WORLDRADIO NEWS

November 1975 50¢ Year 5, Issue 5

FCC to deregulate Amateur Radio

CHARLES HIGGINBOTHAM, W3CAH
Chief, Safety and Special Radio Services Bureau at the ARRL Pacific Division Convention 25 October 1975

Fellow amateurs, and it is "fellow amateurs" because I fairly recently joined your ranks, it's indeed a pleasure for me to be here today, to talk to you about Amateur Radio and to give some flavor of the Commission's views on reregulating your service. Believe me, we think it's time for deregulation and reregulation of the amateur service.

Perhaps you've heard about the airline captain who, after his flight had been in the air about three hours, came on the public address system and said, "I just want to reassure you; everything mechanical is working fine. We do have a problem, however, an electrical problem, and all of our communications gear is out of order. We don't have any direction-finding or distance-measuring or two-way communications. It's all inoperative and, quite frankly, we don't quite know where we are. But, wherever we are going we're making good time getting there."

Now, like the airline captain, I'm certain many of you have looked on the FCC as an organization that doesn't know what it's doing, maybe doesn't know where it's headed, but it's making excellent progress doing whatever it's doing.

Well I'd like to assure you today that the Commission does know where it's going in the regulation of the Amateur Radio Service. We do listen and I think we understand.

Now, the Commission has four operating bureaus. There are more in the Commission, of course, but these four operating bureaus are responsible for the issuing of licenses and the regulation of specific radio services.

We have a broadcast bureau, a cable television bureau, a common carrier bureau and last, and I purposely put it last, a safety and special radio services bureau — that's the service that administers most of the non-broadcast, non-common carrier radio services, the industrial, the public safety, the land transportation, the aviation, the marine, the amateur and the citizens.

That's the structure. At the head of that grouping are seven commissioners with a chairman appointed by the President of the United States. I think that in the

(*please turn to page 10*)

Charles Higginbotham W3CAH

TV appearance

LENORE JENSEN, W6NAZ

Joe Oliveira, WB6BJM, will be seen on a forthcoming "To Tell The Truth."

He is questioned about his experience of obtaining a vital drug for a very ill man in Brazil and finding a quick way to ship it. The man's life was saved; he turned out to be Joe's cousin, a surprise. (See **Worldradio** May, 1975, page 35.)

The program will be seen on a Tuesday in one hundred areas but on varying dates. The program's number is 2472 if one wishes to check with the local TV station to see when it will be shown.

Some dates are:

November 11 in Los Angeles (KNBC), Seattle (KOMO), St. Louis (KTVI), Buffalo (WKBW).

Another good example of favorable publicity for all Amateur Radio operators.

International Pacific DX Net 8th Birthday Party

Date/time: 3 Jan 1976, 0000Z-2359Z

Bands: 10 thru 80

Mode: SSB only

Exchange: Members: RS/Net No./ Name. Non-members: RS/state, country, province/name. Work same station only once per band.

Scoring: Members: 1 point per contact with non-member, 2 points per contact with member. Non-member: 2 points per contact with member. DX: Sum of contact points x sum of countries and states/provinces worked. W, K, VE: sum of contact points x countries worked.

Awards: Achievement Award for any entrant working 25 or more Full Net Members in 10 different countries. Members: Certificate to top 3 scores worldwide. Certificate to top score in each country with more than one entry. Non-members: Certificate to top 3 scores world-wide.

Suggested frequencies: 3665, 3865, 7065, 7265, 14165, 14265 (primary), 21265, 28565.

Logs: DX logs to Ed de Young, VK4ABA, POB 98, Newstead, Queensland 4006, Australia. W, K, VE to Dennis Scannell, WB6IXC, 4201 Mt. Hukee Ave., San Diego, CA, 92117 USA. Logs to reach above by 1 March 1976.

Richard Baldwin, W1RU

An opportunity and a challenge

RICHARD BALDWIN, W1RU
at the ARRL Pacific Division Convention 25 October 1975

I'd like to tell you what WARC '79 is, what happens at a World Administrative Radio Conference, what is happening in this country, and what the League is doing.

What is a WARC, a World Administrative Radio Conference? The International telecommunications rules, the regular regulations of the world are developed by the International Telecommunications Union (ITU). This is a membership association of, at the present time, 145 countries throughout the world. What they do is, every so many years, get together and decide what the basic allocations shall be by services. In other words, how many kHz will be allocated to broadcasting, how many kHz will be allocated to land mobile, how many to the amateur service, how many to radio astronomy, etc. And, having determined the number of frequencies to be allocated to each service, they divide them up into bands throughout the spectrum.

The last such general WARC conference was held in 1959. At that time there were far less administrations that were members of the ITU than there are now. A great deal has happened since 1959, principally the explosion in satellite communications and the great expansion in submarine cables. There have been great changes in communications technology generally and so it was decided by the administrative council of the ITU that there should be another World Administrative Radio Conference. It will reallocate or reconsider the allocations throughout the spectrum from 10 kHz (which is the lower limit) up to, this time, beyond 300 Giga Hertz.

Now, what happens in prepara-

(*please turn to page 16*)

Tulsa area amateurs prepare to defend their rights.

On 17 September 1975 a group of approximately 50 Tulsa area amateurs met to show strength at the hearing on the TMAPC Board of Adjustment. The action was taken by the neighbors of Jim Pickett, K5LAD, to appeal the City of Tulsa's issuance of a building permit for Jim's 69 foot Rohn 45 foldover tower.

In a marathon 2 hour deliberation on this one case, the appeal was upheld by the Board. This meant that Jim's building permit was invalid. The Board did agree that Amateur Radio is incidental to a residential area and thus would be permitted in the amateur's home. They also agreed that, according to existing ordinances, there would be no height limitation on an antenna (aerial) but that a supporting structure for an antenna could not exceed 26 feet.

At this point any tower higher than 26 feet is in violation. No future towers may be erected which will exceed the 26 foot limit. Any deviation from this decision will have to be individually decided by a variance.

Jim has a choice of several options. Because his tower was erected in compliance with a legal building permit and the tower was up before the Board's decision, he could apply for and doubtless receive a variance on his own case. If this were done, Jim would be okay, but it would leave all other Tulsa amateurs stuck with a 26 foot restriction. He has chosen to appeal the case to District Court to clear up the point for everyone. The appeal will run in the neighborhood of $1,000.

This is not K5LAD's fight alone by any means. This is the fight of every amateur in Tulsa, to be sure, and all interested amateurs around the country. The Executive board of the TRO met and has decided to head up the fight. Max Attebery, WB5BET, and Don Johnson, W5PYA, have agreed to handle the trust fund for the Legal Defense. This fight must not be allowed to lose; the cost must be shared by everyone because it is everyone's fight. The ARRL is providing some help in the legal line but the finances must come from us.

Donations are appreciated in whatever amount you can afford. Everything from $5 to $20 has come in so far from individuals but amounts less or more would be appreciated, and welcomed. Checks may be sent to the TRO, PO Box 1422, Tulsa, OK 74101 or given in person to Max Attebery, WB5BET, or Bud Ambrose, K5HDO. Make Checks out to "Jim Pickett Legal Defense Fund".

Jim will appreciate your help and you will be helping yourself and Amateur Radio in Tulsa for years to come.

—TRO, The Tulsa Repeater Organization, Inc.

Council rejects plan to regulate antennas

CHULA VISTA, CA — The City Council decided against requiring conditional use permits to regulate the installation of antennas by Amateur Radio operators and citizens band radio groups.

After a 90-minute hearing and discussion last night (7 October 1975) the council felt it did not want to adopt an ordinance because the problem does not appear to be widespread.

The subject was introduced after a complaint was received about a year ago about an unsightly Amateur Radio antenna on Corte Maria Avenue.

The councilmen considered requiring conditional use permits for three-dimensional antennas that resemble box kites.

Amateur radio operator Leonard Babin, WA6CQF, said such a restriction could not be aimed at amateur and citizens band radio operators only, but would have to include all antenna — private, commercial, government and television.

It was discovered that several home television antennas could fall into this category and some governmental facilities, including the city's fire communications antenna, could be affected.

The council chambers were packed with radio operators who explained that they were working on a solution to the Corte Maria problem which, some members of the City Council called "a backyard dispute."

—The San Diego Union

Great Falls, MT flood

KEN ANDERSON. W7LDZ

If it weren't for Amateur Radio during the flood that began on 20 June 1975 many persons may have been injured or killed.

On the evening of 19 June the National Weather Service contacted the District Six Civil Defense Office and informed them of coming extreme flood conditions. Upon receiving this call Monte Tanberg, District C.D. Officer, contacted Ken Anderson, K7LDZ, C.D. Communications Officer. Within an hour emergency communications were set up between the Civil Defense Office and the Helena, Montana C.D. State Headquarters. Another radio system using VHF simplex and VHF repeater communications via repeater stations WR7ADO and WR7AFW provided communications from the local C.D. Headquarters into the flood area.

John Nixon, WA7KHO; John Sielke, W7JEF; and William Plyler, WA7YAU, were able to provide a direct communications link into the Augusta, Montana area. In this area the only means of communications was via Amateur Radio with Ernest, W7DIO, and Katie Fairbank, W7DIN, who reside at Augusta. This communications link provided life savings communications to several injured persons vacationing in the area.

Following is a list of operators who donated many hours of time and equipment for communications during the 1975 flood at Great Falls, MT: WB7ALL; James Haslip, K7CCZ; Katie Fairbank, W7DIN; Ernest Fairbank, W7DIO; Walter Partlow, W7FGZ; John Sielke, W7JEF; John Nixon, WA7KHO; Ken Anderson, K7LDZ; Darrell Smith, W7LVY; Louie Felton, W7MEW; Ken Sande, W7PAF; Ed Trapp, WA7QXW; John Wright, WA7TUW; Peter Schuch, WB2UAQ/7; Mary Wright, WA7UDH; William Plyler, WA7YAU; and Charles Penson, WA7ZZE.

Bounty story still is unfolding

EUNICE BERNON, K8ONA

The story of the mutiny on HMS Bounty in 1789 lives on, especially on Amateur Radio frequencies.

Tom Christian, VR6TC, is the great-great-great-grandson of Fletcher Christian, mutineer of Bounty fame.

Christian is radio officer of Pitcairn Island, population 70. He causes quite a pile-up on the air waves; DXers strive to communicate with this rare station in the South Pacific.

Mailed QSL cards, showing confirmation of contacts from Pitcairn, are valued; Pitcairn postage stamps are collector's items. Lucky operators like Michael Bakos (W8LY), Cleveland, display carvings, a native specialty, made from Miro heartwood.

Amateur radio's goodwill ambassador, Dr. Charles M. Mosher (W6HS), California, is an adoptee of the islanders.

"Tom mentioned that his dad had trouble reading," Dr. Mosher said, "so I shipped a set of 12 glasses along with a chart. Everyone on Pitcairn was tested, with the result that 38 pairs of magnifications were needed."

Dr. Mosher sent 38 pairs in time for Christmas, earning himself the title, "the spectacle man."

Six years ago Tom Christian and his wife were sent to California to become more competent in phases of audio and the

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Worldradio

The Worldradio News
is published monthly by
Worldradio Associates

Offices at 2120 28th Street
Sacramento, CA 95818 USA
Telephone: (916) 457-3655

Subscription rates: $5.00 per year, $9.00 for two years, $12.00 for three years, and $50 for life. IRCs and local currency will be accepted from overseas readers.

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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.

Controlled circulation postage paid at Sacramento, CA.

Nov., 1975 Vol. 5, No. 5

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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.

LA5LG's aid fund

JOHAN GORRISSEN, LA1Q
Chairman

Realizing that Amateur Radio can be of tremendous help and encouragement to a disabled person, the Norwegian Radio Relay League (NRRL) decided in 1966 to include this work in its programme. For the handling of this activity the LA5LG's Aid Fund was founded as a division of the NRRL.

There are currently in Norway some 3,785 licensed amateurs, of which 270 are disabled.

Most disabled live an isolated life, unable to take part in normal activities. Just here, Amateur Radio may mean a lot, but we have to take into account that most disabled are by the nature of their handicap unable to attend normal radio classes. They are also generally of limited economic means and only a few can afford to buy their own equipment. These are the problems we are faced with and which we must overcome.

It is far beyond our capacity to give a private education to everyone who wants to become a radio operator. Nothing could, however, be more natural in our long and thinly populated country than to make full use of Amateur Radio.

We have therefore organized a radio course giving instructions in radio theory as well as in CW. It acts as a normal class, four days a week and two hours every day. The course lasts from September until May and includes a final two weeks gathering with active personal training.

After this training the candidates are well prepared for the final examination. The results prove that this education can fully compete with the ordinary one.

Instructions by radio work very well in Southern Norway but, unfortunately, not so well in Northern Norway. This is due to distances of more than 1000 km, few amateurs and the unstable propagation conditions in the Arctic. For disabled amateurs in this part of the country we are therefore providing, at no cost, a correspondence course in radio theory and a CW course recorded on tape.

It is always difficult to present technical material to blind people. This is especially difficult when the blind are living in isolated places, unable to attend a normal class. It is solved by slightly modifying the normal textbook. It is recorded on 20 tape reels together with 255 plastic sheets with elevated drawings and symbols suitable for fingertip reading by a blind person.

Educational material is normally only provided during the period of education. The blind, however are permitted to permanently keep the tapes and drawings for future reference.

The Fund is working in close cooperation with the Telecommunication Administration. Without the support and understanding shown by the Administration it would not have been possible to fulfill the objectives of the Fund.

One of our problems is that some disabled positively cannot pass all tests required for a license. Accepting that Amateur Radio has a social as well as a technical aspect, the Telecommunication Administration is granting dispensations based upon a personal and medical examination. For all amateurs it is compulsory, however, that they pass tests related to handling, procedure and safety. Amateurs with some sort of dispensation can only work the 80 and 40 meter bands.

The Fund has a considerable stock of transceivers and other radio equipment. These are lent free of charge to disabled amateurs for as long as they are active or until they can afford to buy their own stations. When necessary the stations are equipped with devices to enable severely disabled or blind amateurs to operate them. Most of the devices have been developed and are produced by the Fund itself.

Maintenance is an essential service to disabled amateurs. By the active help of military radio stations we have organized a country-wide service working at no cost to the amateurs.

In order to simplify maintenance and to reduce our stock of spare parts we have introduced a rigid standardization. The Fund has today only two types of transceivers, a 1-band and a 5-band type.

All amateurs engaged in the activities of the Fund are doing this work in their own spare time and at no cost to the Fund. Even so expenditures are quite considerable, I 10—15,000 a year. Half of this comes from private contributions. The other half from the State, represented by the Department for Social Welfare and the Department for Education.

Norway is a a long, sparsely populated country. It is difficult to reach, educate and assist the disabled who want to become radio operators. It is made possible through the active support and ccoperation by more than 250 licensed amateurs. These are scattered all over the country. They often endure a lot of hardship to bring their services to remote living invalids. They do an important job for a fellow citizen — a demonstration of a new side of Amateur Radio.

Favorable aspects of Amateur Radio will be highlighted on the 15 November episode of the SHAZAM/ISIS Hour, a Saturday morning children's TV show which is written and produced by Arthur H. Nadel, W6TZY, at Filmation Studios, Reseda, CA. Nadel, 1974 Emmy Award winner for the NBC special "Welcome Home," also serves on the faculty at UCLA, department of Theatre Arts. This episode of the highly rated children's show, entitled "No Drums, No Trumpets," will be repeated several times in the near future. Shown on the set of the SHAZAM/ISIS Hour are, left to right, Holly Morse, Director; Robert Sparks, Cameraman; seated Mark Lambert, Actor; Nadel; and John Carroll, Grip.

Christmas across the borders

The Norwegian Broadcasting Corporation (Radio Norway) is celebrating its 50-Years Jubilee this year.

In 1975 50 years have passed since the first radio amateur contact was made between Norway (LA1, later LA1A) and a foreign station (28 April 1925 on 90 meters with a radio laboratory in Nisjni Novgorod. On 25 November 1925 was another "first" across the Atlantic between LA1 and U1YB in the USA on 40 meters.) The Norwegian Radio Relay League is also taking part in the celebration.

In a joint effort, Radio Norway and the Trondheim Section of NRRL will exchange Christmas greetings with radio amateurs on 24 December, 0800-0930 GMT. The messages will be tape recorded and re-transmitted on Radio Norway's broadcast frequencies later the same day.

Radio amateurs around the world, in particular those speaking some Norwegian, Swedish or Danish, are invited to contact the recording station LA7JO, Stig Lindblom who will be operating on 14.300 MHz +/- QRM. The stations of Trondheimsgruppen Av NRRL, LA2T; Kjell Duna, LA7AH; and Halvard Toegersen, LA2AD, will be available for information but are not recording.

Call for papers

1976 ARRL Technical Symposium on Mobile Communications will be held on the evening of Wednesday, 24 March 1976 at the Statler Hilton Hotel, Washington, DC, in conjunction with the IEEE Twenty Sixth Vehicular Technology Conference (24-26 March). This American Radio Relay League Technical Symposium is sponsored by the Northern Virginia Amateur Radio Council (NOVARC) and managed by the Amateur Radio Research and Development Corporation (AMRAD).

Previously unpublished papers are invited on technical topics relating to mobile communications. Areas of interest are: HF/VHF/UHF mobile communications, repeater technology and operations, signaling and control techniques, special mobile communications (AMSAT, ATV, RTTY, etc.); especially subjects of interest to both amateur and commercial mobile radio users.

Summaries are due by 1 February, 1976. Manuscripts, photo of author and biographical sketch of amateur/electronic background are due by 1 March 1976.

Write: Paul Rinaldo, K4YKB, 1524 Springvale Ave., McLean, VA 22101 or call (703) 356-8918 eves.

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Wheat City Award

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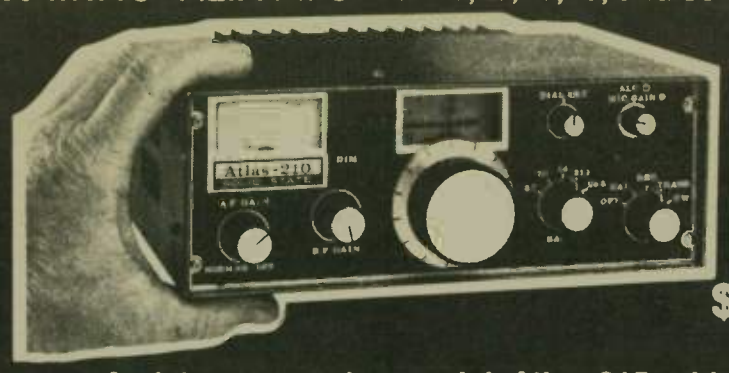

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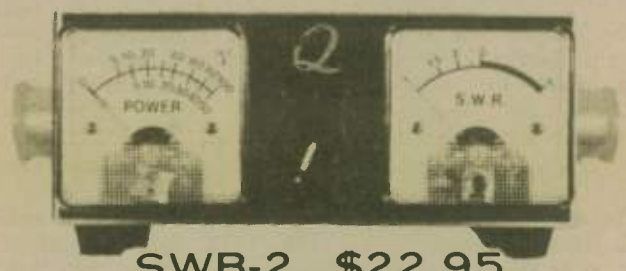

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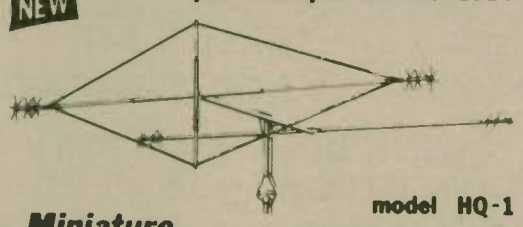

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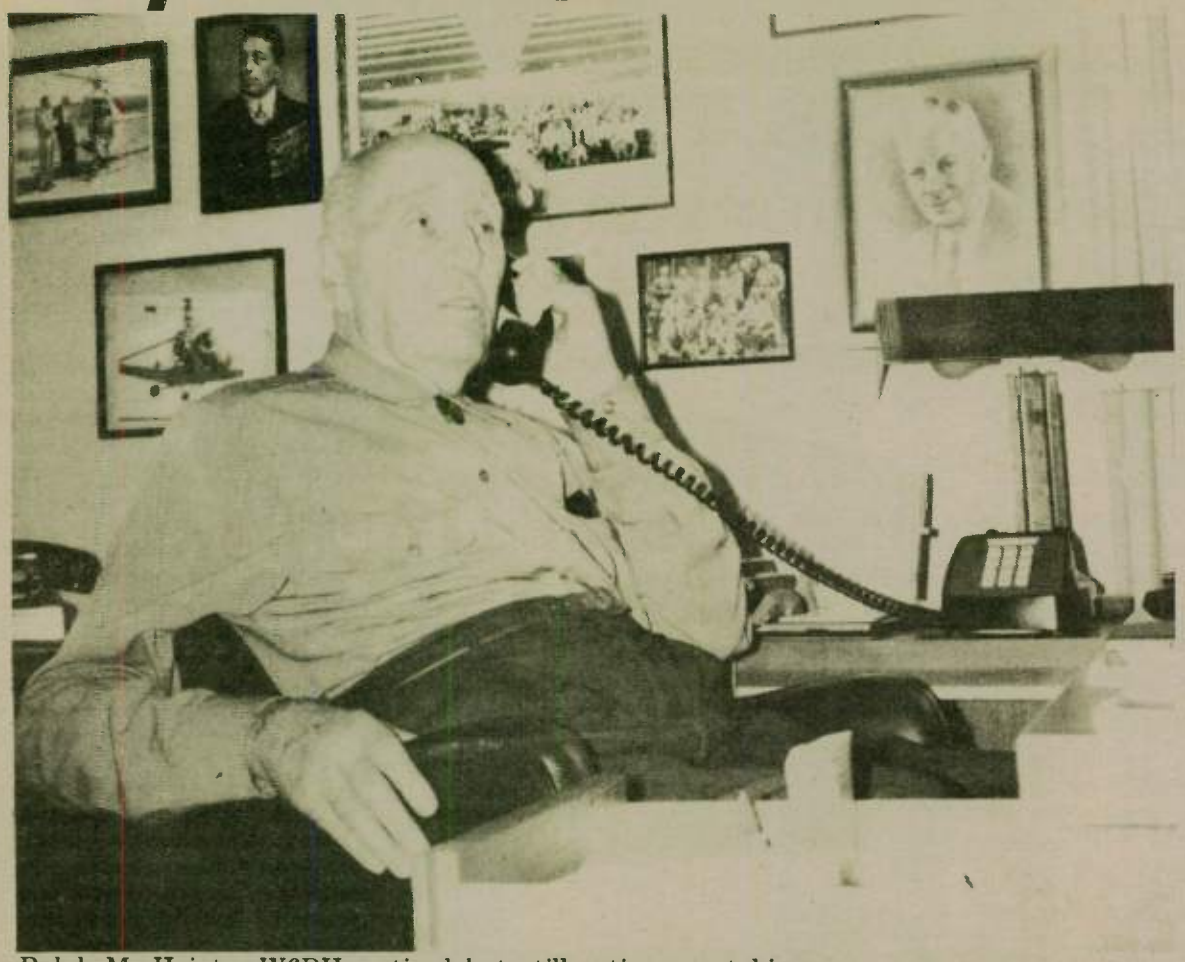
Ralph Heintz, W6RH



Ralph M. Heintz, W6RH, retired but still active — at his office. [*Photo by Leon Stanley, W7DKB*]

CYNTHIA FRY GUNN

"The reason I liked this job, aside from the fact that I'm doing some good for some people, which is the greatest reward, is that it is a field that I know nothing about," says 81-year-old Los Gatos innovator Ralph Heintz, W6RH, describing his latest invention.

The invention he refers to is a series of delicate surgical instruments which has proved successful in the extraction of diseased eye tissue, in one instance restoring sight to a man blind for 20 years.

Two years ago Ralph Heintz's wife, Sophie, W6SH, had a serious operation for a detached retina. After surgery, her physician, Dr. Conor O'Malley, of San Jose, told Heintz, "When this is all over I want to come and pick your brain."

Heintz replied, "If there's anything there to pick, you're welcome to it."

Once he knew what the surgeons needed Heintz began to work on a solution, first poring over Dr. O'Malley's books on ophthalmology. Heintz was 79 when he developed the instruments at his laboratory adjoining his home.

Fifteen years ago Heintz obtained patents on another of his inventions — the Heintz Stratichargе engine, a clean, non-polluting engine that may be the solution to the problem of automobile-caused smog.

Ralph Heintz won't make a dime off this invention but the benefit to Stanford University could be substantial — possibly several million dollars.

In 1970 Heintz turned over all of the engine's patents to his alma mater: "I hoped that Stanford might get some good out of it." Although the four original patents expire in 1976, 1978, and 1981, Heintz has conceived of a number of new stratified-charge engine improvements and also has turned over these patent rights to Stanford.

In October 1971, motorcycle-manufacturer-turned-automaker, Honda, unveiled a car that met all the 1975 auto emissions standards set down by the Clean Air Act of 1970. Honda's development took place over a period of three years, with 400 engineers on the project. Their solution applies basically the same principle of the stratified-charge engine that Ralph Heintz invented over 15 years ago, alone in his workshop, with a lot of ingenuity.

"I believe that the Heintz approach as exemplified by current Honda models is the ideal way to solve the problem of air pollution in the United States, ideal in the sense of providing the American public a simple, inexpensive vehicle which will improve fuel economy rather than make it worse," says Dr. Edward Ginzton, chairman of the National Academy of Sciences committee appointed by Congress to study the problems of cleaning up the automobile.

The surgical instruments and Stratichargе engine are but two of the more than 200 patented inventions of Ralph Heintz's innovative career which spans six decades. Many of his patents are still in use today.

Ralph Heintz was born in St. Louis, Mo., in 1892, the only child of a restless, adventuresome German-American father whose diversity of careers and exploits before settling in the United States in 1887 is amazing in itself: he was the youngest member of the first expedition to reach the headwaters of the Amazon River, a professor of philosophy at the University of Heidelburg, a director of colonization of Amish and Menonnite groups as they first settled in America, and ultimately a mining engineer.

The first 10 years of Ralph Heintz's life were spent largely in transit as his father cultivated his flair for diversity, moving from one business to another.

The family moved successively from Missouri to Illinois, to Iowa, to Utah, and finally, in 1903, to California — where they remained.

From that time, until he entered college, Ralph spent most of his life in mining camps, receiving his early education primarily from his mother though he did attend backwoods one-room school-houses.

"My mining experience was of considerable help in becoming self-reliant," recalls Heintz, who became a mine foreman at 18 and superintendent at 21, when he was responsible for the design and construction of two sizable mills.

Heintz's inventiveness flourished in this mining experience. Regions of the Chetco River, where Heintz's father had a mine, were too shallow for a motor boat. Heintz quickly solved the problem of transporting his supplies: he simply took an airplane propeller and devised a system by which it drove the boat up the river.

In 1909 Heintz entered the California School of Mechanical Arts in San Francisco. "That's where I learned to use my hands. I learned more there for use in later life than I ever did in college." In the summers he continued to work in mines to put himself through school, sometimes missing two or three semesters at a time. He was the oldest freshman in his class when he entered the University of California in 1913 at the age of 21. He soon transferred to Stanford University where a close friend was a professor.

While at Stanford Heintz specialized in physical chemistry and chemical engineering. His college career, however, was abruptly interrupted by the United States' entry into World War I. Heintz enlisted in the aviation section of the Signal Corps where he worked on one of the first aircraft radio-direction finders and experimented with early radio-navigation equipment.

When the war ended Heintz returned home to find his family in financial difficulty. With his cancelled Army insurance as capital he and his father set up a small chemical laboratory in San Francisco. Within about a month he hit upon an important innovation — a chemical process based upon ionization in fusion, which he called Solvolysis. He sold this process, which provided enormous savings to the paper and rubber industries, for $5,000.

In 1919 he married Sophie Kohlmoos. The day following their marriage she decided Ralph should return to Stanford and finish. Heintz graduated in 1920 and became Standard Oil of California's only chemical engineer at the San Francisco headquarters. His association with Standard Oil lasted a brief eight months — "I started looking around and saw that it would take at least ten funerals before I could move up, so I decided to quit and go out on my own."

With only $2,000 in capital he set up his first business, Scientific Apparatus, which he gradually directed into his long-time interest, Amateur Radio. With the advent of broadcasting in 1920 Heintz's company rapidly expanded, building both broadcasting equipment and stations. This led to the incorporation of a new and larger company, Heintz and Kaufman, in 1926. He was responsible for much of the pioneering work in the development of short-wave communication and for major innovations in the radio communications industry.

In the mid-1930s Heintz developed a complete system for

(*please turn to page 14*)

Vern Dameron Jr., K1DRN, in the operating position of FPØXX. Each of his 1,163 contacts was made from this station.

St. Pierre et Miquelon Islands

Vern Dameron Jr., K1DRN/ FPØXX

I am, and have been, essentially a DXer for my 19 years in Amateur Radio. I presently have 317 countries confirmed on phone and need just three more to make the phone DXCC Honor Roll. As is true of many DXers, I became interested in finding out what it was like on the other end of the pile-ups, to be a rare DX station chased by literally hundreds of amateurs. Over the last few years I have made several trips to St. Pierre et Miquelon, two very small French islands that are certainly among the rarest of DXCC countries in the North American continent. Following is an account of my most recent trip to St. Pierre where I operated as FPØXX.

I went to St. Pierre et Miquelon again this summer, my third straight DXpedition to these fascinating little French islands. Of the three trips this was by far the most successful DX-wise. My wife Janet, my two daughters, Lauree age 10 and Susan age 6, made the trip with me. Janet made the first trip with me in 1973 but the two girls had never visited the islands before. They expressed great interest in going with us and, while it did increase the cost of the trip considerably, we felt it would be a worthwhile experience for them.

In March of 1975 I purchased an eight-sleeper tent trailer with DXpeditions in mind. Early in June we began preparing for our first trailer-oriented DXpedition and left Bedford, MA on Sunday, 29 June. We drove to northeastern Maine and spent the evening in a trailer park. On the second day we drove further northeastward to Amherst, Nova Scotia, Canada. We arrived in North Sydney, Nova Scotia on the third evening of our journey. Arrangements were made to leave our trailer in North Sydney at a trailer park. Then, along with our 1972 Chevrolet, we boarded the *Ambrose Shea*, a large ocean-going Canadian ship enroute to Argentia, Newfoundland.

After a journey of twenty hours, some of them rather unpleasant due to rough waters, we arrived in Argentia. After departing from the ship (Thursday morning, 3 July) we drove 180 miles to Fortune, Newfoundland and spent the night in a motel. The next morning we left our car in Fortune and boarded still another smaller boat for the two and one-half hour trip to St. Pierre. We were met by Paul Andrieux, FP8DH, who immediately took us to the French pension (boarding house) in which we would be staying. One could never have better friends than Paul and Larry Briand, FP8CT. We were given two rooms at the pension, one for the girls and one for Janet and myself. All of our meals were provided by Madame at the pension. Breakfasts were considered to be light but included breads, jellies, tea or coffee and delicious French pastry. A typical dinner or supper may include either fish, beef, chicken or turkey, along with a variety of vegetables. Delicious table wine was served with each meal. A great variety of desserts were served to conclude the meal.

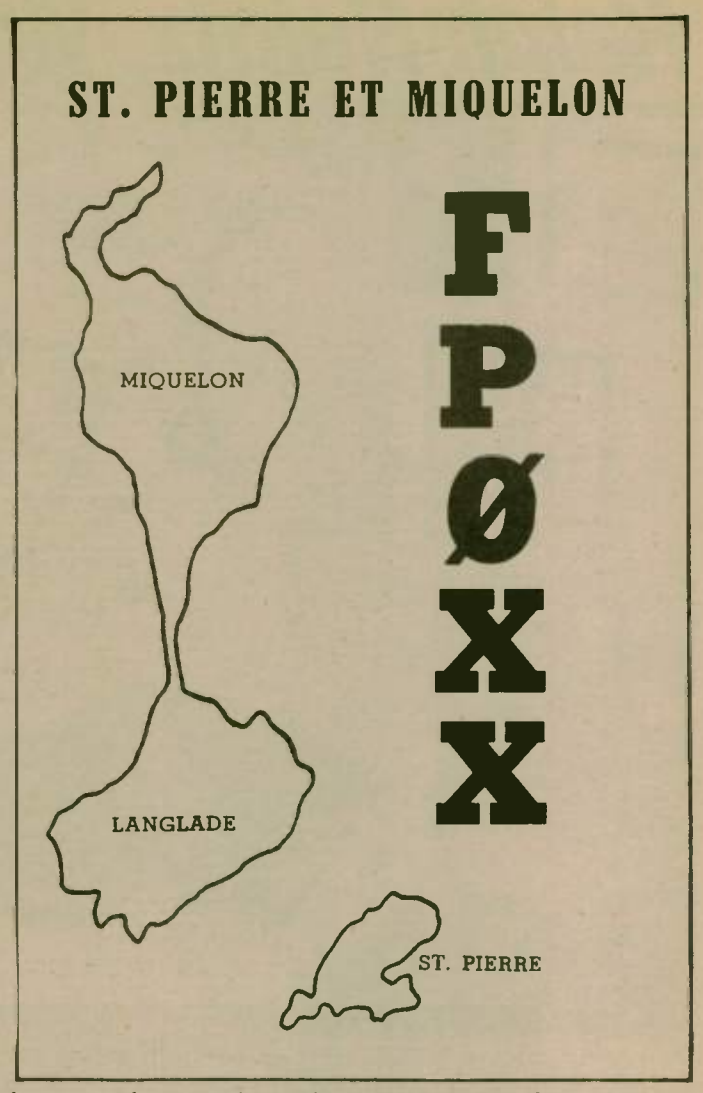
The two girls thoroughly enjoyed themselves, particularly when they were able to swim in the giant olympic-sized indoor pool at St. Pierre. Too, they made friends with many St. Pierre youngsters as the language barrier seemed to create no major difficulties. Both are hopeful of returning again in the not-too-distant future. In fact, Lauree, my 10-year-old, became so enthusiastic about radio during the fantastic FPØXX pile-ups that she returned home immediately and began preparing for her Novice exam. She passed her exam in late August and received her novice license, WN1VUM, on Thursday, 9 October. This is quite an achievement for a 10-year-old girl!

Janet, the girls and I spent the mornings together sight-seeing, taking pictures and visiting friends from earlier trips. St. Pierre has many quaint little gift shops that are simply fascinating to peruse. Hesitantly we rented motor bikes to tour the island. I say "hesitantly" for none of us had ever ridden such a vehicle before. Luck was with us, however, for we all survived with a minimum of scrapes and bruises.

