused. Here's some 10-meter beacons that you might hear which would obviously tell you the band was open:

ZL2MHF - 28.170; JA1IGY - 28.190; VE3TEN - 28.175; DJ0IJI - 28.195; ZC4CY - 28.180; 3B8MS - 28.200; ZB3SX - 28.185; DL0AR - 29.000.

A terrific antenna for 10 and 15 is the quad. You can rotate a small one like that with a TV rotor and you'll find that a two-element quad is about equal to a three-element Yagi, and it has other advantages. The 10 and 15-meter quad can be easily built or purchased quite inexpensively.

Speaking about small outlays of cash, we'd like to mention our special on subscriptions for Novices. Our regular price is $5 a year, but for Novices your first subscription is only $4. Our way of saying welcome. Please see page 13.

— *W6AJY*

VHF *(continued from page 34)*

are still having problems with the 432 high power final. Consequently, the test might slip a month or more. Check next month's column for any up date changes.

August saw the Central States VHF gang at their yearly gathering after the Perseids. This year, Oklahoma, near Wagoneer was the site. A nice lush, muggy setting along a lake, far from the nearest city and any decent night life. The program included talks by Gary Frey, W6KJD; Mel Wilson, W2BOC; Dick Allen, W5SXD; Jan King, W3GEY; Marshall Williams, WA5UNL; John Fox, W0LER; Ron Dunbar, W0MJS; Al Katz, K2UYH; Kelly Scheimberg, W8KPY; Hank Oredson, W0RLI; Mike Staal, K6MYC; Tom McMullen, W1SL and an EME Forum chaired by Tom W1SL and included W6KJD, K2UYH, K6MYC, Dick Hart, K0MQS, and myself.

The Banquet speaker was Bill Tynan, W3KMV. At the Banquet, the John Chambers Award was made to John Fox, W0LER, for this work on the OSCAR program and the unique data reductions he

[Please turn to page 42]

TEACHER

The person who conducts the courses leading to an Amateur Radio license is one of the most important people in assuring the continuance of Amateur Radio.

We'd like to give you a little hand in making sure that you get enough people in your class to make your good efforts worthwhile.

A problem is getting the word out about your classes. Please know that just about every newpaper is glad to print such notices. Don't overlook the community newspaper or "shoppers". They really want to be "local news" papers and will always print items of community interest. Your radio stations will be most happy to put your announcement on their "Community Billboard" programs or run them as public service announcements.

Another source of publicity is your local Radio Shack, Lafayette stores, and don't forget your local store carrying Amateur Radio equipment.

We just received a marvelous poster from the Hall of Science Radio Club in Flushing,NY. It is 17" x 11" and it has drawings of people at a radio in an Asian scene, South Pacific, etc. They really make it exciting. It is produced by the photo-offset method, which means anything that you cut out of somewhere else can be turned into printing.

An attractive poster will certainly draw the eye. If you see any photographs, drawings, headlines, etc. in this newspaper that you'd like to use on your poster, just go right ahead. Cut it out and glue it down. Certainly there must be someone in your club in printing, advertising, art or something that could help you make a nice poster. It will make a lot of difference.

In your release to the local radio stations, you couldn't find a much better lead paragraph than this one from the Wheaton Community (IL) Radio Amateurs:

"Imagine yourself tuning in mysterious-sounding signals coming over the North Pole from India or from Soviet Central Asia, on amateur shortwave frequencies, and then talking to those people with your own transmitter! Or you could talk with people in South America or Singapore or Germany or Samoa...or anywhere in the world!"

Pow. That paragraph above should certainly excite a few people.

Next subject. The Novice classes are great, but there is a problem. Only about 25% of the Novices ever move up to a higher class of license. We're doing an awful lot of wheel-spinning if all our efforts only get us that few number of amateurs in the long run. And don't forget, at the present we are not getting enough new amateurs to offset the attrition rate of the old-timers who are going to the big DXpedition in the sky. For some years now we have been showing a net loss each year. And when considering what Amateur Radio has to offer, that's dumb.

To the point. We've got to get more General classes going. Every month we send a copy of this newspaper to every newly licensed amateur. The big feedback from Novices is a question, "Where is there a class to get a General license in this area?" So, if you run a General licensing class send in the info to **Worldradio** (2509 Donner Way, Sacramento, CA 95818) and we'll list your course in a Notices column.

So, get your course listed here. Not only for Novices, but so all our readers can see it and thus be able to tell people where the classes are in their area.

Here you are, a dedicated amateur, running a class. Great, but getting the word out is just about as important as having the class in the first place. Could it be that we're in communications but we don't communicate?

Example: We recently read about an amateur who said he worked at a desk next to another person. Quite often they would go to lunch together. It wasn't until after five years that they found out they were both active amateurs. The question is — don't we talk about Amateur Radio to other people. Instead of just waiting to see who shows up at the class, how about some active recruiting?

In the past five years the Sertoma International has seen a 21% increase in members. Let's take a page from the book of the service clubs and go out and recruit people who we feel would be a credit to Amateur Radio. Let's get out there and talk it up to our friends. Let's invite them into this great fraternity. The other day one of the guys at the garage where we take the **Worldradio** company car for service invited me to join their Optimist club. I must admit I was flattered by their invitation.

Shall we invite more people into the service club that is Amateur Radio? I have heard the argument that, unlike other activities, in Amateur Radio you have to study and that is what keeps most people out. My answer to that is, "Baloney." Look at the number of people at the community colleges "studying". Our Maritime Mobile columnist, Bill Yost, WA6PIU, teaches classes on sailing and navigation. People are "studying" those subjects, and hundreds of others. Look at the number of people who have "studied" to get their private pilot's licenses (incidentally, MORE than have made the effort to get a radio license). Maybe we should just attempt to recruit those who are not afraid of a little work. Let's go after those who are willing to go on drills such as those in the Civil Air Patrol or volunteer firemen or reserve police officers.

There should be, and there could be, an Amateur Radio class at every community college. This way we would reach those who are not afraid of using their noodle.

In one of my classes last year was a gal who is a teacher. At the same time she was studying to get her radio license she was finishing up the work on her Masters. Now, at age 50, she has decided to go to law school at night. Let's find and attract a few more people like her!

Well, enough from me. Let's make this column a real forum for the instructors in Amateur Radio. Other teachers will want to hear of your methods. Tell of your experiences, what worked....and what didn't, so others can learn.

— *W6AJY*

continued from page 41

has accomplished using these satellites. John made mention during his acceptance, of his work's worth being due in part to considerable work by Ron Dunbar, WØMJS. I felt it was a bit sad not to see Ron share in this award, which they both richly deserve.

