Worldradio

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Shown at the Astor Fire Base communications center during the recent Ocala National Forest fire, from left, are Judith Tolliver, NS4C; Nancy Lane (XYL) and Fred Lane, KB4HOD. They and more than 50 other amateurs handled all the logistic and tactical communications between fire units and government agencies during the four-day fire that destroyed 100,000 acres in Florida.

Hams fight Florida's fires

Ken Tolliver, NQ4P

If you doubt the value of the Amateur Radio Service in an emergency, ask the U.S. Forestry Service, the Florida Forestry Department, the Florida National Guard, 14 volunteer fire departments, the Lake County Sheriff and 4,000 residents of Astor and Astor Park, Florida.

Following an extremely dry winter and spring, the forests of Florida were tinder dry. Everyone expected forest fires unless the rains came, but what no one expected was a series of massive fires that destroyed more than 100,000 acres of Florida forest and hundreds of homes.

While hams served many places in the state during the emergency, this is the story of the Ocala National Forest Fire in Lake County as lived by NQ4P — the ARRL District Emergency Coordinator for the area, and the scores of hams who joined the battle.

May 20th marked the beginning of the fire in the Ocala National Forest. High winds, gusting to more than 50 mph, had driven several small fires out of control in the forest in the northern part of Lake County. Similar fires were spreading in neighboring Marion and Volusia Counties, as well as in the southern part of the state.

As soon as the news of the fire reached NQ4P, he contacted Chuck Sower, the Lake County Fire Coordinator at the Office of Emergency Services and Disaster Planning and asked if the hams could help.

The answer was a resounding yes. Sower said that he had at least six fire departments in the fire area near the town of Astor, but he was "blind and dumb" because of lack of communications from the fire front.

He explained that none of the volunteer fire departments had radio communications between themselves, nor was the state and U.S. Forest Service in any better position. No one, it seemed, could talk to anyone else!

So desperate was the communications problem, that Sower asked for every available ham in the area. Fortunately, the area has a nightly emergency training net meeting on the KJ4AN repeater on top of Sugar Loaf Mountain, near Clermont, Florida.

A radio command post was quickly established in the Lake County Commissioners Offices in the courthouse at Tavares, Florida, with NS4C calling for assistance via the Sugarloaf machine, while the Fire Coordinator and NQ4P rushed north to the fire.

The roads were heavily obscured by smoke, and the night sky glowed angry red as they approached the fire lines. Deputies passed them through to the fire command post established at Astor Fire House, which was to become known as Astor Fire Base in the coming days.

The Astor Fire Base was in range of the repeater, but what the firemen wanted was Amateur Radio operators to ride with every fire truck. This meant hand-held radios, and they couldn't make the repeater 45 miles away. It was decided to put a second base station in service at Astor Fire Base; this station would operate simplex and utilize the fire house's 50-foot tower.

Hams responding to the call included KJ4AN and Fred Lane, KB4HOD, who put up the antennas. But by now the U.S. Forestry Service was begging for help to link them with the county fire fighters and the sheriff. The demand for hams was escalating.

The winds dropped the night of 20 May and gave fire fighters a chance to plan their tactics and the hams to gather. On Saturday, 21 May, the U.S. Weather Bureau predicted no rain and winds gusting to 20 mph.

The fire was now threatening Astor and Astor Park and was burning along State Road 40, State Road 445 and 445A and State Road 19. It was also threatening the recreation areas at Alexander Springs. In Volusia County it had already destroyed more than 150 homes.

In Tavares that Saturday morning at 6:30 a.m., the amateurs gathered and headed north under the escort of authorities. No road blocks for the hams.

In Tavares, KB4MOG — a 19-year-old college coed, with a two-month old General Class license, assisted by veteran ham John Mullan, W4OQF — reopened the repeater emergency net and set up liaison stations with other repeaters and other agencies.

(please turn to page 4)

'Thanks to all' says W4GH

Dear Fellow Hams:

Rev. Tom Carten and I wish to express our heartfelt thanks for your response to the need for a better duplicator. Some 70 friends donated a total of about $1,300. Donations came from our list of members, from sighted hams, and from the folks at **Worldradio.** We wish we could thank each of you in person.

The money was used to purchase a Recordex-330 and 100 C-90 tapes. Some was also used to apply to my personal debt incurred in purchasing tapes, cartons and other incidentals for "Worldradio for the blind". The machine makes three copies at a time and takes a bit over four minutes. Its erase heads eliminate the need for the bulk erasing. Its use greatly speeds up the monthly task, and we hope you will enjoy the improved audio quality. We made some of the May issue on it and all of the June. As Judge Hardcastle puts it, "Now you're cooking."

This new set-up is a great relief for me after my recent illness, so we thank each of you for your generosity, and may the tapes continue to bring you pleasure. God bless.

Vy 73 es 88,
G.K. "Kel" Hickin, W4GH
Macon Georgia □

See tribute to Don Wallace, W6AM, on page 10.

El Cajon amateurs thwart restrictions

2 meter and 70 cm antenna installations were seriously threatened recently by a proposed satellite dish antenna ordinance in El Cajon, CA. The action of the city council in the San Diego suburb, which has a population of 80,000, nearly restricted the installations of the popular amateur antennas by including them with television satellite dish receiving antennas in a revised building code.

The council directed the planning commission to prepare an ordinance to control the installation of satellite dishes that were popping up like mushrooms in their city. The proposed ordinance defined satellite dish antenna as, "an accessory structure capable of receiving communications from a transmitter or transmitter relay located in planetary orbit." The definition made no reference to parabolic reflectors.

Since the OSCAR satellites and the Russian radio sport satellites transmit on 2 meters and 70 cm, the wording included virtually all amateur antennas on those two bands. Adoption of the proposal would have required a conditional use permit, public hearings, a building permit, a fence around backyard installations, which would have been limited to 12 feet in height, and needless to say, many dollars.

When chief planner Ray Henson, was interviewed by Bob Hart, WA7HRA, he freely admitted that the intent was only to control satellite dish antennas and that it had never occured to his personnel that any other antennas could be affected. He was also quite surprised to learn of the amateur satellites and was deeply interested in

(please turn to page 4)

The price of a radio frequency

The British government is trying to find out whether more efficient use of radio frequencies can be achieved by charging for them. CSP International has been commissioned to carry out a study into pricing radio spectrum in the U.K. The area of study includes the questions of whether there are any benefits to be had from bringing market forces and the price mechanism to the area of spectrum management. Also another question to be answered is whether it is technically and administratively feasible within a regulatory framework to charge for use of a frequency.

A separate contract will be awarded for another study of spectrum usage.

This should be of concern for all amateurs worldwide. We have always accepted that radio frequency should be free but with increased useage some special interest may want to purchase it from us. This may be the hobby's greatest problem in the future. — *Tri-City Feedback, Groton, CT* □

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

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

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

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

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

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

Worldradio is an independent newspaper. It is not affiliated with any other firm, group or organization. Its pages are open to all. Permission is hereby automatically granted to reprint from this publication. If there is something useful, we wish to share it.

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Second-class postage paid at Sacramento, CA.

Correction

The May issue of **WORLDRADIO** contained an error which caused reader Jeffrey Gornstein, KD2BE, to lose out on the opportunity to copy the Secretary of Defense' CW message on Armed Forces Day.

A line was deleted, and the time for the CW test with it. Instead, the time for the RTTY test appeared in its place. Our apologies to KD2BE, and any other station who missed the message — Ed. □

The AMSAT Software Exchange

Do you have a personal computer? And are you also into operating the OSCAR satellites? You're in luck. AMSAT Software Exchange has some new programs for you.

Bob McGwier, N4HY, gave all this good news to the AMSAT Forum at the Dayton Hamvention, 26 April 1985.

AMSAT has been providing public domain software for a donation. Programs are available to tell you all of the information you need to be able to point your antennas in the right direction at the right time.

These programs have been improved with "pointing angle" built in. This tells you the angle the satellite antennas will make with an imaginary line from you to the satellite. Thus, you'll know when is the best time to get the best signals. They are also incorporating into the programs an algorithm which tells when will be your next acquisition of signal, once you have lost it.

Software is available for the IBM PC and its compatibles — Commodore 64, VIC 20, the TR 80 Series, and several others.

For more information, write AMSAT Software Exchange, P.O. Box 27, Washington, D.C. 20044. □

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If you received this publication and are not a subscriber of WORLDRADIO, it was no accident. Please consider it an invitation to join. We can be very friendly.

Transmitting Tube Museum

The objective of Ye Olde Transmitting Tube Museum is to collect, preserve and display transmitting tubes manufactured and used during the yester-years. The museum is a new venture with over 900 different tubes collected to date. It is open to interested individuals or groups. Displays are available for transport and display at hamfest, electronic shows or other related events.

The purpose of this letter is to solicit your support in helping expand the museum and preserve those rapidly disappearing old transmitting tubes of years past for future generation hams and professionals to see, study and admire.