From roughly 1700 GMT onward it was DXpedition time! Over the four day period of operation I made 1163 contacts with stations in all continents, 61 countries and 48 states. The only states missed were Alaska and Montana, both states which I had contacted on previous trips to St. Pierre. In fact, after returning home and collecting QSLs I applied for *Worked All States* as FPØXX and found that I was the first FPØ to ever achieve WAS from St. Pierre! This is clearly stated on my certificate along with an endorsement for 20-meter SSB operation.

The openings into Europe and the West Coast were excellent; the pile-ups literally unbelievable, fantastic! I provided a new country for many people throughout the world. Courtesy seemed to be the rule as I worked the states by districts and the Europeans by call number. Deliberate jamming was a problem on several occasions but patience overcame this in the end. I operated the station of Paul, FP8DH, which included a Collins KWM2-A, 30L-1, and a Hy-Gain 204BA beam. I would again like to thank Paul for his extreme generosity for without

(*please turn to page 27*)



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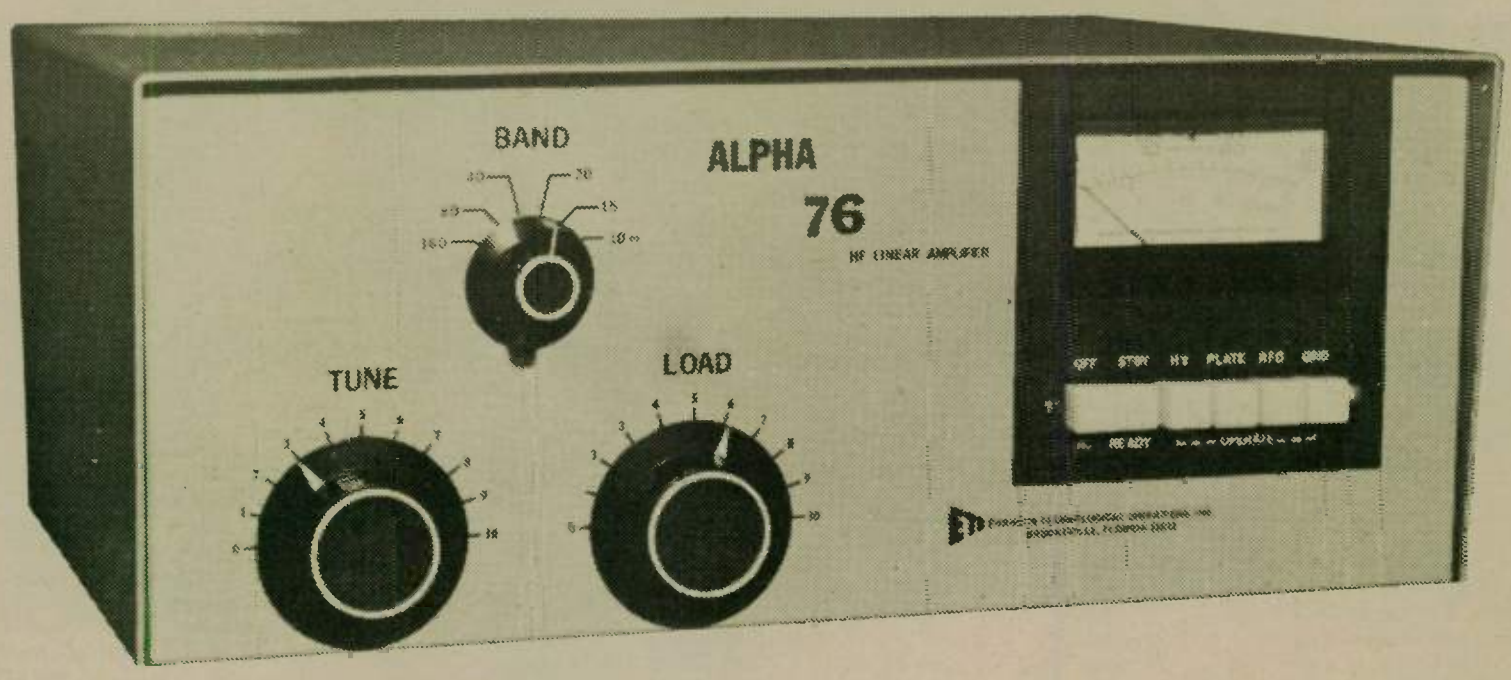

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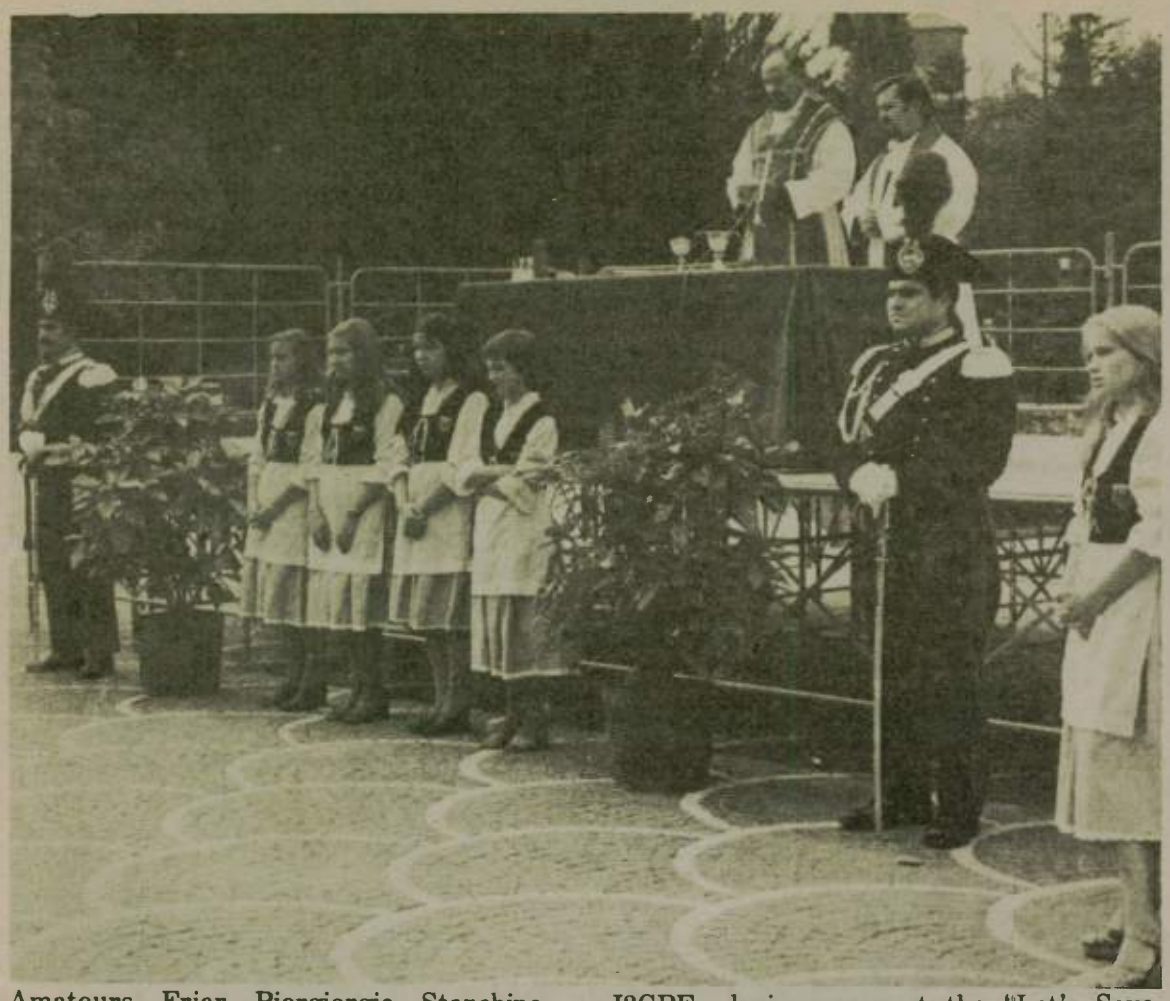


Amateurs Friar Piergiorgio Stanchina, I3LBZ, and Padre Sergio Giovannini, I3GPF, during mass at the "Let's Save Venice" days.

Giorgio Giro, I3BMV, being awarded a conference prize by Valentina Ottorogo Donati, I3ZMT, president of YLIRC (Young Ladies' Italian Radio Club).

Italian AMSAT participates in "Let's Save Venice"

GIORGIO GIRO, I3BMV and JOE KASSER G3ZCZ—

The "International Let's Save Venice Exhibition", which was held in Trento, Italy from 14 to 21 September, was the first practical activity of AMSAT ITALIA. The exhibition, whose president was the Princess Elettra Marconi, was sponsored by such persons as H.M. King Hussein of Jordan (JY1); Senatore Spagnolli, President of the Senate; Conte Premoli; Senatore del Senato; Senatore Orlando, Minister of Posts and Telecommunications.

HF, VHF, RTTY, SSTV and a complete mobile OSCAR station were exhibited in the Piazza Dante in Trento. Dr. Giorgio Giro, I3BMV, gave an address on the subject of "Amateur Radio Tele-communications via satellites" in the main hall of the Sala Dei Congressi of the Region of Trento. The exhibition was visited by thousands of persons who saw the special exhibition station IV3VLS operating through the AMSAT-OSCAR 7 spacecraft.

The Mayors of Trento and Venice commissioned a special message to be sent to all the radio amateur's in the world via the satellite. The following is the text of the prerecorded message that was repetetively transmitted via the AMSAT-OSCAR 7 satellite:

"Let's save Venice. Let's save Venice.Let's save Venice.This is jolly station IV3VLS calling for the "Let's save Venice OSCAR award", available to all world-wide radio amateurs. Italian AMSAT and the Young Ladies Italian Radio Club invite all amateurs to co-operate with the salvation of Venice. Venice must not die."

The special call IV3VLS rotates around many stations and will one day be re-allocated to Trieste and will be back on the air through the OSCAR spacecraft.

AMSAT ITALIA was formed in May 1975 and the following were recently elected to office: President, Dr. Giorgio Giro, I3BMV; Executive Vice President, Proffessor Marciano Righini, I4MY; Technical Vice President, Pietro Morroni, I5-TDJ; Secretary/Treasurer, Fulvio Colombo, I3RSY.

●

Amateurs Friar Piergiorgio Stanchina, I3LBZ,. and Padre Sergio Giovannini, I3GPF, being awarded memory medals from YLIRC president Valentina.

It's a small world

MORT WEISBORD, W6EBB

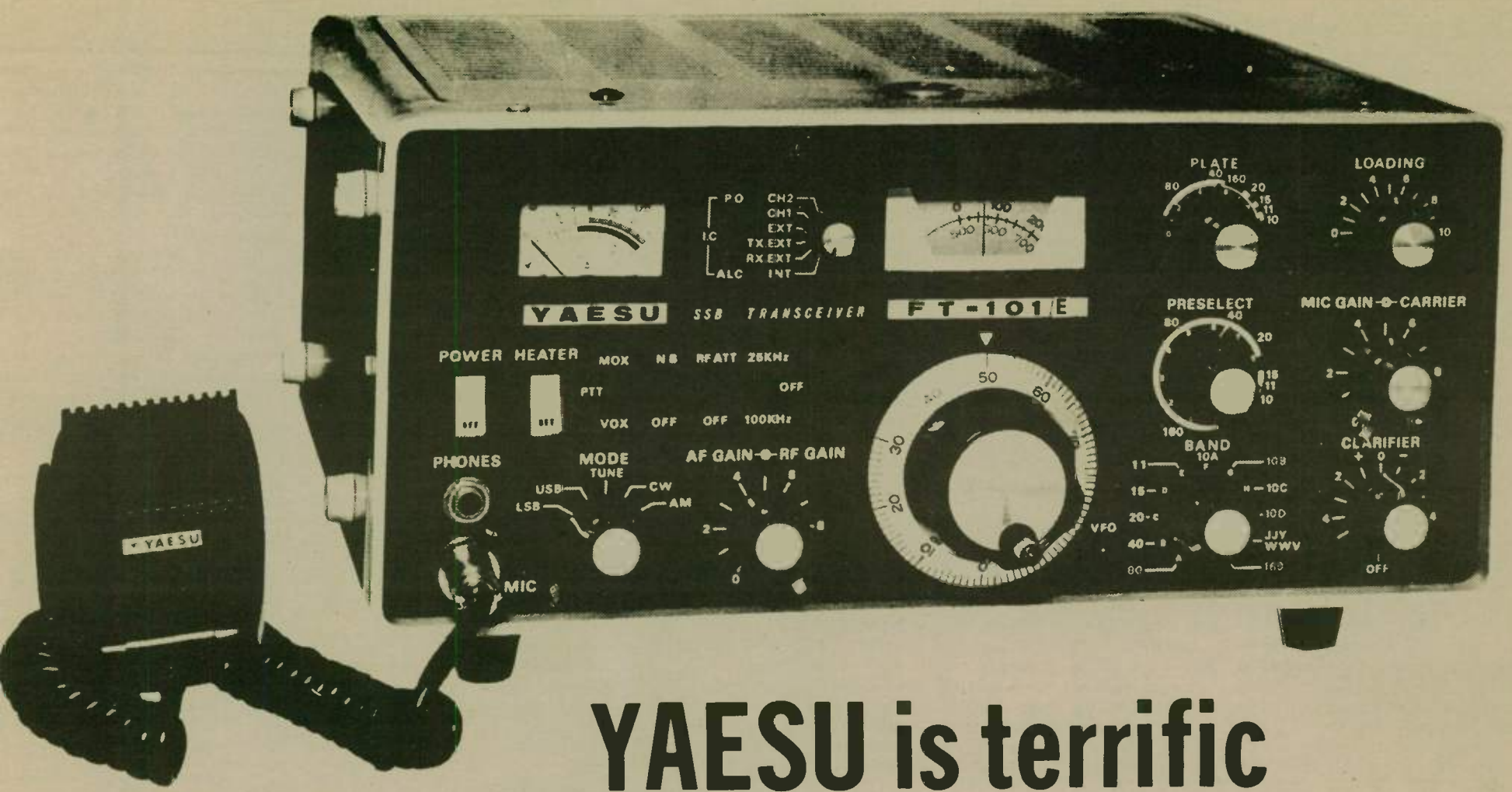
In the months following the end of WW-II life in the Merchant Marine Radio Operators was rife with boredom. One of the simple diversions which intrigued this writer, an ex-W3, was to try to determine from the sound of the fist of operators on other ships if they were amateurs or not.

Now, as you mostly don't know (as how could you), if you were not even born yet, 500 kHz was the calling as well as the International Distress frequency. Anyhow, if we thought we had found an amateur, a shift to 500 kHz was made and a call to slide up or down to a rag-chewing frequency was requested.

Several hours out of New Zealand's South Island, heading for the Panama Canal, the MCW signals of a nearby ship were heard going on with a shore station. Aha! Sounded like a good chance at an amateur. All the "ham" signs just oozed from his sending. Going through the routine to get him on a rag-chew proved we were on the right path again. Sure enough, he was a W9 from Chicago named Jim. A lengthy QSO ensued which lasted fairly long. Those usually did as it pepped up an otherwise dull time. A schedule was set up and repeat QSOs were enjoyed for several days, laced into the regular duties. Then, as the proverbial ships-that-pass-in-the-night stuff, we lost contact and wended our separate ways.

Some time later, after returning to shore life and the old

(*please turn to page 34*)



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Deregulation

(*continued from page 1*)

last few years the Commission has begun to devote more and more time and attention to the safety and special radio services of which the amateur service is one, and a very important one I might add. And I assure you that the Commission is interested in maintaining a viable Amateur Radio Service in the public interest. After all, the public interest is what we are charged to regulate in the FCC. You have a chairman who's very interested in Amateur Radio and he supports deregulation. You also have a new Chief of the Amateur and Citizens Division who believes that the amateur regulations ought to be revised.

And I have been talking about that for some time. As a matter of fact, in 1974 at a speech presented to the Quarter-Century Wireless Association in New York City, I talked about deregulation of the safety and special radio services. I think that it's important for you to understand that the commissioners carefully consider all viewpoints before they approve decisions, and when we get into deregulation we are not talking about abandoning the Amateur Radio Service.

I think we are talking about emphasizing more and more the self-regulatory aspects of Amateur Radio to provide a framework of rules under which you, the amateur, can have the broadest possible latitude to pursue your own specific areas of interest wherever that might be, whether it be in CW, or it be in sideband, or it be in HF, whether it be in VHF or UHF or whatever. I think that's important and I think you, as amateurs, have to look at that carefully because each of you have different areas of interest. If there is one place this is ever evident to the Commission it's in rule-making proceedings when we see your comments, and I'm not saying that's bad — we welcome those comments, that's the mechanism under which our rule-making procedures function — you have to tell us about the rules and regulations; you have to tell us what you need in the way of rules.

Now, I think we've already made some progress in deregulation. We've been backing off from what I feel were relatively onerous rules for repeaters. I think they were adopted to meet a specific situation and we think that's one of the problems with our regulations — we are constantly devising rules to meet specific situations, and that's bad. We think you in the amateur community ought to be able to meet those specific situations. We can provide for, I think, some relaxation in the control operation rules. We have more under study. We have provided for interlinking of repeaters and we think that the time has come to reduce the paper work and the processing time for repeater applications.

Another area of deregulation is in the exam area, and this is an area that's very near and dear to me because I think the exam area is the key to a viable amateur service. We have to maintain interest in at least a portion of the youth of this country in Amateur Radio.

Now how about instant licenses? We are working out the details of such a system where a new prospective amateur can walk into one of our FCC supervised exams, take the examination and, depending upon that particular examiner's workload or whatever, the exam might be graded right then or might be graded the next day. In any event, when it's graded, instead of notifying the new amateur that he's passed and can expect his license one of these days, it will say, "Here's your authorization to get on the air right away. Your license will be coming along, but in the meanwhile you have the authority to operate." We are working that out right now (applause) with our field operating bureau and we are confident we will be announcing the details of that plan within the next month or two.

The procedure that we have in mind is a temporary call. We will have those pre-printed, issued to all of the field offices, and there would merely be a place for the examiner to check it, sign it and to hand it to the new amateur or mail it to him. I think most of you understand that we do essentially that now except you have to wait for your operating authority. In most cases, if you take an FCC exam, you know within a couple of days if you passed it; in some cases, you know right away. To repeat myself, we are going to do something about that.

We think we are long overdue to changes in the code test. I've heard from all over the United States, even from some of my own people, that our code examination is archaic, that we expect amateurs to sit down and copy solid for one minute. We aren't sure that really serves any useful purpose in the amateur community because it's not whether the operator copies solid but whether or not he gets the message. So we are going to be looking carefully at revision s in the code examination which will probably turn the code test around and include in the exam questions which could only be answered by correctly listening to the transmitted code test. (applause) We hear that when you go into a Commission exam room that you are under tension, that you are apprehensive about getting it right, it may be a noisy room, although in some areas we've been doing a lot to improve that. You have to immediately start copying the code and you have to get it solid for one minute.

Another area is instant upgrading. We like it. After all, you want to upgrade your operating privileges so you go in and take a supervised examination, and you wait. And I know you wait because we do keep track of our application processing patterns.

So why shouldn't you do the same thing? Does it offend you to think we might give a Novice call in a phone band? We realize this might cause some enforcement problems but we are looking at it carefully.

I point out to you that if you should be involved in something like that and do get an upgrading authority (the inspector hands you a card and says you can operate with your new privileges right away) and two weeks later you get a citation from our field offices (laughter), bear with us, because we think there's a simple

(*please turn to page 11*)

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(*continued from page 10*)

way to handle it. You merely write the field office and tell them what happened because it's still going to take some time for that reference in the records to be updated. And we are having a tremendous problem with our computer records. I don't think we still have a transmission list of the amateur licenses we granted in the last computer run.

So when you call our offices and we say, "We issued a lot of licenses but we don't know whether you were in it or not," please bear with us because there's no way in the world that we can tell you — that computer is as much of a warped box to us as it is to you on the outside. And it seems to us that in the case of volunteer exams we hope we can work out some kind of a procedure there that will allow for instant operation — now that may be tougher, and there may be legal impediments to that, but we are certainly going to pursue it.

Another thing — exam credit. You take an exam and you pass a portion of it and fail the code, for example. You are going to get a credit for the portion of the exam you passed. Why do I point to this? I think it's important because it allows people to take the exam in two parts. You can take a code test and a theory and regulations test in two separate parts. We don't care which one first. The point is, if you pass you get a credit for it. When you retake it you only take the part that you failed.

We are also concerned about mail exam requests. The potential new amateur has to, first off, make a request for an application form. That takes time. Then you have to request a mail exam. That takes time. Then you have to send the forwarded exam to the Commission's office in Gettysburg and get it graded, and that takes time. And all these things are in series — they add up to not days but to weeks and months. And we don't think it's in the public interest to do that. So we are going to come up with some new procedure for handling these. We've been talking to the League and we are willing to talk to any other interested groups that want to talk about it. We are open to suggestions.

Now at this stage, one thing that I have said many times since we issued our restructuring proposals, those of you who hold Conditional licenses, you are not going to lose those rights. We don't think Conditional license holders are bad — we think they are a valuable part of the amateur community.

Now, as many of you know, we have fallen behind in our application processing at Gettysburg and I know it's difficult to understand. But we have 60 people at Gettysburg working in our processing group. We have about another 24 working in our key stroking operation, and about 70 per cent of our key stroking is being done by contract. We process in that Gettysburg activity, in addition to amateur applications, aviation, marine, restricted permits and citizens band applications. Last month we received around 214,000 citizens band applications, up from about 194,000 the previous month.

So it looks like CB applications are headed for somewhere around a quarter million per month more. And we think we have to plan for something like four times that amount ultimately. What's this done to us? First off, the mail comes in to us in bags and we can't tell whether it's a CB application, a marine application, a restricted permit or what it is. We can't sort our mail and say "CB applications will have to wait their turn because we have a small group there. The other applications will be processed more expeditiously." I'd like to

(*please turn to page 12*)

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Deregulation

(continued from page 11)

...n is opened what's con... in the application. We are making some changes. We've instituted a system of post office box numbers. Like so many old wive's tales you hear about it never rains but what it pours. Troubles lead to more troubles. The Post Office didn't bother to sort them for us. Why? Because they're overloaded. So we are trying a new tack now. Hopefully, it's going to come out as a revised citizens band form and establishing a separate ZIP code for citizens band applications (applause) so that the Post Office will sort them for us at a major sorting post, and that major sorting post in this instance happens to be York Pennsylvania.

But this month we made some, we think, very constructive changes in Gettysburg. Bear in mind we had a processing operation that's been geared to handle about 20,000 CB applications, not quite the number of other applications we've been getting because maritime mobile, the VHF ship has been up and our restricted permit applications are up. But we've been geared to handle somewhere between twenty and thirty thousand applications a month. Now we are getting around 250,000 pieces of mail per month and we can't even open the mail. And it's very difficult, I know, for anyone to imagine what 250,000 pieces of mail amounts to each month. It doesn't sound like very much but it means, with the staff that we have with the kind of mail volume, that each piece of mail gets about 30 seconds of attention from one of our processors.

Now the new system that we've instituted is to turn that operation from a processing system into a production mill. It's a production line, now, a factory. And we have, as we've always had, some special groups to handle the processing of amateur and citizen and marine and aviation. Those will continue. We have a small group for citizens. We have a big group opening the mail; we purchased some new letter-opening equipment. And now we can see that unless we get some great expansion of application load, that the very latest by Dec. 31 we are going to be opening the mail the day after we receive it. Right now we are about ten days behind. We still have a lot of trays of mail — we don't count the mail there by letters, we count it by trays. We pack it in trays the post office provides us and now we are weighing each tray so we can be sure that each of our examiners is producing a reasonable amount of mail each and every day. And that system is designed to get us to ground zero by the end of the year.

So bear with us. We recognize the problem. I would love to get our applications back to you the day after we get them, but there's another problem — we have computer problems. If we process an amateur application today, it's probably going to be three weeks before it's run in the computer.

Just for example, we didn't mail any CB applications from Aug. 22 until Sept. 18. On that date we carried 248,000 of them to our mail room, and three days later we gave them fifty more thousand!

And I know a lot of your amateurs are writing, complaining about the speed and the service — and you should. But boy if you think you're doing it you should see the CB mail we're getting! We're getting them by the hundreds, and they are writing their congressmen, too.

Bear in mind, these are people who have been so widely accused of not using call signs, operating unlicensed. There are a heck of a lot of people who want to get a CB license, who want to operate within the rules, and I am told that on September 15 when we changed our CB rules that there was a marked increase in identification on those bands. So what I'm trying to tell you is, we can't make changes overnight.

I hate to keep giving CB as an example, but a year ago we revised the CB form and went to a much simpler form. Today 40 per cent of our applications are still on the old form and our work is much easier handling the new forms. So you see that when you set a post office box, when you set up zip codes, it takes time for those things to begin to bear fruit. You just can't do it overnight, particularly when you have such a barrage of mail.

When I went to Gettysburg, and I go up there periodically, we have mail stacked all over the place — you can't believe it, down one wall up to your armpits and down another wall up to your armpits, and we have a crew there who (unlike the bureaucratic people that you hear about working in Washington who spend all day on a coffee break come in late and leave early) are dedicated people. They come from the old school; they believe in working and, quite frankly, I don't think that we could have instituted the kind of production line system that we put into effect in Gettysburg, in Washington — it would have been extremely difficult.

Now, we are looking at the need to separate the station and operator licenses in the amateur service. We talked about in the call sign proposal of issuing the Extra class of a license for life, but the more we look at it the more it's beginning to make sense to issue the amateur operator license for life. Now I noticed it's dead wood in the files and I think we can work out procedures for at least keeping it reasonably clean.

Well, I could talk about restructuring 220 MHz, no code, two-letter calls and other pending matters, but I've used up more than the time I should have. I just want to tell you that we did receive, in my opinion, probably the largest number of comments from the amateur fraternity that we've received in any amateur rule making. And I think that the comments were, for the most part, well thought out — they were good comments and I take off my hat to you. I think that's the way you should comment on rule-making procedures because those are your rules. You should have a say in how they are structured and what we do with them. We are going to carefully consider all those comments. That doesn't mean we are going to adopt them all — we can't because some of them are mutually exclusive. If you adopt one you have to cut out some other one. But we are going to give them careful consideration and I think that's the important point you should understand. We are not going to blindfold ourselves and put them all in a hat and stir it up and reach in and pull some out — it will not be done that way.

I know all of you are concerned about 220 but the Commission has promised to take some realistic relook at the 220 MHz problem this year. So let's face it; they are going to have to get back to it. I don't know how it's going to come out.

I think there are problems over implementing that allocation. As you know the Canadians are opposed to it, the Mexicans have problems with it and there may yet be other problems. And all other things being equal, there's no way that we could go ahead with that kind of a reallocation without some agreement with our neighbors, particularly our neighbors to the north.

And I'm convinced that we need some kind of a no code. I think it's important. I don't want to tear down the amateur service but I do think that if you look around you will see the interest youngsters are having in CB. Everybody's got it, everybody. I think some of these youngsters would be potential amateurs and we ought to try to find a way to drag him into the amateur ranks. I think if they are broken in properly, by association with the right kind of people, they ... going to make good amateurs.

But I keep saying, it's ... portant that whatever we ... there, that you, the amat... community, accept them; do... set them apart and say, "W... that's a group that can only t... to each other." You've got to t... them in.

Now we are going ahead w... two-letter calls thing. I kn... that this is of interest to a lot... you and I do have some su... maries here — I won't bother... give them to you — of where ... stand with two-letter calls. Bu... think in the sixth district we o... have about 170-some availa... and we've got 1400 Extra cl... holders in the sixth area. So ... can see the kind of problems. Th... are more people who are proba... going to want two-letter calls t... we can ever possibly supply.

Now I'm hopeful that next w... the Commission's going ... approve repeater crossbandi... That item had been on the agen... We were all ready to go with it a... we had some min... in-staff problems which involv... not the content of what we ... doing but, not the substance, ... the content of what we ... saying. So we pulled it back a... we made some changes and ... confident the Commission ... going to approve it next week.

The last thing I'd like ... belabor you with is Bicentenn... calls. You don't have to ... special authority to use the... When the day comes, n... January, if you follow the for... ula in our public notice, and ... been widely publicized, you j... use that formula and go with it... those prefixes.

In conclusion I'd like ... summarize by saying that ... objective in deregulation will ... to eliminate unneeded, and... emphasize unneeded, rules a... regulations, not to wipe ... regulations, as such, because... think some regulations ... needed to eliminate the unnee... ones and rely upon self-regu... tion.

We will simplify, clarify a... consolidate our remaining ru... and procedures.

Chief Charles Higginboth... had served as Chief of ... Industrial and Public Safe... Rules division prior to assum... his present post. He has be... with the FCC since 1948, havi... previously worked with Unit... Airline and serving in the U... Navy. He is a native of N... Martinsville, West Virginia, ... attended the Americ... University and is a register... professional engineer and ... Fellow in the Radio Club ... America. He has participated ... many areas of the Commissio... responsibilities, includi... broadcasting, marine, priva... land mobile and microwa... services. ●

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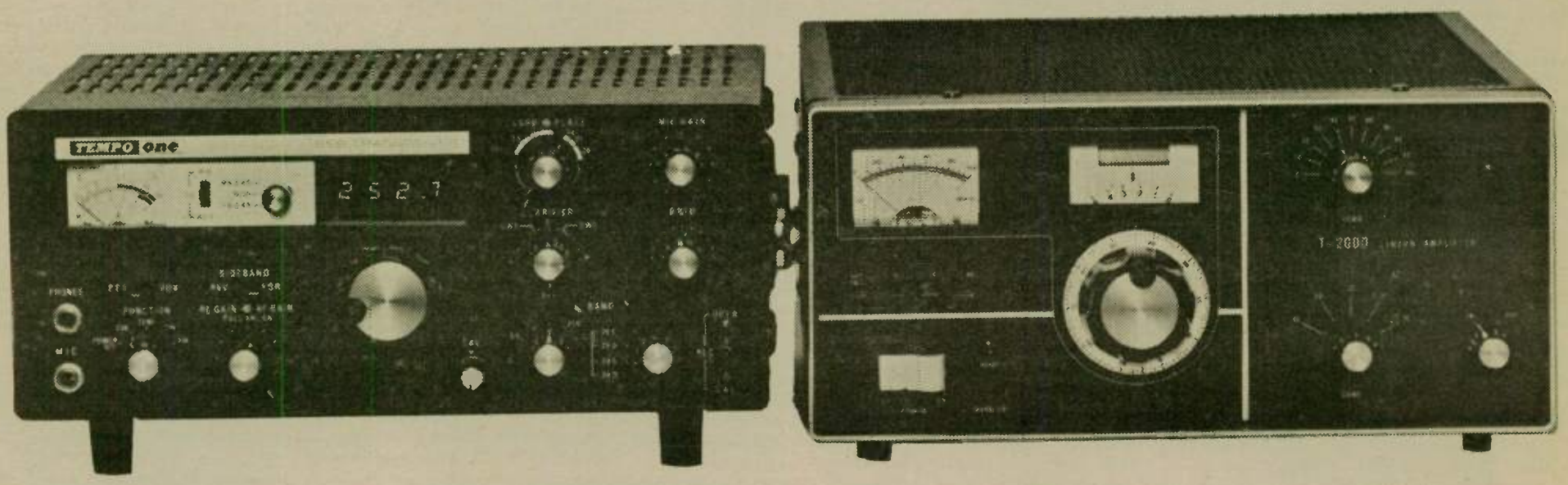

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Ralph Heintz' R & D laboratory and office adjacent to his home on his estate at Los Gatos, CA. [*Photo by Leon Stanley, W7DKB*]

Heintz, W6RH

(*continued from page 5*)

electric power generation in aircraft. The system, employing high-frequency polyphase power, was adopted by the entire industry and was used on many aircraft during World War II.

Bendix Aviation Corporation bought the project from Heintz's company in 1937 for $150,000 — with the proviso that Heintz work for them two years to help further development of his system. Though Heintz agreed, his old dislike of salaried jobs had not left him and when his two-year contract expired he was ripe for a dramatic change.

He soon got together with a man named Bill Jack, whom he had met in New York a few years previously on business, and another adventure began. Bill Jack asked Heintz to start a Western development division of Borg Warner. So Heintz set to work, bought a plant with his own capital — and then a snag developed.

"The only problem," Heintz recounts, "was that Bill Jack neglected to tell Borg Warner's directors or president of his plan, so they promptly fired him." Furious that he had been fired from the company he had founded and made such a success, Bill Jack got in his car and wasn't heard from for weeks.

As Heintz describes it, "Bill went underground. He surfaced in Mexico somewhere, and here I was back in California holding the sack." Heintz finally got the matter straightened out and was reimbursed by Borg Warner for the plant and for the embarrassment. "Then Bill Jack and his brother showed up, just as if nothing had ever happened."

Heintz is not one to get bogged down by anger, taking in stride situations that could flap the most unflappable. He reacts candidly and without the histrionics that can debilitate energies. His eyes show amusement, if some disbelief, as he continues his story: "I told Bill I'd been through hell on this thing. He asked me what I needed. I told him about $25,000. So he turned to his brother and said, 'Write Ralph a check for $25,000.' Then we started in."

During his two years at Bendix, Heintz had learned a great deal about the aircraft industry, including that Bendix had a monopoly on the aircraft engine starter business. He knew how vulnerable Bendix was because he had design ideas for a better and cheaper starter system.

Heintz worked out starter designs and production problems for six weeks in the firm's small Palo Alto building. Then Jack went to Washington, armed with drawings and proposals, and landed an experimental contract with the government.

Forty-six of Jack's best machinists came out from Cleveland to join him — and labor trouble broke out. Though his machinists were union people they weren't local, and the San Francisco union didn't like it. Not being individuals to succumb to pressure tactics, Bill and Ralph decided to move the company to Cleveland, Bill Jack's home territory. When the union threatened to prevent their departure Jack & Heintz got a full police escort out of Palo Alto.

"Mind you, we were stony broke. I had my life insurance in hock, the house was in hock, all my securities were in hock. We arrived in Cleveland with empty pockets and we couldn't borrow any money. They all thought we were a fly-by-night organization. But we managed to finish our first contract" — for which they received a check for $4,200,000. That was just the beginning.

Through design innovation and efficiency in manufacturing Jack and Heintz attained unheard of productivity and dramatically lowered the manufacturing costs of virtually everything they made. Bendix was charging around $1,500 for an aircraft starter when Jack and Heintz became their sole competitor. Jack and Heintz got the price down to under $500.

As a result they made virtually all the aircraft starters during World War II.

Heintz returned to California, bought the 114-acre ranch in Los Gatos where he and his wife still live, built a laboratory-machine shop adjoining his home and continued doing what he loved best — inventing.