Out of the Conference came some possible conflicts in frequency interests. For EME, the majority of the work has been carried out within the first ten kHz above 144 MHz. (Only 144 band is considered here). Some proposals were put forth to establish CW EME operations in some set part of the band.

One proposal was to use the band 144.150 to 144.200 for CW skeds. This would allow SSB to be used if conditions and signals warranted. This was mostly rejected in light of the majority of the world's lesser band extent as compared to the US. Another proposal was to use the land 144.050 to 144.100 for set CW skeds. Random CQing and the like would remain in first 10kHz or so. If SSB were possible, then upon indication to switch to SSB, both EMEers would shift to 144.175.

Whatever possible band segmentation is deemed appropriate by the majority, is for the main purpose of trying to clear up the considerable QRM and confusion now present in the lower 10kHz segment. Interested parties are invited to send their ideas on this to Bill Tynan, W3KMV, at ARRL. Bill will compile the comments and list them in QST. At some undecided date, a decision will be made upon this. I would also appreciate a copy, or send it to me and I'll forward it to Bill as well.

Another proposal was the change of the 144 gang time period to 2½ minutes instead of the present 2 minutes. This is as is done on 432, and as was done several years ago when 220 was active on EME. Another change, mainly to the 432 gang, is the order of transmission. The Western-most station with respect to the Date Line will go first. In event both are same Longitude, the Southern-most station goes first.

[*please turn to page 43*]

TRAVEL

At long last, I am planning a trip to Europe about a year from now..the Spring of 1976..and will visit several countries from which I hope to operate.

I am now digging up info about this type trip and the article by Gil Baker, W5QPX, made me think about promoting international fellowship. I wrote Gil and told him I will show hospitality to any amateur coming thru the Jackson Hole/Yellowstone Park whenever I can and to list me as being available.

My business is such that my sport shop puts me in contact with thousands of people each year, many of them amateurs. Some of these I get to meet and others I miss. I just wanted you to know about my feelings up here and should Gil or anyone compile a list, count me in.

If you know any operators who have traveled to Switzerland, Yugoslavia, Germany, Austria, etc. and operated over there. I would appreciate writing to them. They may have a few tips to pass on to someone like myself.

Jim VanNostrand, WA7IFX
Box 1659
Jackson Hole, WY 83001

Bump in the night

More than forty-thousand air passengers were given free trips last year by U.S. airlines who had "bumped" their flights.

Most "bumping" occurs when an airline over-sells and thereby over-books a flight. If you arrive at the airport and your plane leaves without you on it, the airline must not only provide you with another flight, it must pay you money equaling the fare to your next connection(or your destination if the flight is a direct one).

According to the little known rules of the Civil Aeronautics Board, the airline is responsible if it can't put you on a flight arriving within two hours of the regularly scheduled arrival time (four hours for international flights).

Airlines often fail to tell a passenger about the money he or she is entitled to. The CAB recently issued a cease and desist order against a major airline for its failure to offer denied boarding compensation to its passengers. The airline agreed to track down and reimburse everyone who had been bumped.

A valuable booklet called "Air Travelers' Fly-Rights" may be obtained free from the Civil Aeronautics Board, Washington D.C. 20428.

Useful booklet

How to travel overseas,how best to use a travel agent, and how to fly with baggage, pets and infants are just a few of the valuable tips included in a new pamphlet entitled "How to Fly."

This "must have" publication can be obtained free of charge by writing to the Air Transport Association, 1709 New York Avenue NW, Washington, DC 20006.

travel

Since so many Worldradio subscribers are world travellers, we'd like to start a new feature.

What travel tips do you have for others? What good experiences did you have? What bad experiences did you have?

We'll print your recommendations and your "avoids" regarding carriers, lodging, restaurants, etc.

VHF

continued from page 42

Another significant change, mainly to the 144 gang, is the reporting technique. As is done now on 432, T indicates partial copy; M indicates calls copied; O indicates excellent copy, SSB possible; and either Rm or RO is acknowledgement. This variation to TMO system gives an unknown factor to report; and, in some circles does represent a more valid QSO.

Along with the above, the meteor ping jockies have been adhering to the West to East and North to South transmit order. In the Middle part of US, this at times must be modified in event two stations in the same area are on together. One might be looking West and other East, this conflict requires one to switch order so mutual QRM doesn't result. The reporting system was outlined several years ago in QST. From Bob Sutherland, comes this outline from John Perchalski, K4IXC:

Meteor Scatter Procedure

When You Receive	You Send
Nil or incomplete Calls	Calls only
Complete Calls	Calls & Sig Report
Calls & Sig Rprt	Sig Rprt & 'Rogers'
Sig Rprt & 'Roger '	'Roger' continuously
2 'Roger' in row	QSO Complete, nil more*

*If burst continues, may let others in, or send anything else desired.

Signal Report	Burst Length
Si	up to 3 secs
S2	3-10 secs
S3	11-20 secs
S4	21-30 secs
S5	30 secs or more

Notes: If activity appears quite good, resort to BK operation, by stopping for a second or so every 5 seconds, or after every call set. Most important, both for meteor scatter, where 15 second periods are most typical, and for EME work ensure clock is set to a standard time station such as WWV, JJY, CHU.

For those desiring to listen in on EME skeds, the following periods will prove best. For 432, usually around 432.000 or 432.010; the bulk of activity is run at Moon Perigee. Within 2-3 days either

[*please turn to page 45*]

ANTENNAS

Bill Dirk, KP4EAK

For the past six months I have been using what is, for amateur purposes, a rather unusual type of antenna, and I have been having very good luck with it. I feel that the time has come to share the idea with my fellow amateurs.

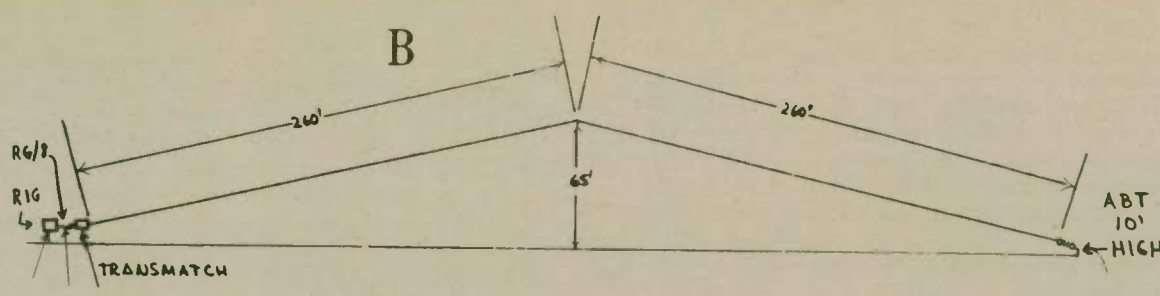
The basic idea comes from a book entitled "Traveling Wave Antennas" by Carlton Walter (Dover Publications, 1965). It turns out that true longwire antennas (i.e. antennas several wavelengths long) can be considered as traveling wave antennas.