Many individuals and organizations like yourself have one or more old transmitting tubes in storage that I know you must have wondered what to do with. Well, here is an opportunity to free that valuable storage space. In addition, you can make a personal contribution to the preservation of your transmitting tubes used in the formative years of amateur and commercial broadcasting. The museum is a registered non-profit organization for tax benefits as applicable.

If you presently have any old transmitting tubes, tube sockets or manuals that you would like to contribute to the museum, please write or call and let us know what you have.

The purchase of rare tubes will always be considered. The tubes do not have to be usable. We will pay your packing and shipping cost. Also, arrangements for pickup in the western states can be arranged. Tubes contributed are inventoried, identifying who the donor was. All significant tubes used for display are further identified by donor (unless notified otherwise).

All duplicate tubes collected by the museum are retained in a tube bank and are made available at no cost to other collectors or those restoring old transmitting equipment.

Please seriously consider making a contribution to the preservation of any old transmitting tubes you may have. These old tubes will soon become extinct unless people like you and the Ye Olde Transmitting Tube Museum take action to preserve them. We look forward to hearing from you soon.

It is recommended that all shipments be made by UPS to the museum at 150 Tanbark Lane, Crescent City, CA 95531. □

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

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

1985 YLRL YL-OM Contest results

Here are the winners of the CW and phone portions of the 1985 YLRL YL-OM Contest.

Phone: *Gold Cup* — Kahdeksikkojen Kerho ry, OH8AA (YL) and Stefan Melcer, OK3CGP (OM); *2nd Place* — Martha Wessel, KØEPE (YL) and Manuel Greco, K2LFG (OM); *3rd Place* — Donna Mollan, WB7FDE (YL) and David Kuniholm, W1HOZ (OM).

CW: *Gold Cup* — OH8AA (YL) and Anthony Truhlar, W9LNQ (OM); *2nd Place* — Fernanda Rocca, I2RLX (YL) and W1HOZ (OM); *3rd Place* — Sally Ryden, K8ONV/4 (YL) and K2LFG (OM). □

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

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Haruo "Harry" Yoneda, JA1ANG, president of JAMSAT

JAS-1: The JAMSAT Project

Norm Brooks, K6FO

The Dayton Hamvention and the AMSAT Forum were honored by the presence of Haruo "Harry" Yoneda, JA1ANG, president of JAMSAT, the Japanese AMSAT. On 26 April 1985, he spoke on "JAS-1: The JAMSAT Project to Launch a Voice and Data Communications Satellite Into Low Earth Orbit."

The JAS-1 satellite is being developed by the Japan Amateur Radio League (JARL) and JAMSAT. It will be launched by the National Space Development Agency of Japan (NASDA) in early 1986. NASDA has already approved launching of JAS-1 together with an experimental geodetic payload using NASDA's experimental launch vehicle, the H-1 rocket.

"JAS-1 was not strictly made in Japan," Harry explained. "Some of the system design came from some of you right here. We have received help from all over the world. On behalf of JARL and JAMSAT, I want to thank you all very much."

JAS-1 will carry two transponders. One will be J Mode, very similar to OSCAR-8. Input frequency 145.9 to 146.0 MHz. Downlink 435.9 to 435.8 MHz. The digital Packet Radio transponder will have four uplink frequencies: 145.85, 145.87, 145.89 and 145.91 MHz. There will be one downlink frequency of 435.91 MHz. Packet signal format: 1200 baud psk, store and forward. The satellite will be in a circular orbit 930 miles high, with an inclination of 20°. It will therefore pass west to east and east to west, with about an 18-minute window each pass.

The question and answer period following Harry's talk brought out an interesting situation. "Here in the United States, you can be proud to be an amateur," Harry explained, "but in Japan that is not the case. Amateurs are dealt with cooly, because of TVI, etc. There's something wrong — Japanese amateurs don't enjoy the image that American hams have."

"When the JAS-1 project was first proposed, nobody would believe that JAMSAT could build a satellite. To get NASDA's approval, JARL had to get the hardware for the spacecraft itself made by the professional group at NEC. JAMSAT, however, is making all the subsystems. The professional people were impressed with the equipment made by JAMSAT. If we succeed with this satellite project, we will gain a great deal of credibility. We may get to put up more sophisticated satellites in the future," Harry added.

"Perhaps the use of the word 'amateur' is part of the problem," he opined. "In Britain they don't use the word amateur — it's RSGB! In Australia it's WIA. In the United States it's ARRL."

Youth group backs ham space program

President Reagan might play a role in this summer's Ham-In-Space project, thanks to a new relationship between the Young Astronaut Program and the League. YAP is part of the White House Office of Private Sector Initiatives. The director, Dr. Kerry Joels, is accepting an invitation to pair chapters of young people enrolled in YAP with local ham clubs, to respond to Astronaut Tony England's goal of talking to the nation's youth.

YAP is said to consist of at least 50,000 school children enrolled in some 2,000 chapters nationwide. Dr. Joels indicates close ties with the League will bring Amateur Radio into his group's focus on space-oriented experimentation. Joels recently (10 May) met with League Development Manager Bill Lazzaro, N2CF, and League PIO Paul Courson, WA3VJB, to map out a strategy that hopefully will expand public awareness of Amateur Radio.

The strategy includes methods to substantially hike private sector support for the Amateur Space Program. Joels said he has found strong corporate enthusiasm for a proposed geostationary Amateur satellite, to be used primarily by pairs of YAP chapters and local ham clubs! The million dollar price of such a project could be entirely underwritten by a corporation!

But the most immediate impact of YAP's decision to work with the League on an ongoing basis will be this summer's space shuttle Challenger flight 51-F. With YAP's list of local chapters, it becomes easy for the League to match responding groups to affiliated ham clubs. They then would be given preferred uplink frequencies available only to qualified pairings. This saves the local ham club the trouble of seeking out an interested group of young people to take part.

YAP has a tremendous capacity to generate publicity for its own projects as well as joint projects involving Amateur Radio. So for future shuttle missions, YAP is agreeing to help publicize NASA/ham club frequencies where shuttle communications are re-transmitted. This will undoubtedly bring in SWL and scanner enthusiasts besides young people involved with the Young Astronaut Program. □

For information on how to get your club listed in "Visit Your Radio Club" plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

PACSAT

PACSAT, the Packet Radio Amateur Satellite, was presented by three speakers at the Dayton Hamvention, 26 April 1985; Larry Koziel, K8MU; Harold Price, NK6K, AMSAT Vice President for Engineering and PACSAT Project Manager; and Dr. Tom Clark, W3IWI, of NASA.

Larry explained packet radio in nontechnical terms. "Packet radio uses a little device that allows your computer to communicate with digital data via Amateur Radio. It acts as a very selective filter. It allows you to receive data that is specifically addressed to you, and also is absolutely correct — no mistakes.

"The device is a Terminal Node Controller. It takes care of all sorts of overhead tasks your computer is freed from doing. It puts the call signs of your station and the receiving station in the information it transmits, and it also gives information for the receiving station to be able to determine that the information it received is correct.

Harold Price, NK6K

"In operation it is very much like sending a radiogram. It first listens on the frequency to determine if it is in use. It sends the information. The receiving station accepts only the information addressed to it. The receiving station then checks the accuracy, and if it is OK, it QSLs for the transmission.

"When PACSAT was first conceived, there was little support for it. That has dramatically changed now. At first there were only two sources for boards for the terminal node controller. Now there are many. Now, it sounds like the first satellite may not be enough to satisfy our needs."

Harold then showed an interesting slide show of packet radio "shacks," both neat and disorderly.

He explained that PACSAT will be in a low polar orbit. It will drop off and pick up messages at as it goes by our stations. "It's like putting your message on the corkboard at the supermarket," he said. "When you visit, you pick up your message and put an answer on the corkboard. PACSAT does the same thing. PACSAT will be able to store 4 million characters."

Dr. Clark's talk was directed at the Space Shuttle, which is set up to disperse payloads for high school science projects and similar experiments. These are called "get away specials."

"Get away specials are built in various standard-sized containers, which look like trash containers. They each get one twisted pair of wires from Space Shuttle's computer which allows the command of something on or off."

He facetiously told the story of "the high technology antenna release mechanism. It was called 'nylon lacing twine.' A small nichrome wire was wrapped around the cord. When power was put to the wire, it melted the nylon twine and the antenna was released 'sproinngg!'

"In building something to go aboard a spacecraft, you never use a red wire. Space technicians are trained that anything red is

Dr. Tom Clark, W3IWI

Fires

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At Astor Fire Base, Jim Huey, NS4A — himself a fire fighter — offered to shut down his repeater on 146.895 so there would be a clear simplex frequency available.

"The radios pumped new energy into us," said one fire chief. "It meant that instead of coming all the way back to the fire base for orders, we could be radio dispatched, or we could call for help."

And calling for help was to be important as the morning wore on. Big four-engined water bombers roared over the fire dropping tons of water, as did helicopters, each suspending huge canvas water buckets on cables. But the fire was not being stopped.