An ardent train enthusiast, Heintz built a miniature train, a steam engine with five passenger cars. He built it 15 years ago; it still runs perfectly. Also interested in astronomy, Heintz built an observatory and wanted the dome to turn very smoothly with the rotation of the earth. His solution? He built a channel and filled it with golf balls. The dome rides on the golf balls — typical Heintz ingenuity.

He also did consulting work for major electronics firms on the Peninsula. Bill Hewlett, co-founder of Hewlett-Packard, explains how they called in Ralph for a problem job. He devised the solution and designed the machines to do the job, too. "He's no tinkerer — he knows what he wants to do, he knows the theory behind it and he has the ability to build it himself," says Hewlett. Not only that, Hewlett adds, he can design the tools to do the job so that it can be mass-produced: "It's easy to design one thing, but to devise the tools so that anyone can make it — that is difficult." And that is Heintz's strong point.

One of Heintz's most extensive projects developed from a visit to Los Angeles in the early 1950s. Heintz, an asthmatic with emphysema, had a negative reaction to his first encounter with smog. When he returned home he set to work. For the next five years he sought to produce an engine that was both clean and efficient.

Always operating within realistic limits — knowing the art of the possible and the constraints of the practical — Heintz began devising an approach that would take advantage of Detroit's existing knowledge and experience with the internal combustion engine, and their $2 billion capital investment in tooling for it.

By modifying a normal internal combustion engine to enable more complete combustion of fuel, Heintz created a solution both possible and practical for Detroit to adopt. His Straticharge engine's advantages include both great gas efficiency and clean combustion — a no-smog engine.

He began his trial and error process with an old Chrysler engine, a small carburetor from a lawn mower and a larger carburetor. This two-carburetor approach is what Honda now uses. Heintz, however, soon came across the limitations of using carburetors. "You can't get as much fuel into the pre-combustion chamber with a carburetor, nor can the engine burn as wide a variety of fuels or be so readily supercharged," Heintz explains. Also, you can't cut off the fuel supply when declerating — in essence, the car is pulling the engine instead of the engine pulling the car.

One day when both carburetors were off and only fresh air was moving through the engine, Heintz took an oil can, filled it with fuel and squirted it into the engine's pre-combustion chamber. The engine performed well. To make things more permanent he took a gallon can, suspended it above the engine, attached a small pipe leading to the pre-combustion chamber and let the fuel dribble in continuously. Again, the engine performed flawlessly. In place of the gallon can Heintz then substituted a belt-driven gas pump. He returned the small carburetor to his lawn mower and from that point on Heintz forgot about using carburetors.

Having difficulty in drilling small holes 6/1000's of an inch in diameter (necessary for the fuel to be aspirated into the pre-cup) Heintz hit upon the idea of using watch jewels: "I couldn't drill a hole as cheaply as I could buy the jewels," Heintz explains. He crimped the inexpensive, sapphire watch jewels into the small brass nozzles — making the minute holes needed — another novel Heintz solution.

Heintz faced years of frustration in trying to explain

(*please turn to page 15*)

Fifty years - but it was worth it

EILA D. RUSSELL, WA8EBS

Fifty years! That's really a long time to wait for an amateur license but that's what it took.

I probably wasn't like the girl in this story, but maybe I really was — that's for you to judge: A girl was sitting with her boy friend parked in a car in a beautiful garden cemetery. A burly guard approached them as they were deeply engrossed in each other and shouted, "Hey there, start up that motor and get out of here. They'll shut those gates and you'll be locked in overnight. Didn't you see the sign on that gate, 'Closed at 5:00 p.m.'? "

The girl piped up, "But we didn't come in that gate. We came in over here and the sign on that gate says 'Get a lot while you're young'. "

Anyway, it took me fifty years to become an amateur radio operator and it's a wonder I ever did, and astonishing that I even married one considering my introduction to the art. Oh, I did learn the code to earn a Girl Scout merit badge but in my estimation that had nothing whatsoever to do with Amateur Radio, or wireless as it was generally called then.

My very best boy friend, Jim, was a wireless operator, but that wasn't the reason I thought he was special. I recognized ".. .-.. --- ...- . -.-- --- .." but I hadn't any particular use for the other letters in the alphabet.

Well, when Jim came to call I never wanted to appear anxious. My mother always said, "Don't be a ripe peach, ready to fall in his mouth. Be the most luscious, beautiful, desirable and tantalizing one on the top of the tree that he has to expend real effort to reach." So, accordingly, I would wait upstairs until I heard the call, "Eila, Jim is here," and I would answer, "I'm almost ready; I'll be down in just a minute." So Jim occupied the interval getting acquainted with my father and little brother.

Since radio was Jim's hobby, and a new, scientific interest, the conversation took that trend and Jim explained to my father the art of making a coil on an oatmeal box with a slide tuner and a chunk of galena with a cat's whisker. My Dad said, "Galena, what's galena?" Jim explained that it was lead sulfide and it was hard to get a good piece, but maybe he could find one to start my young brother. I appeared about then and we went out for the evening.

When we came home and stood in the shadows on the front porch, cozily saying a few confidential words, our front door opened suddenly and my father, holding something with a pair of tongs, heaved it mightily with a few choice words to accompany it. It hurtled past us in the darkness. Startled, we watched it fly by and clatter way down the walk to the sidewalk.

Jim said, "That looked like a tin can," and he went to investigate. Indeed it was and it was red hot and smelled like sulfur. Jim said, "Hmmm, hot lead and sulfur fumes. I guess I'd better not come in tonight." And it surely was a wise decision. My father had tried to make galena by melting lead and sulfur and it took some time to air out the house and cool off the head of the family. It was a touchy subject for quite a while, but love conquers all. Jim didn't get tossed out like the hot, malodorous tin can.

My next memory of Amateur Radio was visiting Jim out at Camp Roosevelt at Perry-on-the-Lake. He was swimming instructor and radio operator for the camp every summer for several years. I loved those long trips on the suburban trolley car to Painesville, meeting Jim who was waiting for me in the camp truck and spending the romantic weekends in the beautiful out-of-doors on the lake. The camp director and his wife had a guest room for me in their big mansion house, which was an old inn and consisted of a large, camp council room with fireplace and trophies, the camp dining room, the office and the infirmary. Upstairs were the director's family quarters and on the third floor, the ham shack.

When we first climbed the stairs to the attic it was dark and had a musty smell. I thought of bats and held Jim's hand. He would walk across to the shack and open a board drop window, which was practically the entire side of the radio shack, and lifted right up from the floor and hooked onto the rafters. We would sit there looking out over the fields, woods and lake and just drink in the beauty as Jim got the day's weather report for the camp. It was wonderful to me but radio wasn't really the reason. Jim built all of his gear and got Cleveland through the air, but to me it just meant that HE was wonderful.

Then came his success in being heard by Paul Godley in Scotland — 500 miles inland in U.S.A. and then across the Atlantic ocean — on the very first DX ARRL trans-Atlantic test. This feat was with Jim's own homebrew gear also and was a wonderful achievement in anyone's book.

For the first seven months of our marriage in 1922-23 we lived in an apartment with an in-a-door bed which turned the living room into a bedroom at night. There was a kitchenette and dinette at one end, but the dinette became the radio shack so a gateleg table in the living room made that serve in another capacity also — living room, bedroom and dining room. But the radio shack was essential.

In those days the landlords didn't object to Amateur Radio in their apartment houses. We were on the third floor and to get an antenna on the roof meant climbing an iron ladder up the apartment building wall, which started up a long reach from the railing of the back outdoor iron steps already three floors up, with an open well to the ground below. It still makes me dizzy to think about it. Climbing up was precarious but transporting wire and other necessities and tools made a hazardous project out of just reaching the roof. I managed it once or twice and I can assure you I got more of a thrill out of that than I ever experienced from any roller coaster.

For the first few years Jim worked all day, went to law school and studied at night, but even with this busy schedule he found time to build radio sets and sell them to swell the exchequer. For a while after the superheterodyne sets came on the market he was also in demand to come over and tune the sets for people who hadn't the least idea what it was all about but who had money enough to buy the best.

Through all the years of my husband's activity in radio it never occurred to me that it was a field for my endeavors until 1962, fifty years after my OM had started. At this time he joined a radio club whose wives accompanied the members at monthly meetings. The first meeting that I attended, two of the wives, who were also amateurs, joined the business session. The others, called the non-conformists, were relegated to the kitchen where, chattering like magpies, they cut out decorations and pasted trimmings on tray doilies for a nursing home (which wasn't exactly my dish), followed by laying out a smorgasbord for the crowd.

At this affair schematics, code information and bulletins were spread out on a table for the operators to take home for study if they wished. A neighbor operator who had come along in our car picked up material for a son he hoped to inspire. On the way home my OM and this neighbor stopped at several QTHs with antennas looking for an amateur friend who had moved to a small town which we passed through. As I sat cooling my heels while they appreciated each shack I looked about for something to pass the time. My neighbor's literature answered the purpose and as I glanced over it I thought, "I used to know the code about 50 years ago when I was a Girl Scout. I wonder how much I remember?" I guess I still knew "I love you, Jim" but some of the other letters needed refreshing.

With nothing more pressing to do I sat and studied that code. An idea was percolating through my cranium. If I'm going to these radio meetings I'm going for radio, not cutting paper doilies. When I got home that night I checked through Jim's electronics library but couldn't find any trace of the code in print. So I wrote it out myself and thought I'd memorize it, but all of a sudden I thought, "Gee, if I haven't remembered it right now and learn it wrong, I'll be in a fix." So I showed my page to Jim and asked if it was correct. My OM said, "What? Don't tell me! Are you interested in radio? After all these years? Boy, oh boy!.....Yes, this is O.K. What are you planning to do?" I answered, "I thought if I'm going to radio meetings I might as well join 'em."

He got on the net that night and announced my intention and the die was cast. I had to become an amateur so I studied and practiced code and got on the air. Since I had learned a little code a long time ago, and had studied Physics in school, I got my Novice license in three weeks and my Tech ticket in 5 months. But 13 words per minute in code really took some doing. I worked hard at it for two years. A bet by the OM of a KWM-2 if I made it really clinched the deal and I passed the General. I cost him a wad this time, all right, but he was as tickled as I, and after the inspiration of the Denver YLRL convention I got my Advanced.

In September 1962 I attended an ARRL convention here in Cleveland where I joined the *Chix-on-Six* and the *Buckeye Belles*. They elected me secretary of the Cleveland group of *Buckeye Belles* at the very first meeting, probably because no one else wanted the job. The next year Shirley Rex, K8MZT, and I discovered each other. Shirley was the originator of both the *Chix-on-Six* and the *Buckeye Belles* and had become involved in YLRL, attending the convention observing their 21st year, which was sponsored. in Massachusetts by the WRONES. She was elected treasurer of YLRL, which at that time was a terrific responsibility for it was both Receiving and Disbursing Treasurers jobs combined. Shirley was organizing all of the *Buckeye Belles* throughout the state as hostesses for YLRL's Silver Anniversary celebration in Columbus and visited the Cleveland group on one of the worst cold, snowy days in February at K8ONA, Eunice Bernon's Club 21. I walked over after closing our office that evening and joined Eunice and Shirley for a steak dinner, getting acquainted and planning between bites. The *Buckeye Belles* drove in from Painesville, Amherst, Lorain, Akron and Seville and all points between, regardless of the weather, and after Shirley outlined all she hoped we would do for the great 25th YLRL convention our hostess really fed all the girls royally with ham and cheese sandwiches, a party tray, coffee galore and a giant *Buckeye Bell* chocolate cake. She wanted to be sure they'd not be hungry even if they became snowbound and stranded for hours on the return trip. I guess everyone made it safely, however, and in those days everybody had 6-meter radio communication in their cars if they were amateurs.

That was my introduction to YLRL eleven years ago. It really took for I've attended all the conventions since and some Mid West ones to boot. I have more than ten years on my YLRL continuous membership certificate and am still adding to it.

Since our retirement I have been checking in the YLRL nets and I am just finding out how much fun I had been missing. The girls are always friendly and really wonderful, ready and willing to help in any situation, and no matter where a member goes, even overseas, she will find a welcome from a friendly YLRL member. I have been taking the YLRL convention kit around to hamfests and conventions and have been persuading YLs to sign an application and experience the joy of belonging to YLRL. Those who try it love it. I know. I have been fifty years reaching this point and it's worth it.

●

Heintz (*continued from page 14*) the merits of his engine to an industry not yet interested in a solution to the smog problem.

Meanwhile, Ralph Heintz, at the age of 81, works in his laboratory-machine shop five hours a day or more, devising the tooling adaptations for the machines to mass-produce his Straticharge engine. He remains a master of the art of the possible.

"I'll tell you the characteristic of a great engineer," says Bill Hewlett. "He finds a simple solution to a difficult problem. And Heintz is just damn good at that."

—*The Stanford Magazine*

An opportunity and a challenge

(*continued from page 1*)

tion for a World Administrative Radio Conference? In each country the administrations gather all their experts together in the various services and they debate amongst themselves as to what they need to satisfy their services in their country. Specifically, relating to the United States, what is happening is that all the users in this country are now engaged in a series of explorations and studies to decide what each service needs for its users.

Now the situation is slightly complicated in the United States because, unlike most other countries in which the entire administration of the spectrum is done by a single agency, we have two groups. We have the Office of Telecommunications Policy (OTP) and we have the Federal Communications Commission. The difference is that in this country the federal users of the spectrum come under the banner of the OTP and the non-federal, which includes municipal governments, amateur service, taxicabs, radio astronomers and all that sort of thing come under the banner of the FCC. Right now in the United States there is an Ad Hoc Committee number 144 of the OTP which is studying the needs of all the federal users of the spectrum. They will decide what frequencies are needed by the fixed service users on the federal side, the fixed service being point to point, principally in this country military.

Eventually, hopefully sometime in 1976, no later than early 1977, the OTP will have determined what it believes this country should support in the way of allocations for all services for 1979.

At the same time the FCC is doing the same thing for civilian users in this country and by sometime in 1976, probably late '76, perhaps early 1977, the FCC will have decided what the spectrum allocation needs are for all of the users under its responsibility.

Then the OTP and the FCC get together and they work out their two lists and make them coincide so that there will be one position for the United States. That single position will then be delivered to the State Department. The State Department will then be responsible not only for promulgating it to other countries to try to get their agreement, prior to the conference, but also negotiating for that position or whatever the final position is at the conference.

We, of course, are most interested in what is happening at the moment with the FCC. There's a so-called Federal Advisory Committee Acts which governs what happens in these preparatory meetings but there are now formed under the leadership of the FCC a whole series of working groups studying all the radio services in this country. There is one for broadcasting, there is one for land-mobile, the fixed service common carrier, all through the list of users of the spectrum including of course the amateur service. The working group for the amateur service had their first meeting last May. It had a second meeting in September at the National Convention in Reston. It will hold another meeting on December 3rd in Washington.

This amateur working group has eight committees, or subworking groups, and each one of these committees is charged with developing a position for the amateur service for a particular area. Four of the committees are dealing with allocations, others deal with the justification of the amateur service, its basis and purpose, liaison with other services, etc. At the same time that these meetings are going on for the amateur service similar meetings are taking place for all of these other services, the other working groups.

Now it's essential that we know what is happening throughout these various areas. And I want you to know that the League, to the best of my knowledge, has participated in every meeting of every other group that is taking place. We know exactly what the trends are in requests and probable requests of all these other services. To the best of my knowledge also no other service is similarly participating in the meetings of all other groups. We're the only one that's doing this.

Certainly by mid-1976 we in the amateur service will have established what we want the U.S. Government to ask for, and this position, as we call it, will have been then presented to the Commission, the overall committee that is consolidating the requests of all the services, and there will then be some negotiating and haggling to resolve the conflicts between the various services. I think it's obvious that everyone may well ask for more than he can really have. I think that each service will probably justify in its own mind and in its own position a greater slice of the spectrum than can be accomplished when you have to add all of these desires together. And so there will be a so-called steering commitee of the FCC which is going to resolve all of these conflicts that undoubtedly will arise.

About six months ago a fellow named Merle Glunt retired from the Commission; he was an assistant chief engineer. He was the Commission's expert on conference preparation and conference implementation. The day he retired I hired him. He has been working for us and has been participating in all of these meetings. He has a special arrangement with the Commission whereby he is participating on the Steering Committee and is going to help resolve the many conflicts that undoubtedly will take place.

At the same time that this preparation, this developing of a position, is going on in the United States the same thing is happening in other countries. And what we have to make sure is that what happens in the other countries parallels as much as possible what happens in this country. And we are attempting to do this through the mechanics of the IARU (The International Amateur Radio Union). We have inaugurated a monthly newsletter to all of the member societies of the IARU, a newsletter that will swap hints, tips and progress in other countries so that every member of the Union will know what is happening in the other countries.

There have already been two meetings of other regional organizations of the IARU. One was in Hong Kong in March of this year and it recommended to its Region 3 members (encompassing essentially Asia) that they adopt the same position that we have pretty much adopted in this country. It is recommending to the countries, to its societies in that area, that they ask their government for the same things that we are asking for in this country. And so we have unity there.

Later this year, in April, there was a meeting in Warsaw, Poland between the Region members of the IARU (Europe and Africa). The Region members adopted essentially the same position with some minor changes in the 80 and 40 meter area. And so what we have now, except for Region 2 which is North and South America and that group hasn't met yet, is all the amateur societies throughout the world going to their governments to try to obtain the same thing that we hope to obtain here in the States. We will have a common goal and we are going to keep each other informed about this so we know the progress in the various countries.

There are other things we have to do. One is that we allot travel by various members of IARU staff and officers to bolster up the efforts of the societies overseas to encourage them to push for their governments to adopt this same position that we are adopting here in the States. The other thing is that I have instituted a thing I call an IARU fellowship or a WARC fellowship. I have offered to pay the expenses of representatives from other amateur societies here at League headquarters for a week or two weeks at a time so that they can become more familiar with how we do this work, what is going on, to give them more expertise, hopefully in going back and doing the same sort of job in their countries.

Now, we get down to the question of how are we going to be successful, and what can you as individual members do. No one can tell at this time whether or not we will be successful. I think we know what we have to do. I think we have most of the arguments that we need to pursue this course. In 1980 when it's all over we may decide that something else also might have been of value, but at the present time I think we have a pretty clear idea of what we have to do and how to get there. But most of what I described briefly this morning are things that are in the area of responsibility of the League staff and of other groups overseas.

The question is what can you do as individual amateurs. Well, one thing you can do, and you have been doing for 60 years or so, is render public service. The most important single task that we have in all of this WARC preparation is to convince our own government that we are a worthwhile service and that we deserve their support at the WARC meetings in Geneva. That's the most important thing that we can do. So we have to influence to the greatest extent possible the people of the United States who are going to be responsible for making these decisions.

There are many ways to do this but one thing that you can accomplish is to get more favorable publicity for the Amateur Radio Service. The editorial in the November *QST* treats this. It's important that every time you do anything of any public service you record it somehow, that it becomes publicized so that everyone at whatever level he may be in private life or federal life recognizes that the amateur service is a valuable and worthwhile service.

Another thing that you can do is we have to clean up some of the miserable practices that occur on the amateur bands. Even though I think each one of us thinks that when he works somebody else it's sort of a private communication line, it isn't. There are people listening to us all the time and some of the shenanigans that

(*please turn to page 34*)

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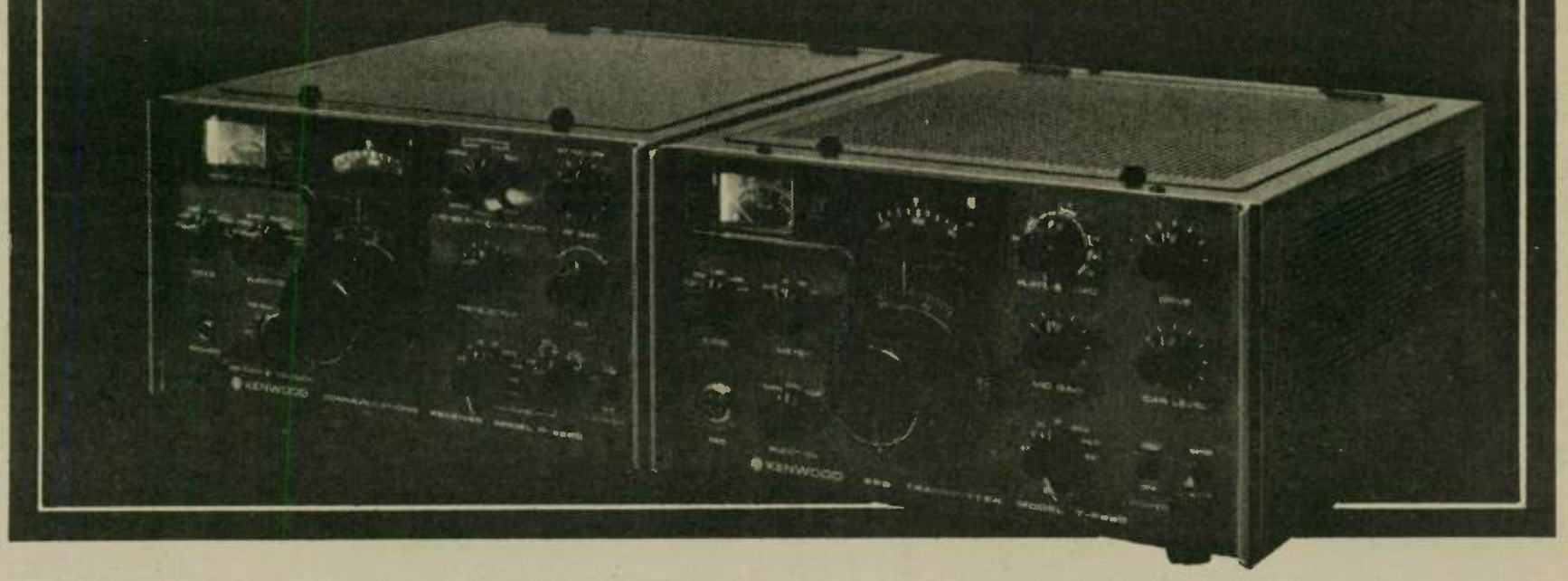

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Important public service role is seen for Amateur Radio

DONNA MARIE BAVER

"I see Amateur Radio as having a tremendous potential for public service — highway assistance, directions for travelers, accident reports, emergencies, disasters ...and more..." stated Blair Bates, WA3BSV, vice president and public relations officer of the Anthracite Repeater Amateur Radio Association.

"I think our repeater gives us the constant potential to perform all of these things for the public. With a small, low-powered piece of equipment in a car or on your belt (a hand-held), an amateur can communicate with almost 100 per cent reliability anywhere throughout the area," Bates said.

The "almost 100 per cent reliability" is the factor that makes the two-meter repeater type mode of amateur communication so invaluable in incidents such as Bates mentioned. Dr. Richard Schatz, WA3GWY, area chiropractor and amateur operator, noted that, although he preferred lower frequency amateur bands, repeater communication was "sure communication." The Rev. Ivon Harris, W3FCU, pastor of Ss. Peter and Paul's Lutheran Church, noted that he joined the repeater association because he could see in the device "a great potential for blanketing a wide area with reliable communication."

The first repeaters built for hobby usage were erected on the West Coast in the early 1950's. The apparatus was assembled from surplus and obsolete Army equipment which had been phased out of existence when the Army changed frequencies. Repeaters, prior to these first pioneer devices, had been used only for commercial purposes.

Locally the repeater organization had its roots with three men who were deeply involved with amateur radio and possessed the ability to electronically rework surplus radio equipment to transmit on the two-meter band.

One of these men was Thomas Krohn, K3IJX, now president of the organization. He is employed as a communications field engineer for Syntonic Technology, NE Extension of the Pa. Tpk., a position which gave him the necessary professional technological background needed by the association to aid in the building of the unit. He feels that a repeater "provides a common interest for many people and leads rather quickly to a club."

Rev. Harris was also instrumental in developing the organization and its equipment. Interested in amateur radio since his high school years, due to his "interest in communicating with other people," he joined the repeater association at its creation, adding his store of electronic and technological knowledge to the organization.

Frank Aiello, K3TRM, trustee of the organization, a substation engineer for the PP&L Co., was the third man responsible for the development of the Anthracite Repeater Association. He noted that the unit now used by the organization was "scrounged from parts here and there. We just sort of put it together from what we had." Feeling that the Hazleton area had far too little activity in the field of Amateur Radio, he was pleased to develop an association that can bring more interested persons into the hobby.

Due to the efforts of these men the association was able to put its first repeater-transmitted signal on the air on 25 May, 1974.

The repeater presently used is situated with the receiver at Krohn's home, 638 N. Laurel St., and the transmitter at Aiello's home at 623 Grant St. Ideally the transmitter and receiver should be located together, a move that the association hopes to make within the next few months. Bates mentioned a site near Freeland that the organization is considering, as the elevation of the town would be excellent for radio signals.

Located at its present site, th repeater station has a range encompassing both interstate highways and the Pennsylvania Turnpike for at least a 25-mile radius. During an informal "grand tour" of the repeater's communicative abilities presented to this reporter by Bates and Ron Mackay, WA3GNG, government affairs representative for the Greater Hazleton Area Chamber of Commerce, the two spoke through repeater stations located in Frackville, Pine Grove, Whitehall, State College, Pottsville, Philadelphia and Cherry Hill, NJ.

Rev. Harris noted that repeater communication is invaluable for interstate highway emergencies and is also useful on secondary roads which are not heavily traveled. A stranded operator, who might otherwise be forced to wait hours for help, can contact someone over a repeater in the area and receive help almost immediately. The ability of the repeater transcends even the ability of the Citizens Band radio in such an instance as CB's are more limited in range and are subject to more interference on the frequencies. Furthermore, each repeater station is constantly monitored by a control operator which gives the station 24-hour communication ability.

In addition to emergency usage of the repeater, the device is especially useful for public service. The organization is capable of coordinating communication for a number of community projects such as the CROP Walk for the Hungry which the organization handled a few months ago.

While Bates marched with the walkers, hand-held in hand, Rev. Harris and Aiello monitored units in Hazleton and Carl Zimmerman, W3EEK, a PP&L field engineer, monitored a Hometown station, maintaining a constant watch over the progress of the marchers. A minor problem concerning transportation was encountered and solved through their efforts. A problem of any greater magnitude could also have been averted through their vigilance.

Again in the area of service, though more service to radio than community, members of the organization have recently been offering a 10-week course for those interested in obtaining an amateur license. The class, which meets at 8 p.m. each Tuesday at City Hall, concentrates on Morse Code and basic electronic and communications theory. It assumes no prior experience in either field.

The course being offered now is nearing its end. However, if enough interest is displayed, the members will run another series of classes according to Bates.

The course, Bates said, encompasses enough subject matter for an individual to pass the Novice examination with very little outside study.

Of course, in addition to the many forms of service the association can offer, repeater communication is quite a lot of fun, according to Krohn. "I spend several hours a day alone in my car while working and I have someone to talk with," he noted. "Besides," Bates added, "just having the equipment in the car and someone to talk with while I'm traveling by myself is a lot of fun."

Locally, Harry Costas, WA3DQO, owner of the Coney Island Restaurant; Joe Gorski, K30MF, a criminologist for the Pennsylvania State Police; Emil Timko, W3OHX, president of the Damar Electric Co.; Ken Gould, WA3TMV, association treasurer, plant manager of the General Machine Co., Berwick, and Dr. Richard Schatz, WA3GWY, area chiropractor, and many, many others have become involved with Amateur Radio. These are merely a fraction of the over 100 operators in the Hazleton area.

Reasons for becoming a radio amateur are as varied as the operators on the air. Ernest Julius, WN3WEL, a University of Pennsylvania pre-med student, said he started in the hobby, in addition to a common interest with a friend, because of a television show he had seen. On the show characters were playing chess over Amateur Radio. Being interested in chess, this naturally further sparked his interest in Amateur Radio. Andy Verba, K3RHI, secretary of the club, a retired Army master sergeant and auto service technician, noted that his interest stemmed from his desire to help other people. Frank Aiello said, "It just happened. Besides, I was fascinated by the thought of talking around the world."

Most Amateurs are interested in other people, and therefore have a desire to communicate with them—wherever they are.

Amateur radio makes this possible to many. The Anthracite Repeater Association makes this further possible to area radio enthusiasts through its major purposes in existence:to further interest in Amateur Radio and to contribute its assistance to the community during any needed situation. The organization has thus far fulfilled all of the purposes stated in its constitution and will continue to further its intentions in the future. "We have a potential for community and emergency service," noted Tom Krohn, president. The organization intends to put that potential to its fullest use.

Persons interested in joining the organization or receiving an amateur license should contact any of the organization officers for more information.

—Excerpted from the Standard-Speaker, Hazelton, PA

Real pals

(continued from page 45)

Fred Barnes, WA8PCT
J.R. Burkhart, WØBA
Ed Gribi, YBØAAP
Thomas Carten, WA1DJC
Diego Garces, WA6IPX
Dr. Edward Abernethy, WA5OWO
Marvin A. Mahre, W/MGI
Philip Lawrence, W1RFW
Porter Evans, W7YP
Craig & Linda Rutledge, WB6KTR & WN6ECS
Armand Tanny, WA6NMY
Willard Tiffany, W6GNX
Guy Ottinger, K6CN
B.K. Galbreath, WB6POQ
Jerry W. Sharp, WB4AOT
LERC Amateur Radio Club, W6LS
Beth Taylor, W7NJS
Ken Berry, WN6BBV
Rev. Leo Brand, WØJCO
Claude James, K6IAQ
Richard A. Dauls, WA4RAD
Ernest Berlucchi, W2G .B
E.A. Samson, WØRZS
James V. Smith, WB9NIB
Darryl B. Larsen, WA6WNE

Why not?

Phil Sager, WB4FDT

The assistant Emergency Coordinator of Richmond, VA, James Stamper, WA4HUB, has come up with an interesting idea which I think deserves some thought.

WA4HUB's idea is to abolish the Novice class segments and let the Novices operate anywhere in the General class CW segments.

After much thought I must admit that I fully agree with his idea. Certainly segregating Novices into their own sub-bands retards their development into the mainstream of Amateur Radio. It is infinitely more difficult for Novices to work DX, contests, traffic nets, etc. Also, since very few Generals regularly operate in the Novice bands, Novices mostly work other Novices and thus are mostly exposed to poor operating techniques and practices. Novices are also subject to higher QRM levels, and I further note that the Novice sub-bands coincide with the European and Canadian phone bands.

At a time when the amateur service is declining in numbers, and an effort is being made to increase our numbers via a proposed codeless license, I do not understand why we wish to discourage Novice operation by segregating them in their own sub-bands. Johnny Johnston, K3BNS, Chief, Amateur Division of the FCC, once told me that only about 20%of the Novices ever upgrade to the General class license. When viewed in the light of the above paragraph, I'm surprised that large a percentage upgrades!

To permit Novices to operate in the General class CW bands would allow them to pursue many aspects of the hobby which are now relatively closed to them on their segregated bands. Since the Novices would mostly be working Generals instead of other Novices, I believe their code speed would increase faster and certainly their operating techniques and practices would upgrade much faster.

Furthermore, the abolishment of the Novice sub-bands would free these frequencies for general amateur use. On 40 meters this is especially important since General class CW operators, assuming they do not wish to operate in the Novice sub-band, can now only operate between 7025-7100. To close the 40 meter Novice sub-band would open 50 additional kHZ for general amateur use, an increase of 66%.

Frankly I cannot think of a single reason why Novices should not be allowed to operate in the General class segments. Presently, except during some contest periods, the General class CW bands are vastly under-utilized, especially in comparison to the phone bands.

This idea certainly relates to Docket 20282 since it concerns itself with operating privileges and the Docket proposes a 5-year renewable Novice license with higher power privileges. If Novices were allowed to operate in the General class segments I would be against any renewable Novice license and the higher power privileges since I believe there would be very little incentive for someone who just wanted to operate CW to upgrade his license.

I would like to see this topic discussed at the ARRL Board of Directors meeting. I believe it should be discussed in the League's comments on 20282. I'm writing to some members of the ARRL Board of Directors and others. I'd be very interested in receiving your comments also.

Equipment needed

Do you know of anyone who would be willing to donate any amateur gear to a young struggling college radio club?

The Florida Atlantic University Amateur Radio Club is trying like mad to get on the air and active. We are finally, after a year of trying, going to get a space on campus which we can call our own, hopefully a little more secure than our last place, from which some unknown party removed our only good receiver without compensating us for it.

We are totally unable to get any money from the University. (We get a lot of old run-around but no money, while dorm beer parties are funded by the FAU Student Government Association at the rate of eight per year, more or less.)

So we have to rely on donations of gear to supplement the ancient equipment we now have, all of which needs extensive work to become operational.

We are trying, in the best tradition of Amateur Radio Service, to provide a public service to the FAU community. Any donations of equipment to help us reach that goal would be greatly appreciated from anyone wishing to help. I can guarantee that anything donated to the FAU-ARC will be put to use, nothing will go idle.

Ted Champagne, WB4FLW, 5821 N.E. 7th Ave., Ft. Lauderdale, FL 33334
—Florida Skip

QCWA

At the Annual Meeting of the Quarter Century Wireless Association, held in September, the following Officers and Directors were elected to serve for the next two years: President: Frank A. Gunther, W2ALS; Vice Pres: Harry S. Gartsman, W6ATC; Treasurer: Mark J. Devaney, K4IDC; Secretary: G.D. Meserve, WØHG; Directors: J.R. David, W4YK; Art Miligan, W8KW; H.H. Robinson, W4QR; Harold A. Sears, W5NC; and Clarence Seid, W2KW/KV4AB.

Executive Secretary Ethel M. Smith, K4LMB, was appointed by the Board to serve for another year.

The Quarter Century Wireless Association brings together the "old timers" who have been licensed for at least 25 years. Local chapters have regular meetings to promote fellowship and to keep the old traditions of Amateur Radio alive. Membership now totals 10,000 — with over 7,000 active members. — and 88 chapters.

The American Radio Relay League

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

Continued from last month
Number eight in a series

Among the most popular activities in Amateur Radio, and at the same time often controversial, are the many operating contests. In recent years there are enough operating contests and events that an amateur can be active in one contest or another on every weekend of the year.

Contests first became a part of Amateur Radio in the 1930s when the League started various kinds of "QSO parties" to encourage amateurs to work each other for a particular purpose, such as the exchange of messages.

Later, contests were added to encourage operation on a particular band or by a particular mode or to publicize a particular event or location such as a state, county or city.

One of the "grand-daddy" contests is the ARRL Sweepstakes which was first started to encourage the passing of written messages or traffic. At first those participating actually sent a full message as part of the exchange.

Now of course the object is to work as many stations as possible in the shortest possible time so that the exchange is short and abbreviated, but this illustrates how contests change and evolve through the years.