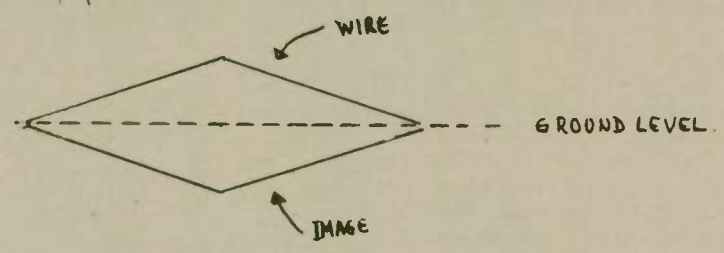
The rhombic is a traveling wave antenna, being basically an array of 4 longwires. However, to erect a rhombic takes a huge amount of ground. Fortunately there is a way around this, known as an "obtuse angle V antenna."

The obtuse angle V is basically one side of a rhombic (see drawing A) that has been installed in a vertical configuration and is fed against ground so that the "image" forms the other side of the rhombic.

The particular antenna that I have been using with such great success is shown in drawing B. I chose an overall length of 520 feet for several reasons, i.e. it is 2 wavelengths on 75 meters, it was the maximum amount of wire I could fit in the space I have available and it was all the wire I could get for the money that I had with me that day. The antenna is 65 feet high in the center because there is a tree at that point in which I have a rope up 65 feet in the limbs.

B





My antenna is constructed of #10 wire from the local hardware store and is put up running north and south.

Theory says that the antenna will be bi-directional, but my experience shows that it works well in all directions. I get good reports from VK and ZL stations, from UA's and VU's, and also from Europe and Africa. The antenna works well on 75, 40, 20, 15 and 10 meters, has been used successfully on 160 and has even been connected to my TR-22C and used. It doesn't work as as well as the beam on 2 meters.

I am feeding it with the Ultimate Transmatch, rollerless version, per the 1974 handbook. A good RF ground is essential — not just one driven ground rod, but that and the cold-water pipes and the power company's ground and your chain-link fence and a few wires run out under the antenna on the surface of the earth.

The antenna works very well at my QTH (150 countries in the last 6 months) but put it up to stay - mine fell down during the KP6 pileups!

Clubs

(continued from page 40)

Field Day contacts would be a good contest. (Which platoon's the best platoon? Remember that?)

We think the local radio club should be something important to its members, and the community. In talking to members of different clubs they say what is needed is a club goal or purpose. For example, the Optimist Club, right on their banner, says "Friend of the Boy" and they sponsor orphanages. The Shrine supports the hospitals, the Rotary sponsors exchange students, etc.

Should radio clubs help sponsor the high school radio clubs, possibly looking at them as a "farm club" where new members would eventually come from?

We see alumni groups making grants to their schools. Should we get a feeling towards our alma mater and help support their radio clubs?

Should every club, once a year, have an open forum to discuss the clubs purpose and goals?

If you never raise your eyes you will always think you are at the highest point.

When one looks at the goals and purposes of such groups as Exchange, Jay-Cees, 20-30, etc., and then looks at the radio clubs, questions must be asked.

Are the other groups possibly more mature in their outlook? Are they more sophisticated in seeing how they fit into society as a whole?

Do radio clubs look apathetic in comparison to these gung-ho civic-minded organizations?

What's the difference? Could it be "a different breed of cat"?

In order to help motivate clubs to greater heights we discussed competition in this column.

We were quite pleased at the response to our idea of this newspaper sponsoring an annual award for "Club of the Year". We saw it as a national award and also one for each call area. We're in the process of working on the rules and criteria and in a few more months we'll bring it out.

As always, we invite your input to this column regarding the activities of your club.

Speaking about input, let's look at output. Like to again remind any and all that anything in **Worldradio** may be reprinted (without prior permission) anywhere else. We're quite happy with the amount of material from this newspaper that appears in club bulletins. Shows that we're selecting useful info.

Speaking about information, we have some for you. We'd like to get your club some more members. All you have to do is send 12 self-addressed stamped envelopes to **Worldradio** (2509 Donner Way, Sacramento, CA 95818) and tell us the first three numbers of your ZIP code, and every month (in conjunction with the **Callbook**) we'll send you a list of the new licensees in your area. The idea is for you to send them an invitation to your club meeting. We'd also suggest copying the list off and doing a follow-up mailing every so often.

By the way, does your club have an annual "Amateur of the Year" award for the member who has made the greatest contribution to the club?

— W6AJY

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Station Appearance

(continued from page 18)

to make excuses for it. My operating includes DXing, traffic handling, building and experimenting, etc. I still have my workshop in the basement but it is just that, a workshop! All experimentation and homebrewing is confined to the workshop and the only rig kept there is one converted commercial FM rig for two meters.

I hope that you find the picture and the information useful. With the help of my wife and her encouragement, I now have my "dream" radio station.

(Robert Myers, WA2JZX, receives a one-year-extension of his **Worldradio** subscription for his being this month's "station appearance" awardee.

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The Bones of an Organization

The body of almost every organization has four kinds of bones:

The Wishbones - who spend all their time wishing someone else would do the work;

The Jawbones - who do all the talking but little else;

The Knucklebones - who knock everything that anybody else tries to do;

The Backbones - who get under the load and do the work.

Eitel (*continued from page 20*)

young people. Let's attract the kind of people we want.

"Amateur Radio has been just drifting along, we've got to face up to our responsibilities. Let's make Amateur Radio what it should and could be.

"We've got to be more emergency minded, on an individual basis aside from the organized nets. We need both,organized nets and individual initiative. I've got two 12 volt battery powered rigs in a trailer ready to go.

"Another important project is the Sister City program. If we offer and provide the communication for the program we would have the voices of these countries on our side. If we attract the attention of more people we will gain their support. Also, we have to work with foreign countries in developing Amateur Radio so we'll have more friends at the conferences.

"I learned a great deal about that side of it from Herbert Hoover, Jr. What a great man he was. If he had only lived a few more years a lot of problems facing us on the international front would be much closer to a solution. His son, Pete Hoover, selected me to be on the Basis and Purpose committee and I'm going to the national ARRL convention where the full committee will be meeting.

"La Neil and I just made a 9,000 mile trip around this country meeting amateurs. Many of them were people we had talked to on the air. These are warm, wonderful people from all walks of life. Where else can you find the feeling that exists in Amateur Radio?

"I feel that I could provide leadership. We've got use to use this great pool of talent that is available in Amateur Radio. People want to be involved, they just haven't been asked.