At Astor Fire Base, Judy Tolliver, NS4C, and KB4HOD were busy dispatching fire trucks and pumps, each manned by a ham carrying a 2-meter hand-talkie, extra batteries and a mag mount antenna. The Sheriff's Department next asked for hams to act as relay communicators to the fire front, and they were sent.

By noon, it appeared that the only hope of saving Astor and Astor Park would be a backfire to be set along Blue Creek Lodge Road. If that should fail, the towns would have to be evacuated.

Almost all the available fire trucks and forestry equipment formed the battle line along that road, but the winds rose and before the back fire could be well lighted, the fire front hit the road.

The firefighters were overwhelmed. Only the fire fighting aircraft, dropping their water loads right on the firemen, saved lives. It was the hams with those units who reported conditions and passed the orders that finally extracted the fire trucks and men to safety.

It was like Viet-Nam. Smoke and flames, as if from napalm strikes, were everywhere.

The fire units were radio dispatched back toward Astor Park and the amateurs relayed the house-to-house evacuation orders to the sheriff's deputies.

But as the fire raged toward Wildwood Campground, where 50 trailers and 100 propane gas tanks waited, the Fire Coordinator discovered that the town cemetery was in the path of the flames and offered another possible firebreak.

Astor and Astor Park were saved Saturday afternoon by a combination of luck and bravery. The fire crews ran a bulldozer through the cemetery to plow a needed fire break as the grass was already ablaze. The ham-equipped fire trucks were able to call for help at "hot spots" and the winds began to drop.

The fight went on all night, but by Sunday morning, despite the fact there was no rain forecast, fire fighters had hopes that they might contain the fires.

Arsonists struck behind the fire line Sunday morning, but again, Amateur Radio dispatched fire units responded so quickly that these blazes were checked. Because of the confirmed arson attempts, authorities ordered the national forest closed and off limits to visitors.

Now, Amateur Radio was to begin another, equally vital service. The firemen were nearing exhaustion and they needed food and drink. The women of the town were providing food, but how to get it to the fire units was the question. The answer was to start a mobile food service with a ham on the food mobile to locate the units.

While hot food and coffee was being delivered to the fire front, the Fire Coordinator was relaying reports to the county government back in Tavares. They responded with additional equipment, ambulances and assistance as they received requests via Amateur Radio.

By Sunday afternoon, the enormous resources of the federal government were beginning to converge on the Ocala National Forest. Where bulldozers had been worth their weight in gold Saturday, they were in surplus Sunday night. Hundreds of veteran firemen were being airlifted into the fire front, but again, radio communications from agency to agency depended largely on Amateur Radio.

Monday was to be a true test for the amateurs. Many wondered how long the hams could furnish communications. The weekend was ideal, but with Monday, many hams would need to leave the fire and report to jobs.

While the fire was still out of control, there were rain clouds and the containment was slowly circling the fire area.

The hams kept answering the calls of the Emergency Coordinators and many took leave of their jobs and stayed. One man — Bill May, WB4HXS, from Orange County — closed his business and stayed on to provide radio communications to the Fire Coordinator.

Several hams, from as far away as Chicago, on vacation to places like Disney World, scrapped their vacations and joined the fire fighting.

Monday afternoon the rains came and by Monday night the fire was fully contained, burning only in isolated areas.

The ARES radio net shut down that evening, and the hams took down their antennas and loaded the cars. They found, however, that strong bonds had been forged between radio operators and firemen. Again, it was like troops saying goodbye at the end of a war. Promises never to forget or lose touch were exchanged.

Repeatedly, officials said, "We couldn't have done it without the hams.

The logs indicated more than 50 radio amateurs actually served at the fire, while an equal number acted as liaison. More than 3,000 messages had been dispatched.

On Friday, Saturday and Sunday, at the peak of the action, messages were being sent at the rate of two and three per minute. In fact, to save time and aid officials, tactical calls were used. Each fire department responded with the name of the town it represented. The hams at Fire Base Astor sounded like big city dispatchers.

The amateurs of Lake County had been training for hurricane season, but the training paid off at the fire. Hams from surrounding counties also responded to Lake County's need. There was no malicious interference, no pettiness, no prima donnas — just radio amateurs doing their jobs.

There was a sign in the Fire House at Astor Base. It was meant for volunteer firemen, but the hams quickly adopted the message. It read, "We may be volunteers, but we are professionals." □

El Cajon

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what the Amateurs were doing.

Even though the public hearings had been closed, the opportunity to revise the proposed ordinance was still open since the council had returned it to the planning staff for some other changes. Henson made an extra effort to adopt wording proposed by the amateur community which changed the definition to read, "Satellite dish antenna means an accessory structure consisting of a parabolic, electromagnetic wave (radio wave) reflector, along with the necessary receiving antenna parts and supporting structure, the purpose of which is to receive television signals broadcast from an earth orbiting transmitter." The revised ordinance clearly exempts all current amateur antennas and was adopted by the council on May 7, 1985. — *Bob Hart, WA7HRA, El Cajon, CA* □

Radio foils burglars

On Sunday afternoon, 24 March, an attempt was made to burglarize the home of Richard Tyner, W0UDP. Entry was made via a window. Nothing was taken. Later the sheriff's office apprehended the culprits.

When asked why they did not go through with the burglary, they stated that they heard voices (the 2-meter rig left on) and took off.

Keep in mind, many people on 2-meter rigs and scanners monitor our conversations, and it is a poor practice to broadcast on the air that you will be away from home for a few hours or weeks.

—*Bemidji ARC, MN* □

AMSAT policy determination

All of the presentations at the AMSAT Forum at the Dayton Hamvention were not technical in nature. The president of AMSAT, John Browning, W6SP, spoke on 27 April 1985 on general AMSAT administration. His subject was called "AMSAT Policy Determination."

"My call sign lends itself to a lot of phonetics," he said, "and one of them is Space Philosopher." In making introductions, he proved himself not only a philosopher, but quite a showman as well. He chided those who tried to tell jokes about baldheaded men. "I'm the only one who can tell hair jokes around here!" he declared. Sample: *Question* — What do you call a bunch of rabbits dancing backwards? *Answer* — A receding hairline.

"Your Board of Directors acts very much as a legislative body," John explained. "We represent you, the members, and make decisions based on what we think is best from the standpoint of the Amateur Radio satellite gang.

"We are international in scope. We have four international members on this seven-member Board. One Japanese, one Canadian and two Californians. (laughter) One of the original goals of AMSAT was to be an international organization. Obviously, the scope of satellite communications is international, and there needs to be a great deal of cooperation. We fostered the formation of societies in other countries, such as AMSAT DL, AMSAT UK, etc.

"What we've seen over the years is what we've seen in other international organizations, be they civil or military. As the capability in other countries has increased to do technological things, they have preferred to go their own way. Thus, one is hard pressed to find an international organization that is really dominated by one country. We were a little slow to recognize that truth, and we get referred to by those other societies as 'AMSAT US.'

"We still provide considerable leadership, but many of the other groups prefer to do their own thing in their own way and in their own language. However, we will continue to have international members on our Board if the membership so elects them.

"When people organize in society, there seems to be a sociological need to draw boundary lines. In communications organizations, it seems to be a division between the engineers and the operators. This is true not only for Amateur Radio, but also for any commercial operation. For those of us who don't have either engineering or operating talent, this provides an opportunity. You need somebody to referee between the two groups when they get in

John Browning, W6SP

conflict. In civil life we're called managers. We're part of the overhead, and usually considered a necessary evil.

"In our Board meeting we looked for analogies. What other kind of organization are we like? From our objectives, I think we're most like a repeater club. Of course, our repeaters are very expensive and go on pretty high hills.

Our #1 stated objective is to get the satellite there. We have a lot of specialized engineers working on things that are quite remote from what the users do. Of course, in our huge repeater club, we need both types — the engineers who put up the satellites and the users. We have to balance the needs of both groups — challenges for the engineers and what the users want. Sometimes it's a compromise in what things are to be done.

"Everyone agrees we could do more in AMSAT if we had more members. We need more users. We have this fine satellite ready to use. It works great. It's really easy to use, but it's difficult to find out how to get started. We've got this capability and it's not crowded, like the ham bands are supposed to be. You can carry on a conversation without interruption. We've got to do something to correct that situation! (laughter)

"We therefore must make it easier to get started. We didn't have a publication telling you how to get started on OSCAR-10. We saw we had a need for such a publication. I came here to Dayton and found it had already been done.

"What is it AMSAT should be supplying to its members, whether engineers, users or 'other?' It turns out to be 'getting information to you.' With the numbers we have, it gets expensive. The more information we provide, the more it costs. Our 6,000-copy publication should be about 20,000 to make it self-sustaining. All the money used to get you information isn't used to put up satellites.

"We have divided 'news' from 'articles.' We put news in a separate newsletter called *Amateur Satellite Report*, which pays for itself. It's not a drain on our treasury. Those who want can subscribe separately. We went from *Orbit* magazine to *Satellite Journal* to save money. It still is costly at 6,000 circulation. We're looking for ways to overcome this dilemma. The obvious one is to increase our membership to get up to where the advertising will carry most of the weight.