In this article we will discuss just ARRL contests. Of course there are many more than those sponsored by the League and amateurs are encouraged to participate in whatever contests they wish.

To keep League membership informed, Headquarters publishes an "Operating Events" column each month in *QST* edited by Ellen White, W1YL, Deputy Communications Manager. All contests that come to the attention of Headquarters are listed and you can plan for participation in those that are of interest to you by keeping track in the "Operating Events" column.

The Sweepstakes mentioned above is a two weekend event held in November of each year with one weekend for CW and one weekend for phone. The object is to work as many stations as possible and as many ARRL sections, which count as multipliers. One of the problems that newcomers have is in knowing what section they are in. To find this see page six of any issue of *QST*, which lists all sections. If you are in doubt write to Headquarters for a listing of the sections in your area by county if they are less than one state.

Often clubs will participate in Sweepstakes and other contests with a club aggregate score, which pools all of the scores by individual members. Many times two or more amateurs will operate a single station as a multiple operator entry. During recent years competition between clubs has been lively with challenges and sometimes exchange of awards of trophies.

Perhaps the second most popular of the League's operating contests is the International DX Test held in February and March of each year. There are two weekends for each major mode used, phone and CW, one each in each of the two months.

The object of this event is for amateurs in the U.S. and Canada to work as many stations in other countries as possible. Mulitiplier for U.S. and Canadian amateurs is the number of countries worked, using the ARRL Countries list.

The purpose of this contest is to encourage operating between various nations to help promote goodwill. While some say that fast exchanges in contests can't promote much goodwill, often friendships develop as a result of contest operation that lead to much more on-the-air time between stations in other countries, often lead to personal visits between amateurs. This certainly is an exchange of goodwill as a result of amateur operation and does help improve our image as amateurs.

Another popular operating event is the ARRL Field Day held on the fourth weekend of June of each year. Perhaps more individual amateurs operate in this event than any other although at less stations than in some contests. This is because most operation is by clubs and groups operating stations with one or more transmitters, with two to fifty or more amateurs taking part in at least some of the operating.

Stations set up in the field using emergency power, and while the objective of the contest aspect is to work as many other stations as possible, the main purpose is to test emergency communications capabilities in the field. From reports and experience, this is a real test.

There is a great spirit of competition in the Field Day and amateurs work hard to make it a success. "Murphy's Law" is involved to a great extent as various equipment fails under the rigorous operating; the statement "the generator blew up" is heard often. This is indeed a test of equipment in the field.

Some say that Field Day should be changed to be more like the ARRL Simulated Emergency Test held in January each year to test regular emergency communications facilities. However, the SET is not a contest and is not like the Field Day. While various amateurs have different ideas on what Field Day should be, it must be pointed out that the contest aspect does encourage more amateurs to take part and, as mentioned above, does really give amateurs a chance to test equipment under pressure.

Two of the first ARRL contests established to encourage operations on a specific band or bands are the VHF QSO Parties held in June and September and VHF Sweepstakes held in January. These events encourage operations on the bands 50 MHz and above.

While much of the operating during these events is on 50 and 144 MHz bands, the contests are set up so that amateurs are encouraged to operate on the higher bands. There is more and more operation on 220 and 432 and even on the 1296 MHz band now using single-sideband.

In these contests, as well as Field Day, amateurs are encouraged to use the OSCAR satellites to gain higher points for contacts via these "machines".

ARRL contests that have become increasingly popular are the CD (Communications Department) Parties held four times per year in January, April, July and October. The Communications Department is the operational department of the League as explained in a previous article in this series.

Originally this event was established for Communications Department appointees and League Officials to exchange contacts. Appointees include official station appointments such as ORS, OPS, OBS, OOs, ECs and LOs including SECs, SCMs, and Division Directors and their Assistants.

The list now includes all League working group members such as the members of advisory committees and the intruder watch members. With the increasing popularity of the event the July CD Party was opened to all League members recently, who sign MBR for their appointment.

The object of the CD Party, like SS, is to work as many stations holding appointment as possible and as many sections. The contest is held in two parts in each of the months it is held, one weekend for CW and one for phone. Those interested in League appointments should contact their Section Communications Manager.

Two contests that have been added to the League's list in recent years to encourage operation on specific bands are the 160-Meter Contest and the 10-Meter Contest both held in December of each year.

The 10-Meter Contest is held to encourage operation on this large band, especially during years of low sunspot activity. Often this band is open for short periods even in low sunspot years and amateurs are encouraged to try this band even when they believe it to be "dead". Since it is a large band there is much pressure from other interests to take frequencies for the other services.

While the 160 band is shared, and is not very large, amateurs should be encouraged to use what frequencies are available to show the amateur need for this important band. The 160-Meter Contest is designed to encourage this operation. It gives amateurs a chance to try for WAS or other awards when there is more participation such as in a contest.

The last ARRL contest to be mentioned is the Straight Key Night held in January and July. The January event is held on the evening of December 31 and into January 1, and the July contest on the July 4th holiday.

The purpose of this event is to encourage the use of the straight key for CW "as an art" since more and more the electronic key and the keyboard keyer are coming into amateur use. While some say that the day of the straight key is past, perhaps we amateurs can keep this form of operating alive as a skill to be learned for its own sake.

Much of the controversy in contests comes from amateurs who wish to make contacts of a casual nature and during a contest find most stations operating in the contest and not wishing a regular QSO. This happens over a large portion of the bands and some amateurs resent this operation since they feel that it interferes with their own. Not everyone is interested in contests. Many amateurs feel that the short contest exchange is not a real QSO and therefore not in the amateur spirit.

While it is not the purpose of this series to discuss the pros and cons of the issues in Amateur Radio, we must point out that contests do encourage more operation on our bands, especially on the little used bands where we need more operation. In recent months it has been general practice to encourage amateurs to work contests in specific limited sections of the bands, and there is still room for casual QSOs.

While some complain that they can't find QSOs because everyone else is involved with the contest, this is only an indication of where amateur interest lies.

Contests are popular because amateurs like them and, after all, it is an American tradition to be competitve.

If you are interested in contests we suggest that you read the "Operating Events" column in *QST*, or for further information contact Ellen White, W1YL, ARRL Headquarters, 225 Main St., Newington, CT 06111.

If you have suggestions for changes in contests contact the ARRL Contest Advisory Committee through Headquarters or through the local member in your call area.

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EDITOR'S LOG

Armond Noble, W6AJY
Editor, Worldradio

They say life begins at 40, and they could be right. This last year for me has been the happiest of my life. **Worldradio** has grown at a fantastic rate and it looks like our revenues will be about double that of the previous year.

So I'm going to throw a big 41st birthday party and invite all my best friends, the **Worldradio** subscribers. A few days ago I was at the Southwestern Division ARRL Convention. When we come back from such a gathering we're really charged up from all "the people we work for" stopping at our booth. What a great bunch they are. It's a real thrill to know them.

While my previous employment in the news media resulted in front page stories in major newspapers, lead articles in magazines and reporting on the radio in the big cities, nothing was as thrilling as working on **Worldradio**. The big difference here is that the readers are the writers, plus we are dealing with a different type of story. Here we try to put the spotlight on the good things that people do rather than the rotten things people do.

The letters from readers are warm and touching; they are an inspiration. We are often awed and humbled by the fine people who respond in the manner that they do. We feel a sense of responsibility to justify their faith in us.

There is nothing that could be a greater thrill than working on **Worldradio**. When you love what you are doing the extra hours and days are not a burden but an opportunity.

We're extremely fortunate in having a dedicated crew, for it is only with such commitment that we are able to turn out the equivalent of a 144 page magazine with the few numbers of people who work here.

Back to the party, here is your invitation. The 21st of December is the date. Since that is close to Christmas and many people have holiday plans, we'll also be open on 20 December and the night of the 19th. That way all who wish to stop by may, and those visiting relatives on the West Coast for the holidays could get a chance to come by Sacramento. The address is 2120 28th St., Sacramento, CA 95818, telephone (916) 457-3655. It's by 28th and "V" Sts. and we'll have talk-ins on 2 meters, 40 and 80.

The site is our new office building. Up until recently the entire operation was in the basement of my home — seven desks and work tables down there. It spread to the garage, my shack, etc. We had to have more room. Now we have three times the space (and could use more). We'll be installing a station at our new place, putting in an Atlas transceiver.

The work flow is moving much smoother. We've added to the staff and so we should be issuing the paper a littler earlier in the month. All the gang here thanks you for helping us get out of the basement.

Any other groups that wish to participate are invited to the party. WCARS, WPSS, etc. are invited to be officially represented and maybe we can get Amateur Radio's "superman," Chuck Towns, K6LFH, to come down and boost OSCAR.

As this paper has such a personal feel to it (we get many letters calling it a conversation among friends) we'll have another open house in July of 1976 marking our fifth anniversary.

We're pretty excited around here due to our new offices, the terrific articles we have in store for you, the great growth every month, etc.

But I was brought up short the other day. Part of passing through 40 is getting a new prescription for your glasses. As he was examining my eyes the optometrist asked me what I did for a living to determine if I had to do a lot of reading on the job. When I told him he replied, "I read about them the other day. It seems there are so many millions of them the airwaves are all clogged up and they are interfering with the television sets." And this was an educated man. It brings up again just what a rotten public relations job we have done and that we are practically invisible.

The tragedy is that we have so many talented people in Amateur Radio who work in journalism, advertising, public relations, education, etc. and they don't bring their expertise to this great avocation.

I hear that the FCC field offices constantly get people asking them where they can take a Novice test. Why don't we get the Amateur Radio Clubs listed in the newspapers alongside of all the other club listings? Why isn't there a listing in every phone book for "Amateur Radio"?

My SCM friends tell me that people hold classes and never tell them. Shouldn't we give more thought to real communications?

Every month we send a copy of this newspaper to every newly licensed amateur in the U.S. When we get the labels from the *Callbook* I always look at the local area to see how we are doing. Fully half of them are either out of my classes or people I've given the test to. It's pretty bad that out of 1500 amateurs in this area that more people aren't involved in bringing in the new blood. Hasn't Amateur Radio meant enough to its practitioners that they want to see it grow and flourish?

What is wrong that we don't want to share with some good friend of ours the great joy that we have received from Amateur Radio? If you gave up but one night a week to personally teach someone whom you feel would be a credit to Amateur Radio we would have a lot of problems solved.

If each active amateur had but brought in one person every other year or every third year we wouldn't have such things like Docket 20282 and the other problems plaguing us.

Do we want to let Amateur Radio die?

The other day we were talking to someone who has a top idea. Darryl Larsen, WA6WNE, is well aware that the radio clubs don't go out of their way to encourage the young people to come to their meetings. (The biggest feedback we get from new licensees is that they go down to their local clubs and no one makes any effort to welcome them, talk to them, introduce them, etc.)

Darryl is also aware that many young people feel a bit uncomfortable in an all adult gathering. He proposes that we set up youth radio clubs. The young people are the officers, set up the activities, run the club, etc. The adult is just an advisor. This is like the Explorer Troops and the like.

Here the kids can do their thing, go on Field Day, enter the contests, whatever.

Darryl has been talking up the idea around town and looking for people to help him. (We volunteered to typeset and print any instructional materials, bulletins, etc.) One person he talked to said he'd help but it looked like he'd have to give up watching a few football games.

That may be the key to our problems. Why do so many people insist on spending so much of their lives watching fiction shows or other people doing something?

Just why don't more people do something themselves instead of sitting on their duffs watching others? There's a lot out there that needs to be done.

With so much reality staring us in the face I'd rather attend to that than worry if the Oakland Raiders are going to win a football game that affects no one (except the players) in the least.

In the time that someone (*please turn to page 36*)

Station K9UTN as it looks today.

John Kline, K9UTN, in his communication center as it appeared before his recent equipment change.

Station Appearance

The "Station Appearance Award' for this month goes to John Kline, K9UTN. He receives a one-year extension of his Worldradio subscription.

The picture above right is also used on John's QSL card. An interesting fact is that so many of those who win our station appearance award also have a scope. It seems they want a clean signal going out as well as a clean radio room.

Shortly after we wrote to John and told him that he was going to be featured here he sent us another picture showing that he had replaced all the gear in his communications center. So here we show the before and after.

John's main interest is DX and he has worked 195 countries with 175 confirmed. He was the eighth amateur to obtain the new CW DXCC. On CW since the award was started he has 145/120.

An Extra class licensee, his antenna is a Telrex Duo-Bander for 20 and 15.

The purpose of the station appearance award is to give recognition to those who take pride in Amateur Radio.

Can we display your station next? •

How about six or ten meters?

HOWARD EVANS, W6IDS

Since we all found out that there are going to be some rather drastic changes in our amateur licensing structure there are comments surfacing regarding another potential problem. These observations revolve around over-crowding on two meters.

Allegedly there is little room for a sudden influx of new station operators and in some circles, the feeling is held that if we are "invaded" we are going to leave the two-meter band for good. However, it is never clearly said where they are going . . . they are just leaving.

I would like to ask the question "Why is it that it takes a change such as license restructuring to make us think about setting up operation on other bands? Why is it that we don't consider these types of moves during peaceful times?"

For instance, I have some Motorola equipment set up on six meters and ten meters FM. Yet on six the only thing I have heard to date is an LA repeater, and at best the operation on that machine is sparse. On ten meters the background noise is nice and clear. Perhaps I listen at the wrong time, but I don't believe that I am really missing much.

I believe many of you could enhance your station operations if you would consider six and ten meter operations. I have done some testing on six and have encountered no TVI by neighbors or on my own sets. There just isn't any to speak of at all. Since the FM mode seems to be free of that spectre we fear (TVI), we have apparently, at our beck and call, a frequency range which would allow some pretty nifty operation — provided that we find some way to encourage other stations to get on the air and frequent it.

If we were to go to six meters we would be able to enjoy a band free of clutter (for now anyway), set up reliable repeater systems and expand our facilities in order to ensure that we would not be in a position to lose a potentially foxy band, resulting from lack of use. Six meters can be used, but it is not and it should be.

With regard to ten meters, apparently, from what I have seen on this band, this unique little area doles out a different gift. It would seem that you have excellent local coverage resembling something of two meters but you also have the capability of working long-haul stations without having to resort to repeaters all the time. Obviously operation on ten would most probably require a different type of operating, but how many of you have listened up above 28.8 or 29.0 and have been able to hear much of anything in the way of activity?

For gosh sakes fellas! Why don't we give these two bands a try? The gear seems to be available cheaply and there's plenty of room to set up operation and have something a little different, perhaps setting up a whole new ball game for us that can only result in our winning out in the end with some fairly decent additional FM operation. I know very well that two meter FM has served us well and we have shown that it could be turned into one of the most reliable communication medias around for us.

I recently was able to interest Gerry Gray, WB6HZN, in Escondido with the idea. He, too now has FM equipment, a GE rig I believe, and is setting up on six meters. All we need now is some other individuals to try.

Why don't some of you consider what I have written? Perhaps more could have been said on the technical aspects, with facts and figures, but this is not the intent. I only wish to have you think about these two bands. They are just sitting there, apparently dormant, and it only takes a few bold operators to set up and give it a try. I strongly feel you won't be disappointed.

So, I shall conclude this with saying I am set up on 52.525 MHz and 29.6 MHz just waiting for someone to chat with. Would someone like to join me . . . please?

•

Bounty

(*continued from page 2*)

transcribing of programs on tape.

Mosher recalled, "We met, and they became like members of our family. Christian used my amateur station for contacts back home."

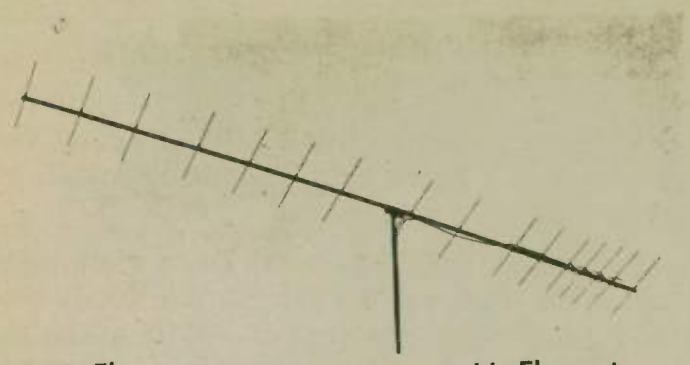
"When they left, we decided to set up weekly schedules to continue our close relationship." The schedules are still maintained Wednesdays at 0530 GMT on 14, 225 kHz (20 meters).

Mosher is delighted to help other amateurs contact the rare DX station.

Christian appears in the 16mm sound film "In the Wake of the Bounty." The film, Mosher said, is available through the Voice of Prophecy film library, 1500 E Glenoaks Blvd., Glendale, CA 91206. The only charge is return postage.

Christian needs supplies of QSL cards, Mosher added, since he sends out a thousand a month. Address is Tom Christian, VR6TC, P.O.Box 1, Pitcairn Island, South Pacific.

KLM at M-TRON



9 Element
KLM 144-148-9

Gain	13.7 iso.
Boom length	120 in.
3 dB points	24 degs.
Weight	5 lbs.

$33.95

11 Element
KLM 144-148-11

Gain	14.5 iso.
Boom length	150 in.
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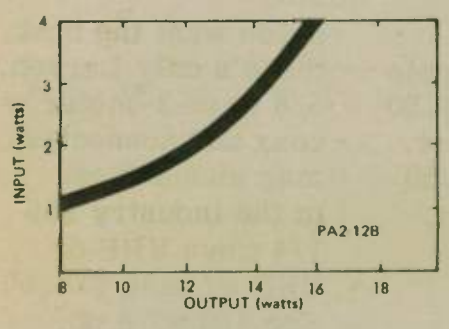
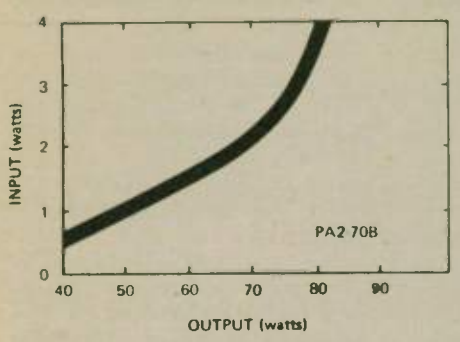
VHF Solid State Power Amplifiers 144 - 148 MHz



$44.95



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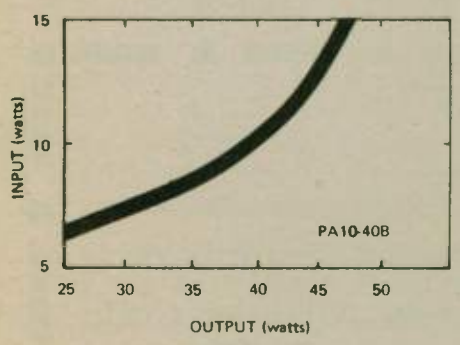

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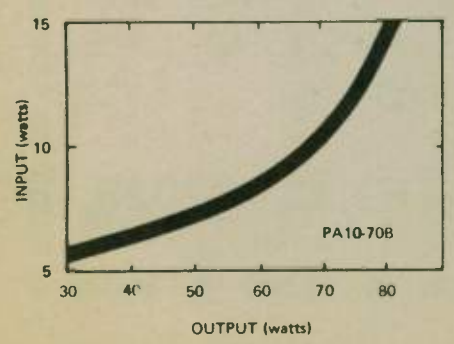

$79.95

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EXCLUSIVE FEATURES

Constant gain and low SWR across the phone and CW portion without retuning. *DUAL DRIVEN* elements for high efficiency and superb front to back and front to side ratio . . . that will put *YOU* on top of the pileups . . . All elements insulated from the boom with KLM's exclusive epoxy insulators.

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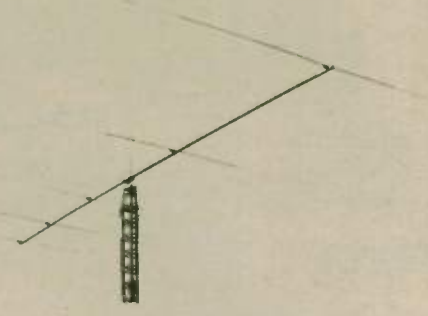
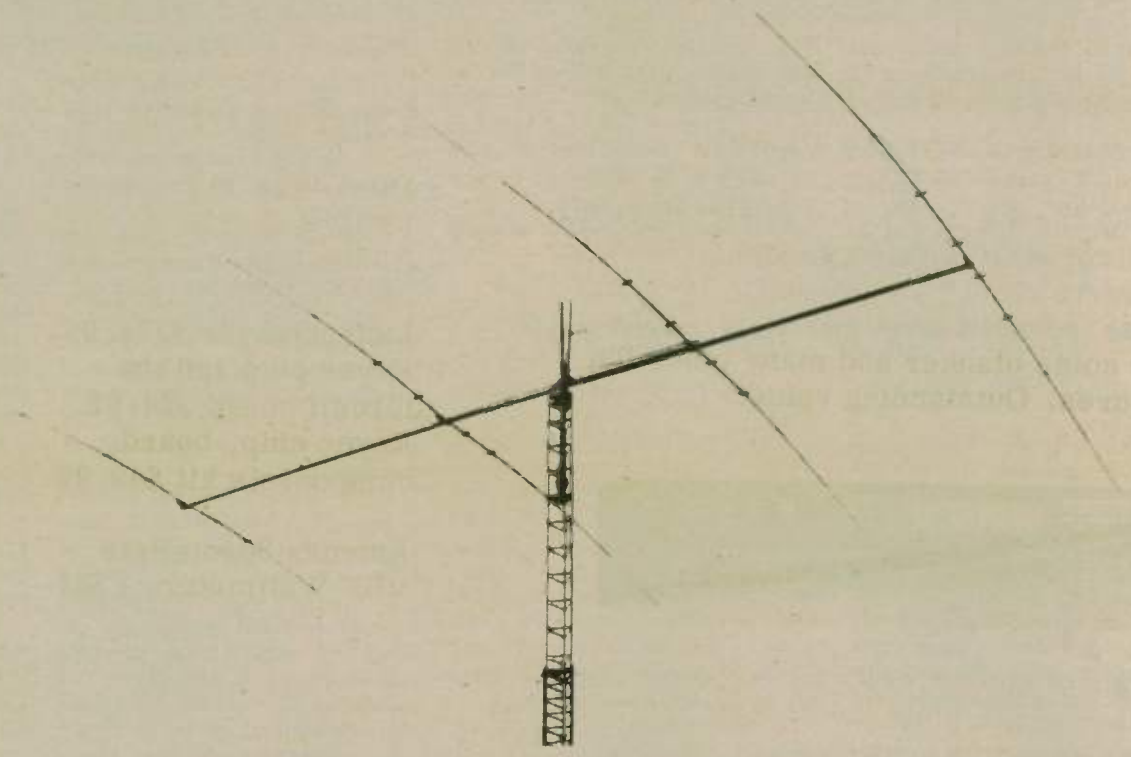


Elements	5 full size
Frequency of Operation	13.9 to 14.4 mHz
Gain Over a Dipole	9.7 + 0.2db
Front to Back Ratio	30 db
Impedance	200 ohm balanced

(50 ohms with KLM's optional 4:1, 4KW pep balun)

Boom Size	42' x 3" dia.
Weight	65 lbs.
Turn Radius	28 feet
Wind Area	9.25 sq. ft.

Order KLM 13.9 - 14.4 - 5



Introducing . . . the long-awaited, practical sized, high performance 40 meter "Big Stick" Dual Driven Yagi.

Featuring . . . CONSTANT GAIN and low VSWR across the 40 meter band . . . DUAL DRIVEN ELEMENTS for high efficiency and clean pattern . . . LIGHT WEIGHT but strong materials including KLM's exclusive epoxy insulator design . . .

SPECIFICATIONS

Frequency of Operation	70 - 7.3 Mhz
Elements	4, Linear Loaded (46' max. length)
Boom	3" dia. x 42' long
Gain	7.25 db/dipole
F/B	20 db typ.
Turn Radius	32'
Weight	85 lbs.
Wind Area	10 sq. ft.
Feed Impedance	200 ohms balanced (50 ohms with optional KLM 5-31 4:1 4KWPEP balun) $13.95
Shipping Container	Wood crate 12 ft. long 125 lbs.
Price	$495.00

MEL FARRER
K6KBE

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We're active, on-the-air amateurs. The great growth of our company has come because, as they say...class tells. We care! Workmanship and quality are still alive at KLM. You are invited to purchase our products at M-TRON.

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24-hour clock w/sweep 2nd hand. 12-inch face. Classy. Price? dollar an hour ($24)

NPC 13.5 VDC power supplies: regulated--
4 A regular $49 at M-TRON $39.95
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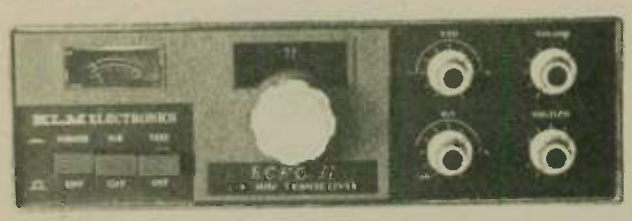
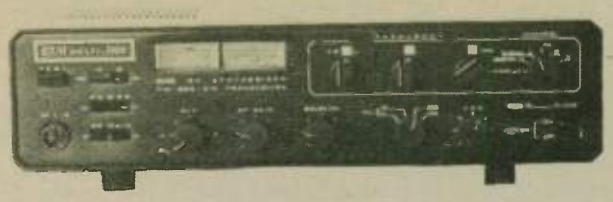


The future of Amateur Radio is here today if you are on OSCAR. Go with the KLM ECHO II cw & ssb xcvr. frequency synthesizer w/10 kHz steps and 6 kHz vxo. Seperate rit w/ 6 kHz range. 10 w pep. Sensitive and selective for only $389. Has noise blanker and many other top features. Outstanding value.



This one does everything but wash the dishes. KLM Multi-2000 SSB/CW/FM 10 watts on all modes. Wide, narrow and side band. FM 1 uv for more than 30db, SSB .3 uv for 10 db. Selectivity sharp. ac/dc power supplies . This is a remarkable radio for but $795.

We stock the entire Drake line, Atlas, Viking Nye, ICOM, KE, Cushcraft, Hy-Gain, etc. Try us, you'll like our semi-friendly service.

M-TRON's used specials

Hammarlund HQ-180A with clock and external speaker. Hammarlund Quality.	$295
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Ameco 6,2,220 vfo, go oscar	$39.95
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YOUR ATTENTION PLEASE - THIS WILL HELP YOU!!!!!

The R.L. Drake Company has just come out with their TV3300 low-pass filter. The cut-off is at 33 MHz and the attenuation is 80-95 db at 41 MHz (TV IF frequency) and 54 MHz (channel 2) This is the best filter ever made by anyone. Good for a KW. Get it at M-TRON for $19.95. Be really clean.

We also recommend the Drake hi-pass filter for hanging on Dumont 1950 TV sets and the other garbage buckets that the neighbors always seem to have. TV-300 $6.95 at M-TRON.

Filters work best when they see a real 50-ohm load. Be sure what is really going on. Get the Omega antenna noise bridge-1-100 MHz $29.95
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BACKPACKERS DELIGHT: Ten-Tec 5 W ssb/cw qrp xcvr $329
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TUNERAMA+++++++

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Dentron 160-10 for balanced or unbalanced handle 3 kw $229.50

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Dentron 160-40 vert. low bands for $79.50
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Drake W4 wattmeter SWR 2-30 MHz $62

Be Felix Unger, not Oscar Madison, with the plastic QSL card holders. Stop the thumbtack jazz. $1 for every 40 cards you hant to display.

Keep peace in your home. Wear ear-phones. Superex.
$5.95 good
$15.35 better
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If you want the best, there's only Larsen. 5/8 wave 2-meter w coax and connecter. mag mount (best in the industry $35
1/4 wave VHF or UHF w/ mag $14.50
For 450 w/ 6 db gain-and coax and connector-mag $35

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M-TRON's way of saying thanks--Special specials and clearance items. One of a kind, demos and closeouts. Limited to stock on hand . The race goes to the swift.

1975 Callbooks: U.S. Regular $13, sale priced at but ten bucks. DX regular $12, on sale at nine.

Magnum Six for Heath SB-100, 101, 400, 401, HW 100, 101. Specify ur model. was $150 on sale $110.

Magnum Six for Swan, 500 series, was $180, sale priced at $138

Magnum Six for Yaesu FTDX , was $150 now only $114.

Ten-Tec KR-40 Squeeze keyer w/ paddle. was $99.50, now $79.50
KR-2 paddle was $15, now $12
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Your reward for reading this far down in our ad: Atlas 210, was $599, yours for only $539.10

Contact M-TRON, the trade-in champs of the free world. We accept Master Charge, Bankamericard, cash deals, package deals. Please estimate shipping charges (excess refunded). CA add 6% state tax. Our hours: Mon. - Fri. 9 a.m. to 5 p.m., Sat. 9-4. We ship to every continent. Look here next month for more great M-TRON values.

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Doug Murray, W6HVN (415) 763-6262 Art M

DX DIGEST

Gary Stilwell, W6NJU

Listen to all the signals. I wonder if this is a DX contest? Boy, so many Ws, and they seem to be working each other. Oh no, I've miscalculated the Sweepstakes Contest. No, they all seem to be after the W6s. Boy, I'd better get on the air and have all those stati is 'round the world chase me.

Talk about State QSO Party, the California QSO Party was something to behold. There was record breaking activity and many wonderful comments from those participating. It was also great and fun on this end. I packed up the van and with my son headed out for some of the rarer counties. We were able to operate one day from Nevada County and one day from Yuba County. It was almost like a DX contest and even had more fun than Field Day.

The California QSO Party had such excitement and zing due to the efforts of Rusty Epps, W6OAT, and John Minke, W6KYA, under the sponsorship of the Northern California Contest Club. The Club meeting right after the great event saw 27 new applications for membership. Better look out in Sweepstakes, World, the NCCC is coming.

DX Advisory Committee

The DX Advisory Committee has not been able to reach agreement as to any changes in Rule 9 (how far you can move and retain your DXCC credits) of the DXCC Rules. The Committee is now considering an item that would allow you to retain credits as long as you remained in the same country. The Committee will be voting in December so make your wishes known at an early date.

The DX Editor of a national magazine recently commented on the track record of the DX Advisory Committee and the quality of topics being discussed as an indication that the Committee appears to be "more of a DX round file than an influential factor."

It is always interesting to note non-participants making critical statements. In my time on the Committee, that DX Editor has never submitted any proposal, statement or comment to the Committee. The Committee exists to consider ideas from the members for presentation to others. Rather than generate I think the Committee feels it should receive ideas from DXers. DXers will write ideas and make proposals concerning DX matters to DX bulletins and magazines but they never seem to submit anything or even copies to the Advisory Committee. Might the reflections of the DX Committee be a reflection on the attitudes and non-interest of DXers themselves and not the Committee?

In the same article a plea is made for DXers to organize. This is a fine idea and worthy of an all out attempt. However, the object appears to be to organize to reject fees imposed by the ARRL in DXCC matters. "The dollar sign is plastered all over the DXCC" is a worthy quote from a magazine which also has DX oriented awards in which charges are made. Perhaps the DX Editors are suggesting that they will lead the way and will soon announce the deletion of fees for WAZ and WPX awards? If we organize maybe we can not only "speak on the unfair taxation" of the ARRL but also of *CQ Magazine*.

Northern California DX Club DXer

Adam Mentes, VE3DXV/W6, is the new Editor of the Northern California DX Club's "DXer". Information can now be submitted to Adam at P.O.Box 951, Mountain View, CA 94042.

YASME on the move again

The YASME Foundation is active again and is sponsoring once more the world-wide DXpedition of Lloyd (W6KG) and Iris (W6DOD) Colvin. The Colvins have already operated under 50 different calls and are now trying for 100. First stop will be VR1Z (15 December 1975) and then to VR8B and VR8C (1 January 1976). VR8B and VR8C effective 1 January 1976 will be a new country for DXCC credit. Frequencies are as follows:

CW: 3505, 7005, 14050, 21050 and 28050 (listening up 5 kHz or just inside the General class band)

SSB: 3795, 7095, 14195, 21,255 and 28,550 (listening up 5 kHz or just inside the General class band)

Donations to YASME (tax deductible) are requested but not required. QSLs will be handled by the YASME Foundation, P.O.Box 2025, Castro Valley, CA 94546.

New DXCC countries

While no official announcement has been made by the ARRL, the Canadian DX Association has announced that Sable Island (in the Atlantic off Nova Scotia) and St. Paul Island (in the Cabot Strait between Nova Scotia and Newfoundland) would count as new countries.

The group has operated from Sable Island with the call VX9A and has been active through 30 October. QSY to St Paul Island was expected shortly and operation into the early part of November with the call VYØA. QSLs for both operations should go to VE3GMT. You might remember that right now there is no postal service to Canada and mail sent in the United States is being returned to senders pending settlement of a postal strike. You might make sure the strike has been settled before you send your QSLs.

Macao

Horacio Torres, CR9AJ, has been active on 15 meters around 21.252. John Minke, W6KYA, worked Horacio at 0030 on 27 October so keep looking. I understand one has to overcome the pileup of JAs who are usually calling.

In memory

On October 5th we lost a dedicated DXer in Gene Darlington, W6TTS (ex 3A1J, W2ALP, W2ZFA). I think the following by Bob Thompson, K6SSJ, in the *Northern California DXer* cannot say it any better:

"Gene Darlington, W6TTS, passed away Sunday, 5 October, at 7:30 a.m. He had suffered a massive heart attack nine years ago and the damage this time rendered his heart only five percent effective. He was nevertheless alert and of good mind right to the end. He was in the Intensive Care section of Merrit Hospital in Oakland, California and for the past several days his body functions were being assisted by the various machinery associated with such cases. They had inserted a pump in the artery to assist his weakened heart during the past several days. He was unable to undergo a heart transplant and this plan was abandoned. All support equipment was removed including the assisting pump at 3:00 p.m. Saturday. His weakened heart was unable to recover from the earlier damage and he succumbed this morning.

Gene was born on November 4th, 1904 in Pennsylvania. He would have been 71 this coming November 4th. He obtained his 1st amateur call, 3AIJ, in December of 1920 and went on the air with a one inch spark gap transmitter feeding a 200 foot long antenna. In 1923 he joined General Electric Co. at Schenectady, N.Y. and it was there that he became W2ALP and later W2ZZFA, a special four letter mobile call.

He joined the Armed Forces in June of 1942 receiving a direct appointment as a 1st Lt. He served at numerous training centers throughout the U.S. from California to Florida and back, mostly in the training of radio operators and mechanics.