"One thing I want to do is drum up more support for the OSCAR projects. This is the new frontier of Amateur Radio. Those getting into it now are real pioneers. They'll have something to tell their grandchildren.

"Amateur Radio has certainly done a lot for me. I hope to be in a position to make beneficial judgments for Amateur Radio. I'd like to be a part of the official League organization, that way I'd get to hear all the views.

He mentioned his running mate Director Candidate Gary Stilwell, W6NJU, and said, "I think I could be a lot of help to Gary, I've known him for three years and we are in strong agreement on what has to be done. We'll work together, learn, roll with the punches and put some substance in what we do. Let's get the people to work together as a team and make this division hum."

[*The above interview was conducted at the Worldradio offices on 3 September. Eitel's visit was at the invitation of this newspaper*]

Insight

Bill Grenfell, W4GF

Preservation of the Amateur Radio Service should be the goal and desire of every amateur who enjoys and values the privilege of operation in the service.

Domestically and internationally, providing a communication service in times of natural disasters and other emergency situations, when other systems are inadequate or wiped out, is probably the most important quality of the "service" for which its continued use of segments of the precious radio spectrum may be justified.

Improvement of the amateur's public communications "image" here and abroad is necessary to counteract the demand for more frequencies by other radio services. Domestically, lack of occupancy of some of the VHF and higher amateur frequency bands has attracted frequency expansion moves by other communications services (e.g. the Docket 19759 proposal to allocate 224-225 MHz amateur band segment to a Class E Citizen's Service).

While sheer numbers should not alone determine who gets, or gets to keep, a frequency band, the weight of numbers of a certain group of licensees cannot be ignored and can be expected to have some significant influence on the decision of the (FCC) Commissioners directly and via the United States Congress.

Meet the challenges ahead.

Auto-Call

Each month will try to include 2-3 month's Universal Windows' time periods to assist those who might desire to listen in on the real DX mode. EME.

Two regional newsletters are in the offering. The **'Tidewater SSBN Report'** is folksy treatment of VHF news in XE USA, and put out by Bill Shaw, WA4MMP, 2216 Dunbarton Dr., Chesapeake, VA 23325. Send Bill postage for mailings. Jim Labo now KØOST (ex-WB8IDD) is gearing up for another 220 newsletter. His 3rd one in the past 5 years.

Previously he had fine copy in the Great Lakes area, thence to Texas. Now, will be Rocky Mtn. 220 News, P.O. Box 842, Denver, CO 80201. We wish these fellows success, and ask you to support them with your letters and comments.

In closing, please keep sending me your goodies of info. Adr. is still 4519 Narragansett Ave. San Diego, CA 92107.

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The Onslow Amateur Radio Club,

Regular monthly meeting
Second Saturday, 10 AM
Howard Johnsons Restaurant

For information write P.O.Box 841, Jacksonville, NC 28540

VHF *continued from page 43*

side of this date, when moon is up for US, most activity takes place. Cor Maas, VE7BBG, runs skeds, and an SASE will get the sked for you. The dates for the rest of 1975 are: 4 Oct., 1Nov., 30 Nov. & 26 Dec.

For 144 band, the Universal Window is best time to listen. The hour including the specified time will yield most of window. The times are GMT, and given with first two digits representing the date. For Sept.: 210530, 220645, 230745, 240900, 251000, 261100, 271200, 281245, 291330, 301400. For October: 011430, 021445, 190430, 200545, 210645, 220800, 230900, 240945, 251045, 261130, 271200, 281230, 291245.

NEW PRODUCTS

PROTO BOARDS

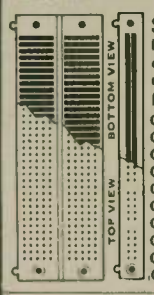
Build & test circuits as fast as you think!

PB100	10 IC cap breadboard kit, 4.5 x 6.0 x 1.35"	$19.95
PB101	10 14-DIP cap, 5-way post, 940 solderless tie points, 5.8 x 4.5"	$29.95
PB102	12 14-DIP cap., like PB101 with 1,240 tie points, 7.0 x 4.5"	$39.95
PB103	24 14-DIP cap., 4 5-way posts, 2,250 tie points, 6.0 x 9.0"	$59.95
PB104	32 14-DIP cap., 3060 solderless tie points, 8.0 x 9.76"	$79.95

LOGIC MONITOR
Simultaneously displays static and dynamic logic states of DTL, TTL, HTL or CMOS DIP ICs. Pocket size. $84.95.

PROTO-CLIP
For power-on/hands-off signal tracing. Bring IC leads up from PC board surface for fast trouble-shooting.

PC14	14-pin	$4.50
PC16	16-pin	4.75



SOCKETS & BUS STRIPS

Plug-in, wire, test, modify or expand without patch cords or solder. Snap together to form breadboard needed.

PN/Description	L.	Hole-to-Hole	Term'ls	Price
QT59S Socket	6.5"	6.2"	118	$12.50
QT59B Bus	6.5"	6.2"	20	2.50
QT47S Socket	5.3"	5.0"	94	10.00
QT47B Bus	5.3"	5.0"	16	2.25
QT35S Socket	4.1"	3.8"	70	8.50
QT35B Bus	4.1"	3.8"	12	2.00
QT18S Socket	2.4"	2.1"	36	4.75
QT12S Socket	1.8"	1.5"	24	3.75
QT8S Socket	1.4"	1.1"	16	3.25
QT7S Socket	1.3::	1.0"	14	3.00

7400N TTL

7400N	$.13	7443N	.95	74104N	1.20	74165N	1.30
7401N	.16	7444N	1.05	74105N	.50	74166N	1.30
7402N	.14	7445N	.90	74107N	.30	74170N	2.50
7403N	.16	7446N	.90	74109N	.90	74173N	1.50
7404N	.19	7447N	.80	74110N	.72	74174N	1.10
7405N	.20	7448N	.80	74114N	.93	74175N	1.20
7406N	.29	7450N	.16	74118N	1.52	74176N	1.25
7407N	.29	7451N	.16	74121N	.45	74177N	1.40
7408N	.18	7453N	.16	74122N	.45	74180N	.73
7409N	.20	7454N	.16	74123N	.70	74181N	3.00
7410N	.18	7460N	.16	74125N	.50	74182N	.70
7411N	.26	7470N	.30	74126N	.50	74184N	2.00
7412N	.33	7472N	.30	74128N	.90	74185N	2.29
7413N	.58	7473N	.37	74132N	1.00	74188N	4.80
7414N	1.23	7474N	.32	74136N	.95	74190N	1.20
7416N	.28	7475N	.59	74141N	1.20	74191N	1.20
7417N	.33	7476N	.32	74145N	1.00	74192N	1.20
7420N	.17	7480N	.59	74147N	2.40	74193N	1.00
7421N	.33	7481N	1.18	74148N	1.80	74194N	1.15
7422N	.50	7482N	.89	74150N	1.00	74195N	.80
7423N	.50	7483N	.65	74151N	.80	74196N	1.70
7425N	.34	7484N	3.00	74152N	1.40	74197N	.80
7426N	.25	7485N	1.20	74153N	1.00	74198N	1.75
7427N	.31	7486N	.35	74154N	1.40	74199N	1.40
7428N	.50	7489N	2.30	74155N	1.00	74200N	5.60
7430N	.20	7490N	.50	74156N	1.18	74221N	1.70
7432N	.24	7491N	.90	74157N	1.00	74251N	2.00
7433N	.60	7492N	.55	74158N	1.20	74278N	2.95
7437N	.35	7493N	.58	74160N	1.30	74279N	.90
7438N	.33	7494N	.80	74161N	1.20	74293N	1.00
7439N	.38	7495N	.80	74162N	1.40	74298N	2.20
7440N	.16	7496N	1.50	74163N	1.40		
7441N	.95	74100N	1.00	74164N	1.30		
7442N	.50						