One publication problem is that the readership wants "something for everyone." This means space must be given all the way from beginners' to highly technical articles. We decided to split off very high tech items into a new technical journal for those interested in space itself as a hobby, what goes into designing satellites, etc. It will come out late this year. It will be made available to you at a price that will cover the cost of it and hopefully provide some revenues for building satellites as well.

When introducing Harry Yoneda, JA1ANG, John told about industry cooperation between Japan and the United States. We see a lot of Japanese radio equipment and cars in the United States, and to keep balance, we are promoting a "Buy American" campaign in Japan. "The idea is catching on," he said. "We understand Nissan is buying General Motors!"

PACSAT

(continued from page 3)

removed before flight.

"Space Shuttle is like an aircraft," he said, "a bomber, except the bomb-bay doors open upwards. In the agency (NASA), it is called 'the (ethnic) bomber.'

"Propulsion systems need fuel, which is stored in a tank. Since the satellite spins, we want it to spin smoothly and stably. If the tank were long and skinny, it could not spin stably around an end-to-end axis. Therefore, fuel tanks are made short and squat.

"Since people are aboard, safety is the big concern. NASA is very serious about not losing astronauts, even if they are U.S. Senators! Everything must be certified safe. For PACSAT, we had a problem, since the Shuttle is in low Earth orbit, about 300km high, and we want our satellite to be in a higher orbit, about 800km high. We must provide a propulsion system that will raise the orbit safely, even if anything goes wrong.

"Facetiously, the first suggestion for a safe propulsion system was to use steam! They heat a liquid to vapor and eject it through an orifice. They went through a long list of fluids, like freon, etc., and came up with ammonia to use as the fluid, rather than water.

"In the Shuttle cargo bay, there is a wide difference in temperatures, from minus 160 degrees C + 100 degrees C, depending on where the sun is shining. The hottest possible case is when the doors are open to the sun and the craft is not spinning. The coldest possible case is the same with the doors open away from the sun.

"Building an Amateur Radio satellite is 10% Amateur Radio and 90% other. 'Other' includes negotiating launches, doing mechanical design, thermal design, structural design, system design, propulsion system design, and, of course, raising money to pay for all those things.

"PACSAT will fly around early 1987. There will be a packet radio experiment aboard JAS-1 which will launch earlier. Also, Phase 3C will have a digipeater in

Larry Koziel, K8MU

orbit function. Thus, all the next set of amateur spacecraft in the near future (three or four) will have packet radio aspects to them." □

A pitch for ACSSB

At the AMSAT Forum at the Dayton Hamvention 26 April 1985, Paul Rinaldo, W4RI, made a pitch for the development of ACSSB — *A*mplitude *C*ompandered *S*ingle *Sideband*. Paul is publications manager for ARRL, as well as editor of its technical publication *QEX*.

There are several schemes for ACSSB, and Paul was not pushing any particular one. He said he wanted someone to design a good working system with the hopes it will become an accepted standard for both satellite and terrestrial use.

"FM cannot be used on the satellites because of its high duty cycle," he explained. Yet FM has advantages. A good ACSSB system could have the same advantages (i.e., quieting, capture effect and noise reduction).

He explained one ACSSB method in detail. "The technique is simply SSB plus a pilot carrier. The pilot carrier is put up about 3.1 kHz. The pilot serves as a reference frequency so that your receiving equipment can automatically tune in the wanted signal. It gives you an automatic frequency lock. It helps you acquire the signal in the first place, and it helps you stay tuned to it once you have acquired it. The pilot also provides compression information.

"At the transmitter, when you compress, the compression information is added to the pilot tone as amplitude modulation. The pilot tone is about 10dB below the peak amplitude of the SSB signal. As you compress, your signal should have gotten louder, but you compress instead. You pump the pilot up and down.

"At the receiving end, it tells you how much compression was used at that instant time. When you demodulate it and listen to it, you add that amount of expansion to counteract the amount of compression you put in at the transmitting end — thus the term compandering. Basically, that's all there is to the idea. What you're doing is taking the rather wide audio dynamic range going into audio stages of your transmitter and compressing it into a smaller dynamic range. You expand it again at the receiving end to get back to the original dynamic range."

ACSSB has advantages over FM. Paul explained, "One of the problems with FM is that whenever you have fading, you still hear the signal at full amplitude. Say you're out in a mobile, in a weak area from a repeater. You've all experienced 'picket fencing' in an FM repeater system. When this happens, the audio you're listening to is at a constant volume, and the noise goes up and down. It doesn't happen that way with ACSSB. In between, when there is a fade, you get a slight audio distortion. You don't get the noisy fades that you do on FM."

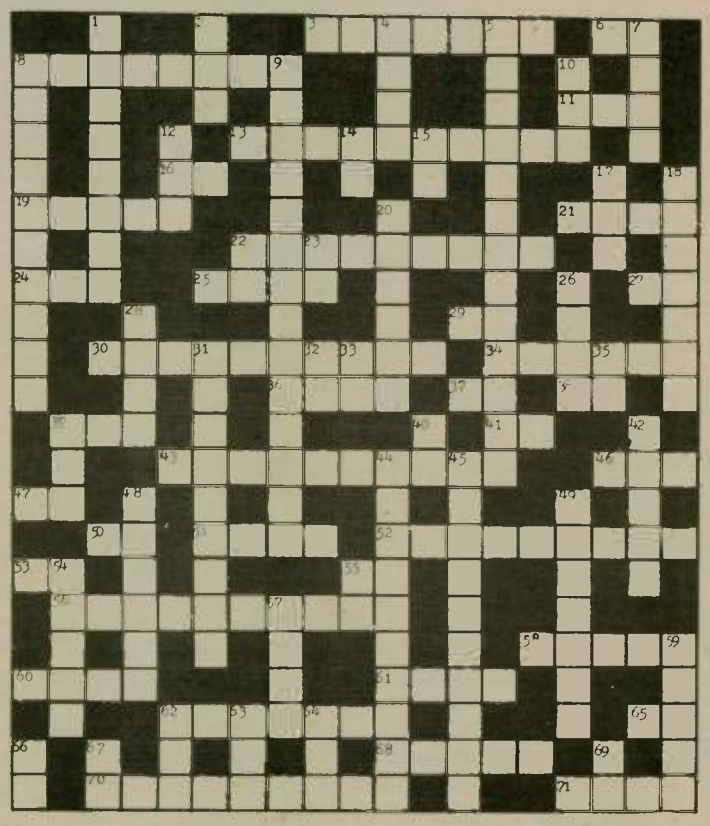
The objective of Paul's presentation was to improve the signal to noise (S/N) ratio on the satellites. "By S/N ratio, what I'm talking about is the peak signal you have as compared to other products that are in the pass band. This is quite variable, because it depends on how many other people are using the satellite at the same time, etc. In general, it is about a 19dB S/N ratio. This could be improved considerable by using ACSSB.

"ACSSB also eliminates the problem of receiver tuning. It always sounds natural because the frequency is 'right on.' It is not unusual to mistune ordinary SSB up to 50 or 100 Hz before you notice it sounds unnatural.

"We're encouraging experimentation, either through the satellite or terrestrially. We're willing, through QEX, to be the clearing house on experimenter information." □

Crossword Puzzle

John Lawson, WA6ZXN



ACROSS

3. State in W4-land.
6. Radio stations in other countries or at great distances.
8. Station receiving a signal on one frequency and automatically retransmitting it on another.
11. A group of hams meeting on a specific frequency, at a scheduled time, for direct communications.
13. Used to propagate high frequency radio signals over great distances.
16. Hertz (abbr.)
19. One cycle per second.
21. Usually sent to guarantee a reply by mail.
22. Happens to resonant frequency as antenna length increases.
24. Five required for Novice; 13 for General; 20 for Extra.
25. Excellent directional antenna.
27. W1-state with the least number of amateurs. (abbr.)
29. From
30. Federal Communications
34. Beginner's ticket.
36. Type of beam antenna.
37. One of North Carolina's neighbors. (abbr.)
38. Radio frequency.
39. Thanks.
41. And.
43. Electrolytics are common types.
46. Antenna. (abbr.)
47. Good night in Morse code.
50. Old man in Morse code.
51. Not odd.
52. Country with "VK" prefix.
53. Good morning in Morse code.
55. Belgium prefix.
56. Tube's internal components
58. Current (I) multiplied by voltage (E).
60. Not there.
61. A heavenly object in radio astronomy.
62. The maximum usable frequency has a direct relation to this cycle.
65. Field day. (abbr.)
68. A Space Age VHF repeater.
70. A poor electrical conductor
71. The ITU phonetic word for "E."