Gene's ambition was to achieve 5 Band DXCC. He doggedly staulked the bands looking for those elusive countries which would have given him the ones he needed on 40 and 80 meters. He would stay up late if 80 was expected to open and was frequently up early in the morning for the same reason. He kept track of the WWV propogation reports and regularly announced them over the club's 2-meter repeater system. Although he had a very modest station he did an exceptionally good job of DXing and of reporting new stations and countries to the members.

He is survived by his wife Veronica, two married daughters Linda and Jean and their families, who live nearby. All of the members of his family including the grandchildren visited Gene prior to his passing.

His life was dedicated to Amateur Radio and of late to DXing in particular, The doctors had made a suggestion of a heart pacer but Gene dismissed this idea as he felt he would be unable to continue his hobby and he did not want to survive without Amateur Radio. He was awarded the DXer of the Year Award last year. He will be greatly missed by all of us."

QLS information

G5ACH via YASME	VR1Y via YASME
G5ACI via YASME	VR1Z via YASME
KA6RI via WB6KGB	VR8B via YASME
KA6YL via WB6KGB	VR8C via YASME
KV4IJ via K6SDR	VX9A via VE3GMT
VP2G via W5MYA	VYØA via VE3GMT

Ing. Endrei Guigea, YO3AC, is a 34-year-old chemical engineer from Bucharest, Romania. He is married and has a 5 1/2 year-old son, Vlad. Andy got his license in 1958. He worked only CW on 40 and 80 meters until 1971 when he got his HW-100 transceiver. His equipment also includes a linear amplifier with 1 x 3-500Z and a 5-element tri-band Yagi from Germany. His main interest is working DX; actual score is 289 countries worked and 287 confirmed. He is very active on the US bands and is trying to get California.

Thanks for information to the West Coast DX Bulletin, Northern California DXer, QSL Managers Director, YASME Foundation and *CQ Magaine*.

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St. Pierre

(*continued from page 6*)

his aid the DXpedition would have been an impossibility.

Our return trip was essentially uneventful. We retraced our steps, stopping off along the way for a very pleasant evening with Maurice Gladden, VO1FG, and his wife in Carbonear, Newfoundland. We detoured slightly on our return trip in order to visit my mother and father in Vermont. My father is W1HGA. As on my previous DXpeditions we had daily schedules on 20-meter SSB.

After returning to Bedford I rushed to the post office to pick up my mail. There awaiting me were four monstrous stacks of mail! The postman asked me how long I had been gone, "a year?" My answer simply was "two weeks." His face fell in disbelievement.

Even after answering all of the QSLs I am ready to go again. I firmly believe that there exists a DX-bug and when one gets bitten by it he is forever under its spell. I believe I was one of its first victims! Overall the trip involved 2578 miles by car and 614 miles by boat, and a total of 14 days, from 29 June through 12 July. The total cost of the trip was just under $1000.00. It was a marvelous trip for all concerned and, if possible, FPØXX will be activated again within the next few years.

Immediately upon arrival at the Telecommunications Office in St. Pierre, Vern, K1DRN, is issued his license to operate as FPØXX. Licenses are issued for a month, this one good from 4 July through 3 August 1975. The price of the license was 10 francs, or two dollars American money.

DECEMBER 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

UT	AFRI	ASIA	EURO	SOAM	SPAC
01	8.7	17.4	9.5	13.4	21.4
02	6.9	12.8	9.0	12.1	16.8
03	6.0	10.6	8.4	12.2	13.4
04	7.8	10.2	7.7	12.6	11.9
05	7.6	10.3	7.0	12.8	11.3
06	7.8	10.2	6.6	11.7	11.1
07	8.2	10.0	7.2	11.1	11.1
08	9.2	9.7	9.8	11.2	11.0
09	9.4	10.0	11.3	13.0	10.6
10	9.1	10.2	11.5	13.6	10.9
11	8.6	10.8	11.0	11.2	11.9
12	8.2	10.9	9.9	10.2	12.1
13	8.2	9.8	9.8	12.1	10.7
14	10.3	9.0	12.0	16.2	10.0
15	13.0	9.7	14.5	20.0	12.6
16	15.2	11.5	13.0	22.1	17.0
17	16.9	11.6	11.2	22.8	15.6
18	18.6	14.1	9.6	22.8	15.4
19	19.2	10.8	9.0	23.1	17.2
20	16.4	13.2	8.4	23.7	19.9
21	14.7	15.5	8.7	24.3	21.8
22	12.9	19.1	8.9	23.4	22.6
23	11.5	21.3	9.0	20.4	23.4
24	10.3	21.3	9.4	16.5	24.7

REPEATERS

Memorandum

FROM: The Ad Hoc Committee on Repeaters and VHF/UHF Frequency Coordination
TO: Chairman, officers, and delegates, San Diego County Amateur Radio Council, Inc.
SUBJECT: Report on Development of Guidelines and Council Policy on VHF/UHF Amateur Bands Utilization

I. The Ad Hoc Committee, hereinafter The Committee, was appointed at the 31 July meeting of the Council and tasked with the subject development.

II. The Committee recommendations fall in three areas:

A. Goals

B. Actions

C. Rank-ordered major problems

1. The Commitee recommends the following goals:

a. First, equitable availability of VHF/UHF amateur band communications channels to all in-county amateurs, with due regard for equity of amateurs in adjacent out-of-county areas.

b. Second, an open democratic system of determining equity in cases of conflict.

c. Third, technological and operational advancement of the art in utilization of the VHF/UHF amateur bands.

d. Fourth, selective assistance by the Council to the VHF/UHF amateur community in achieving the first three goals — but realistic recognition that the major works must be the responsibility of that community.

2. The Committee recommends the following Committee actions:

a. As many as possible of the potentially concerned VHF/UHF radio amateurs in the county be identified and a mailing list prepared. Five classes are suggested

(1) Repeater licensees/trustees, owners

(2) Remote base owners

(3) Widely recognized achievers, technologically or operationally.

(4) Representatives of those amateurs participating in the advancement of less used modes of VHF/UHF utilization, including EME, ATV, SSTV, RTTY, Satellite Communication and basic experimentation.

(5) Collectively, all others, including simplex and repeater users.

b. A mailing be drafted and sent to those in the first four classes above.

c. That the mailing:

(1) States the Council concerns and the above suggested goals for the VHF/UHF community.

(2) Includes an opinion poll and response form. States deadline for return and provides return envelope. Basis for the poll to be the goals and rank-ordered problems (see enclosure 2) as seen by the Council. Response sheet to be formatted for concurrence, disagreement or re-ordering. Essay responses or remarks invited, in addition.

(3) Invites their participation in further identifying problems.

(4) Invites their participation in evolving long-term solutions to the problems.

(5) Inquires regarding their degree of personal committment to achieving VHF/UHF community goals. Forced-choice answer format in several degrees suggested, varying from willingness to provide leadership down to attending meetings.

(6) States the need for a broadly representative organization of the VHF/UHF community not now existing.

(7) Sets a date, time and place for an initial organizational meeting.

(8) Identifies a temporary Chairman to be replaced by an elected Chairman when election procedures have been established.

(9) Requests nominations for Chairman of the Committee, permission of the nominee required. Provides place or slip for nomination submission.

(10) Sets a tentative agenda for the initial meeting. One important item — sign-in sheet with columns for name, call, address, zip and telephone.

(11) Invites spreading the word and bringing other concerned amateurs to the initial meeting.

(12) Makes clear the importance of the Chairman appointing, or himself acting as a representative to the Council and reporting thereto.

(13) States the Council intention to consider, vote-on and act where so voted, in support of those important issues presented to it by the VHF/UHF community representative (where the group serves as Technical Advisor on VHF/UHF) which would benefit by Council stature and influence.

3. A list of rank-ordered major problems as now seen by the Committee is supplied in enclosure 2.

III. The Committee was also tasked with recommendation of a Chairman (temporary if the above recommendations are approved and successfully carried out) for a Standing Committee of the Council in the subject area. At the time of writing the Committee has been unable to fulfill this task.

IV. At such time as the Committee is successful in item III above, the Committee recommends that the Ad Hoc Committee be discharged and the outlined actions be carried out through the Standing Committee.

Signed this 25th day of September, 1975:
Louis Anciaux, WB6NMT, Acting Chairman
Wayne Bamford, W6PDA
Roy Maxson, W6DEY
Angelo Boccia, WB6MNR
Sybil Allbright, W6GIC
Fred Moffett, WA6BJM

ENCLOSURE 2

Preliminary rank-ordered listing of major problems of the San Diego County VHF/UHF community

1. **Out-of-county frequency coordination*** There is a need for well formulated, rationalized and documented processes of coordinating VHF/UHF frequencies within our own county.

2. **Out-of-county frequency coordination** — The body performing the function of frequency coordination should be subject to democratic processes of review and election by the community they are supposed to serve.

3. **Out-of-county frequency coordination** — Foremost among the needs for improving the rationality of the process of frequency coordination is the grading of repeater importance in order of the magnitude of the product of the number of users and the area covered and the appropriate consideration of this factor in the channel recommendation process, as well as the function of Public Service.

4. **Administrative** — The VHF/UHF community of San Diego County is unorganized and cannot speak with one voice. Although SANDRA and PALOMAR clearly constitute a majority of users, it would be unfair to allow them to set policy for the community without first providing the entire community with an opportunity to organize and be heard.

5. **Administrative/volunteer** — There is a need for a periodically updated repeater roster and a map of San Diego County amateur repeater sites.

6. **Administrative/Volunteer** — There is a need for several types of volunteer support services. These include crystal banks equipment/component banks and test equipment banks.

7. **Administrative/operational volunteer** — Public Service through VHF needs further development in close coordination with existing Council and ARRL functions.

8. **Technical consultant/volunteer** — There is a need for technical and operational education and counseling resources for the benefit of the amateur. Especially valuable would be a list of technically qualified amateurs who would make their expertise available on a phone call basis to help other amateurs with technical problems.

9. **Regulatory consultant/volunteer** — There is a growing tendency for individual amateurs and groups of amateurs to appeal to the FCC to solve amateur community problems and to neglect the more difficult but ultimately freedom-preserving processes of self-discipline and town-hall democracy. A person with in-depth knowledge of the rules and regulations and operation of the FCC would be a valuable asset to

(*please turn to page 32*)

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Orlando, FL 32803

Amateur Radio Center
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Miami, FL 33137

Amateur Radio Supply
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Seattle, WA 98108

Aquarius Electronics
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Atlanta, GA 30328

Audio Land
36633 S Gratiot Ave.
Mt. Clemens, MI 48043

Barry Electronics
512 Broadway
New York, NY 10012

Bellaire Electronics Supply
5200 Bellaire Blvd
Bellaire, TX 77401

Buddy Sales
18552 Sherman Way
Reseda, CA 91335

Buddy Sales
2445 Harbor Blvd
Ventura, CA 93003

Burghardt Amateur Electronics
P.O. Box 73
Watertown, SD 57201

C & A Electronics
2529 E Carson Street
Carson, CA 90745

CDS Electronics and Hobbies
Baseview Shopping Center
Emerado, ND 58228

CFP Enterprises
766 Ridge Road
Lansing, NY 14882

Cal's Radio
3rd at Davis Street
Tipton, OK 73570

Conley Radio Supply
101 S 31st St
Billings, MT 59101

CW Electronic Sales Co.
1401 Blake Street
Denver, CO 80202

Craig Radio
29 Sherburne Ave
Portsmouth, NH 03801

Derrick Electronics
W. Kenosha Hickory
Broken Arrow, OK 74012

Douglas Electronics
118 S Staples
Corpus Christi, TX 78404

Down East Ham Shack
57 Main Street
Lewiston, ME 04240

Electric City Radio
2315 10th Ave S
Great Falls, MT 59401

Electronic Exchange
136 N Main
Souderton, PA 18964

Electronic Center
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Dallas, TX 75204

Electronic Distributors
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Muskegon, MI 49441

Erickson Communications
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Skokie, IL 60076

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Wheaton, Maryland 20902

Evans Radio Co.
Route 3A Bow Junction
Concord, N.H. 03301

Gary Radio
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San Diego, CA 92111

GDS Electronics
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Spokane, WA 99208

G & I Sales
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Tacoma, WA 98499

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Farmingdale, L.I. NY 11735

HCJ Electronics
8214 East Spreague
Spokane, WA 99206

Ham Radio Outlet
999 Howard Street
Burlingame, CA 94010

Ham Radio Center
8342 Olive Street
St Louis, MO 63132

Hamtronics
4033 Brownsville Rd
Trevose, PA 10947

Help Radio
1055 Liberty Street
Jacksonville, FL 32206

Henry Radio
211 N. Main
Butler, MO 64730

Henry Radio
11240 W Olympic Blvd
Los Angeles, CA 90064

Henry Radio
931 N Euclid St
Anaheim, CA 92801

Hoosier Electronics
430 B Meadows Shopping Center
Terre Haute, IN 47802

Howard Radio
4235 N First Street
Abilene, TX 79603

Island Electronics
1111 McCully St
Honolulu, HI 96814

Jimmy's Hamshack
1217 Winterview Drive
Jackson, MS 39211

J & H Radio Supply
232 N. 53nd. St.
Odessa, TX 79762

Juge Electronics
11181 Harry Hines
Dallas, TX 75229

Juge Electronics
3850 S. Freeway
Ft. Worth, TX 76112

Kass Electronics
2502 Township Road
Drexel Hill, PA 19026

Kensco Sales
46 Pearl St
Quincy, MA 02169

Klaus Radio
8400 N Pioneer Pkwy
Peoria, IL 61614

Lasater Electronics
4617 Paxton
Tampa, FL 33611

L & M Communications
5912 Smith
Hamburg, NY 14075

LEC Electronics
1820 Highway 50 West
Pueblo, CO 81008

MJ Communications
Highway 67 N
N Little Rock, AR 72116

Marcus Communications
134 E. Center St.
Manchester, CT 06040

Manzano Enterprises
Box 198 Star Route
Tijeras, NM 87059

Masters Communications
7025 N 58th Drive
Glendale, AZ 85031

M-Tron
2811 Telegraph Road
Oakland, CA 94609

Mellers Photo Labs, Inc
1929 E Bennett
Springfield, MO 65804

Northern Virginia Communication
729 N. Edison
Arlington, VA 22203

Oregon Ham Sales
409 W First Ave
Albany, OR 97321

Pair Electronics
107 Trade St
Greenville, NC 27834

Portland Radio Supply
1234 SW Stark
Portland, OR 97205

Precision Radio Co
7208 Prospect
Kansas City, MO 64132

Progress Electronics
825 Commerce St
Longview, WA 98632

Quement Electronics
1000 S Bascom Ave
San Jose, CA 95128

Radio Pro Shop
Bon-Aire Shopping Ctr
Butler, PA 16001

Radio Parts, Inc
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New Orleans, LA 70130

Radio Store, Inc.
2104 S.W. 59th St
Oklahoma City, OK 73119

Roland Radio Company
5923 31st Ave.
Tulsa, OK 74112

Ross Distributing Co
112 S First West
Preston, ID 83263

Rule Communications
512 Grand Ave
Laramie, WY 82070

Selectronics
2204 Del Paso Blvd
Sacramento, CA 95825

Sere-Rose
1465 Wells Station
Memphis, TN 38108

Sequoia Stereo
773 8th St
Arcata, CA 95521

Sequoia Stereo
410 F Street
Eureka, CA 95501

Sichel Equipment Co
245 E Harris
So. San Francisco, CA 94080

Bob Smith Electronics
1226 Ninth Ave. North
Ft. Dodge, Iowa 50501

Spectronics, Inc.
1009 Garfield
Oak Park, IL 60304

Srepco
314 Leo Street
Dayton, OH 45404

Teletronics
4175 San Felipe Road
San Jose, CA 95121

Texas Technical Products
16015 White Fawn Drive
San Antonio, TX 78228

Trimble Electronics
2911 Amy Lane
Tyler, TX 75701

Tucker Electronics
1717 South Jupiter Rd
Garland, TX 75040

Tuft's Radio
386 Main St.
Medford, MA 02155

United Electronics
328 Third Ave East
Twin Falls, ID 83301

Utah FM Sales
1365 East 5360 South
Salt Lake City, UT 84117

Vegas Radio
1074 N Rancho
Las Vegas, NV 89101

Vickers Electronics
506 E Main Street
Durham, NC 27701

Waco Communications
401 W. Loop 340
Waco, TX 76710

Webster Radio
2602 E Ashlan
Fresno, CA 93726

Westcom Engineering
831 Grand Ave
San Marcos, CA 92069

Williams Radio Sales
123 Grandin Court
Danville, VA 24541

Yorks Radio
Court & Main
Houlton, ME 04730

TELEVISION

Dave Ingram, K4TWJ

There are many new exciting aspects of modern Amateur Radio that offer unlimited challenge and excitement for the enthusiastic radio operator.

Satellite communication, moonbounce, computerized station operation and Slow Scan TV are some prime examples of these new communication worlds. I personally feel that SSTV is the most fascinating mode because it can be incorporated with many other unique areas like moonbounce, etc. Earth-Moon-Earth experimentation is presently centered around CW operation because total path attenuation is approximately 250 db. Watch that dissolve your ordinary SSTV or RTTY signal! Pulse modulation seems like the logical solution so I plan to try this method within the next few years. Anyone care to join with me?

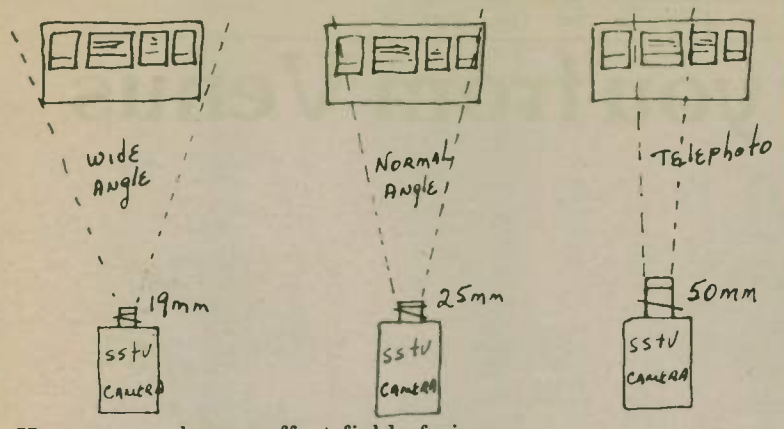
Hobby computers are another fascinating expansion which integrates beautifully with SSTV. For example, let's suppose you contact another Slow Scanner and you have a mini-computer interfaced with your station. Using an ASCII encoded SSTV keyboard, you type out his call and it appears on your monitor screen. You flip a switch and this info is entered into the computer. The computer responds by printing out data like the other station's gear, location, name, outside interests, etc. on the SSTV monitor screen and by sending beam coordinates to your antenna rotor. SSTV tapes may also prove ideal for storing and exchanging hobby computer programs. Slow Scan is, indeed, an exciting aspect of modern Amateur Radio.

Bob Schloeman, WA7MOV, continues to entice the SSTV gang with various weather pictures received from the National Oceanic and Atmospheric Administration observation satellites. Bob initially receives these Slow Scanned signals (roughly 208 seconds per frame) with gear tuned to approximately 136 MHz. The decoded tones drive a modified SSTV monitor, then a time exposure photograph is taken of the monitor's display. Usually Bob has a few recent weather pictures near his SSTV camera and even these "second generation" pictures look very good when received via Slow Scan.

Incidentally, the full details on WA7MOV's system and a computer program for calculating satellite passes will (like many other new innovations) be included in my forthcoming SSTV book. TAB Publishing is presently laying out and scheduling this book for printing. We should soon be working together on proofs and the finished book should appear in stores by spring of 1976.

Many amateurs are somewhat particular when choosing a microphone for single sideband use. Each application seems to have its own associated audio requirements. Likewise, Slow Scan operators benefit by choosing a camera lens which best suits their own situation. This decision is often based on parameters like the amount of area illumination, the probable size of televised object, the desired depth of field and the available funds. Considering these facts, let's talk briefly about lens basics.

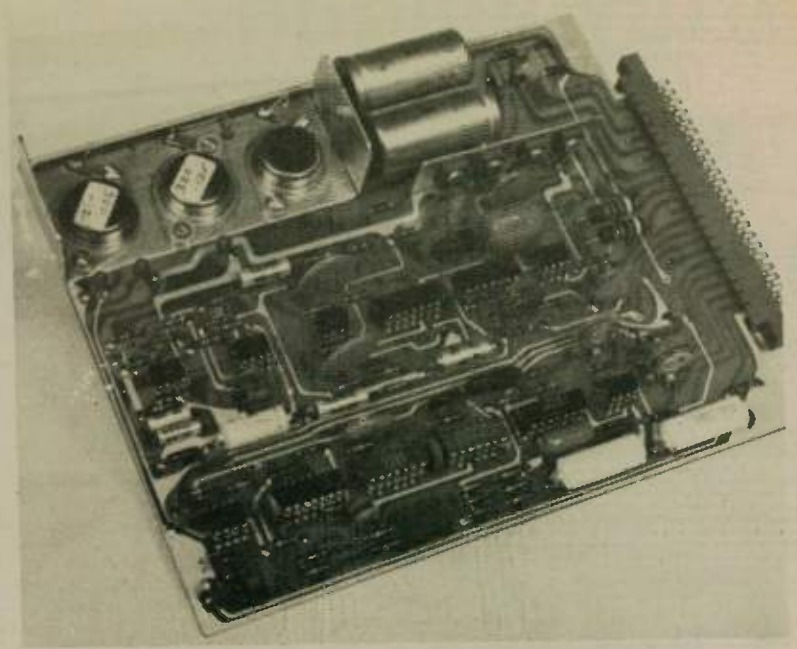
Television lens can be placed in three general categories: wide angle, normal and telephoto. Wide angle lenses are usually 10 to 19 mm. These lens are ideal for close-up work and for televising large areas, like the complete station console. The normal angle lens are usually in the 25 mm range. As these lenses can be used for medium-close and distance viewing, they are the usual choice for one lens SSTV setups. Some SSTVers fabricate a short extension barrel for insertion between the camera proper and its lens. This short focal length modification allows small objects, like postage stamps or IC's, to fill a TV picture. The telephoto lenses are usually considered as 50 mm and higher focal lengths. These narrow angle lenses act like a low power telescope on the camera.



How camera lenses affect field of view

Although I didn't catch the call letters of the station transmitting this picture, it is a view from his shack window in Arizona. Beautiful, eh? Imagine how impressive this picture would be to radio amateurs abroad. Likewise, imagine how interesting it would be to see "neighborhood" type SSTV pictures from DX stations.

Hal Holler's (HR2HH) SSTV was S-2 when he transmitted this picture on 20 meters. QRM was so rough that his audio was barely perceptable. Notice the lost lines near the picture bottom. This was caused by intereference to sync pulses.



This is the single printed circuit board utilized in the new WØLMD/WA9MFF video sampling monitor described in last month's column. This monitor features maximum sync stability and exceptional video response (picture detail). These pre-drilled, double sided boards are available from WA9MFF at twenty dollars each.

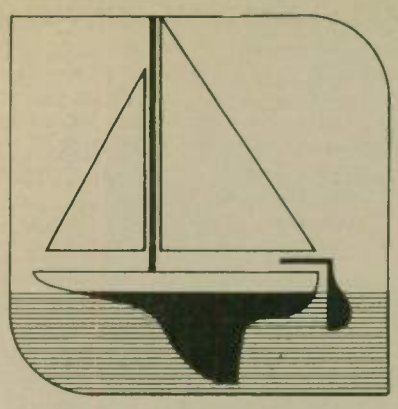
Compared to the wide angle tv lens (19 mm), the telephoto lens will view only one piece of gear on the operating console.

One of the most important considerations of any tv lens is its "F" stops. This adjustment determines the percentage of light hitting the camera pick-up tube. Naturally, video signal to

(*please turn to page 32*)

MARITIME MOBILE

Bill Yost, WA6PIU



Amateur Radio and Yacht Racing

The morning dew was slowly dissipating as the wind began to freshen. The Royal fleet off England's east coast were slowly making its way to the start. While the race was typical of many prior, today's race had taken on a new aspect. Following closely behind in a tugboat was some guy named Marconi who had come from Italy with some wizardly form of wireless communications. Bucking the politics of established landline telegraphy companies, Marconi needed an advantage. Ship-to-shore was a natural over the limitations of the landline and today was his moment to triumph. Special permission was granted by the queen who was especially interested in the concept.

As the racers crossed the line Marconi sent in the results to a shore station where they were immediately relayed to the queen. Thus marked the first ship-to-shore contact.

While such an event was heralded as a historic milestone giving Marconi needed leverage and backing for future experiments, it established another aspect of our wide scope of services.

Yacht racing or sailboat racing in its non-opulant context has become increasingly popular on an international scope. On just about any body of water blessed with a wind can be found a fleet of racers vying for positions. On our oceans the great spinnakered fleets wing their way over thousands of miles to place in the transoceanic classics. Whether it be a quick trip around the bouys or many miles across oceans, the need for communications is always prevalent.

Take, for instance, a typical ocean race — the Transpacific. A hundred or more boats start off San Pedro to end up days later at Honolulu — over 2,000 miles of open sea. Each boat has been carefully inspected prior to the start. The latest in safety equipment must be incorporated aboard each vessel. Manoverboard strobes, lifelines and radio gear are all optimized for the well-being of the crew. Communications include both VHF and SSB equipment.

During the course of the race the fleet may be separated by several hundred miles. Daily contact is thus made with an escort vessel via the marine radio. The escort boat then relays the individual positions, using the amateur bands, to the race committee on the beach. Such data are then fed into a computer which figures the relative position of each craft. Projections can then be made as to the eventual winners. Hawaiian stations are also kept in contact concerning the status of the race. Any problems which may occur have always been handled with great dispatch from the escort boat.

Amateur Radio is about the only mode which can facilitate such traffic. Where else can you communicate for hours at a time without tying up some channel or incurring a terrible expense?

On many of the more popular coastal races, i.e., Ensenada, Matzalan, Acapulco, Bermuda, Bahama, etc., Amateur Radio has also been the forefront of communications. By relaying finishing positions and times back to race committee headquarters, the handicaps can be quickly computed. Traffic can be relayed to the various participating yacht clubs as to the success of their participants. Families can also be notified as to the welfare of the crews. If trouble should occur, arrangements for spare parts or medical aid can be rapidly summoned.

Locally on our lakes, bays and reservoirs the need for communications persists in a big way. During any large regatta several stations can be utilized for a multitude of traffic. During a recent regatta in the Sacramento area over 500 boats representing several classes all converged on Folsom Lake for the competition. Two-meter stations were located on the lake at each start-finish line, at several strategic marks and on several of the rescue power boats. In addition, several stations monitored the race from shoreline vantage points sighting overturned craft, etc. A base station at the race committee headquarters on the beach provided coordination of the group. The traffic involved getting personnel and equipment to and from the start-finish lines, rescue requests and race scores. The only problem encountered was, again, overcoming the bad image set by CBers in prior years on the value of communications.

Again I will emphasize that in any public service function the need for positive publicity is utmost. If approached by a group for communications ask first about the publicity, then about the assignment. There's nothing wrong with trading our service for publicity. What we are able to provide in the way of communications far surpasses the effort to get us recognized. Bulletins describing the event should give us mention. Newspapers, radio and TV should all emphasize our effort.

Well, so much for the freelance commentary which I occasionally manage to sneak into the MM context.

In the way of a request from our MM ops, I'm attempting to develop a slide presentation suitable for yacht clubs, power squadrons, Coast Guard auxiliary groups, racing fleets, etc. Any contributions would be greatly appreciated. I will, of course, return the slides after making duplications. Hopefully I will develop an audio-visual package which can be loaned to boating amateurs for local presentation. Let's make the fine virtues of our service known to the boating public.

While seemingly redundant, I still need MM news and pictures for this column. I'm fast running out of tricks for the next editions. I'd hate to see the column perish due to the apathy of the readers. I'm currently researching potting and coating compounds for corrosion resistance, protecting rigs from the salt water environment. Any feedback or experience from readers would be appreciated. In the meantime, have a good Turkey Day.WA6PIU/R2

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Info from Boulder

You may want to get on the mailing list for the weekly Radio Telecommunications Forecasts. This is a free service and you may subscribe by writing to: U.S. Department of Commerce, Office of Telecommunications, Telecommunications Center, Boulder, Colorado, 80302. They are mailed weekly via Air Mail and seem to be well worth receiving.
NCDXC DXer

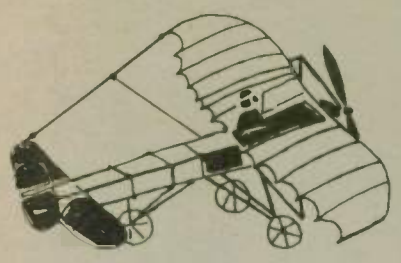
GOOD INFORMATION

Ron Reed, W6ODX, normally transmits code practice on Saturdays and Sundays from 8 to 9 a.m. on 7295 kHz, and on major national holidays on 7255 kHz. Speeds range from 10 through 24 words per minute.

He begins monitoring the frequency at about 7:15 a.m., and during the code practice leaves a quiet interval of one minute every five minutes. During these times he will answer any emergency calls and will interrupt the code practice to take care of said emergency.

AERONAUTICAL MOBILE

Vern Weiss, WA9VLK



The great Amateur Radio fleecing.

If I may, please let me depart from the normal patter of this unassuming, never-controversial monthly column to (you will please excuse the expression) "stick it to" the radio equipment dealerships. Now, now . . . before biting the paper you he'd in your hands, let me quality this. There are many radio dealers who are honest, trade fairly and offer genuine services. To those I tip my St. Louis Cardinals baseball cap. My gripe is the other ones.

I hold nothing against trying to make a living and an extra buck for an occasional steak dinner, but c'mon.

A letter from a reader who preferred to remain anonymous brought this to my attention. For quite some time I have felt the same way he did but never thought much about it for I thought it was just I who had a few sour apples in my tummy.

The reader states that he purchased a five-band transceiver from a dealership in North Dakota for $179. Upon receiving it the unit operated poorly at best. Time and money were invested in the unit to bring it to good condition. After a month the reader decided to trade it off to a large dealership in Milwaukee. After driving 300 miles to the Milwaukee dealership he arrived 40 minutes before closing time. The clerks were all too busy to serve him so our friend waited a half-hour. Finally a clerk went over and asked what he wanted.

Our reader told him, to which he was advised that he should have come in a few minutes earlier at least because they were about to close. A deal was made to leave our reader's transceiver at the Milwaukee dealership so that it could be evaluated the next day by a technican to see what kind of trade would be given. The remainder of the money would be put on a popular credit card. Five weeks passed and our reader finally received the statement informing him how much he was given for the transceiver he had rebuilt at a total cost of $200+. This amateur flim-flam operation granted him $50. Such a deal.

I can sympathize with him for I have also been treated pretty shabbily by not only this dealer but by others too. Their magazine ads really pour it on thick about amateur-to-amateur concern and service and friendliness and promptness, but unfortunately these ads are written by the founder of the company who probably resides elsewhere and hasn't "clerked" at his business for years.

The only rule of thumb I can offer in this situation is, use the phone. If they're not what you want on the phone they will be no happier to see you in person. I have personally compiled a list of the amateur radio dealers who have given me a bad experience and the solution is simple: I'll never go back to them no matter what.

Now let me really shake you up . . . upon totalling my equipment trades and purchases for the last nine years, I have gotten stung with bad equipment (inoperable or operates poorly) and gotten "taken" 90% less at hamfests than buying from bona fide dealers.

Oh well. Again, there are a lot of good dealers whom I regularly do business with. But let's make it not-so-easy on the fat ones who don't care anymore.

Lets go flying

Barry bounces back. As you are probably aware, in most cases it is against FARs to go flying without an operating emergency locating transmitter (ELT). Senator Barry Goldwater, K7UGA/K3UIG, has proposed a bill in Senate which would permit operation of an aircraft while an ELT was, say, back at the factory getting repaired. A review of illegitimate crash alarms would indicate more ELTs than the FAA would care to admit should be returned to the factory. Write your Senator on this one. Irregardless of your personal opinions on ELTs please continue to monitor 121.5 on cross-countries whenever possible.

Another happening on the aviation scene is the AOPA's letter to the FAA asking that "antenna farms" be established around large metropolitan areas so that large transmitting and receiving structures can be concentrated and, thus, marked on charts. Wait till the FCC with all their rules of separation gets wind of this one! I personally feel that there are not enough crashes to warrant this, and since current structures would be waived from the rule how effective can it be? The important thing this proposal lacks is timing. That is, this should have been suggested a few years ago sometime during the era between Kitty Hawk and KDKA.

With the holidays approaching and your wife finding the Heathkit catalogue in increasingly more visible places keep in mind that their aircraft strobe is approved for some — not all — aircraft applications. For your particular needs read the catalogue description closely or write Heath.

Air mail

A nice note came in from Jerry Bliss, K6SMH/6, of Palo Alto, California. Jerry says that he regularly flies aboard a Navy Reserve 4-engine Lockheed Electra (also known as the Navy P-3) from Moffett Field (San Jose, CA) to San Diego and return. During these four-hour flights K6SMH runs SSB on primarily 7260 kHz and once in awhile on 14.320 MHz. You can find him Sundays around 1700 PST (0100 GMT). Bet he feels like Sargeant Rock aboard that 'ol P-3.

SWL Corner

Insignificant to aviation but important nonetheless, I am saddened to report that the Radio Canada Shortwave Club has folded effective 2 November 1975. The nearly 16,000 member club (of which I am number 15,842) had gone strong for over eight years but has come upon hard times. That brings to zero the number of North American shortwave stations offering organized membership-type clubs, the last one being the radio New York Worldwide Shortwave club which folded in 1968. Radio Canada still does, however, run regular programs on bush piloting in Northern Canada.

Anybody remember the VOA's Ham Radio program with George Jacobs circa 1966?

Last month I stated that a flight instructor net was organized on 40 meters. You will find "CQ CFI" at 0200 GMT Mondays on 7290 kHz.

The Worldwide DX Club (c/o Michael Bethge, D-6380 Bad Homburg, Ferdinandsplatz 11, Federal Republic of Germany) puts out a neat shortwave DX magazine and in it there is a long listing (updated monthly) of worldwide goodies to hear from the aviation scene on your nifty general coverage receiver. Write Mr. Bethge for a sample copy.

Hence we are cleared for the approach.

I am still a-beggin' for letters from you. Let the people who fly with **Worldradio News** know about you and your air mobile activities. Acquired a new license or rating? Let us know! Darned right you should be proud! Send your news and pictures to me in care of Garlicandonions Airlines, 533 South Lincoln Avenue, Kankakee, IL 60901. Till next month . . . our closing tip-of-the-month: During busy IFR days . . ask for your clearance in a falsetto voice.

•

Memorandum

(*continued from page 28*)
have available for consultation.