HIGH SPEED TTL

74H00N	$.33	74H20N	.33	74H53N	.36	74H73N	.90
74H01N	.25	74H21N	.33	74H54N	.36	74H74N	.87
74H02N	.30	74H22N	.33	74H55N	.36	74H76N	.90
74H04N	.33	74H30N	.33	74H60N	.36	74H101N	.80
74H05N	.33	74H40N	.36	74H61N	.36	74H102N	.80
74H08N	.40	74H50N	.36	74H62N	.36	74H103N	1.10
74H10N	.33	74H51N	.36	74H71N	.80	74H106N	.95
74H11N	.33	74H52N	.36	74H72N	.74		

LOW POWER TTL

74L00N	$.31	74L10N	.33	74L51N	.34	74L90N	1.62
74L02N	.33	74L20N	.33	74L73N	.69	74L93N	1.74
74L03N	.39	74L42N	1.49	74L74N	.90	74L95N	1.62
74L04N	.33						

74LS

74LS00	$.50	74LS21	.58	74LS76	.92	74LS157	2.10
74LS01	.58	74LS22	.58	74LS78	.92	74LS158	2.40
74LS02	.58	74LS27	.64	74LS100	.92	74LS160	2.70
74LS03	.58	74LS30	.58	74LS109	.92	74LS161	2.70
74LS04	.60	74LS32	.64	74LS112	.92	74LS170	5.92
74LS05	.63	74LS38	.65	74LS113	.92	74LS174	3.02
74LS08	.58	74LS51	.58	74LS114	.92	74LS175	2.90
74LS09	.58	74LS54	.58	74LS138	2.38	74LS181	3.72
74LS10	.58	74LS55	.58	74LS139	2.38	74LS251	2.55
74LS11	.58	74LS73	.92	74LS151	2.10	74LS253	3.05
74LS15	.58	74LS74	.92	74LS153	2.38	74LS260	.58
74LS20	.58						

SCHOTTKY TTL

74S00N	$.44	74S51N	.80	74S140N	.80	74S189N	4.40
74S02N	.60	74S64N	.80	74S151N	2.20	74S194N	3.30
74S03N	.75	74S74N	1.20	74S153N	3.40	74S195N	3.30
74S04N	.55	74S85N	6.10	74S157N	2.40	74S251N	2.20
74S08N	.80	74S86N	2.50	74S158N	2.20	74S253N	2.40
74S10N	.55	74S112N	1.00	74S160N	3.90	74S257N	2.40
74S11N	.65	74S113N	1.50	74S161N	4.70	74S258N	2.40
74S20N	.65	74S132N	3.60	74S174N	3.30	74S260N	1.20
74S30N	.80	74S133N	.80	74S175N	2.90	74S280N	5.70
74S32N	.80	74S138N	2.20	74S181N	8.40	74S289N	4.00
74S40N	.65	74S139N	2.20				

9300 SERIES

9300PC	$1.00	9318PC	2.30	9366PC	1.75	93L18	3.50
9301PC	1.20	9321PC	1.20	93L00	1.50	93L21	1.50
9304PC	1.50	9322PC	1.30	93L01	1.60	93L22	1.80
9306PC	6.90	9324PC	2.00	93L08	3.20	93L24	2.80
9308PC	2.50	9328PC	2.50	93L09	1.80	93L28	3.70
9309PC	1.60	9334PC	2.95	93L10	2.80	93L34	4.00
9310PC	1.50	9338PC	3.30	93L11	4.20	93L38	4.20
9311PC	2.30	9340PC	5.00	93L12	1.80	93L40	6.50
9312PC	1.20	9341PC	4.10	93L14	1.70	93L41	6.50
9314PC	1.30	9342PC	1.15	93L16	3.20	93L60	3.00
9316PC	1.50	9360PC	1.75	93L18	3.50	93L66	2.70

AUDIO AMPS

TYPE	V	W	Ω	PRICE
LM352	6-15	1.15	8	1.60
LM354A	6-27	2.80	8	2.50
TAA611B12	6-15	1.15	8	1.60
TAA621A12	6-27	1.40	8	2.00
TAA641B11	6-18	2.20	4	3.00
TBA800	5-30	4.70	8	2.20
TBA810AS	4-20	2.50	4	3.00
TBA820	3-16	0.75	4	1.70
TCA830	5-20	2.00	4	2.20
TCA940	6-24	6.50	8	4.40

IC SOCKETS

SOLDER-TIN DIP PIN	1-24	25	100
8	.21	.19	.17
14	.25	.22	.20
16	.28	.25	.23
24	.67	.61	.55
28	.88	.80	.72
36	1.09	.98	.89
40	1.24	1.12	.92

WIRE-WRAP GOLD PIN	1-24	25	100
14	.45	.41	.37
16	.54	.49	.44

SOLDER - GOLD			
14	.34	.28	
16	.37	.31	

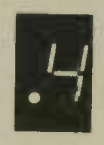
TEFLON TO-5	
3 PIN	.55 EA
4 PIN	.65 EA
6 PIN	.90 EA
8 PIN	1.10 EA
10 PIN	1.40 EA

LEDs

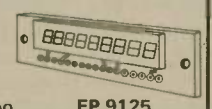
.125" dia.			.160".dia.			.200" dia.		
209	RED	$.25	216	RED	$.25	220	RED	$.25
209	YELLOW	.35	216	YELLOW	.30	220	YELLOW	.30
209	GREEN	.35	216	GREEN	.30	220	GREEN	.30