DOWN

1. The entire range of wavelengths in radio waves.
2. The same as Greenwich mean time.
4. Who's law states voltage(E) = current(I) multiplied by resistance(R).
5. QRM and QRN.
7. Transmitter.
8. Talking for hours.
9. r.m.s.
10. Number of years a log must be kept.
12. A million cycles per second. (abbr.)
14. Integrated circuit.
15. Power amplifier.
17. Award for confirming all states in the U.S.
18. WX
20. ditdahditdahditdah.
22. "This is" in Morse code.
23. Cuba prefix.
26. Receiver.
28. Common transmission line.
31. 1000 kilohertz.
32. Egypt prefix.
33. State in W0-land. (abbr.)
35. Intermediate frequency.
39. Excellent daytime DX band during the years of high sunspot activity.
40. Clipperton Island prefix.
42. The ITU phonetic word for "I."
44. A solid-state tube.
45. Voltage(E) divided by current(I).
48. Unit of current.
49. An electrode of a tube.
54. The approximate metric equivalent to the yard.
55. Austria prefix.
57. Units of resistance.
59. Transceiver in laymen's terms.
62. Distress call in Morse code.
63. Nothing.
64. Push to talk.
66. Type of current found in house lines.
67. The telegraphic laugh.
69. Type of current from a battery.

(Answer on page 32)

New life among Los Angeles hams

Spurred by the infectious enthusiasm generated by the 800 ham participants in the 1984 Olympics, the venerable Los Angeles Area Council of Amateur Radio clubs is surging with new vitality in 1985. The 47 member clubs and repeater groups of the Council have rededicated their efforts to the growth and prosperity of Amateur Radio in Los Angeles County, establishing many new benefits for hams and member clubs in the process.

The interchange of ideas, reports and opinions between clubs during scheduled Council meetings has reached new levels of enthusiastic participation among the delegates. ARRL officials regularly attend, serving as a direct two-way funnel for information and opinions to and from the League. The Council itself has established a 42-page Delegates Handbook of information that would be difficult for individual clubs to compile.

Originally issued in March, Handbook revisions are distributed at each Council meeting to ensure fresh, current data reaches each member club. The Handbook includes:

- **Officials**. Names, addresses and telephone numbers of all Council officers, ARRL officials and Section officials, both elected and appointed.
- **Clubs**. Listings of all 47 member clubs, addresses, contacts and telephone numbers.
- **License classes**. Details of 17 clubs running regularly scheduled licensing classes; places, dates, times, telephone numbers.
- **Examination sessions**. Over 52 scheduled license examination sessions for all VECs in the sixth region, including dozens in the Los Angeles area.
- **VE information**. Details on how any club can set up examination sessions as a regular part of their monthly meetings.
- **Speakers**. A Speakers Bureau, with current listings of speakers making the rounds of clubs in Los Angeles; names, subjects, telephone numbers.
- **Emergency Telephones**. A listing of fire, police and paramedic telephone numbers for 83 communities in Los Angeles County and 30 communities and unincorporated areas in Orange County.
- **Cable TV systems**. A listing of 29 cable TV companies serving 830,000 homes in 76 communities and areas in Los Angeles and Orange Counties.
- **Frequency chart**. A handy reference chart of all amateur bands, including the new 24 MHz band.
- **Special Events**. A listing of conventions, hamfests and other upcoming events in Los Angeles and Orange Counties.
- **Westlink**. A listing of information on the Westlink organization, including four telephone numbers across the nation for access to the weekly Westlink taped broadcasts.
- **On-the-air-nets**. A listing of nets for computers (Apple, TRS-80 and Pet/Commodore), packet radio, the LA Council, and Volunteer Examiners: local, western and national.

In addition to Handbook revisions, Council meetings include an exchange of Bulletins from attending clubs, plus listings of from 150 to 200 newly licensed hams in Los Angeles County, by community and call signs, to assist clubs in recruiting new members.

Council meetings are held six times per year, the first Tuesday of every odd-numbered month, at 7:30 p.m. in the cafeteria of the Los Angeles Department of Water and Power, First and Hope Streets, Los Angeles. The next meeting is 02 July 1985. Visitors are always welcome, with new member clubs or repeater groups accepted any time. Annual dues are $10.

For further information, contact Rosemary Willis, Secretary, P.O. Box 1460, Sun Valley, CA 91352, or call (818) 767-5131. — *C. W. Lobb, KN6H* □

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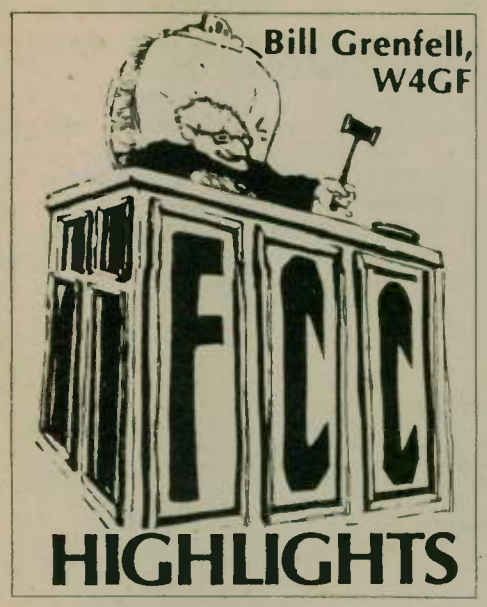
When submitting photos, please *DO NOT* write on the backs of them — they often stain the fronts of other photos, making them unusable.

Send your news to Worldradio at the same time you send it to other amateur publications and see who prints it first. We get the news out before anyone else.



"...The ten-meter external amplifier ban covers the frequencies 24.00 to 35.00 MHz and so includes the 12 meter band" an FCC official recently pointed out to an ARRL visitor at his office. This does not prevent use of the full 1500 watts PEP in the new band. It just means that amplifiers which can operate in the 12 meter band (as well as the 10 meter band) can not be sold by manufacturers.

•

Operation by United States amateurs in the 12 and 30 meter bands must be on a non-interference or secondary basis to the operation of certain radio services outside the United States. Section 97.7 (b) (11) of FCC's Amateur Radio Service Rules limits the use of 10,100-10,150 kHz as follows:

This band is allocated to the fixed service on a primary basis outside the United States and its possessions. Transmissions of stations in the Amateur Radio Service in this band are secondary to foreign fixed service use in the band."

97.7 (b) (12) limits the use of 24,890-24,990 kHz as follows: "Until July 1, 1989, transmissions of stations in the amateur service shall not cause harmful interference to operation in the fixed and mobile services outside the United States. Stations in the amateur service are required to make all necessary adjustments (including termination of transmission) if harmful interference is caused."

•

The FCC is reviewing the performance of the volunteer examination coordinators, as I reported last month. "The Commission will keep track of the percentage of defective applications each VEC forwards to the FCC. "The first time a mistake occurs, the FCC will correct the mistake and notify the VEC. "The next time, the application will be returned without action." (*ARRL Letter*, May 9, 1985)

•

FCC action on the ARRL request for limited federal preemption of Amateur antennas, PRB-1 "...is expected in the next few months." (*ARRL Letter*, 05/23/85) "The FCC has set the fourth quarter (July, August and September) of this fiscal year as the scheduled time for action on this very important regulatory request, according to high ranking FCC sources." (*WESTLINK Report*, 05/17/85)

•

The FCC is being asked "to take a look at enhancing Novice Class privileges" is a statement reported in an interview with FCC Special Services Division Chief Raymond Kowalski. "The Commission is not considering any sort of codeless Novice Class or any other No Code license."..."In fact, 92% of all new hams coming to amateur radio start with the Novice license. "Perhaps it's time to make that license more attractive."...So we are indeed considering the possibility of putting out for comment some of the more well thought out proposals that would give Novices additional privileges such as voice, and possibly others." (*Westlink Report*, 05/17/85) The ARRL Executive Committee approved a plan for enhanced privileges for Novice class Amateur Radio operators at its May 18 meeting. (*ARRL Letter*, 05/23/85) There was no indication of when it might be sent to FCC as a petition for rule making.

•

The FCC has authorized spread spectrum techniques in the Amateur Radio Service. "The final rules...authorize amateurs to develop, test and operate low cost spread spectrum systems." "...frequency bands above 420 MHz will be authorized." FCC is "...delaying the effective date of the rule change by one year in order to give the amateur community time to develop initial voluntary interoperability standards as they have done recently in packet radio. "In this interim period, we are continuing our policy of granting STA's (Special Temporary Authority) to those who wish to experiment in this area." (FCC report and order, Gen. Docket No. 81-414, adopted 05/09/85, effective 06/01/85). Copies of the Order can be obtained by writing to FCC, Washington, D.C. 20554.