10. **Research consultant/volunteer** — There is a need for research program support, for example, computer programmed channel search methods, studies in advancements in equipment, antennas, duplexers, modularization of control systems, autopatch, etc.

11. **General** — There is a need to promote the occupancy of some bands to avoid losing them. Six meters and 220 MHz are the most vulnerable.

12. **Technical consultant/volunteer** — There is a need for solving technical problems such as intermod on mountaintops and split channel rejection techniques. Many others will come to light.

13. **Educational** — There is a growing need for educational programs for the benefit of newcomers to VHF/UHF. This applies as well to operational techniques and technical standards of deviation, gain and on-frequency operation.

14. **Educational** — Plans need be developed to legally provide for use of more than one repeater without inviting problems. Joint cooperation among repeater owners may produce a plan such as in Orlando, FL, where, by agreement, any amateur who is a member of one of the repeaters in the Council has also the privilege of using any other repeater that is represented in the Council.

15. **General** — Jammers pose problems to all modes of VHF/UHF communications. Help is needed in focusing on ways of minimizing the damage done by jammers and in finding and identifying them by:

a. T-Hunt Techniques

b. Recording and analyzing jamming signals

*Each problem is preceded by a categorization of the type of organizational attention needed.

•

SSTV

(*continued from page 30*)
noise ratio and picture depth of field will be influenced by this setting. Usual "F" stops range from F-22 (smallest aperture size) to approximately F-1.4 (largest aperature size) and each click of the "F" ring doubles or halves the previous light setting.

Depth of field relates to the acceptably focused range behind and in front of the picture's primary subject. This depth of field can usually be expanded by reducing lens aperature size (higher number "F" stop) and increased room illumination. The end result is more lifelike SSTV pictures.

One of the most common problems facing an SSTV newcomer is the initial calibration adjustments of commercial monitors and cameras. Although a "closed circuit" arrangement (monitor input directly connected to camera output) will permit viewing pictures produced by the Slow Scan camera, it usually confines the video swing. This problem can be reduced substantially if the SSTV gear is calibrated by a gray scale tape. First, the monitor is adjusted to reproduce black, white and the varying shades of gray. Then the camera is set for best contrast (without readjusting the monitor). A couple of years ago I produced some of these gray scale tapes for newcomers and the results were quite gratifying. I am renewing that offer this month. If you would like a gray scale tape send me a blank cassette and return postage. I will "dub" some frames of gray scale onto your cassette and return it in your mailer. If you only have a reel to reel machine than I will swap three-inch 3 3/4 IPS reels with you (while my supply lasts). My address is Eastwood Village #604N, Rt. 11 Box 499, Birmingham, Alabama, 35210.

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- No transmitter tuning
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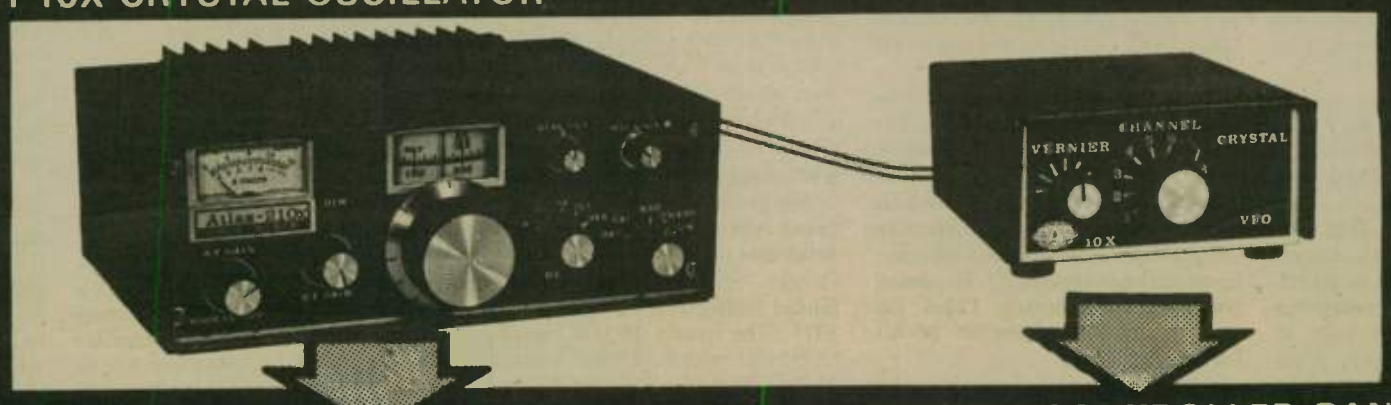

BAND	VFO RANGE	CRYSTAL CONTROLLED RANGE
160M Model 215x only	1,800–2,100 KHz	1,700–3,000 KHz
80M	3,500–4,000	3,000–5,200
40M	7,000–7,500	5,800–10,000
20M	14,000–14,500	13,900–14,900
15M	21,000–21,500	20,600–21,600
10M Model 210x only	28,400–29,400 Adjustable for any 1,000 KHz segment	27,500–30,000

210x/215x . . . . . $649.
AC Console 110/220V . . . . . $139.
Portable AC Supply, 110/22V . $95.

Plug-in Mobile Kit . . . . . $44.
10x Osc. Less Crystals . . . . . $55.

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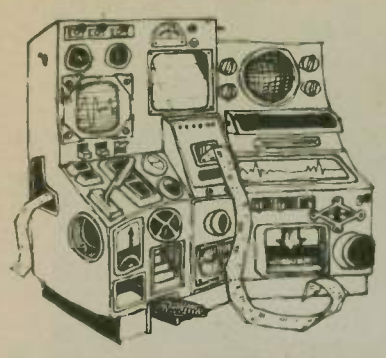


VHF-UHF

Lou Anciaux, WB6NMT

The big news for November is the WA6LET EME tests to be conducted on the 23rd. A one hour test was run on the 31st of October but results were not in yet. This issue of Worldradio was printed on 6 Nov. The text of the announcement sent out by Vic Frank, WB6KAP, is quoted below.

"You are invited to participate in a 432 MHz moonbounce test from WA6LET at the SRI 150 ft dish on November 23, 1975 from 0430-1530 UT.

We plan to transmit the first 30 seconds of each minute on 432.100 and receive between 432.00-432.075 during the last 30 seconds of each minute. A circularly-polarized feed will be used.

We will again attempt to conduct low-power one-way tests near the even hour, in which a preamble will be sent announcing the test, the power will be changed, and a morse code group will be repeated over and over for 15 seconds, followed by another change. Please send us a copy of what you received (postmarked by 8 December) and we will send you a SWL card giving the lowest power level at which you were able to copy the code groups correctly.

Facilities for these tests are being made available courtesy of SRI's radio physics laboratory and remote measurements laboratory. The equipment will be operated by members of the SRI Amateur Radio Society (WA6LET) and the UHF Radio Society (W6GD).

I trust that this notice arrives in time for you to get ready. Address any reply to: Victor R. Frank, Stanford Research Institute, Bldg 320A, 333 Ravenswood Ave., Menlo Park, California, 94025, USA."

The SRI dish to be used for these tests is the same 150' one used in past years. The phone number at the dish is (415) 493-8595. With the considerable prework being done and the single-band operation, results should be quite outstanding.

VHF seems to be a growing interest among those not previously involved in this part of the spectrum. Also, those involved with only the FM type activity are like-wise becoming more involved with the more esoteric modes.

The ARRL Southwestern Division Convention in Ventura, the weekend of 25-26 Oct. featured a mini antenna measuring contest of the type normally only seen at the East and West Coast VHF Conferences. Jim Mills, WB6LLT, coordinator for the event, reports considerable interest was shown. Alas, but only a handful of entries were measured.

Besides the antenna contest, and in addition to the AMSAT talk; three of the technical talks featured VHF/UHF oriented discussions.

Years past, conventions featured a good selection of various subjects. During more recent times however, the fewer talks along lines of real VHF/-UHF work have promoted the regional VHF/UHF conferences. Perhaps we are entering the circle again.

The New England Division ARRL Convention held the first weekend of November featured seven VHF/UHF oriented talks in addition to the AMSAT talk. This speaks very well for the N.E. VHF Association's work.

As previously reported, Takashi Kumamoto, JA6DR, had his first EME QSO on 144 with Bob Suterhland, W6PO at the end of August. By mid-October, Tak has also worked W7CNK, VK5MC, SM7BAE, DK1KO and probably others by the time this is printed.

Feast or Famine it seems. After several years of trying, suddenly Japan is blooming with first-rate EME stations. Guess the proper spacing of Yagis is finally getting through.

Speaking of antennae, though not big monsters, at the Ventura Convention, Specialty Communications Systems displayed their new DX "J". Although the "J" has been around longer than most of us, it still remains one of the best mobile antennas around. The SCS version features a different approach to the matching problem. The Teflon coax match section employed yields a 1:1.5 VSWR across the entire two-meter band, with optimum tuning over the 146-148 portion. The 220 version is also in production and a 440-450 model is in the works as well.

Not too early to start planning, mark the 15-16 May 1976 as the weekend for the East Coast VHF Conference. Jim Fisk, W1DTY, is presently the planning committee. The Central States VHF Society annual get-together will be 20-22 August. The committee for the conference consists of Carl Scheidler, W2AZL; John Fox, WØLER and Ray Nichols, W5HFV. Dates and place for the West Coast VHF conference is yet to be established.

Keep the info coming to 4519 Narragansett Ave., San Diego, CA 92107. This short column is partially due to the lack of info. You are the one to help make it a fat, news filled column.

●

An opportunity

(*continued from page 16*)

have gone on on two-meters and other bands causes real problems. People in other countries overhear some of this and they get the wrong impression of the value of the amateur service. People in this country may hear this and get the wrong impression about the amateur service. We do have an excellent reputation for being self-policing. That's a strong point for us. We have a better reputation than any other service for solving our own problems and we have to continue to do this in order to keep this reputation because it is a plus for us.

And the final thing we can do is help build up more members in the League. Membership now is at an all-time high. Running around 120,000 it's gone up between 6 or 7 percent since the beginning of the year. We're in good shape from a membership standpoint but we need to be in an even better shape because, regardless of the reason, every now and then someone in Washington brings up the point, well, we've got 270,000 licencees and the League has only got 100,000 or 110,000 members so obviously you don't represent the majority. That is a weak point in some conversations that we have.

That rather briefly is what WARC '79 is all about. It's an opportunity to get some increased frequency bands. The recommendations now in the HF are that we have an expanded band at 40 meters, an exclusive band at 20, 15 and 10 and that we have additional bands at 10.5, 18 and 24 MHz. That's what we're shooting for. I believe that we have the material or can get the material to justify this request. Whether we're successful, no one can say at this point.

We have a tremendous opportunity; we have a tremendous challenge. And I personally am quite confident that we can make a good showing between now and 1979.

In 1948 Dick Baldwin joined the ARRL staff and has served as Managing Editor of *QST*, Asst. General Manager and now serves as General Manager. He has been licensed since 1934 and now is the holder of the Amateur Extra Class license and many operating awards. Dick graduated from Bates College and Boston University with a Masters degree. During World War II he served in the U.S. Navy and presently is a Commander in the Naval Reserve. In addition to Amateur Radio, Dick enjoys taking his family sailing in their 35 foot ketch, *Endurance*.

●

Tornado Survival

The tornado is the most violent of all storms. To save your life you must know what to do when you hear official tornado watches and warnings.

1. LISTEN TO YOUR RADIO for official tornado watches and warnings, and take them seriously. You usually will first hear that a tornado "Watch" is in effect. This means tornadoes may occur. A tornado "Warning" is broadcast when a tornado actually strikes.

2. STAY INDOORS. Wind-driven objects are your greatest danger outdoors.

3. IN YOUR HOME, go to a storm cellar or basement if you can. The Southwest corner is usually the safest. **If there is time**, open the windows about an inch on the side of the home/mobile home away from the approaching storm to reduce air pressure inside.

4. IN OFFICE BUILDINGS, plan to go to an interior hallway of the lowest floor, or go to the designated shelter area.

5. IN SHOPPING CENTERS, go to the designated shelter area . . . NOT to your parked car.

6. IN SCHOOLS, follow advanced plans to an interior hallway on the lowest floor. Avoid auditoriums, gymnasiums and large open rooms with poorly supported roofs.

7. IN YOUR CAR, drive away from the path of the tornado at a right angle. Go to low, dry ground for shelter from wind-driven objects. Avoid overhead wires.

8. IF CAUGHT OUTDOORS, lie down flat on the ground. A dry roadside ditch or plow furrow gives you some protection.

9. MOTHER . . . STAY CALM! Know where the kids are during a tornado watch. Be sure they know your plans for emergency action. Keep the path to the basement uncluttered. Decide which corner of the basement is best to use. Keep your battery powered radio handy.

10. KNOW WHERE AND HOW to shut off your electrical power and gas. Do not touch broken wires.

11. KNOW THE NAMES OF COUNTIES, towns and numbers of main highways around you, especially if you're traveling. This will help you interpret weather information.

12. IF YOU OWN A MOBILE HOME, take steps to properly block and tie it down NOW.

13. WHEN YOU HEAR CIVIL DEFENSE SIRENS, turn on your radio for Official Tornado "Watch" and "Warning" information.

If you are included in a tornado WATCH, now is the time to plan!

If you are included in a tornado WARNING, you must act.

If you see a funnel cloud formation or a tornado, call your local Civil Defense agency or your law enforcement center.

●

(*continued from page 8*)

sea experiences began to dim from memory, it came time to start doing something about something. There was a chance to get into aviation radio and so a visit to the Pan American Airline school for Flight Radio Officers was made to Jackson Heights, New York. Classes started and Pan Am had two sessions of fifteen men in each class, spaced two weeks apart in the two months course. The classroom was divided into two separate sides: one for theory and the other for code practice. Cubicles were such that ordinarily one could only see the top of the guy's head on the other side.

Once we were asked to leave the rooms and join the others in their code practice room. Yup — here it comes! Any CW op worth his salt, when seated at or near a "live" hand key and with a captive audience to boot, will act. A snappy "CQ" was rapped out but got only one response from that room full of thirty operators. Seems hard to believe but it was Jim from Chicago, the W9 who had cheered up many a QSO on the high seas around New Zealand.

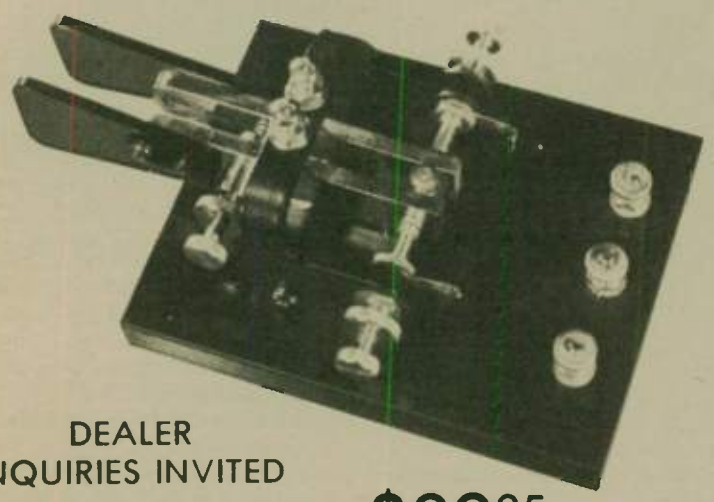
Small world? You bet it is. Jim has remained one of my best amateur friends over the years. It's always a pleasure to reminisce over the far-flung places we have been in the course of our travels.

—*LERC Club Bulletin*

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"



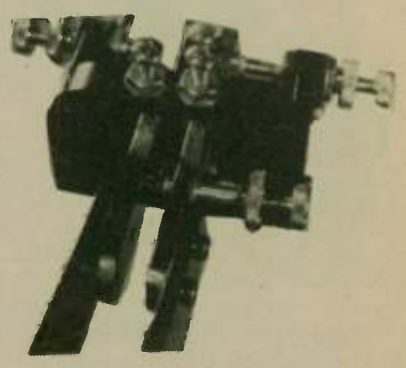
DEALER
INQUIRIES INVITED

$39.95 PREPAID

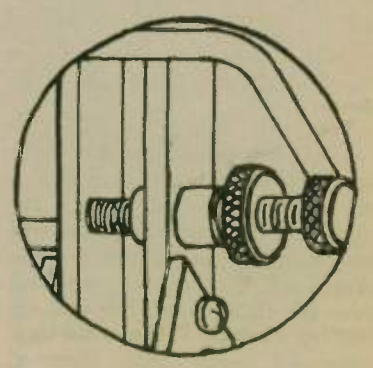
Electronics Center, Inc, Dallas, is pleased to announce on a national basis the "Black Beauty" squeeze paddle for the serious minded CW operator as well as the newcomer who is planning to make a move up from the mechanical flopper.
Many months of make-up, testing, remake, and more testing have gone into the development of the "Black Beauty". It is designed to complement any keyer, and will provide many hours of "fatigue free" operating time. It makes sending a pleasure and reopens the door to a facit of operating unknown until this time in your communications life.

The "controlled chamber", constant feather adjustment (see insert) permits precise touch as desired by the critical. Look at the many features:

* selected spring steel for uniform performance
* constant "controlled chamber" for adjustment
* five points of adjustment for the most critical touch
* 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.

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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

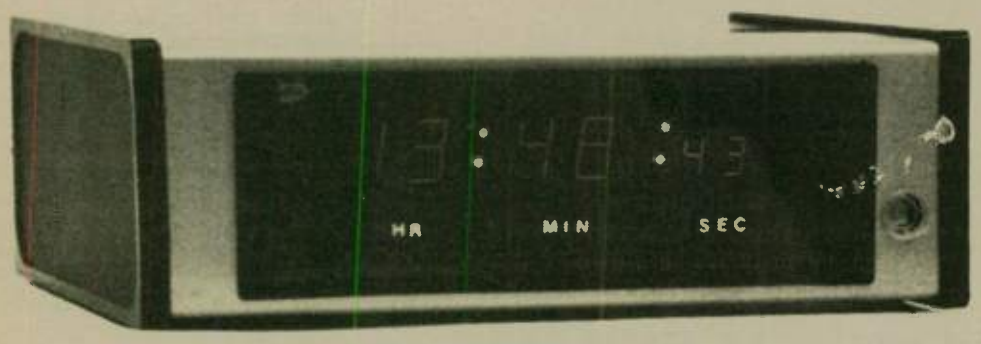
$99.95 PREPAID

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

JOE KASSER, G3ZCZ

At the AMSAT general meeting the four directors whose terms of office had expired were reelected. The AMSAT board is now comprised of seven persons: Perry Klein, K3JTE; Chuck Dorian, W3JPT; Jan King, W3GEY; and Bill Tynan W3KMV, who were just reelected to two year terms of office; and Tom Clark, WA3LND; Bill Dunkerly, Jr., WA2INB; and Larry Kayser, VE3QB, who are in the middle of their terms of office. Bob Carpenter, W3OTC, was later appointed Secretary; Gary Tater, W3HUC, assistant Secretary; and Roy Rosner, WB4UOX, treasurer. The meeting was attended by about seventy persons. Reports were given on the progress of the next radio amateur spacecraft — the Phase III high orbit project-and on the AMSAT-OSCAR 6 and 7 command and control activities including the changeover to microprocessor control at the ground command stations.

Certificates for the new "OSCAR" Award are available and were first shown at the meeting. Full details of the requirements for the award and of the meeting are published in the December 1975 issue of the AMSAT Newsletter.

AMSAT-OSCAR 6 celebrated its third birthday on October 15th and AMSAT-OSCAR 7 its first birthday on November 15th. QSL cards are still available from AMSAT for reception reports of the special relay transmissions from the satellites commemorating these anniversaries. The Jet Propulsion Laboratories (Radio Club) at Pasadena, California held an OSCAR month from 15 October to 15 November with special exhibits depicting the two spacecraft.

A distance record for amateur satellite relay communications has been claimed by P.J. Gowen, G3IOR, and Bud Schultz, W6CG, for a QSO made over a ground distance of nearly 6,000 miles. As this path is well out of direct line of sight range, the contact was made using meteor scatter techniques on successive evening orbits. The QSO took two weeks to complete.

The FCC has authorized radio amateurs in the USA equipped for RTTY to transmit ASCII coded signals through the AMSAT-OSCAR spacecraft for experimental purposes. AMSAT is interested in receiving proposals for and carrying out experiments in transmitting computer data via satellite.

New orbit books for 1976 listlisting all AMSAT-OSCAR 6 and 7 orbits are available from Skip Reyman, W6PAJ, P.O.Box 374, San Dimas, California 91773 for $3.00 (or IRCs) postpaid.

Fred Merry, W2GN, has completed tests operating mobile in motion using SSB via AMSAT-OSCAR 7 mode B with fantastic results. His signals were fully audible over most of the East Coast of the USA during the 15 minutes or so that the spacecraft was within his visibility range. These experiments have demonstrated the superior downlink capability of Mode B. If you would like to listen to really good downlink signals for a change try listening to AMSAT-OSCAR 7 Mode B.

Bud Schultz, W6CG, distance record holder (along with P. J. Gowen, G3IOR) for amateur satellite relay communications.

OSCAR Award

EARL SKELTON, WA3THD

AMSAT is currently offering an award for OSCAR Satellite Communications Achievement Recognition; a facsimile of the OSCAR is on the reverse side. The details concerning the award are as follows:

Purpose: The purpose of the award is to stimulate and maintain a continuing interest in satellite communications by providing recognition of continuing QSO accomplishments, AND to provide for recognition by AMSAT of special efforts and services by all radio amateurs.

Availability: The basic award is available for confirmed satellite contacts with either (1) twenty U.S. states, Canadian call areas, other countries or any mixture thereof, or (2) six Australian call areas and two countries, or (3) any other requirements as specified by the AMSAT Board of Directors.

Notes: (1) All contacts made via any OSCAR spacecraft using any legal transmission mode are valid.

(2) QSL cards or other written confirmation of contacts must show that the QSO was via an OSCAR satellite.

(3) In lieu of such QSL cards applicants may submit a list of contacts confirmed by the awards manager of their national amateur radio society or AMSAT affiliate organization.

(4) All contacts must be made from the same QTH (within an area of 25 miles from a particular location).

(5) Sufficient postage must be supplied for the return of the QSL cards submitted. The award is free to AMSAT members and is available to nonmembers for the nominal fee of one U.S. dollar ($1.00).

(6) Endorsements are available for each ten additional areas as defined in Availability-Item (1) above.

(7) Applications should be forwarded to AMSAT-Award Manager, P.O. Box 27, Washington, DC 20044, USA AMSAT members should include their membership numbers.

Jan King, W3GEY, (and son) talking about the proposed next AMSAT-OSCAR spacecraft. [*Photo by W4ART*]

Tom Clark, WA3LND, reading ITU regulations at AMSAT annual meeting. [*Photo by W4ART*]

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Beware of bumpers

Personnel need to be extremely cautious when trying to assist in separating vehicles which have been involved in accidents. This warning is directed at those automobiles equipped with the new "safety" or impact bumpers.

According to a police safety bulletin, five patrolmen in one department had lost fingers and one a part of his foot when they attempted to separate wrecked vehicles only to have the new model bumpers shoot out like a "spring loaded ram". All personnel involved in separating vehicles involved in accidents should exercise reasonable caution and should wait if possible for two trucks to handle such situations. (Richards-Gebaur AFB Bulletin)

– MARAC Newsletter

AMSAT-OSCAR 6 — DECEMBER

MON 1 DEC 1975 (335) — ASCENDING NODE

ORBIT	TIME	LONG
14292	00:12:18	54.2
14293	02:07:17	82.9
14294	04:02:17	111.7
14295	05:57:17	140.4
14296	07:52:16	169.2
14297	09:47:16	197.9
14298	11:42:16	226.7
14299	13:37:15	255.4
14300	15:32:15	284.2
14301	17:27:15	312.9
14302	19:22:14	341.7
14303	21:17:14	10.4
14304	23:12:14	39.2

TUES 2 DEC 1975 (336) — ASCENDING NODE

ORBIT	TIME	LONG
14305	01:07:13	67.9
14306	03:02:13	96.7
14307	04:57:13	125.4
14308	06:52:13	154.2
14309	08:47:12	182.9
14310	10:42:12	211.7
14311	12:37:12	240.4
14312E	14:32:11	269.2
14313E	16:27:11	297.9
14314	18:22:11	326.7
14315	20:17:10	355.4
14316	22:12:10	24.2

WED 3 DEC 1975 (337) — ASCENDING NODE

ORBIT	TIME	LONG
14317	00:07:10	52.9
14318	02:02:09	81.7
14319	03:57:09	110.4
14320	05:52:09	139.1
14321	07:47:08	167.9
14322	09:42:08	196.6
14323	11:37:08	225.4
14324	13:32:07	254.1
14325	15:27:07	282.9
14326	17:22:07	311.6
14327	19:17:06	340.4
14328	21:12:06	9.1
14329	23:07:06	37.9

THUR 4 DEC 1975 (338) — ASCENDING NODE

ORBIT	TIME	LONG
14330	01:02:05	66.6
14331	02:57:05	95.4
14332	04:52:05	124.1
14333	06:47:04	152.9
14334	08:42:04	181.6
14335	10:37:04	210.4
14336	12:32:03	239.1
14337E	14:27:03	267.9
14338E	16:22:03	296.6
14339	18:17:02	325.4
14340	20:12:02	354.1
14341	22:07:02	22.9

FRI 5 DEC 1975 (339) — ASCENDING NODE

ORBIT	TIME	LONG
14342	00:02:01	51.6
14343	01:57:01	80.4
14344	03:52:01	109.1
14345	05:47:00	137.9
14346	07:42:00	166.6
14347	09:37:00	195.4
14348	11:31:59	224.1
14349	13:26:59	252.9
14350	15:21:59	281.6
14351	17:16:58	310.4
14352	19:11:58	339.1
14353	21:06:58	7.9
14354	23:01:57	36.6

SAT 6 DEC 1975 (340) — ASCENDING NODE

ORBIT	TIME	LONG
14355	00:56:57	65.4
14356	02:51:57	94.1
14357	04:46:57	122.9
14358	06:41:56	151.6
14359	08:36:56	180.4
14360	10:31:56	209.1
14361	12:26:55	237.9
14362	14:21:55	266.6
14363	16:16:55	295.4
14364	18:11:54	324.1
14365	20:06:54	352.9
14366	22:01:54	21.6
14367	23:56:53	50.4

SUN 7 DEC 1975 (341) — ASCENDING NODE

ORBIT	TIME	LONG
14368	01:51:53	79.1
14369	03:46:53	107.9
14370	05:41:52	136.6
14371	07:36:52	165.3
14372	09:31:52	194.1
14373	11:26:51	222.8
14374	13:21:51	251.6
14375	15:16:51	280.3
14376	17:11:50	309.1
14377	19:06:50	337.8
14378	21:01:50	6.6
14379	22:56:49	35.3

MON 8 DEC 1975 (342) — ASCENDING NODE

ORBIT	TIME	LONG
14380	00:51:49	64.1
14381	02:46:49	92.8
14382	04:41:48	121.6
14383	06:36:48	150.3
14384	08:31:48	179.1
14385	10:26:47	207.8
14386	12:21:47	236.6
14387E	14:16:47	265.3
14388E	16:11:46	294.1
14389	18:06:46	322.8
14390	20:01:46	351.6
14391	21:56:45	20.3
14392	23:51:45	49.1

TUES 9 DEC 1975 (343) — ASCENDING NODE

ORBIT	TIME	LONG
14393	01:46:45	77.8
14394	03:41:44	106.6
14395	05:36:44	135.3
14396	07:31:44	164.1
14397	09:26:43	192.8
14398	11:21:43	221.6
14399	13:16:43	250.3
14400	15:11:42	279.1
14401	17:06:42	307.8
14402	19:01:42	336.6
14403	20:56:42	5.3
14404	22:51:41	34.1

WED 10 DEC 1975 (344) — ASCENDING NODE

ORBIT	TIME	LONG
14405	00:46:41	62.8
14406	02:41:41	91.6
14407	04:36:40	120.3
14408	06:31:40	149.1
14409	08:26:40	177.8
14410	10:21:39	206.6
14411	12:16:39	235.3
14412E	14:11:39	264.1
14413E	16:06:38	292.8
14414	18:01:38	321.6
14415	19:56:38	350.3
14416	21:51:37	19.1
14417	23:46:37	47.8

THUR 11 DEC 1975 (345) — ASCENDING NODE

ORBIT	TIME	LONG
14418	01:41:37	76.6
14419	03:36:36	105.3
14420	05:31:36	134.0
14421	07:26:36	162.8
14422	09:21:35	191.5
14423	11:16:35	220.3
14424	13:11:35	249.0
14425	15:06:34	277.8
14426	17:01:34	306.5
14427	18:56:34	335.3
14428	20:51:33	4.0
14429	22:46:33	32.8

FRI 12 DEC 1975 (346) — ASCENDING NODE

ORBIT	TIME	LONG
14430	00:41:33	61.5
14431	02:36:32	90.3
14432	04:31:32	119.0
14433	06:26:32	147.8
14434	08:21:31	176.5
14435	10:16:31	205.3
14436	12:11:31	234.0
14437E	14:06:30	262.8
14438E	16:01:30	291.5
14439	17:56:30	320.3
14440	19:51:29	349.0
14441	21:46:29	17.8
14442	23:41:29	46.5

SAT 13 DEC 1975 (347) — ASCENDING NODE

ORBIT	TIME	LONG
14443	01:36:28	75.3
14444	03:31:28	104.0
14445	05:26:28	132.8
14446	07:21:27	161.5
14447	09:16:27	190.3
14448	11:11:27	219.0
14449	13:06:26	247.8
14450	15:01:26	276.5
14451	16:56:26	305.3
14452	18:51:25	334.0
14453	20:46:25	2.8
14454	22:41:25	31.5

SUN 14 DEC 1975 (348) — ASCENDING NODE

ORBIT	TIME	LONG
14455	00:36:25	60.3
14456	02:31:24	89.0
14457	04:26:24	117.8
14458	06:21:24	146.5
14459	08:16:23	175.3
14460	10:11:23	204.0
14461	12:06:23	232.8
14462	14:01:22	261.5
14463	15:56:22	290.3
14464	17:51:22	319.0
14465	19:46:21	347.8
14466	21:41:21	16.5
14467	23:36:21	45.3

MON 15 DEC 1975 (349) — ASCENDING NODE

ORBIT	TIME	LONG
14468	01:31:20	74.0
14469	03:26:20	102.8
14470	05:21:20	131.5
14471	07:16:19	160.2
14472	09:11:19	189.0
14473	11:06:19	217.7
14474	13:01:18	246.5
14475	14:56:18	275.2
14476	16:51:18	304.0
14477	18:46:17	332.7
14478	20:41:17	1.5
14479	22:36:17	30.2

TUES 16 DEC 1975 (350) — ASCENDING NODE

ORBIT	TIME	LONG
14480	00:31:16	59.0
14481	02:26:16	87.7
14482	04:21:16	116.5
14483	06:16:15	145.2
14484	08:11:15	174.0
14485	10:06:15	202.7
14486	12:01:14	231.5
14487E	13:56:14	260.2
14488E	15:51:14	289.0
14489	17:46:13	317.7
14490	19:41:13	346.5
14491	21:36:13	15.2
14492	23:31:12	44.0

WED 17 DEC 1975 (351) — ASCENDING NODE

ORBIT	TIME	LONG
14493	01:26:12	72.7
14494	03:21:12	101.5
14495	05:16:11	130.2
14496	07:11:11	159.0
14497	09:06:11	187.7
14498	11:01:10	216.5
14499	12:56:10	245.2
14500	14:51:10	274.0
14501	16:46:10	302.7
14502	18:41:09	331.5
14503	20:36:09	.2
14504	22:31:09	29.0

THUR 18 DEC 1975 (352) — ASCENDING NODE

ORBIT	TIME	LONG
14505	00:26:08	57.7
14506	02:21:08	86.5
14507	04:16:08	115.2
14508	06:11:07	144.0
14509	08:06:07	172.7
14510	10:01:07	201.5
14511	11:56:06	230.2
14512E	13:51:06	259.0
14513E	15:46:06	287.7
14514	17:41:05	316.5
14515	19:36:05	345.2
14516	21:31:05	14.0
14517	23:26:04	42.7

FRI 19 DEC 1975 (353) — ASCENDING NODE

ORBIT	TIME	LONG
14518	01:21:04	71.5
14519	03:16:04	100.2
14520	05:11:03	128.9
14521	07:06:03	157.7
14522	09:01:03	186.4
14523	10:56:02	215.2
14524	12:51:02	243.9
14525	14:46:02	272.7
14526	16:41:01	301.4
14527	18:36:01	330.2
14528	20:31:01	358.9
14529	22:26:00	27.7

SAT 20 DEC 1975 (354) — ASCENDING NODE

ORBIT	TIME	LONG
14530	00:21:00	56.4
14531	02:16:00	85.2
14532	04:10:59	113.9
14533	06:05:59	142.7
14534	08:00:59	171.4
14535	09:55:58	200.2
14536	11:50:58	228.9
14537	13:45:58	257.7
14538	15:40:57	286.4
14539	17:35:57	315.2
14540	19:30:57	343.9
14541	21:25:56	12.7
14542	23:20:56	41.4

SUN 21 DEC 1975 (355) — ASCENDING NODE

ORBIT	TIME	LONG
14543	01:15:56	70.2
14544	03:10:55	98.9
14545	05:05:55	127.7
14546	07:00:55	156.4
14547	08:55:55	185.2
14548	10:50:54	213.9
14549	12:45:54	242.7
14550	14:40:54	271.4
14551	16:35:53	300.2
14552	18:30:53	328.9
14553	20:25:53	357.7
14554	22:20:52	26.4

MON 22 DEC 1975 (356) — ASCENDING NODE

ORBIT	TIME	LONG
14555	00:15:52	55.2
14556	02:10:52	83.9
14557	04:05:51	112.7
14558	06:00:51	141.4
14559	07:55:51	170.2
14560	09:50:50	198.9
14561	11:45:50	227.7
14562E	13:40:50	256.4
14563E	15:35:49	285.2
14564	17:30:49	313.9
14565	19:25:49	342.7
14566	21:20:48	11.4
14567	23:15:48	40.2

TUES 23 DEC 1975 (357) — ASCENDING NODE

ORBIT	TIME	LONG
14568	01:10:48	68.9
14569	03:05:47	97.7
14570	05:00:47	126.4
14571	06:55:47	155.1
14572	08:50:46	183.9
14573	10:45:46	212.6
14574	12:40:46	241.4
14575	14:35:45	270.1
14576	16:30:45	298.9
14577	18:25:45	327.6
14578	20:20:44	356.4
14579	22:15:44	25.1