LOW PROFILE

226	RED	$.25	5053	RED	$.35	MV50	RED	$.30
226	YELLOW	.30	5053	YELLOW	.40			
226	GREEN	.30	5053	GREEN	.40	*216 = MV5024*		
226	ORANGE	.30	5053	ORANGE	.40	*5053 = MV5053*		



DISPLAYS



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DL81	RED	6.00
DL10	RED	6.00
DL10A	RED	4.00
DL101	RED	4.90
DL57	RED	9.90
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DL33	RED	4.00
DL44	RED	6.00
DL402	RED	4.00
DL701	RED	3.40
DL704	RED	2.25
DL707	RED	2.35
DL747	RED	2.50
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IL12		1.40
IL16		1.80
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9614PC	2.30
9615PC	2.40
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9617PC	3.50
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75110N	2.20
75115N	2.25
75138N	2.95
75150N	3.10
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75453N	1.00

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1702	33.00
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C2102-1	8.00
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LM302H	1.40	LM320-5T	2.50	LM741CH	.45
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4001AE	.26	.22	4023AE	.26	.22	4052AE	1.34	1.33
4002AE	.26	.22	4024AE	.90	.88	4053AE	1.34	1.33
4004AE	5.83	5.82	4025AE	.26	.22	4055AE	2.68	2.00
4006AE	1.35	1.34	4026AE	3.72	3.70	4056AE	2.43	1.86
4007AE	.26	.22	4027AE	.60	.50	4060AE	1.50	1.25
4008AE	1.79	1.78	4028AE	.98	.90	4066AE	.90	.72
4009AE	.60	.50	4029AE	1.27	1.16	4069AE	.38	.34
4010AE	.59	.50	4030AE	.44	.37	4071AE	.26	.22
4011AE	.26	.22	4033AE	3.01	3.00	4076AE	1.68	1.48
4012AE	.26	.22	4035AE	1.27	1.16	4081AE	.26	.25
4013AE	.47	.40	4040AE	1.49	1.25	4508AE	2.30	2.20
4014AE	1.49	1.25	4041AE	4.06	4.05	4510AE	1.98	1.46
4015AE	1.26	.90	4042AE	.75	.64	4516AE	1.98	1.46
4016AE	.56	.45	4043AE	.60	.50	4518AE	1.28	.98
4017AE	1.20	1.00	4044AE	.60	.50	4520AE	1.28	.98
4018AE	1.49	1.25	4047AE	3.54	3.53	4528AE	2.30	2.20
4019AE	.52	.44	4048AE	1.43	1.42	4901AE	.43	.36
4020AE	1.49	1.25	4049AE	.52	.50	4911AE	.43	.36
4021AE	1.34	1.25	4050AE	.52	.50			

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APS24-1	24	1.0		
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APS5-6	5	6		
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APS15-3	15	3	$48.45	$46.05
APS24-2.2	24	2.2		
APS28-2	28	2		
APS5-10	5	10		
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APS24-5	24	5		
APS28-4	28	4		

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CAL1022	60.00	52.00	45.00

INTERFERENCE

Dr. Theodore Cohen, W4UMF

ARRL national convention to feature RFI technical symposium

Increasing numbers of RFI complaints, coupled with a greater awareness of the problem on the part of consumers and amateurs alike, have led to the scheduling of an RFI Technical Symposium at the 1975 ARRL National Convention. The symposium, which was held on Friday afternoon, 12 September, was moderated by John R. Johnston, K3BNS, of the FCC. The following is a list of the papers scheduled for presentation:

RFI and the Congress...W. Brendan Harrington, Legislative Assistant to the Honorable Charles A. Vanik;

The Regulatory View of RFI and EMC...Frank L. Rose, W3RO/W30WU, Chief, Technical Standards Branch, Office of the Chief Engineer, FCC;

IEEE EMC Group Activities... William E. Cory, President, IEEE EMC Group;

Minimizing Interference Susceptibility of Consumer Electronic Entertainment Products . . Egbert M. Tingley, K4FKX, Staff Engineer with the Electronic Industries Association;

A Survey of Manufacturers Who Produce Electronic Home-Entertainment Devices... Harold R. Richman, W4CIZ, Technical Assistant to the ARRL RFI Task Group.

In addition to the above, three papers will be presented on RFI susceptibility tests. These presentations will be given by Doug DeMaw, W1CER, Technical Editor of **QST**; Donald R. Gerue, K6YX, of the Santa Barbara Electronic Interference Assistance Committee; and a representative of the Amateur Research and Development Association (AMRAD).

The RFI Technical Symposium will provide a thorough, up-to-date treatment of RFI as it affects the Amateur Service today. For this reason, those attending the Convention should take time from their diverse schedules to hear the presentations. For those who are not able to attend, reviews of the papers presented at the symposium will be published in an early INTERFERENCE column.

Turning to the problem of incidental radiation, there are indications that the Canadian Department of Communications is planning to implement a regulation aimed at controlling the levels of radio interference to communication equipment which is produced by electrical and electronic appliances. The regulation is initially directed toward a reduction in household complaints. Thus, most domestic appliances, fluorescent fixtures and other devices found in the domestic environment will be required to be suppressed.

The Canadian regulation appears very similar to Section 302 of the United States' Communications Act of 1934, as amended, and is a significant step forward in cleaning up the rf environment.

With respect to the problem of obtaining assistance from manufacturers in resolving RFI complaints, recent correspondence with manufacturers of home-entertainment equipment about RFI problems brought forth the following responses:

From a major manufacture of television receivers, radios and phonographs:

"The phenomenon which you are experiencing of interference from the local ham operator station is due to audio rectification. To alleviate this problem it will be necessary to either shield all wiring leading to the amplifier section or to install a cut off switch in the front of a speaker."

Not to be outdone, another manufacturer responded to an RFI complaint as follows (again, the problem was audio rectification):

"We do not at the moment have an answer for the interference being picked up by the phono and, for this reason, would appreciate your returning it for engineering analysis.

"We have, however, found in some instances that just replacing the unit will correct an interference problem. This is apparently due to the variations in layout of wires and components during the manufacturing process."

How about this quote from a well-known manufacturer of high-fidelity equipment:

"As we have explained to the ham operator, the equipment, of course, is built to UL, EIA, as well as all FCC standards concerning interference transmission and rejection. It remains the responsibility of the amateur radio operator to find the means for, or work out a schedule of transmitting hours, so as to cause the minimum inconvenience to the consumer."

Finally, this quote from a major manufacturer of home-entertainment equipment:

"From the way you describe your problem, there is not much that can be done as the signal is so strong it is over-riding the volume control."

Had enough? Then don't you think it's time for Federal legislation to be enacted which will give the FCC the right to make reasonable regulations with respect to the manufacture of home-entertainment devices such as to make these devices less susceptible to rf fields? If so, write to the 94th Congress and encourage an early hearing for H.R. 7052. Write:

The Honorable Torbert H. Macdonald
Chairman
Subcommittee on Communications
Room B331
Rayburn House Office Building
House of Representatives
Washington, D.C. 20515

And be sure to write your own Congressman. After all, he or she will have to vote on the measure when it reaches the House floor.