"Spread Spectrum is a term applied to communications systems that spread radio frequency energy over a wide bandwidth by means of an auxiliary spreading code. "The spreading of the bandwidth can be accomplished in many different ways and the systems are usually classified by the type of spreading technique that they employ. The spreading of the energy in spread spectrum systems over a wide bandwidth results in several possible advantages: short range interference free overlays on other emissions, efficient use of the electro-magnetic spectrum, resistance to interference from other emissions, and low detectability. The primary user of spread spectrum at present is the military." (*W5YI Report*, 05/15/85)

•

A certificate of successful completion "does not provide a basis for an applicant to take additional, higher-level written examination elements" according to a letter to the ARRL from Raymond Kowalski, Chief of the FCC Special Services Division. "Under the rules, only an FCC license would suffice. "Rule 97.25 governs 'Examination credit' and it provides credit only for telegraphy examination elements 1 (A), 1 (B) and 1 (C). "Kowalski goes on to say that the FCC would entertain a formal proposal to change Section 97.25 of the rules to permit VEs and VECs to give credit for written examination elements to holders of appropriate certificates of successful completion." (*ARRL Letter*, 05/23/85)

•

"FCC's Langhorne, Pennsylvania District Office has fined Ronald Mondgock, of Yardley, Pennsylvania, $1500 for bootlegging on the Delaware Valley Radio Association's Repeater. Assisted by local police, members of DVRA (based in Trenton, New Jersey) DF'ed Mondgock's house as the source of interference to their club repeater. They then notified the FCC Engineer-in-Charge, prompting official FCC involvement and action." (*ARRL Letter*, 05/23/85)

•

A bill which would make malicious interference a statutory offense has been reintroduced in the house by representative Jim Bates, D-CA. "The text is very close to that used by Senator Barry Goldwater in his Senate bill, S-66."... "There are two possible courses of action for the bill -- hearings could be held on the bill itself, or it could be tacked on to some other communications bill in Congress." (*ARRL Letter*, 05/23/85)

•

FCC has proposed F2A emission for Amateur stations on frequencies between 29.5 and 29.7 MHz, in a Notice of Proposed Rule Making (NPRM) action on May 23, 1985 (PR DOCKET 85-168). Noting that the subband is used substantially for FM repeater operation, the Commission reasoned that the use of F2A therein "...would further the development of FM repeater technology." Comments on any adverse effects that might occur were invited.

•

The number of Amateur operator licensees in each class at the end of April, 1985 follow: Novice, 78,942; Technician, 80,906; General, 116,728; Advanced, 97,376; Extra, 36,670; Total operators, 410,622. The highest ever total of Amateur operators was 414,973 at the end of May 1983.

•

The average age of Amateurs newly licensed during the month of April, 1985 was: 36 for the Novice Class; 38 for Technician; 46 for General; 50 for Advanced; and 46 for Extra Class. The high/low extremes of the same group were: 82/7 for the Novice Class; 72/23 for Technician; 78/22 for General; 67/23 for Advanced; 61/34 for Extra Class. The total of each class was: 1996 Novice; 78 Technician; 44 General; 8 Advanced; 3 Extra; and the total of the April new licensees was 2129. □

VE exams

California

ARRL/VEC-sponsored Amateur Radio examinations for initial and upgrade licenses of all classes are given the first Saturday of each month, at the Lockheed ERC ARC (W6LS), 2814 Empire Avenue Ave., Burbank, CA 91504

Applicant pre-registration is not required, but it is recommended. Only pre-registered applicants can be sure they will be examined. Unregistered applicants (walk-ins) will be examined as time permits. Excess applicants are given first choice in the next month's exams. (W6LS tries to have enough trios of VE's on hand to service all applicants.)

Send completed FCC Form 610, $4 reimbursement fee (make checks payable to ARRL/VEC), and suitable personal identification to the above address, ATTN: Marie Welsh, W6JFP. A Form 610 will be sent to anyone who requests it and supplies an SASE. An SASE is also needed if you desire confirmation of pre-registration appointment. □

New Jersey

The Ramapo Mountain ARC will be conducting FCC Amateur Radio license exams on 17 August at Valley Middle School in Oakland, New Jersey. Exams will be given for all license classes, Novice through Extra. Registration is requested by 10 July.

Send SASE and $4 check payable to "ARRL/VEC" for exam request to: Frank Lee, KA2ALS, 989 Crystal Lake Terrace, Franklin Lakes, NJ 07417. Testing schedule, instructions and form 610 will be returned promptly. □

Amateur Radio call signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of 01 June 1985.

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

Radio District	Group A	Group B	Group C	Group D
	Am. Extra	Advanced	Tech./Gen.	Novice
0	NK0Q	KD0XL	N0GFJ	KA0UYL
1	KZ1W	KB1TD	N1DOE	KA1NDA
2	NK2E	KD2NG	N2FOP	KA2YNC
3	KW3B	KC3SJ	N3EKQ	KA3OFU
4	AA4JX	KJ4EQ	N4MDM	KB4OOM
5	NW5G	KF5AZ	N5IBJ	KA5WIK
6	WI6H	KG6UF	N6MBW	KB6JCW
7	NO7A	KE7GT	N7HFU	KA7VPV
8	NM8S	KD8YQ	N8GOJ	KA8WUC
9	NE9X	KD9PW	N9FFO	KA9TUR
N. Mariana Is.	AH0D	AH0AC	KH0AI	WH0AAG
Guam	AH2V	AH2BD	KH2BV	WH2AGD
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Hawaii	WH6Y	AH6GD	NH6DX	WH6BEM
Kure Is.			KH7AA	
Amer. Samoa	AH8B	AH8AB	KH8AD	WH8AAP
Wake Wilkes Peale		AH9AC	KH9AB	WH9AAE
Alaska		AL7GY	NL7GJ	WL7BHK
Virgin Is.	KP2L	KP2AT	NP2BH	WP2AEJ
Puerto Rico	WP4L	KP4IP	NP4OD	WP4EFQ

SPECIAL EVENTS

High point in PA

The Somerset County ARC will sponsor a mini-DXpedition to the highest point in Pennsylvania — Mt. Davis — using call AK3J.

Starting time will be 1600 UTC, 03 August; ending time is 1600 UTC, 04 August. Operations will be in the lower 25 kHz of General bands and in Novice bands.

For nice certificate, please send SASE to RD #2, Box 237, Stoystown, PA 15563. □

Old Threshers Reunion

The Mount Pleasant, Iowa ARC will once again be operating a station at the 36th Annual Midwest Old Threshers Reunion in Mount Pleasant from 28 August through 02 September. Using club call WØMME, they will be on 3970 and 7280 kHz throughout the event.

An Old Threshers QSL card is being issued to those who work the station, and can be obtained by sending an SASE to Dave Schneider, WDØENR, 507 Vine, Mount Pleasant, IA 52641.

Mount Pleasant amateurs will also be providing message handling service and will provide talk-in on 147.99/.39 and 449.95/444.95 for those attending.

Heading the Amateur Radio operation will be Dave Schneider, WDØENR; Bill Barber, KAØBTE; Gary McMeins, NØFIB; and Don Campbell, WØSWY. — *Dave Schneider, WDØENR* □

Brookfield Zoo Country Fair Days

The Chicago Suburban Radio Association will operate a special event Amateur Radio station, N9BAT, from one of the largest zoos in the United States to celebrate their Annual Country Fair Days.

Amateur Radio operation will be on 10-11 August, from 1500Z to 2300Z, using the phone frequencies of 146.55, 14.250 and 7.250 MHz. A special QSL card featuring the zoo's Clydesdale draft horse team will be sent to all stations that reply with their QSL card and a #10 business-size SASE to: N9BAT Special Event, P.O. Box 88, Lyons, IL 60534. □

Drive safely

The Tri-City ARC will operate special event station KA1BB from the Waterford, Connecticut I-95 weigh station to promote safe Labor Day holiday auto travel. This event is in conjunction with the third annual Stay-Awake Coffee Stop offered by BSA Troop 24, Niantic, Connecticut.

Mobile operators are especially encouraged to call. Operation will be from 1700Z, 31 August through 2300Z, 02 September on 14.295, 7.245 and 3.395 MHz phone and on 7.130 MHz CW.

Talk-in to coffee stop on FM-146.52 direct and CB channel 19. QSL via Tri-City ARC, P.O. Box 686, Groton, CT 06340. □

DON'T FORGET . . .

Include first and last names with call signs.

Coax connector tips

Coax connectors seem to present an insurmountable problem to some members of our group. On every RACES event I've attended, I have seen improperly attached connectors, some of which would embarrass a novice.

People don't seem to realize that a badly soldered PL-259 can cause an impedance bump, producing a high SWR. Or, even worse, it can add series resistance that will make SWR look better than it really is (while the bad joint sucks up your power before it can get to the antenna).

The following advice was gleaned from "Hints and Kinks" in QST, the antenna forum at the Dayton Hamvention, and some personal experience.

Step 1: Sand the connector with fine sandpaper. This will help the solder stick.

Step 2: Using a hacksaw, cut two slots in the barrel of the PL-259, connecting the two holes on each side. This will make it easier to solder the braid.

Step 3: Remove about 3 inches of jacket from the coax, but don't cut the braid.

Step 4: Pull the braid back like a sock — all the way down to the jacket. Wrap a strip of aluminum foil twice around the dielectric, as close to the end of the jacket as you can get. This will be a heat shield to protect the dielectric from melting when the braid is soldered.

Step 5: Cut a half inch or so from the end of the dielectric and center conductor — enough so that you can grab and twist the end of the braid. Clamp the twisted end in a vice, and pull firmly on the coax as you tin the braid with solder. If you don't pull it tight, the braid will bulge as you solder it, and you'll never get it into the connector.