WED 24 DEC 1975 (358) — ASCENDING NODE

ORBIT	TIME	LONG
14580	00:10:44	53.9
14581	02:05:43	82.6
14582	04:00:43	111.4
14583	05:55:43	140.1
14584	07:50:42	168.9
14585	09:45:42	197.6
14586	11:40:42	226.4
14587E	13:35:41	255.1
14588E	15:30:41	283.9
14589	17:25:41	312.6
14590	19:20:40	341.4
14591	21:15:40	10.1
14592	23:10:40	38.9

THUR 25 DEC 1975 (359) — ASCENDING NODE

ORBIT	TIME	LONG
14593	01:05:39	67.6
14594	03:00:39	96.4
14595	04:55:39	125.1
14596	06:50:39	153.9
14597	08:45:38	182.6
14598	10:40:38	211.4
14599	12:35:38	240.1
14600	14:30:37	268.9
14601	16:25:37	297.6
14602	18:20:37	326.4
14603	20:15:36	355.1
14604	22:10:36	23.9

FRI 26 DEC 1975 (360) — ASCENDING NODE

ORBIT	TIME	LONG
14605	00:05:36	52.6
14606	02:00:35	81.4
14607	03:55:35	110.1
14608	05:50:35	138.9
14609	07:45:34	167.6
14610	09:40:34	196.4
14611	11:35:34	225.1
14612E	13:30:33	253.9
14613E	15:25:33	282.6
14614	17:20:33	311.4
14615	19:15:32	340.1
14616	21:10:32	8.9
14617	23:05:32	37.6

SAT 27 DEC 1975 (361) — ASCENDING NODE

ORBIT	TIME	LONG
14618	01:00:31	66.4
14619	02:55:31	95.1
14620	04:50:31	123.8
14621	06:45:30	152.6
14622	08:40:30	181.3
14623	10:35:30	210.1
14624	12:30:29	238.8
14625	14:25:29	267.6
14626	16:20:29	296.3
14627	18:15:28	325.1
14628	20:10:28	353.8
14629	22:05:28	22.6

SUN 28 DEC 1975 (362) — ASCENDING NODE

ORBIT	TIME	LONG
14630	00:00:27	51.3
14631	01:55:27	80.1
14632	03:50:27	108.8
14633	05:45:26	137.6
14634	07:40:26	166.3
14635	09:35:26	195.1
14636	11:30:25	223.8
14637	13:25:25	252.6
14638	15:20:25	281.3
14639	17:15:24	310.1
14640	19:10:24	338.8
14641	21:05:24	7.6
14642	23:00:23	36.3

MON 29 DEC 1975 (363) — ASCENDING NODE

ORBIT	TIME	LONG
14643	00:55:23	65.1
14644	02:50:23	93.8
14645	04:45:22	122.6
14646	06:40:22	151.3
14647	08:35:22	180.1
14648	10:30:22	208.8
14649	12:25:21	237.6
14650	14:20:21	266.3
14651	16:15:21	295.1
14652	18:10:20	323.8
14653	20:05:20	352.6
14654	22:00:20	21.3
14655	23:55:19	50.1

TUES 30 DEC 1975 (364) — ASCENDING NODE

ORBIT	TIME	LONG
14656	01:50:19	78.8
14657	03:45:19	107.6
14658	05:40:18	136.3
14659	07:35:18	165.1
14660	09:30:18	193.8
14661	11:25:17	222.6
14662E	13:20:17	251.3
14663E	15:15:17	280.1
14664	17:10:16	308.8
14665	19:05:16	337.6
14666	21:00:16	6.3
14667	22:55:15	35.1

WED 31 DEC 1975 (365) — ASCENDING NODE

ORBIT	TIME	LONG
14668	00:50:15	63.8
14669	02:45:15	92.6
14670	04:40:14	121.3
14671	06:35:14	150.0
14672	08:30:14	178.8
14673	10:25:13	207.5
14674	12:20:13	236.3
14675	14:15:13	265.0
14676	16:10:12	293.8
14677	18:05:12	322.5
14678	20:00:12	351.3
14679	21:55:11	20.0
14680	23:50:11	48.8

THUR 1 JAN 1976 (1) — ASCENDING NODE

ORBIT	TIME	LONG
14681	01:45:11	77.5
14682	03:40:10	106.3
14683	05:35:10	135.0
14684	07:30:10	163.8
14685	09:25:09	192.5
14686	11:20:09	221.3
14687	13:15:09	250.0
14688	15:10:08	278.8
14689	17:05:08	307.5
14690	19:00:08	336.3
14691	20:55:08	5.0
14692	22:50:07	33.8

FRI 2 JAN 1976 (2) — ASCENDING NODE

ORBIT	TIME	LONG
14693	00:45:07	62.5
14694	02:40:07	91.3
14695	04:35:06	120.0
14696	06:30:06	148.8
14697	08:25:06	177.5
14698	10:20:05	206.3
14699	12:15:05	235.0
14700E	14:10:05	263.8
14701E	16:05:04	292.5
14702	18:00:04	321.3
14703	19:55:04	350.0
14704	21:50:03	18.8
14705	23:45:03	47.5

AMSAT-OSCAR 7 — DECEMBER

MON 1 DEC 1975 (335) — ASCENDING NODE

ORBIT	TIME	LONG
4765A	00:53:55	63.3
4766A	02:48:52	92.0
4767A	04:43:49	120.8
4768A	06:38:45	149.5
4769A	08:33:42	178.3
4770A	10:28:39	207.0
4771A	12:23:35	235.7
4772A	14:18:32	264.5
4773A	16:13:29	293.2
4774A	18:08:26	321.9
4775A	20:03:22	350.7
4776A	21:58:19	19.4
4777A	23:53:16	48.1

TUES 2 DEC 1975 (336) — ASCENDING NODE

ORBIT	TIME	LONG
4778B	01:48:12	76.9
4779B	03:43:09	105.6
4780B	05:38:06	134.3
4781B	07:33:02	163.1
4782B	09:27:59	191.8
4783B	11:22:56	220.6
4784B	13:17:53	249.3
4785B	15:12:49	278.0
4786B	17:07:46	306.8
4787B	19:02:43	335.5
4788B	20:57:39	4.2
4789B	22:52:36	33.0

WED 3 DEC 1975 (337) — ASCENDING NODE

ORBIT	TIME	LONG
4790AX	00:47:33	61.7
4791AX	02:42:29	90.4
4792AX	04:37:26	119.2
4793AX	06:32:23	147.9
4794AX	08:27:20	176.7
4795AX	10:22:16	205.4
4796AX	12:17:13	234.1
4797AX	14:12:10	262.9
4798AX	16:07:06	291.6
4799AX	18:02:03	320.3
4800AX	19:57:00	349.1
4801AX	21:51:56	17.8
4802AX	23:46:53	46.5

THUR 4 DEC 1975 (338) — ASCENDING NODE

ORBIT	TIME	LONG
4803B	01:41:50	75.3
4804B	03:36:47	104.0
4805B	05:31:43	132.8
4806B	07:26:40	161.5
4807B	09:21:37	190.2
4808B	11:16:33	219.0
4809B	13:11:30	247.7
4810B	15:06:27	276.4
4811B	17:01:23	305.2
4812B	18:56:20	333.9
4813B	20:51:17	2.6
4814B	22:46:14	31.4

FRI 5 DEC 1975 (339) — ASCENDING NODE

ORBIT	TIME	LONG
4815A	00:41:10	60.1
4816A	02:36:07	88.9
4817A	04:31:04	117.6
4818A	06:26:00	146.3
4819A	08:20:57	175.1
4820A	10:15:54	203.8
4821A	12:10:50	232.5
4822A	14:05:47	261.3
4823A	16:00:44	290.0
4824A	17:55:41	318.7
4825A	19:50:37	347.5
4826A	21:45:34	16.2
4827A	23:40:31	45.0

SAT 6 DEC 1975 (340) — ASCENDING NODE

ORBIT	TIME	LONG
4828B	01:35:27	73.7
4829B	03:30:24	102.4
4830B	05:25:21	131.2
4831B	07:20:17	159.9
4832B	09:15:14	188.6
4833B	11:10:11	217.4
4834B	13:05:07	246.1
4835B	15:00:04	274.8
4836B	16:55:01	303.6
4837B	18:49:58	332.3
4838B	20:44:54	1.1
4839B	22:39:51	29.8

SUN 7 DEC 1975 (341) — ASCENDING NODE

ORBIT	TIME	LONG
4840A	00:34:48	58.5
4841A	02:29:44	87.3
4842A	04:24:41	116.0
4843A	06:19:38	144.7
4844A	08:14:35	173.5
4845A	10:09:31	202.2
4846A	12:04:28	230.9
4847A	13:59:25	259.7
4848A	15:54:21	288.4
4849A	17:49:18	317.1
4850A	19:44:15	345.9
4851A	21:39:11	14.6
4852A	23:34:08	43.4

MON 8 DEC 1975 (342) — ASCENDING NODE

ORBIT	TIME	LONG
4853B	01:29:05	72.1
4854B	03:24:02	100.8
4855B	05:18:58	129.6
4856B	07:13:55	158.3
4857B	09:08:52	187.0
4858B	11:03:48	215.8
4859B	12:58:45	244.5
4860B	14:53:42	273.2
4861B	16:48:38	302.0
4862B	18:43:35	330.7
4863B	20:38:32	359.5
4864B	22:33:29	28.2

TUES 9 DEC 1975 (343) — ASCENDING NODE

ORBIT	TIME	LONG
4865A	00:28:25	56.9
4866A	02:23:22	85.7
4867A	04:18:19	114.4
4868A	06:13:15	143.1
4869A	08:08:12	171.9
4870A	10:03:09	200.6
4871A	11:58:05	229.3
4872A	13:53:02	258.1
4873A	15:47:59	286.8
4874A	17:42:56	315.6
4875A	19:37:52	344.3
4876A	21:32:49	13.0
4877A	23:27:46	41.8

WED 10 DEC 1975 (344) — ASCENDING NODE

ORBIT	TIME	LONG
4878BX	01:22:42	70.5
4879BX	03:17:39	99.2
4880BX	05:12:36	128.0
4881BX	07:07:32	156.7
4882BX	09:02:29	185.4
4883BX	10:57:26	214.2
4884BX	12:52:23	242.9
4885BX	14:47:19	271.7
4886BX	16:42:16	300.4
4887BX	18:37:13	329.1
4888BX	20:32:09	357.9
4889BX	22:27:06	26.6

THUR 11 DEC 1975 (345) — ASCENDING NODE

ORBIT	TIME	LONG
4890A	00:22:03	55.3
4891A	02:16:59	84.1
4892A	04:11:56	112.8
4893A	06:06:53	141.5
4894A	08:01:50	170.3
4895A	09:56:46	199.0
4896A	11:51:43	227.8
4897A	13:46:40	256.5
4898A	15:41:36	285.2
4899A	17:36:33	314.0
4900A	19:31:30	342.7
4901A	21:26:26	11.4
4902A	23:21:23	40.2

FRI 12 DEC 1975 (346) — ASCENDING NODE

ORBIT	TIME	LONG
4903B	01:16:20	68.9
4904B	03:11:17	97.6
4905B	05:06:13	126.4
4906B	07:01:10	155.1
4907B	08:56:07	183.9
4908B	10:51:03	212.6
4909B	12:46:00	241.3
4910B	14:40:57	270.1
4911B	16:35:53	298.8
4912B	18:30:50	327.5
4913B	20:25:47	356.3
4914B	22:20:44	25.0

SAT 13 DEC 1975 (347) — ASCENDING NODE

ORBIT	TIME	LONG
4915A	00:15:40	53.7
4916A	02:10:37	82.5
4917A	04:05:34	111.2
4918A	06:00:30	139.9
4919A	07:55:27	168.7
4920A	09:50:24	197.4
4921A	11:45:20	226.2
4922A	13:40:17	254.9
4923A	15:35:14	283.6
4924A	17:30:11	312.4
4925A	19:25:07	341.1
4926A	21:20:04	9.8
4927A	23:15:01	38.6

SUN 14 DEC 1975 (348) — ASCENDING NODE

ORBIT	TIME	LONG
4928B	01:09:57	67.3
4929B	03:04:54	96.0
4930B	04:59:51	124.8
4931B	06:54:47	153.5
4932B	08:49:44	182.3
4933B	10:44:41	211.0
4934B	12:39:38	239.7
4935B	14:34:34	268.5
4936B	16:29:31	297.2
4937B	18:24:28	325.9
4938B	20:19:24	354.7
4939B	22:14:21	23.4

MON 15 DEC 1975 (349) — ASCENDING NODE

ORBIT	TIME	LONG
4940A	00:09:18	52.1
4941A	02:04:14	80.9
4942A	03:59:11	109.6
4943A	05:54:08	138.4
4944A	07:49:05	167.1
4945A	09:44:01	195.8
4946A	11:38:58	224.6
4947A	13:33:55	253.3
4948A	15:28:51	282.0
4949A	17:23:48	310.8
4950A	19:18:45	339.5
4951A	21:13:41	8.2
4952A	23:08:38	37.0

TUES 16 DEC 1975 (350) — ASCENDING NODE

ORBIT	TIME	LONG
4953B	01:03:35	65.7
4954B	02:58:32	94.5
4955B	04:53:28	123.2
4956B	06:48:25	151.9
4957B	08:43:22	180.7
4958B	10:38:18	209.4
4959B	12:33:15	238.1
4960B	14:28:12	266.9
4961B	16:23:08	295.6
4962B	18:18:05	324.3
4963B	20:13:02	353.1
4964B	22:07:59	21.8

WED 17 DEC 1975 (351) — ASCENDING NODE

ORBIT	TIME	LONG
4965AX	00:02:55	50.6
4966AX	01:57:52	79.3
4967AX	03:52:49	108.0
4968AX	05:47:45	136.8
4969AX	07:42:42	165.5
4970AX	09:37:39	194.2
4971AX	11:32:35	223.0
4972AX	13:27:32	251.7
4973AX	15:22:29	280.4
4974AX	17:17:26	309.2
4975AX	19:12:22	337.9
4976AX	21:07:19	6.7
4977AX	23:02:16	35.4

THUR 18 DEC 1975 (352) — ASCENDING NODE

ORBIT	TIME	LONG
4978B	00:57:12	64.1
4979B	02:52:09	92.9
4980B	04:47:06	121.6
4981B	06:42:02	150.3
4982B	08:36:59	179.1
4983B	10:31:56	207.8
4984B	12:26:53	236.5
4985B	14:21:49	265.3
4986B	16:16:46	294.0
4987B	18:11:43	322.8
4988B	20:06:39	351.5
4989B	22:01:36	20.2
4990B	23:56:33	49.0

FRI 19 DEC 1975 (353) — ASCENDING NODE

ORBIT	TIME	LONG
4991A	01:51:29	77.7
4992A	03:46:26	106.4
4993A	05:41:23	135.2
4994A	07:36:20	163.9
4995A	09:31:16	192.6
4996A	11:26:13	221.4
4997A	13:21:10	250.1
4998A	15:16:06	278.8
4999A	17:11:03	307.6
5000A	19:06:00	336.3
5001A	21:00:56	5.1
5002A	22:55:53	33.8

SAT 20 DEC 1975 (354) — ASCENDING NODE

ORBIT	TIME	LONG
5003B	00:50:50	62.5
5004B	02:45:47	91.3
5005B	04:40:43	120.0
5006B	06:35:40	148.7
5007B	08:30:37	177.5
5008B	10:25:33	206.2
5009B	12:20:30	234.9
5010B	14:15:27	263.7
5011B	16:10:23	292.4
5012B	18:05:20	321.2
5013B	20:00:17	349.9
5014B	21:55:14	18.6
5015B	23:50:10	47.4

SUN 21 DEC 1975 (355) — ASCENDING NODE

ORBIT	TIME	LONG
5016A	01:45:07	76.1
5017A	03:40:04	104.8
5018A	05:35:00	133.6
5019A	07:29:57	162.3
5020A	09:24:54	191.0
5021A	11:19:50	219.8
5022A	13:14:47	248.5
5023A	15:09:44	277.3
5024A	17:04:41	306.0
5025A	18:59:37	334.7
5026A	20:54:34	3.5
5027A	22:49:31	32.2

MON 22 DEC 1975 (356) — ASCENDING NODE

ORBIT	TIME	LONG
5028B	00:44:27	60.9
5029B	02:39:24	89.7
5030B	04:34:21	118.4
5031B	06:29:17	147.1
5032B	08:24:14	175.9
5033B	10:19:11	204.6
5034B	12:14:08	233.4
5035B	14:09:04	262.1
5036B	16:04:01	290.8
5037B	17:58:58	319.6
5038B	19:53:54	348.3
5039B	21:48:51	17.0
5040B	23:43:48	45.8

TUES 23 DEC 1975 (357) — ASCENDING NODE

ORBIT	TIME	LONG
5041A	01:38:44	74.5
5042A	03:33:41	103.2
5043A	05:28:38	132.0
5044A	07:23:35	160.7
5045A	09:18:31	189.5
5046A	11:13:28	218.2
5047A	13:08:25	246.9
5048A	15:03:21	275.7
5049A	16:58:18	304.4
5050A	18:53:15	333.1
5051A	20:48:11	1.9
5052A	22:43:08	30.6

WED 24 DEC 1975 (358) — ASCENDING NODE

ORBIT	TIME	LONG
5053BX	00:38:05	59.3
5054BX	02:33:02	88.1
5055BX	04:27:58	116.8
5056BX	06:22:55	145.6
5057BX	08:17:52	174.3
5058BX	10:12:48	203.0
5059BX	12:07:45	231.8
5060BX	14:02:42	260.5
5061BX	15:57:38	289.2
5062BX	17:52:35	318.0
5063BX	19:47:32	346.7
5064BX	21:42:29	15.4
5065BX	23:37:25	44.2

THUR 25 DEC 1975 (359) — ASCENDING NODE

ORBIT	TIME	LONG
5066A	01:32:22	72.9
5067A	03:27:19	101.6
5068A	05:22:15	130.4
5069A	07:17:12	159.1
5070A	09:12:09	187.9
5071A	11:07:05	216.6
5072A	13:02:02	245.3
5073A	14:56:59	274.1
5074A	16:51:56	302.8
5075A	18:46:52	331.5
5076A	20:41:49	.3
5077A	22:36:46	29.0

FRI 26 DEC 1975 (360) — ASCENDING NODE

ORBIT	TIME	LONG
5078B	00:31:42	57.7
5079B	02:26:39	86.5
5080B	04:21:36	115.2
5081B	06:16:32	143.9
5082B	08:11:29	172.7
5083B	10:06:26	201.4
5084B	12:01:23	230.2
5085B	13:56:19	258.9
5086B	15:51:16	287.6
5087B	17:46:13	316.4
5088B	19:41:09	345.1
5089B	21:36:06	13.8
5090B	23:31:03	42.6

SAT 27 DEC 1975 (361) — ASCENDING NODE

ORBIT	TIME	LONG
5091A	01:25:59	71.3
5092A	03:20:56	100.1
5093A	05:15:53	128.8
5094A	07:10:50	157.5
5095A	09:05:46	186.3
5096A	11:00:43	215.0
5097A	12:55:40	243.7
5098A	14:50:36	272.5
5099A	16:45:33	301.2
5100A	18:40:30	329.9
5101A	20:35:26	358.7
5102A	22:30:23	27.4

SUN 28 DEC 1975 (362) — ASCENDING NODE

ORBIT	TIME	LONG
5103B	00:25:20	56.2
5104B	02:20:17	84.9
5105B	04:15:13	113.6
5106B	06:10:10	142.4
5107B	08:05:07	171.1
5108B	10:00:03	199.8
5109B	11:55:00	228.6
5110B	13:49:57	257.3
5111B	15:44:53	286.0
5112B	17:39:50	314.8
5113B	19:34:47	343.5
5114B	21:29:44	12.3
5115B	23:24:40	41.0

MON 29 DEC 1975 (363) — ASCENDING NODE

ORBIT	TIME	LONG
5116A	01:19:37	69.7
5117A	03:14:34	98.5
5118A	05:09:30	127.2
5119A	07:04:27	155.9
5120A	08:59:24	184.7
5121A	10:54:20	213.4
5122A	12:49:17	242.1
5123A	14:44:14	270.9
5124A	16:39:11	299.6
5125A	18:34:07	328.4
5126A	20:29:04	357.1
5127A	22:24:01	25.8

TUES 30 DEC 1975 (364) — ASCENDING NODE

ORBIT	TIME	LONG
5128B	00:18:57	54.6
5129B	02:13:54	83.3
5130B	04:08:51	112.0
5131B	06:03:47	140.8
5132B	07:58:44	169.5
5133B	09:53:41	198.2
5134B	11:48:38	227.0
5135B	13:43:34	255.7
5136B	15:38:31	284.5
5137B	17:33:28	313.2
5138B	19:28:24	341.9
5139B	21:23:21	10.7
5140B	23:18:18	39.4

WED 31 DEC 1975 (365) — ASCENDING NODE

ORBIT	TIME	LONG
5141AX	01:13:14	68.1
5142AX	03:08:11	96.9
5143AX	05:03:08	125.6
5144AX	06:58:05	154.3
5145AX	08:53:01	183.1
5146AX	10:47:58	211.8
5147AX	12:42:55	240.5
5148AX	14:37:51	269.3
5149AX	16:32:48	298.0
5150AX	18:27:45	326.8
5151AX	20:22:41	355.5
5152AX	22:17:38	24.2

THUR 1 JAN 1976 (1) — ASCENDING NODE

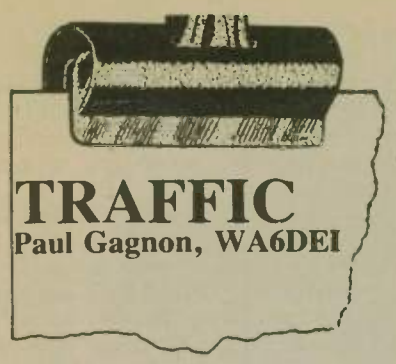
ORBIT	TIME	LONG
5153A	00:12:35	53.0
5154A	02:07:32	81.7
5155A	04:02:28	110.4
5156A	05:57:25	139.2
5157A	07:52:22	167.9
5158A	09:47:18	196.6
5159A	11:42:15	225.4
5160A	13:37:12	254.1
5161A	15:32:08	282.9
5162A	17:27:05	311.6
5163A	19:22:02	340.3
5164A	21:16:59	9.1
5165A	23:11:55	37.8

FRI 2 JAN 1976 (2) — ASCENDING NODE

ORBIT	TIME	LONG
5166B	01:06:52	66.5
5167B	03:01:49	95.3
5168B	04:56:45	124.0
5169B	06:51:42	152.7
5170B	08:46:39	181.5
5171B	10:41:35	210.2
5172B	12:36:32	239.0
5173B	14:31:29	267.7
5174B	16:26:26	296.4
5175B	18:21:22	325.2
5176B	20:16:19	353.9
5177B	22:11:16	22.6

SAT 3 JAN 1976 (3) — ASCENDING NODE

ORBIT	TIME	LONG
5178A	00:06:12	51.4
5179A	02:01:09	80.1
5180A	03:56:06	108.8
5181A	05:51:02	137.6
5182A	07:45:59	166.3
5183A	09:40:56	195.1
5184A	11:35:53	223.8
5185A	13:30:49	252.5
5186A	15:25:46	281.3
5187A	17:20:43	310.0
5188A	19:15:39	338.7
5189A	21:10:36	7.5
5190A	23:05:33	36.2



TRAFFIC

Paul Gagnon, WA6DEI

The National Traffic System

Shortly after World War II *QST* Magazine carried an article by George Hart, W1NJM, describing plans for a new system of traffic handling. The principle was to handle traffic in all parts of the U.S. and Canada as quickly as possible while allowing all stations to get involved as much as they desired and as their proficiencies allowed. The system was called the National Traffic System.

NTS provides four different levels of traffic handling. The lowest echelon is the section net. In theory each ARRL section has a net. In some areas, such as California, there is little activity in some sections so several will combine to form one net, such as SCN. Some sections have more than one net.

The section net is usually the only echelon where any operator is invited to check in at any time. On section nets traffic is exchanged between operators within the section. All traffic going out of the section is given to an assigned representative to a regional net. Section nets usually meet at 1900 local time.

NTS contains twelve numbered regions roughly corresponding to the U.S. call area districts. The region nets meet at 1945 and 2130 local time. Check-ins include assigned reps from the section nets within the region and reps to and from the area net covering the region. The Sixth Regional Net, RN6, has reps from SCN, NCN and the Pacific Area Net (PAN) as well as MARS. At 1945 traffic is exchanged between the section reps and outbound traffic is given to an area rep. At 2130 the area rep gives inbound traffic the section reps. MARS traffic is relayed on both sessions.

There are three area nets: PAN (Pacific Area Net), CAN (Central Area Net) and EAN (Eastern Area Net). The Pacific Area Net covers the Pacific and Mountain time zones. PAN meets at 2030 Pacific Time. Check-ins on an area net include reps to and from each region within the area and Transcontinental Corps (TCC) stations who take traffic to or receive traffic from TCC stations in the other areas.

The fourth and highest echelon of NTS is the Transcontinental Corps (TCC). This is a group of operators who carry on out-of-net schedules to pass inter-area traffic. As an example, Central Area Net (CAN) meets at 2030 CT which is 1830 PT. All traffic for the Pacific Area is given to a TCC station in the Central Area designated station E. At 1930 PT station E meets a station in the Pacific Area designated station G who takes all the traffic for the Pacific Area. At 2030 PT station G checks into PAN and relays the traffic to the region net reps.

Typically, a message from the east coast to the west coast will take slightly less than a day from the time it was first put into the system to the time it is delivered. A message traveling from west to east takes from slightly more than one day to two days.

For over 25 years NTS operated primarily with evening CW nets. In order to attract more operators and increase efficiency the system expanded in 1973 to include a set of daytime voice nets. Presently there is a Continental Traffic Net which meets at 1130 Pacific Time on 14.317 MHz. All stations with traffic are invited to check into CTN. There are reps to each of the twelve regions who take messages to their region nets which meet in the afternoon. The Sixth Regional Daytime Net, DRN6, meets at 1400 PT on 7.267 MHz. Some of the Daytime Regional Nets, such as DRN6, are open to all. Stations are invited to check in and take traffic for delivery. Other DRNs have assigned section reps to take traffic to the early evening section nets.

Several experiments have been tried since 1973 such as Daytime Area Nets and sessions of the Regional Nets early in the morning to relay outbound traffic to CTN. While these are being used in some areas they have not become universal.

—*Southern California Net Operating Notebook*

The ORS appointment

Of all the ARRL official appointments the one which pertains most directly to operators in CW traffic work is the ORS (Official Relay Station) award. This is indeed an award for the holder must meet certain criteria to qualify and he must maintain high standards while he holds the appointment. The recipient should feel proud of his "wallpaper" and should always strive to do his best in traffic handling for the appointment "has existed for over 40 years and is a mark of distinction for the CW traffic handler."

The appointment is made by the SCM, usually upon the advice of the Route Manager. To justify it an operator must be prepared to do more and in a highly dedicated manner. From "Operating an Amateur Radio Station," here are the requirements:

1. Full ARRL membership and Conditional class license or higher.

2. Code speed, transmitting and receiving, of 15 WPM or higher. Sending must be of the highest quality.

3. All ORS are expected to follow standard ARRL operating practices (message form, ending signals, abbreviations, courtesy, etc.).

4. Regular participation in CW or RTTY traffic handling, either "free-lance" or in nets. Participating in ARRL sponsored traffic activities is not required of ORS appointment holders although of course highly recommended.

5. Handle all communications speedily and reliably and set the example in efficient operating procedures. All traffic is relayed or delivered promptly after receipt.

6. Report monthly to the SCM, including a breakdown of traffic handled during the past calendar month.

For the Novice operator there is an ORS-II appointment available. This has the same qualifications as the ORS except that a code speed minimum of 10 wpm is required. This is not available to amateurs of Conditional class or higher and is relinquished when a Novice graduates to General class.

A side benefit of possessing an ORS certificate is the right to participate in the quarterly CD (Communications Department) parties. Although some amateurs have as their chief reason for being an ORS (or other appointment) just this chance to get into the CD party, the greater number consider the contests as a very pleasant adjunct. Every ORS should be generally familiar with the CD party whether he participates or not. He can become so by reading the quarterly CD bulletin issued by ARRL to all appointees. This publication contains much other data regarding CD affairs. (By **Philip Battey, W3FZV**, in the "MDD Bulletin." Reprinted from *The Virginia Ham.*)

National Federation of the Blind Net

Bill Smith, W7GHT, the manager of the Idaho/Montana net, sends along a note regarding a new and very useful net that is just starting. The net is associated with the National Federation of the Blind and is simply called the National Federation of the Blind Net. Jim Aldrich, K7TQM, is forming the net. It is currently meeting Friday and Saturday (Local Time) at 2200Z on 14325 kHz and at 0200Z on 3905 kHz. Everyone is invited and encouraged to join with this worthy net and help out. Contact K7TQM for details.

Phone number check

An item that causes confusion at all levels of traffic handling is the phone number in the text of a message. Phone numbers are usually written and sent as two groups, i.e. 555 1212. When sent as one number with no break it counts as one. Let's try to standardize and use the two word system. Of course if the area code is included it will be a count of three.

HBSN goes daily

Attention all Hit and Bounce Slow Net members! HBSN is going to operate daily during the month of December on a trial basis. That means a total of 62 net sessions. Christmas traffic will keep you really busy; more volunteers are needed to fill the extra net control slots. If you are not now a member check in and lend a hand. HBSN has become one of the better traffic/training opportunities for Novices with long distance capabilities. Many high level ops started out on HBSN. The net meets on 3714 kHz at 7:30 a.m. eastern time and on 7140 at 8:00 a.m. eastern.

Hawaiian Schedules

W6INH, Gene Violino, RN6 manager, mentions in his RN6 bulletin that there is no outlet in the NTS for traffic to Hawaii other than by going via the Military Affiliate Radio System. There is a good bit of non-military traffic generated to and from Hawaii. How about some

(*please turn to page 39*)

Traffic

(*continued from page 38*)

volunteers in the sixth region and in Hawaii for regular skeds on the amateur bands to clear (and encourage) message traffic to Hawaii? (How about RTTY skeds for Christmas rush?) Contact me if you are interested.

South Carolina Novice Net

The South Carolina Novice Net began operations on 1 September. The net meets on 3718 kHz at 2130Z. South Carolina traffic handlers are urged to participate to help the Novices get started right. A Novice net, with old pros participating, is a great way to learn operating procedure. It's a way for Novices to discover that there is something to Amateur Radio other than collecting QSL cards.

The quote for the month from the "Carolinas Net Bulletin" (manager Charles Clark, WB4OBZ) (3573 kHz at 7 and 10 p.m. eastern time) fits in nicely. It says: Tom Camerota, WB9OLF, (age 15) to Hit and Bounce Net manager Walt Russell, W2OE, (age 77): "I got tired of just calling CQ and answering. Wanted to do something useful so I got into the traffic game!"

PSHR

The Public Service Honor Roll was again covered in the October issue of *QST* Magazine. You should read this article and make some decisions whether you think that the PSHR as it now stands needs some changes. It goes way back to the origin of the PSHR and discusses the reasons and objectives. ARRL is ready and willing to make the changes that the operators want but wants to be sure the change is for the best. The two areas of controversy appear to be: 1) How to give credit to the amateur who checks into a net every day and handles traffic for his area faithfully but never takes any liaison schedules or NCS duties; 2) How to use the system to encourage amateurs who are not net participants to become involved. Various methods of awards systems have been tried in the past and have come and gone. Perhaps the only change needed is to award some tangible certificate or medallion for your efforts. At any rate, it is your system and you should take the time to read the issues and make your comments.

California Slow Net [CSN]

Meets Tuesday and Saturday nights at 8:00 p.m. local time on 3735 kHz.

CSN works at 10 WPM but will happily QRS 3 to gain new members.

The net is traffic oriented with liaison to NCN/DRNG. Standard ARRL procedures are used.

Net manager is Kirk Taylor, WB6BDL, of San Rafael, CA.

On handling public service traffic

GARY HENDRICKSON, W3DTN

I would like to paraphrase some comments from a recent issue of 'Squelch Tails," the San Diego Repeater Association Bulletin pertaining to handling of public service traffic.

Many operators monitor some favorite frequency for hours on end. One thing that is likely to make them mad is the case in which they have devoted several hours monitoring and finally respond to some public service traffic only to have that traffic stepped all over by some other well-meaning but thoughtless operator.

A case in point: WA3AAA responds to a call for assistance from WA4XXX who is spotty into the repeater. As WA3AAA switches to repeater reverse, someone else who is faster on the trigger does the same thing and takes over the traffic. WA4XXX gets mad, turns off his rig and vows never to handle 2-meter traffic again. We have just lost a base monitoring station.

Case number 2: K4QQQ takes an emergency call from K3RRR who is on the scene of a two car serious injury accident. K4QQQ calls the police only to find that K4YYY, who happened to be listening, has already made the call. K3RRR, who is now starting to calm down on the scene of the accident, calls K4QQQ with additional information concerning a third vehicle that was involved but left the scene. K4QQQ calls the police with this information.However, because he did not turn in the original report, the police dispatcher has difficulty trying to figure out what is going on and wonders if amateur radio operators really can get together on anything.

POINT: Unless you have information directly pertinent to the traffic being handled, or assistance is requested by the station who initially handles the traffic, SHUT UP!

Additionally, the local police are becoming more and more disenchanted with amateur stations that report accidents, which, upon investigation, turn out to be false calls. Two cars stopped by the side of a highway with the drivers talking to each other does NOT automatically mean trouble.

POINT: Do not report an accident until you have determined positively that there is, in fact, a need for assistance and that the authorities have not already been called.

—*Auto-Call*

Editorial

(*continued from page 22*)

spends staring (they don't call it the boob tube or idiot box for nothing) he could be helping someone get a license, or building up his own code speed or going to night school to prepare himself for a better job or working on a community project or anything that is real.

How sad must be the day when a person finally wakes up and realizes that for so many years he just threw it all away and has nothing that he can look back on and feel a sense of pride about.

The strength of any organization is the commitment of its people. I personally don't think there are many areas that one could commit themselves to that would be more rewarding than Amateur Radio.

One doesn't have to watch TV. He can be the star of his own show for there are more tangible rewards to be obtained in Amateur Radio than in almost any other avenue one could find.

The saddest thing is that so many people's conversations and thoughts center around the latest episode in the life of Jackie Onassis (probably the world's most boring person), that Mickey Rooney will marry his eighth wife, how McCloud solved a case or that some Neanderthal jock ran 50 yards with a bag of air under his arm.

There is no end to "real" things that a person can do himself.

Remember, the strength of Amateur Radio is the commitment of its people.

You can be the star of "the (insert your name) Show". Tell us what you do and we'll put it on these pages to hopefully inspire others.