Dr. Theodore Cohen, W4UMF

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

Gentlemen:

We are an organization of over 200 licensed amateur radio operators and are writing you in support of HR 7052 dealing with reducing the susceptibility of electronic home-entertainment devices to radio frequency signals.

Our group has a very active TVI/RFI committee which investigates all complaints and aids our members in assuring that their transmissions and operations are strictly within FCC regulations. Our experience has shown, in all but a very few instances, that difficulties could be traced to improper filtering of complainants' equipment by the manufacturers.

Not only are we put to considerable time and expense to solve these complaints, but the FCC Engineer in charge of the Local District Office eventually also gets involved as the complainant will usually not accept our explanations and insists on FCC intervention.

We urge you to schedule early hearings on HR 7052 and offer to submit detailed examples of RFI problems and solutions from our experiences, if you so desire. Sincerely,

Robert C. Reiley, WB2FHN
Chairman, TVI/RFI Committee
Hall of Science Radio Club
P.O.Box 1032
Flushing, NY 11352

•

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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.

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Be prepared for emergencies with the SST T-1 Random Wire Antenna Tuner. Also great for field day, camping trips, and home operation. Tunes a random wire for all band operation. $24.95 postpaid. 1 year guarantee. See large ad this issue. SST Electronics, Box 1, Lawndale, CA 90260 (Calif. res. add 6% sales tax).

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Beginners RTTY Handbook — Brand new with everything you need to know to get on RTTY. Theory, application and simple equipment you can build. $2.50. Published by the RTTY JOURNAL, PO BOx 837, Royal Oak, MI 48068.

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Fax Paper, 19-1/8" wide. Good for weathermap and desk fax recorders. $2.95 box, 4 for $9.00, 12/$25. Fax and RTTY list free. Jim Cooper, W2BVE, 651-W Forest Avenue, Paramus, NJ 07652.

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Estate Sale: Antique radio equipment, I.E., spark xmtr's, tubes, receivers, parts and manuals, 1903 thru 1950 vintage. Please send SASE for detail list. Contact Ward Beght, W6IRK, 625 Tufts Ave., Burbank, CA 91504.

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Morse encoded keyboard, easy to operate — $129.95. Keyer — $49.95 with memory — $99.95. Fully warranted. Logic Division, Box 62201, Los Angeles, CA 90062.

No Wall Space? Try our compact rotary QSL file. Comes with 80 pockets for 160 5½x3½ cards. $11.40. Package of 16 extra pockets, $1.25. Postage paid. Arizonans add 5% tax. We also produce ALKANPRINT QSLs, catalog and samples, 20c. Alkan Products, Box 3494, Scottsdale, AZ 85257.

Discounts — test equipment — B & K, RCA, Sencore, etc. Full line Motorola Hep Semiconductors, 50% off list price. 2.5A — 1000V diodes — 4 $1.00, regular price 82c each. Shure 444 microphones — $35.00. Stereo headphones: Koss, Superex, etc. Tubes, parts, printed circuit materials — list 10c. F & M Electronic Dist., PO Box 236, Dept. M, Maspeth, Qns, NY 11378.

Wanted: Generous Americans willing to send expired CALLBOOKS to DXers. Write IARS Inc. Friendship and B-H Program, Box 385, Bonita, CA 92002.

Robot-SSTV Complete — Like New: Model 70A Slow Scan Monitor, Model 60 Fast Scan Monitor, Model 80 Slow Scan Camera, Macro Lens, Two Program Boards with two sets of Plastic Letters, Gray Scale Test Tape, Tripod Mounting Plate. All Manuals — $575.00 (cost over $1050.00). HA-1 Electronic Keyer with Altronic Paddle — $50.00. K8MZS, 2225 Mt. Vernon Blvd. N.W., Canton, Ohio 44709. 216-492-6230.

Bay Area Ham Radio Repairs. All types. Mark, K6BE, Berkeley. 415-548-1889.

160 and 80 meter top loading sections for vertical antennas. For details write Bill Turney, WAØRFF, 1414 East 9th Street, Hutchinson, Kansas 67501.

Auto-Call keeps up with the latest ham info from Washington, D.C. Subscriptions $3.50 a year, sample copies 25 cents. Address: Auto-Call, 2012 Rockingham, McLean, VA 22101.

Sell — All Heath — HR-10B receiver, $60. HD-20 crystal calibrator, $10. DX-60B transmitter, $60. HG-10B VFO, $35. Transmitter needs repair; all others are in good condition. Manuals for all. Contact WN3ZST, 7203 Montague Street, Philadelphia, PA. Phone (215) 333-5012.

Russian Postage Stamp honoring Ernst Krenkle (DXers will recognize him as RAEM) plus booklet on collecting topical stamps only 25 cents when requesting approvals of stamps depicting radio, TV, telephony, telegraphy, satellite communications, electronics, electrical engineering. Alkanstamps, Box 3494, Scottsdale, AZ 85257.

Wanted: Gasoline powered 110 V. generator, 1 to 3 kw, to be used at emergency preparedness station here at **Worldradio.** We will accept your generous donation to a good cause and pay the freight. Or, will trade equal value in advertising, (that should run a lot of classifieds for you-or display), apply against your subscription (for the next 25 years) or gift subscriptions to friends (look like a real sport at Christmas) or combinations of the above. Let's make a deal. Write to Worldradio, Dept. Putt-putt, 2509 Donner Way, Sacramento, CA 95818.

Build your own radio desk/console cabinet. Design drawings, photographs — $4.75. Bill Morris, WA5RSC, PO Box 20302, Oklahoma City, OK 73120.

Wild horses, antelope, elk. Wyoming ranch land. 10 acres — $30 down, $30 month. FREE Maps-Photos-Info. Owner-Mike Gauthier, K6ICS, 9550 Gallatin Road, Downey, CA 90240.

Join largest worldwide DXer SWL, B-H 'Certificate Hunters' Club (B-H pay no dues/fees). Publishes international copyrighted Awards Directory. Non-Profit Organization. Write IARS Inc. Box 385, Bonita, CA 92002.

For sale or trade: CQ's from forty five, QST's from 1920, Government Call books from nineteen thirteen. Want old radio gear and magazines, Handbooks and catalogs. Erv Rasmussen, W6YPM, 164 Lowell St., Redwood City, CA 94062.

Sale: Heath HW-30 two-meter transceiver, groundplane, beam, masts, microphone, crystals and manual, only $25.00 or trade. Very lightweight three-element 10-meter beam, $5.00. Pickup only. W6SVO, Tom Lund, (213) 588-5832.