Step 6: Let it cool thoroughly.

Step 7: Hold a connecter next to the coax and decide where you need to cut the braid and dielectric to make it fit. Cut it either with a sharp knife or a tubing cutter, leaving enough of the center conductor so it will stick out of the center pin when it is assembled.

Step 8: Slide the threaded collar onto the coax first and then screw the conductor onto the tinned braid . . . which now looks just like a piece of hardline.

Step 9: Solder one side of the braid and let it cool. Do the other side and let it cool again. Then solder the center conductor and trim it.

— *Trident ARC, Summerville, SC* □

• Silent Keys •

Fr. Dave Reddy

On 06 June, Father Dave Reddy, CE0AE, died suddenly.

For many years the only station to be heard from Easter Island was CE0AE. Father Dave, as he was known to DXers, was a Franciscan priest who could always be counted on to be out there with the rest of the DX world when a new one came on the air.

Knowing that Easter Island was a rare country for most of the world, he patiently worked the large pile-ups that eagerly gathered when he came on the air. He will be missed. *Tnx to Kern County ARC* □

Eliot F. Haberlitz

It is with deep regret that I report to you the passing of my uncle, Eliot F. Haberlitz, W6QZA, of Santa Barbara, California. Eliot died on 31 March 1985, in the Santa Barbara Cottage Hospital. He is survived by his wife of 55 years, Dee, and by two granddaughters, Robin and Jennifer — all residents of Santa Barbara.

Eliot, who had been licensed since 1934, was a pioneer in mobile communications and in the use of the early VHF bands. Articles describing his activities can be found in the January and May 1940 issues of **RADIO** magazine, and Eliot's picture appears on the May cover.

Despite a long battle with arthritis, Eliot was an active amateur, was always trying new methods of communication, and gave freely of his time to help his many friends. For several years he carried out regular phone patch traffic with stations at the South Pole and also with several friends operating maritime mobile up and down the California coast.

In addition to his Amateur activities, Eliot made time for several fraternal organizations, always had time for friends and family, and for his other passion, orchids, several varieties of which were developed by him and bear his name.

Eliot will be greatly missed by his many friends in Amateur Radio. We have all suffered a loss at his passing.

— *Robert R. R. Jenkins, KA6BQF* □

Don Wallace — a tribute

Don Wallace, W6AM

At the 1973 International DX Convention in Fresno, California, Don Wallace, W6AM (W6 America Mexico) received an award in recognition of his enthusiasm for Amateur Radio. The presentation was made by John Troster, W6ISQ, who gave the following address, which ran in the September 1973 issue of **Worldradio**.

We have been considering an award of the type we will present tonight for some time. We're not quite sure what to call it, other than — very simply — The Joint Sometimes Annual Southern California DX Club and Northern California DX Club Award for Outstanding Amateur Activity Over So Many Years That Everybody Thinks He (or She) Should Get Some Sort of Award For Doing So Many Things For So Many Years Award.

The trouble was that the Northern and Southern California Clubs couldn't get together about the award — communications block. We wouldn't speak to each other.

However, during the first Mt. Athos thing, there were a couple of thousand very humble W6's sitting around feeling sorry for themselves...and since nobody could get the drop on anybody else...we decided to talk things over.

We in California feel we are pretty well known throughout the DX World...and what we say and do does carry some weight in DX circles. We're modest fellas, as you all know.

Anyway, we feel that in our position of prominence, we are surely entitled to stand up and cheer for someone we believe should be honored for doing something... and do so with a little weight. And just as certain as we feel senior enough and well-known enough to speak and be heard with authority, we also are just as certain that we have *the* perfect candidate for the very first Sometimes Annual Award right here in our own membership.

Now the man we chose is a little shy and might feel a little reluctant to come forward, but with a little encouragement from you, maybe we can coax him to stand and be recognized and to hear why we honor him tonight.

Will the real Don C. Wallace, "W6 America Mexico" please stand.

Standing before you is a fella who has been a ham for over 60 years. Now everybody knows everything about W6AM in the 30 years since World War II... when he became the Baron of West Los Angeles and took over Palos Verdes Hills...how he went to the top of DXCC...became a powerful contender in all contests...DX-peditions...DX, SS whatever...he was there...big single operator signal or multi-operator. But above all, Don did whatever he did with the ageless enthusiasm of a Novice.

You already know about that 30 years, so let's talk about the *FIRST* 30 years. I say that glibly — how many of you here have had a ticket for 30 years?

Don was born in Minnesota of hardy stock. You know they had to be sturdy... Scotchmen in Scandahoovia?? But they moved to Long Beach when Don was very young.

He learned the code, as many of you did, at an early age by stringing wire around the neighborhood to the other kids' houses. He worked his way up to 5 wpm and in 1910, after signing a statement that he knew the code that fast, he went on the air legally as "WU." This was the "Novice" program in those days.

After a little "on-the-air" experience, he got his code speed up to 12 wpm and in 1912 at age 14, he became "6OC."

During high school, besides being a four-letter man every year, Don got his code speed to 30-35 wpm pencil copy. (Incidentally, I understand Don is an all-time member of the Long Beach High School Football Hall of Fame.) After high school he went off to college in Minnesota and managed to complete his freshman year before he enlisted in the Navy at the outbreak of World War I.

Don had read that the Navy wanted radio operators who knew the code, so Don became a radioman and reported to what is now Treasure Island in San Francisco Bay. Within an hour after arrival, Don was put on a high speed spark circuit and manned that circuit for eight months. What were you fellas doing an hour after you arrived at your first duty station?

On long night watches, Don and his buddy tried to out-send and receive one another for fun...and to keep awake. They *(please turn to page 12)*

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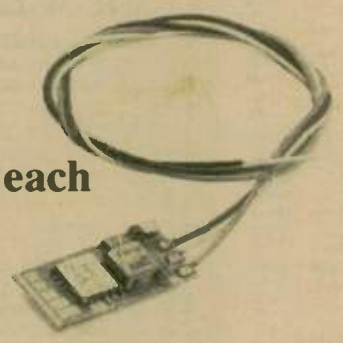

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VISA

Don Wallace

(continued from page 10)

would alternate sending and receiving as fast as they could go. As soon as one made a mistake, they would switch. In this manner, Don got his code speed to 49 wpm with a pencil and into the mid-50's with a mill.

After Treasure Island, Don went to submarines. You wonder how come they put his 6'4" frame in a sub? (Sounds like the service, doesn't it??) However, Don points out that all men in subs in those days had to be big and strong to turn the manually-operated wheels and controls which were not hydraulically controlled then. Don was the only man on the sub who had the ooomph to crank up the radio mast.

After eight months in the sub, he was ashore one day, and met his old C.O. from Treasure Island. The C.O. told Don he was looking for some good radio operators to handle communications for the *USS George Washington* and wondered if Don would like to be the Chief-in-Charge. Turned out that ship was going to take President Wilson to the peace conference. Natch, Don would like the challenge.

So, still a teenager, Don took over the responsibility of the vital communications link between the president of the United States and Washington, D.C. Don stayed on the ship during he entire time the president was at Versailles (the ship was in a French port, and a daily messenger brought the classified traffic to the ship for relay to Washington).

Don had the chance to pick his own operators too, and chose old Marconi men. He knew them to be very accurate both sending and receiving, which they had to be to handle traffic then. They transmitted for an hour and then received for an hour, so there was no chance for the usual "fills." They had to be correct the first and only time.

At that time, the *George Washington* had the most powerful spark transmitter afloat, which Don and his crew also maintained when they weren't on the air.

After the war, he returned to Minnesota to complete college. He obtained the call 9ZT-9XAX and in 1923, Don was awarded the Hoover Cup.

The May 1924 issue of **QST** headlines: "Wallace Wins 1923 Hoover Cup, 9ZT-9XAX. ARRL Board of Directors to honor the best all-around homemade amateur station for 1923 Department of Commerce Cup. (How many ham stations do you think would even be *eligible* for an award like that nowadays?)

"It is difficult to appreciate the amount of hard work and stick-to-it-iveness required to build and operate an amateur station." (Knowing Don, it is not that difficult to appreciate!)

Following was an article by Don describing his station. It began, "It is the near realization of a lifelong ambition (he was 25 years old at the time!)...namely to have a workable and useful amateur station." Don's rig was a 250 watt Radiotron in Hartley circuit..."mounted so air can blow through to circulate around the tube"...a 4000-volt plate transformer and electrolytic rectifiers — 124 of them. He describes how to mix the rectifiers solution..."it was all mixed at one time in a tub and consists of 10 gallons of Chippewa Battery water with 2 pounds of 20-Mule-Team Borax in it and a teaspoon of household water." Sounds like the "Personality Improvement Hour."

His receiver was two tubes, and his antenna was strung from an 85-foot wooden tower which he put up himself. Don was primarily a traffic man then (he was a relay station in good standing with ARRL), and during 1923 handled 2,500 messages. However, he was chasing DX with that spark too, and lists countries worked as KL7, ZL, VK, KH6, XE, HP, South America, KP4, Cuba, England, France...and also "WNP" which was a station aboard Commander (later Admiral) McMillan's ship, *Bowdin*, whose radio operator was a young fella named Don Mix, later to becomes W1TS of the ARRL Technical Staff.