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Clubs

(*continued from page 40*)

Radio Club has a repeater located about four miles west of Danville that has very good coverage. About 30 members of the club currently belong to this repeater group which was formed about 10 years ago. It is not a closed group. Any qualified member may join and any amateur with adequate equipment may operate through the repeater, WR6AHK, which has an input frequency of 147.66 MHz and an output frequency of 147.06. Many of the club's public service types of communications take place through the repeater.

Perhaps the big club event of the year is "Field Day". Using emergency power on the top of Mt. Diablo, about 5 to 10 transmitters and about 30 operators simulate an emergency.

Besides group activities, individual members often participate in such non-group activities as handling traffic, "DXing", making contacts through satellites, innovating new circuitry (and that's how the repeater got started), etc. Thus the club is an amalgamation of radio operators who have many interests.

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Teacher

(*continued from page 40*)

licensing of wives so they can work 2-meters under less than ethical circumstances. Many of us feel that Technician licensing should be handled the same as General class licensing.

3. Permit FCC District Offices to validate new Techs, Generals and upgrades on the spot with paper work to follow. Also give them computer service for instant new calls as required.

4. Failing to do the above, at least provide larger clubs and organizations who conduct substantial licensing courses, a supply of theory tests so the form 610 and theory tests can be put into the system together, saving time.

5. Sending failing theory tests into the system is absolutely ridiculous. There is probably not one in five volunteer examiners who doesn't look at the tests now. The test should be graded at the time it is taken and the student informed unless a system is devised for one month or less licensing.

ARRL says they could do it in 48 hours.

If volunteer examiners are competent enough to administer the test, they should be permitted to grade them. Who is naive enough to go to all the effort and expense of conducting licensing classes and not be assured he is teaching what is on the test?

Come on, Commissioner Wiley, we are over 21.

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Surplus

from page 42

in the time limit prescribed in the "Invitation to Bid". An agent will usually be required to act on behalf of the successful bidder at distant locations in obtaining release of the property from government installations and initiating shipment of property.

The government reserves the right to withdraw any property from the sale when it is determined to be in the best interest of the government.

Register as a prospective bidder

Follow through on this source of economical electronic equipment by writing for "How to Buy Surplus Personal Property From the Department of Defense". This 59-page booklet is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Also obtain a "Department of Defense Surplus Property Bidders Application". Write to Department of Defense Surplus Sales, PO Box 1370, Battle Creek, MI 49016.

Along with the application, you will receive instructions, terms and conditions applicable to Department of Defense Surplus Property Sales and a listing of all classes of property offered for sale.These booklets will answer most questions. Contracting and Merchandising branches of regional sales agencies may be consulted on a particular problem.

Inquiry and comment concerning Government Surplus Communication Equipment are welcome: 9410 Walhampton, Louisville, KY 40222.

CLUBS

Marin Amateur Radio Club provided 75 meter radio communications for the running of the 65th Annual Dipsea Race on Sunday, 24 August 1975.

The Dipsea is a footrace, 6.8 miles long, starting in Mill Valley and ending in Stinson Beach. The first obstacle is 671 steps from Mill Valley to Windy Gap, and from there it's up and down mountain sides to the finish.

Mill Valley Jaycees sponsor this event and provide a coordinator for each check point along the trail.

Trophies abound for various categories in the competition and all finishers are given Survivors Medals by the Mill Valley Jaycees. Handicaps somewhat equalize the opportunities for runners.

Communications participants were invited to the picnic at the conclusion of the race at Stinson Beach Park.

Steve Cerwin, K6OJO, was in charge of club operations for the race.

NASA Club

Lee Ruetz, WA5RDO

Along the periphery of the modern campus-style buildings at the NASA Johnson Space Center in Houston is a small, unimpressive looking surplus trailer — the home of the NASA Amateur Radio Club and station W5RRR. The one external distinctive feature is an 80-foot tower containing a 2-element 40-meter beam and a 3-element tribander beam.

The club, an ARRL affiliate, has 70 members, both contractor and Civil Service, and is active mainly in Civil Defense and other service oriented functions including the weekly West Gulf Hurricane Net and the annual Field Day.

During the manned spaceflight missions special commemorative calls are used and distinctive QSL cards issued. Senator Barry Goldwater, K7UGA, during one of the previous missions, was logged as a visiting station operator. For the joint USA/USSR mission the call WU 5AST (Apollo Soyuz Test) was used.

Although present operation, with a pair of KWM-2's and linears, is limited mostly to 40M and 20m, future plans include antennas for 80M & 160M and participation in the OSCAR activities. An ICOM-22 is used to access the area 2M FM repeaters.

Address all correspondence to: NASA-JSC Amateur Radio Club, Houston, TX 77058.

The Mount Diablo Amateur Radio Club, Incorporated

The Mt. Diablo Amateur Radio Club (Walnut Creek, CA) was organized and founded in 1947 by a group of devoted radio amateurs who recognized the need in this area for a radio club. The object and purpose, as stated in the constitution, is to "further the interests of Amateur Radio and all those interested therein, to be of service to our community and country in times of need, to provide fellowship among our members and to promote harmony with all in our community."

The present membership numbers more than 200 and many members have professional associations in the electronic industry. There is a good exchange of technical know-how between members. There is a range in age from about 14 to over 80 years. The younger members provide a vibrant forward look to Amateur Radio affairs. The older members provide long-term stability and guidance.

Club activities include many kinds of optional participation in various projects, such as on-the-air emergency tests, Field Days, picnics, Christmas parties, parade communications, technical forums, social events, etc. The Club is affiliated with the Diablo Chapter of the American Red Cross and the American Radio Relay League.

On a volunteer basis the Club has been conducting classes in the spring and fall at College Park High School. The next series of classes is scheduled to start 16 September, 1975. Enrollment is without fee and open to any person who would like to learn more about Amateur Radio, obtain a radio license or upgrade his or her present license, etc. Out of these classes has evolved a number of members who take pleasure in helping the new or handicapped operator.

Monthly meetings of the club are held on the third Friday of the month at Grace Presbyterian Church, 2100 Tice Valley Blvd., Walnut Creek. Visitors are welcome. Meetings are varied. There are usually two auctions per year. At other times there are usually guest speakers, or showing of films, discussions, etc. During the "coffee break" part of the meeting (and before and after the main meeting) social contacts between members and their "XYLs" and friends take place.

The club has its own publication, the *Carrier*, a monthly publication which describes Amateur Radio news and views and happenings in the area. Anyone may submit articles for publication on any subject pertaining to Amateur Radio.

The Rocky Ridge Repeater Group of the Mt. Diablo Amateur (*please turn to page 39*)

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
621313th Avenue South
Seattle, WA 98108

Advanced Electronics
804 Dupont Street
Bellingham, WA 98225

Progress Electronics
852 Commerce Avenue
Longview, WA 98632

NOVICE

The biggest question we get from Novices, directed toward this column, regards where and what kind of equipment to obtain. We'll approach the answer in two parts.

First, one can of course buy equipment from other amateurs, and a great deal of this is done either in person or by mail in the classified sections of the periodicals.

One really doesn't have to worry about sending money off to an amateur you have never met for you will find they are a pretty good bunch and the number of bad apples is almost non-existent.

If a newly licensed amateur mentions at a club meeting that he is looking for some gear he will probably be informed of some for sale.

Now, if you don't live in an area with an active club, or everytime you write to or call in response to the bargains they have been taken, then you must of course turn to the dealers. If you don't have one in your area you will have to deal by mail. To those who are accustomed to going to stores and seeing the merchandise rather than sending off for it and may be a little hesitant we can say "calm your fears".

The guys that run the radio stores are in that business because they like Amateur Radio and the people in it. If you are searching for ways to make a fortune, opening a radio store is not one of them. A person can do better in anything else. Dealers are in it because they like it, all in all a pretty good bunch.

You can trust them. First of all, if someone gets "ripped off" that word is spread all over the world pretty quickly. (About 186,000 miles per second - that's much faster than a letter.)

Let's face it, guys like Henry, M-Tron, Ham Radio Outlet, Webster, Quement, etc. (see a list on the page to the left) didn't get to where they are by dumping on the customers.

There is only one way you stay in business and grow and that is maintaining a good reputation.

Also, the dealer will give you something for a trade-in. So don't worry about buying from a dealer out of state. You'll find they will bend over backwards to be fair to you. For you see, they want your repeat business. Actually want isn't the correct word; put need. There is only one reason you'll go back to a dealer and that is because you are satisfied with him. They know it.

Now, to what to buy. Just like everything else in this world you pay for what you get and you get what you pay for — one of the laws of life.

Try to spend as much as you can. While that may sound like odd advice, what it means is that you will get far more enjoyment from all of this if you have the gear that will do the job. Please know that depreciation of equipment isn't much. For example, let's go far out. Let's say ten years ago you spent $1,000 on a transceiver. Today you could sell it for about $600. It cost you $400 over ten years, or $40 a year, or less than $4 a month. Yes, most of us will start out with something a bit more moderate than that.

Realize that the money put into equipment is the best entertainment value you can get. Watch, if you buy a boat, when can you use it? On the weekend that you can get away during good weather. Skis? Use during the summer is minimal. Guns? Hunting season when you can get away,and so forth. When you divide the cost of whatever it may be by the hours used you'll find out that your equipment gives you the best ratio. Rain or shine, hot or cold, summer or winter, day or night, you can use your radio station. Good investment.

What kind of gear to get? It depends on your particular circumstances. Many Novices buy the separate transmitter of one make and another receiver. You may be better off financially to go into a transceiver of modern make and not have to trade in your Novice station when you get your General.

Most people are a bit reluctant to recommend a particular piece of equipment because that's like telling you what kind of gal to marry. They're all a little different and each brand has its legions of supporters and detractors. One should avoid the Eico transceiver that was around; it had a terrible VFO. The SBE-34 was a nice rig but it drifted. A lot of the old Signal Ones from Southern California ended up back at the factory.

If you stick with the tried and true names you can't go wrong. There's some rather good gear around — Collins, Drake, Yaesu, Kenwood, Atlas, Ten-Tec. Stay in there and you'll be in good company. If you like to build, consider Heathkit; you'll save a goodly sum by building it yourself. Speaking of Heath, probably one of the best bargains around is a used Heath HW-100. You can get them for about $275 with power supply from most dealers. A lot of radio there for the money.

One of the most important items a Novice can buy is an Audio Filter to put across the output and before the speaker or phones. This little addition will be the best thing you can buy for your CW work. They are magnificent and everyone I know who has one is just thrilled with what they do for you.

Yes, it all costs money. But from what you get out of it you can't beat the value of radio gear. For some of the younger people the sums could seem staggering but you can pick up a reasonable Hallicrafter or National receiver and a Heath transmitter for not much money. A good value is that Viking Ranger; they built those to last forever. For the young folks a paper route, a part-time job, etc. and you'll have the money saved before you know it.

It's AR from this end for now. Remember, if you have any specific questions send them in and you'll get a reply in the mail.

—W6AJY

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Interference

(continued from page 44)

designed for the consumer market may not have extra protection included for strong rf fields and so stated that caution should be exercised in the use of this equipment lest RFI be introduced into the system. (Thanks to Charlie Spitz, W4API, for forwarding a copy of Mr. Finnegan's article).

Finally, we recently had the pleasure of reading an article entitled "The Other Virginia Ham" (by Donald F. Murray, *Commonwealth*, August 1975). Meant as a broad review of Amateur Radio, the editor of *Commonwealth* took time to comment on the RFI problem, specifically noting that an apparently unavoidable conflict exists between radio operators and consumers because of interference. The editor also noted that legislation has been introduced to require manufacturers to reduce the susceptibility of home-entertainment equipment...legislation we know as H.R. 7052. With H.R. 7052, of course, the RFI problem would be resolved in large part at the design stage, thus removing one of the biggest problems we, as amateurs, face in our day-to-day operations.

Before H.R. 7052 becomes law, however, it must receive a hearing, but unless we make known to the Congress the need for such legislation this bill will die as similar RFI bills have died in the previous two Congresses. Write your Congressman today...let him or her know that you support H.R. 7052 and respectfully request an early hearing on the bill. It's up to each of us to see that the Subcommittee on Communications holds hearings on H.R. 7052 at the earliest possible date.

●

Train your dog!

Yes, you can train your dog with it. Or you can swat mosquitos. Look just how versatile it is — you can get a campfire going with it and also line a birdcage.

What else has so many varied uses? For example: it can wrap fish and also be made into a fireplace log. Pretty terrific, huh? You can use it to mask paint jobs or shield the sun from your eyes Marvelous!

Just think about it. You could turn it into a kite and then put it at the bottom of the kitty litter box. Use it as a fan during Field Day and then turn it into a glider.

Fantastic!

Pack glassware with it or use it for insulation. It can clean your windshield and spank your children. Use it to level a table.

Look at all the things you can do with it, and at such a low price. Think of it; you could use it as a napkin, for collages and many other uses.

And best of all you could read it. Yes, look all that **Worldradio** can do for you. What you can do for us is see page 11.

TEACHER

The biggest news for those who teach the licensing classes is that the tests are going to get much harder.

Two friends of ours on the *Washington Post* have learned that new tests may be coming out in about three months. The word they pass on is that the Novice will more resemble the present General, the General will resemble today's Advanced and the Extra will be on a par with the commercial first class radiotelephone license. Also, logic and digital technique questions will be on the tests.

This affects the teachers in two ways. First, they will have to sustain interest by the class over a much longer period of time in order to teach the more difficult material.

Second, since the teachers are "on the firing line" so to speak, they are probably in more of a position than anyone to know what people have a hard time learning.

No other group of people are as close to understanding what the prospective amateur is facing than our instructors. And, as active amateurs, they have a very good idea of what is relative and what is not.

It is our understanding that the person who designs the test (who is cloaked in anonimity) is not even an amateur himself. We think it would be difficult for such a person to really have a "gut feeling" for what the tests should contain.

It's a pity that those who are "in the trenches" are never consulted. Most often reality and the ivory tower are 180 degrees out of phase.

We have no objection to the Advanced and Extra licenses being comprehensive for they give more privileges and are attempted by people with a lengthy exposure to radio techniques.

However, we cannot agree with the idea of the entry to Amateur Radio being of such a nature that those who are not professionally employed in electronics would find it an arduous task to obtain the necessary knowledge.

After all, the license says "Amateur Radio Operator". The key word is "Operator". It does not say technician or engineer.

We feel it behooves the radio teachers, probably more than any other group (as they more than others hold the future of Amateur Radio in their hands), to write to the Federal Communications Commission urging that restraint be the order of the day.

We are trying to view this issue very objectively. Sure, there are those among us who were fortunate enough to be sent to a Radio School in the service, who continued a technical education (on the GI bill) and got our first phones or more, and this all doesn't look so difficult to us. But how about the people who don't have this kind of background? What does all this electronics look like to someone who has but a few hours a week to spend on it?

Are we going to freeze all these people out of Amateur Radio?

We urge that the instructors, who are accustomed to the blank expressions and bewilderment on the part of students who "come-in-off-the-street", crank up their typewriters and aim their communications towards the FCC.

The people at 1919 M St. NW, Washington, DC 20554 have got to realize that everyone else does not have an EE degree.

Why should we require in an avocation the same level of competency as one would be required to have to be gainfully employed in that field? The Novice license has served us well. It is our "learner's permit". And, even with its minimal requirements, the number of technical and operational violations in a year does not even approach the violations in another radio service committed in a day (possibly hour?).

The Novice has been successful. Why penalize it? It works. Why mess with it?

We ask the teachers to write to the FCC, using their own words, and ask them to leave well enough alone.

It would be nice if, before the government runs off and does things, it would explain to the people just what the problem is it is trying to solve by whatever action it proposes to undertake.

Just what harm has been caused by the present level of tests?

What will making them far more difficult accomplish?

Is there anything more pressing that the FCC could concern itself with at the moment?

It there anything that the tax-supported federal government could find of more importance to worry about?

To put it in perspective: With the immense problems facing this country that are begging for solutions, why is the government even concerning itself with what could be termed a non-issue?

With the quality of life and the standard of living going down this might just be a good time to leave people alone.

Let them reasonably enter something that will give them some enjoyment.

—*W6AJY*

We received this letter from **Robert Reiley, WB2FHN**, Hall of Science Radio Club of Flushing, N.Y.

Reference your October column on FCC licensing procedures, we heartily agree. We suggested to the FCC (no reply) that they consider the following or a combination as applicable:

1. Let the ARRL handle the Novice and basic amateur licensing but not Technician. Provide them with computer facilities for instant call letter assignment or at least large blocks of calls.

2. There is considerable mail

(*please turn to page 39*)

GOVERNMENT SURPLUS

Col. Wayne Russell

BUYING SURPLUS PROPERTY FROM THE GOVERNMENT
(article 2 of a series)

Jeeps for less than $100.00

Sound too good to be true? The truth is — Jeeps currently being sold by the Department of Defense are not economically repairable and are minus major components. Even in this condition the quantity is limited. However much communication equipment, sold as surplus, is complete, operational and desirable for use by amateur radio operators.

Disposal of surplus

Modern technology continually develops improved methods of electronic communication resulting in obsolescence of equipment that only a few years ago was the best that money could provide. This equipment, although outdated by current government standards, may be adapted for amateur radio purposes. This results in high quality gear at an economical price particularly suitable for the amateur radio innovator.

Military property is declared surplus when it becomes excess to requirements because of changes in defense needs or unsuitable because of wear, tear or obsolescence. If the property cannot be used by other federal government activities, and no qualifying civilian agency requires or accepts the property as a donation, the property is offered for sale to the general public.

Surplus property sold by the Department of Defense is grouped into almost 500 classes to correspond to particular buying interests. Classes of interest in amateur radio are: Communication Equipment, Electronic and Electrical Equipment, and Instruments and Laboratory Equipment, to name a few.

Condition of equipment

Surplus property is sold as is at location without warranty to condition. While every effort is made to adequately describe condition in terms of GOOD, FAIR, POOR or SUITABLE FOR RECOVERY OF USABLE PARTS, buyers are cautioned to inspect property carefully before bidding. Consideration must also be given to the location of the property, quantity and weight. Transportation charges are also a serious consideration.

Types of surplus sales

Sales are conducted whenever there is sufficient surplus property to interest prospective buyers and cover the cost of the sale. Sales are open to registered bidders in quantities of reasonable size to encourage individual participation. Prior to the sale an "Invitation to Bid" is mailed to prospective bidders. Sale of surplus property usually falls into one of three types:

Sealed Bid — This method is of wide interest as it allows participation on a national basis on all offerings of your choice. You need not be present; mailed-in bids are accepted. "Invitation to Bid" provides pertinent information for the calculation of a successful bid. Bid and bid deposit (when required) are returned to the original regional agency prior to the bid opening date. Awards are mailed to successful bidders.

Auction — Surplus auctions are conducted similar to other auctions. Mailed-in bids are not acceptable; you must be present to participate. Catalogs, listing and describing the property and specifying the terms and conditions of the sale, location, inspection and sale dates are distributed well in advance of the sale. Awards are made item by item as the sale progresses.

Spot Bid — Prospective buyers inspect the property and submit bids. Awards are made item by item as the sale progresses.

Conditions of sale

Specific terms and conditions vary from sale to sale. Careful review is advised as mistakes may prove costly. Awards are made to the highest responsible and responsive bidder. Awards are not made when the bids received do not represent a fair price to the government and are not commensurate with the market value of the property offered. In such cases the property may be reoffered at a later sale.

Successful bidders are promptly notified. Property may not be removed from government premises until full payment is made. Arrangements must be made by the successful bidder to remove the property from government premises with-

(*please turn to page 39*)

CONLEY RADIO SUPPLY'S

NOW DRAKE'S FINEST...

The C-Line

Drake has made The Best better!

DRAKE

T-4XC Transmitter
$580.00

DRAKE

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$549.00

FREE

160-10AT SUPERTUNER

DenTron

DENTRON 160-10AT ANTENNA TUNER VALUED AT $119.50. THE 160-10AT YOU WILL RECEIVE FREE IF YOU PURCHASE THE FOLLOWING DRAKE C-LINE FOR CASH. NO TRADE OR MASTERCHARGE OR BAC.

DRAKE C-LINE	
R4C RECEIVER	$549.00
T4XC TRANSMITTER	$580.00
AC-4 A.C. SUPPLY	$120.00
MS-4 MATCHING SPEAKER	$ 24.95
TOTAL CASH	$1273.95

* SHIPPING COLLECT FROM BILLINGS, MONTANA

IF YOU ARE INTERESTED IN SAVING SOME MONEY TRY CONLEY RADIO SUPPLY.

WE DON'T HAVE ANY SALES TAX!

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INTERFERENCE

Dr. Theodore Cohen, W4UMF

RFI/EMC Symposium ARRL National Convention

Guest review by
CHARLIE ANDERSON, K2KF

"RFI-Reaching for Improvement" was the theme of the 12 September 1975 Technical Symposium which was the kickoff for the ARRL National Convention in Reston, VA. Coordinated by your regular Column Editor, Ted Cohen, W4UMF, it featured speakers from government and industry, as well as from professional and amateur organizations. John Johnston, K3BNS, (just named Chief of the FCC's Amateur and Special Services) was the Symposium Moderator. In opening the meeting John mentioned that the FCC had handled over 42,000 interference complaints in Fiscal 1974, 38,000 of which involved home-entertainment devices.

Background on H.R. 7052, the "RFI Bill" which was introduced last May by Representative Charles A. Vanik of Ohio, was given by W. Brendan Harrington of the Congressman's staff. Brendan summarized the steps which the bill would have to go through before it could become a law, not the least of which is a hearing before the Subcommittee on Communications. The Subcommittee is now examining its schedule to see if hearings can be scheduled for later this year.

Frank Rose, W3RO, Chief of FCC's Technical Standards Branch, covered the regulatory angles of susceptibility problems. He made a strong plea for cooperation between all parties involved. Noting the importance of using good design techniques to reduce susceptibility, Frank observed that the lack of shielding and widespread use of solid-state components in recent designs of consumer electronic devices has had much to do with the high incidence of RFI problems experienced today.

William E. (Gene) Cory, President of the Administrative Committee of IEEE's Group of Electromagnetic Compatibility, described that Group's functions in the areas of RFI and EMC. Gene showed a chart indicating the complex relationships between rf sources and devices which intercept rf, and discussed some of the problems involved in susceptibility measurements.

Egbert M. Tingley, K4FKX, of Electronic Industries Association (EIA), presented that organization's views on the RFI problem. Eb, too, made a plea for cooperative solutions to RFI problems. EIA's files, by the way, show that nearly 70% of the complaints it receives are for TVI, and that these in large part result from stations running illegally high power on frequencies assigned to the Citizens Radio Service.

Harold Richman, W4CIZ, formerly of the FCC and now a Technical Advisor to the ARRL RFI Task Group, reported the results of a survey of consumer electronic equipment manufacturers. The survey was intended to determine how manufacturers handle RFI complaints involving their products. Hal received 55 replies to the 108 letters he sent out. Overall the response was on the "plus" side. Some companies do have good programs for dealing with complaints and/or using new designs to reduce susceptibility. The results of Hal's survey will be included in the new RFI packet now being prepared for distribution by the ARRL.

Don Gerue, K6YX, Chairman of the Santa Barbara Electronic Interference Assistance Committee, gave a summary of the test program run by his group in which radiated and conducted field-strength levels from amateur transmitters were measured in typical suburban settings. Some examples follow:

1. At 8 meters distance from a dipole in the 80-meter band the field strength was over 100 V/m.
2. In a house about 30 meters from a 20-meter antenna, over 0.1 amps of rf was measured on a TV set's power cord.
3. On the telephone line inside K6YX's house an rf current of over 63 milliamps was measured with the transmitter operating on the 40-meter band.
4. Close to one volt was measured on CATV cables in a neighbor's house when K6YX was operating on 80 meters, and 0.1 volt or more when operations were on the 10,15 and 20 meter bands.

All of the above data were based on an output power of 500 watts.

John Nagle, K4KJ, of AMRAD (Amateur Radio Research and Development Association) reported on tests of susceptibility of police speed radars to amateur mobile transmissions. If you run over about 50 watts on VHF you just might get a ticket one day if you go on the air near a speed-checking radar, but you're going to have to be pretty close to the radar installation to cause a problem. On the other hand, no problems were found when using the high-frequency bands and about 150 watts to a center-loaded vertical.

Finally, Doug DeMaw, W1CER, Technical Editor of *QST*, described the RFI susceptibility test program now underway at the ARRL Laboratory. The engineers at Newington are using an SB-101 with a linear amplifier as a source for their checks. Doug also made some hardware recommendations — and much, much more on the subject of RFI — will appear in an RFI handbook now in the works at the ARRL. Watch for this handbook! It should be ready for distribution early next year.

Charles Anderson, K2KF, is a noted researcher and author in the field of RFI/EMC. Charlie now works as a consultant on EMC, and may be reached at 2 Bauer Avenue, Oakhurst, NJ 07755.

In our column of last month we failed to mention the fine work of the Toledo Area Amateur Radio Club's Television Interference Committee. One of the more active RFI groups in the country, the Toledo Area committee has for many years worked closely with the Amateur, Citizens Radio Service operator and the consumer in an attempt to resolve RFI problems with manufacturers of home-entertainment devices. Inquiries on the committee's activities may be addressed to E.W. Laas, Chairman, Toledo Area Amateur Radio Clubs Television Interference Committee, 1589 Slater Street, Toledo, Ohio 43612.

You think you have an RFI problem?! Consider the commercial broadcast station's problem. As noted by Pat Finnegan (*Broadcast Engineering*, June 1975): "Now that the audio equipment in the broadcast industry has been converted to solid state there is an ever present enemy in the form of RF interference (RFI) that must be combated." Commenting on the fact that there is no "sure-fire" method for resolving an RFI problem, Mr. Finnegan, nonetheless, offered valuable suggestions to engineers plagued with RFI as to how problems can be eliminated. He also noted that equipment

(*please turn to page 41*)

Real pals

Since the July issue the following have taken out **Worldradio** lifetime subscriptions. Our deep thanks.

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(please turn to page 18

TRAVEL

Do yourself a favor and travel light...

You will save yourself much aggravation by following the above advice! The maximum baggage allowance on most economy flights abroad is 44 pounds. In addition, you are allowed one piece of "carry on" baggage.

If you arrive at a foreign destination there may or may not be a porter around to carry your suitcase to a taxi or limousine. If there isn't, you may have to lug your baggage through long corridors and up and down steps before you reach the street. If you travel by train in Europe be prepared to find no porters; they are a dying species in most countries.

Train steps are steep and baggage is stored overhead in a train compartment, so you better be in good condition and be able to lift your suitcase overhead.

Your railway car may be towards the end or front of the train and you might have to walk the length of the station, which could easily be a quarter mile. A valuable test to determine if you have packed too much is to carry your suitcase, flight bags, etc., once around the block before departure. If you can't manage, then start to repack.

Note: The lists shown below are suggestions only. They may be amplified depending on climactic conditions of the area you are visiting, your age and of course, personal preference. But they will serve as a practical guideline, and remember always, "When in doubt—leave it out."

What to take: men

2 pairs of shorts (dacron or nylon drip-dry)
2 T shirts (optional)
4 pairs of socks, easy to dry
3 or 4 sport shirts (wash 'n wear—drip dry)
2 dress shirts—one white
1 or 2 sport jackets (light weight, double knit best for traveling)
2 pairs of slacks (to match jackets), same type of material
1 suit if you take only one of the above combination
1 extra pair of "work slacks," lightweight for very casual wear
1 sweater, 2 or 3 neckties
swim trunks (optional)
toilet and shaving articles
1 light windbreaker (summer only); these are light and take hardly any space
1 pair of sturdy walking shoes These can even look dressy for an all purpose shoe. Be sure they are heavy enough and have ripple soles.
An optional pair of shoes (if you have the room and the need)
1 dressing gown or robe (if it is lightweight it won't take much room.)
1 pair of travel slippers

Note: Some of the above will be worn in flight.

What to take: women

1 nightgown or pajamas
2 petticoats or slips
2 bras (all nylon or dacron for easy washing and drying)
2 girdles or panties
4-6 pair panty hose
1 pair dressy shoes
1 pair sturdy, comfortable walking shoes Ripple soles are great. Your shoeman can add them to your shoes—about $3.
1 lightweight robe (optional) Use your coat in a pinch.
1 swim suit and cap (optional)
1 cardigan sweater
1 all-purpose travel coat
1 plastic raincoat (available at notion counters—carry in your purse or bag.)
2 pant suits or knit-type travel suits (drip-dry)
2 wash'n wear drip-dry daytime dresses or skirts that will go with travel suits
2 wash'n wear drip'dry blouses or tops
1 basic dressy dress—perhaps with jacket which can double for afternoon or evening wear
Jewelry, scarves and accessories to help vary your basic outfits
Cosmetics, medicine, toilet articles (don't take too much—they are available everywhere.)
1 large carry-all travel purse
1 small handbag for evening

Try to plan around one particular color accessory so that everything can be mixed and matched.

Try to dress in layers so that you can be comfortable by removing a jacket, etc.

If you wish to take a hat, make it one of the soft packable travel kind.

1 small travel umbrella.
Sunglasses. Sewing kit.

Now that you are ready to go, please don't forget to check:

- ☐ Passport—visas
- ☐ Baggage
- ☐ Health certificate
- ☐ Spending money in travelers checks (record numbers), a little cash (perhaps $20.00 in dollar bills), a few blank checks (personal)
- ☐ Who will feed pets?
- ☐ Who will care for lawn and plants?
- ☐ Accident, baggage or flight protector insurance in order?
- ☐ Refrigerator turned down or defrosted?
- ☐ Hotel and mailing lists and itineraries left with friends, relatives, lawyer, stock-broker?
- ☐ Carrying additional identification, such as driver's license?
- ☐ Police department notified to look in once in a while?
- ☐ Newspaper delivery stopped?
- ☐ Milk delivery stopped?
- ☐ Post office holding mail or friends collecting it?
- ☐ Good walking shoes along?
- ☐ Camera and plenty of film (register camera before departure at U.S. Customs, if new or looks new.)
- ☐ Leave house key with neighbors?
- ☐ All heating units checked?
- ☐ Faucets and lights checked?
- ☐ All doors locked and windows checked?

also check for:

- ☐ Tickets
- ☐ Wallet
- ☐ Calling cards, pen and paper
- ☐ Addresses and phone numbers of relatives and friends
- ☐ Extra glasses or prescriptions, sun glasses, medication or prescriptions

And now have a safe and happy journey!

• The 15 percent bar and restaurant tax in Mexico has been rescinded for tourists. To avoid paying the tax, show your Mexican tourist card, passport or other proof of tourist status.

•

Mart (*continued from page 47*)

Video recorder-reproducer electronic assembly. Contains power supply with adjustable, regulated outputs of 10 to 18 VDC (15 VDC 1½ amps.) Third output is 10VDC at 3 amps. Perfect for CMOS, TTL, Op amps. Contains over 900 useable parts with extremely long leads. Includes 182 transistors, IC's, diodes, and FET's, numerous resistors, capacitators, crystals, inductors, delay lines and varicaps. Transistors will operate in HEATHKIT TV's. Schematics and semiconductor cross reference supplied upon request. Total price including shipping is $15.00. Write to MADISON ELECTRONICS COMPANY, INC., P.O. Box 369, Madison, AL 35758 for a free brochure.

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Stolen — Kenwood TS-520, serial #930517. Any information, please contact Ron Rueter, WA6WEQ, 1555 Westmont Ave., Campbell, CA 95008.

1975 Foreign Callbook needed plus Radio Boy books by Gerald Breckenridge. K6ARE, Randall, 1263 Lakehurst Road, Livermore, CA 94550. •

Mart (*continued from page 48*)

ICOM — IC-21A & DV21, IC-230, Alpha 374 Linear. All in sealed boxes. Must sell. Good prices. WA20AF, Ed Harwid, 61 Bellot Rd., Ringwood, NJ 07456. (201) 962-4695.

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Picture QSL cards made from your photo of yourself, shack, etc. 250 - $10.00; 1,000 - $19.50. Full color from slide - $38.50. Samples free. Picture cards, Box 5471, Amarillo, TX 79107.

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1000V 1 amp diodes - 10/$1.00. P.C. trimpots, vertical mount - 5/$1.00. Values available: 100, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 500K, 1 meg. Orders below $5.00 add 20c postage. Many other electronic components. Free catalog. NuData Electronics, 104 N. Emerson Street, Dept. C, Mt. Prospect, IL 60056.

Japanese transistors. All transistors original factory made. Free catalog. WEST PACIFIC ELECTRONICS, P.O. Box 25837, W. Los Angeles, CA 90025.

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

(*please turn to page 46*)

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Bay Area Ham Radio Repairs. All types. Mark, K6BE. Berkeley. 415-548-1889.

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.

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.

Dealers wanted - Sell well-known ham and police scanner. Excellent profits possible. No minimum purchase to quality. $1 brings confidential dealer's prices. Contact WA20AF at Narwid Electronics, 61 Bellot Road, Ringwood, NJ 07456.

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, P.O. Box 411, Lubbock, TX 79408.

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.

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", 2120 - E 28th Street, Sacramento, CA 95818.

QUARTER CENTURY WIRELESS ASSOCIATION brings together the "old timers" of Amateur Radio who have been licensed at least 25 years. Membership now totals over 10,000. Dues $10 for three years plus $3 Entry Fee. Write for details: 2012 Rockingham Street, McLean, Virginia 22101.

Pre-Thanksgiving Sale -IC-230's, Multi 2000, Echo II's, Echo 70. Super saving on IC-230's purchased 6 at a time. NARWID ELECTRONICS. 61 Bellot Road Ringwood, NJ 07456. 201-962-4695.

QSL samples with 400 cut catalog. Send 35 cents to: Ritz Print Shop, 5810 Detroit Ave., Cleveland, Ohio 44102.

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.

NATIONAL CMOS DATA BOOKS — 181 pages. Includes data specs, pin layout and applications. $.75 each. NuData Electronics, Dept. C, 104 N. Emerson St., Mt. Prospect, IL 60056

Mini-surveillance transmitter — $30.00. 2-ele. 40, 15 and 20 meter Mosley beam — fob $75.00. Tri-Ex 80 ft. guyed crank-up tower — $385.00. Nick, WB6DXU, 10107 Lev Ave., Arleta, CA 91331.

ICOM: IC-230, IC-21A & DV-21 (pair only), IC-30A, KLM Multi 2000, Echo II. Full factory warranty. NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456. (201) 962-4695.

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.

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.

Wanted: 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. Eighteen pages of hints and tips covering code, theory, taking the exam. $1.20. For beginners and worry-warts. WBØPTM, 516 9th Ave., Brookings, SD 57006.

(*please turn to page 47*)