Unbelievable but true. There are a few amateurs who are not subscribers to this great newspaper. If you are one of them please note page 11. Get on the bandwagon. Now we also have a super special. If you're a little uncertain take our trial subscription — the next two issues for one dollar. Send it to "Worldradio", 2509-E Donner Way, Sacramento, CA 95818.

QSL samples with 400 cut catalog. Send 35 cents to: Ritz Print Shop, 5810 Detroit Ave., Cleveland, Ohio 44102.

QSL Samples: .25, N & S Print, PO Box 11184, Phoenix, AZ 85061.

Your old gear collecting dust? Buyers & Sellers Ham Radio Brokerage. See our ad, page 30.

RF Connectors — PL259 or SO239, five for $3.50 postpaid. Free catalog. COAKIT, Box 101-C, Dumont, NJ 07628.

2-meter FM operating shirts! Details — MZS BOOKS, 8041 N. Hamlin, Skokie, Illinois 60076.

Sell: Motorola HT-220 UHF 5-watts, H34FFN w/ PL — $500, 2-chan — $550; H34FFN 460 MHz slimline w/ PL — $400; HO3BNC pageboy 152.03 w/ Charger — $50. 2-meter HT-220 slimline, 2-chan, needs troubleshooting — $200; Inoue IC-2 (6 channels) w/ xtals & AC power supply — $200. **Wanted:** Collins: KWM-2A, 312B4 speaker console. Bardfield, 879 Beacon St., Boston, MA 02215.

Unscramble police code with decoders. Works on all scanners and receivers. For prices and brochure write: Don Nobles, Box 275, Hot Springs, AR 71901, 501-623-6027. (Dealers wanted).

Prop Pitch motors wanted — medium sized, in good condition. Need repair and maintenance manuals if available with motors, or separate. Need several for friends overseas, J. P. Ashcraft, WB5BFZ, 3008 Southwestern Blvd., Dallas, TX 75225.

Wanted to buy: pre-1930 Wireless gear and Morse keys. Any type? Condition. Write A. Shawsmith, VK4SS, 35 Whynot Street, West End, Brisbane, Queensland 4101, Australia.

San Diego Area: 15-Mtr four-element beam, like new — $45. Prop Motor with accessories — $50. Info W6BLZ, 528 Colima St., La Jolla, CA 92037.

Transmitter: 1 KW VHF AM/FM, 60 to 160 MHz. CCA Corp., Spectrum Analyzer Polorad 2992B, 10 MHz to 20 GHz. Stoddart Field Intensity Meter, NM62A. 1 GHz to 10 GHz. DNTCO, Box 9141, Alexandria, VA 22030. (703) 751-8100.

USA Call Book 1973 Edit. Mint condition — $3.50. Also DX Callbook '73 Edit. — $3.00. W2JBL, 123 Davis Ave., Hackensack, NJ 07601.

12-button touch-tone pad and enclosures — $10.00. Automatic Electric pads — $26.00. Please add $1.00 for shipping and handling. Shipped pre-paid parcel post insured. Rhode Island residents add 5% sales tax. Communications Specialties, 97 Amsterdam Avenue, Warwick, RI 02889.

Donations needed for first L.A. high school 2M-450 repeater. Need FM radios, etc. Dorsey High School, Los Angeles, CA 90016 — WA6CMR.

For sale: New list—send SASE. Teletype machines, $25-up. Panel rack cabinets, milliampere meters, tube testers, patch panels, etc. etc. Bargains galore. Goodman Co., 5454 South Shore Drive, Chicago, Illinois 60615. Phone Anytime: 312-752-1000-Ext-516.

Personalize & dress-up your QSL's. Get better returns with Photo Stamps. Free sample write: WEBB'S, Box 6, Morganton, NC 28655.

Atlas Ops. Share in the Atlas Adventure Newsletter and Club being organized. Send SASE for full details and sample Newsletter. c/o ATLAS Newsletter, 9004 Harvest Way, Sacramento, CA 95826.

Wanted — Antique or vintage amateur and broadcast receivers and parts for personal collection. Leland W. Smith, W5KL, Route 3, Jasper, Arkansas 72641.

Wanted to buy antique, table-model radios of any make or condition, dating before 1932. Crystal, battery, or early AC types. Also, old radio books and magazines, old tubes, radio parts. Write David WAØEUJ, 1880 Gage, Topeka, KS 66604.

Do you want to enjoy your life and job more? Send SASE to learn how. **30 Day Results Guaranteed!** D-D Enterprises, PO Box 7776, San Francisco, CA 94119.

Wantea: Past or present Aviation PILOTS or COMMUNICATORS who are Radio Amateurs — JOIN "Flying Hams' Club". Non-Profit organization. Write IARS Inc. Box 385, Bonita, CA 92002.

General Ticket? If I did you can. $1.00 brings ten pages of hints and tips covering code, theory, taking the exam, especially for the beginner, isolated, discouragea. Not another study course, but ways you design your own success. WBØPTM, 516 Ninth Ave., Brookings, SD 57006.

Motorhome for sale. 25ft. Sportscoach (RB) — 1973 — excellent condition — many extras. Antennas — 2 mtr, TV, (2) HF — 4 KW generator, sleeps six. $1,500 down, assume loan. Send SASE for more info. W6KHS, 212 Magellan St., Capitola, CA 95010.

Needed Badly: Book on Dumont 60 watt MCA365CY. Will photo book & send back to you with $5.00. Clayton Elam, K4FZJ, 28 N. Cooper, Memphis, TN 38104. Please Help me to get rig on air.

"Radio and Electronic Collector," monthly newsletter, trading sheet for collectors. Books, magazines, vintage radio, keys, etc. $2.00 year, no stamps. S.A.S.E. for sample. Robert Morgan, 2374 Queenston, Cleveland, Ohio 44118.

Four feet long new earth anchors (3) $8.50 each. Mini Listening device — $30.00. Nick, 10107 Lev Ave., Arleta, CA 91331.

Rubber Stamps — You can have your name, call letters and address on a quality cushioned stamp for only $2.00 prepaid. Fast Service! John Dowlan, W3UIL, P.O. Box 513, Levittown, PA 19058.

ICOM — IC-21A & DV21, IC-230, Alpha 374 linear. All in sealed boxes. Must sell. Good prices. WA2OAF, Ed Harwid, 61 Bellot Rd., Ringwood, NJ 07456. (201) 962-4695.

Top price or trade. Plug-in coils, audio transcushion sockets for Grebe CR-18, Bakelite chassis, duo-coupler trans. for National SW-4, No. 16 solid scc dcc wire. C. Byrnes, P.O. 25, Pismo Beach, CA 93449.