In 1926, the **QST** Station Activities says "old 9ZT is now 6AM and is on the air with a couple of 'watt-burners.'" Don's first traffic report was "6AM-1." And along about this time, too, Don wrote and published one of the first Amateur Radio Handbooks.

Let's follow Don's activities in **QST** for a few years.

April 1927 — "6AM has a new water-cooled watt-burner..."

May 1927 — "6AM gets only four European cards in one day."

June 1927 — "6AM succeeds in working eight countries on each of two Saturday nights."

July 1927 — 6AM made SCM of Los Angeles...held the position until January 1930.

November 1927 — "6AM has received his WAS certificate; the only station having held that certificate in two different districts."

January 1928 — "6AM worked 10 countries in one week."

February 1929 — W6AM is on 29 MHz on Sundays and holidays.

August 1929 — "6AM reports the tuned doublet receiving system works better than ordinary antennas."

December 1929 — "6AM reports a water-cooled tube and a 6-phase rectifier" (!).

April 1930 — W6AM made BPL.

June 1930 — W6AM reports receiving certificate for SS.

August 1930 — W6AM has two 90-foot telephone poles. Also places third in International Relay Competition.

April 1931 — a photo in **QST** of W6AM's lkW water-cooled tube and his receiver which has six tuned RF stages!

February 1932 — "W6AM claims three countries answered one 7 MHz CQ and Don worked all three at the same time." I'll bet some of you here thought Don Miller started that.

April 1932 — **QST** reports on the '31 Transcon Relays...W6AM second place in relaying on 1750 kHz. Originates message going to East Coast and receives reply in 2 hours 47 minutes via 10 relays across the country. Third place on 3.5 MHz.

December 1934 — "6AM has new 167-foot tower."

November 1937 — A **QST** article by W6AM entitled "Making the Most of Directive Antennas...Practical Pointers on Operating a Number of Antennas in Limited Space"...then Don describes how he hung *FIVE* 14 MHz Sterba curtains off one 90-foot pole! Sounds like "limited" space to Don is about two sections to anybody else.

During all this time before the Big One (World War II for the youth in the audience), Don was almost always in the contests — DX, Sweepstakes, 160. If it was there he was there.

He won some and lost some, but he was always near the top, and the competition was just as tough then as now, the reason being that some of the best present competition was competing with Don back then: Rodney Johnson, W6MUR; Joseph Horvath, W6GPB; Cameron Pierce, W6HJT/K6RU; Victor Clark, W6KFC/W4KFC; W6YX (with Mike Villard, W6QYT at mike); Reginald Tibbetts, W6ITH; Raymond Rinaudo, W6KEV/W6ZO; and from Hawaii there was a young fella, Katashi Nose, K6CGK, who just happens to be in the audience tonight...except you will know his present call a little better — KH6IJ.

What we have been saying, Don, is that for the last 60-plus years you have done everything a ham can do. You've been a leader in everything you've done, and you've stuck with it — *enthusiastically*.

A quote from a note Don wrote to the Northern California DX Club paper, the *DXer*, I think says it all about him and his joy of just being a ham and playing with a radio...

"Anytime any of you are out of the USA and work a W6, please have the W6 phone W6AM collect. W6AM will be delighted to QSO you. This system has worked fine, as W6AM has worked his son, Don, Jr., from all over the world in this manner. If you miss, please try another day."

One thing that paragraph says is that Don is retired. It also says that Don is happiest now — as he has been for over 60 years — when he is at the rig in contact with somebody...right now, preferably on 20-meter CW over his 1kW mobile rig as he is peeling down the L.A. freeways.

Don, we are honored to honor you for 60 years of leadership...and inspiration...and *enthusiasm*.

As most hams know by now, Don Wallace, W6AM, has become a Silent Key. He succumbed to a stroke in a Long Beach hospital at about 1:30 p.m., Saturday, 25 May, at the age of 86.

As mentioned in the above article, Don began his career at an early age — 10, to be exact. The year was 1910 and the place was Long Beach; it wasn't until 1911 that he built his first transmitter.

Don became the "Baron of West Los Angeles" in the early '30s, when he was instrumental in obtaining a 120-acre site in Palos Verdes, California for the Press-Wireless Corporation. In 1944, Press-Wireless moved its operations to San Francisco and W6AM purchased the decommissioned site and converted it into his now famous "Rhombic Farm." Don was dubbed "Mr. DX" by his close friends and has been at the top of the DXCC Honor

A simple antenna tuner

Bill Young, WD5HOH

Background

OK, so here's another antenna tuner article. In the past several years there have been quite a few, most of them describing good antenna tuners or transmatches — whichever name you prefer. Some simple, some elaborate.

Over the past five years or so, I've gradually worked out the tuner I'm about to describe and have found it to be simple to build and fairly easy to use. And it can match a random-wire antenna to a 50 ohm transmitter output impedance on several HF amateur bands.

But first, let me explain that I'm not prepared to engage in a rigorous theoretical discussion of impedance and frequency ranges. I don't own anything more elaborate than a Simpson 260 VOM and a Heath RLC Bridge, so I don't know the exact impedance and frequency limits for the tuner. But I think you can see that the tuner's design permits easy extension of both frequency and impedance. I'll get back to that later.

Back in late 1977, when my interest in Amateur Radio had returned after a lapse of over 22 years (I was KN5DNM in the early '50s), I had just gotten my new Technician Class ticket and a new call, WD5HOH. In the interest of nostalgia and economy, I had just completed a homebrew, crystal-controlled 40-meter transmitter using a 6C4 and an 807.

Input to the 807 was a rather pathetic 18 watts. About the best antenna I could manage consisted of about 45 feet of surplus geophysical wire sloping from just above the window of my shack to the branch of a tree maybe 25 feet up. A real world beater, right? Wrong! But I still remembered getting a QSL card from somewhere in Kentucky (I lived in Austin, Texas at the time) after I called CQ with the ARC-5 I was running in 1954.

Input power — unknown, antenna matching — maybe (probably not). No QSO, understand — just a short CQ with no answer (that I could hear) and a QSL card which came dribbling in months later.

So I knew that this time around, all I really had to do was get some of those 18 watts into that 45-foot piece of wire, and I would be heard. Simple as that.

First, I simply hooked the antenna directly to the transmitter output, hoping the length of wire would be close enough to a quarter-wave at about 7 MHz to be matched directly by my transmitter's pi output network. No soap. But I did work two ham friends at work about a mile away. One of them had an HW-8 and 50 watt RF amplifier in his car. I seem to remember they didn't even give me an S-9 at one mile. Try again.

I own a copy of the 1966 edition of the ARRL Amateur Radio Handbook. There are some antenna matching network circuits on page 358. So, I rattled around in my small junk box and found an air core inductor and a variable capacitor. I mounted them on a piece of wood, soldered pieces of hookup wire to each and began trying the various configurations in the handbook, one at a time. I used a field strength meter built with parts taken from a discarded HF marine band rig to indicate whether or not power was getting into my antenna.

After a little trial and error, I tuned the field strength meter to what I hoped was the 7.115 MHz fundamental frequency output of my rig (I owned just one rock back then). I tried several of the configurations shown on page 358 of the '66 handbook. The one shown in *Figure 1A* worked. The needle on my VOM shot up to about 40 volts, and I even got a nice, reassuring RF burn when I touched the bare metal of a capacitor stator.

I switched everything off, neatened things up a bit, fired up again and began looking for a QSO. Before long I found one, and then another, and so it went. I was on the air.

My ground system then was just a 3-foot piece of copper rod driven into the earth outside my shack window. My power output and tuner settings tended to vary from day to day. Fine when the ground was wet, not so fine when it was dry. I added two short radial wires, but sometimes I still couldn't quite match my rig to the antenna.

More tinkering. I then added a small variable capacitor (see *Figure 1B*) and found it helped sometimes. Then I did more reading in handbooks and ham magazines and discovered other people were using the circuit of *Figure 1C*.

I modified my tuner to look like the circuit in *Figure 1C*. Now I could get a good match just about all the time. Then I moved my shack to a different room and began using a water pipe ground and a somewhat longer, more nearly horizontal antenna. I increased the drive to my 807 and got about 30 watts input.

Things rocked along for several months with WD5HOH making contacts on 40-meter CW and even working a little Caribbean area and Canadian DX (well, DX to me, anyway). But sometimes, when retuning, because — for example — my antenna had fallen down, and I had put it back up in a somewhat different position, I had difficulty finding a definite "peak" with my field strength meter. But I continued to make contacts on the air. And I continued to read the ham literature and came across the time-tested transmatch circuit which uses a split stator variable capacitor and a roller coil *(Figure 1D)*.

This circuit is in widespread use and seemed to be what I needed, but I didn't have a split stator capacitor or a roller coil and didn't want to buy these items. Then

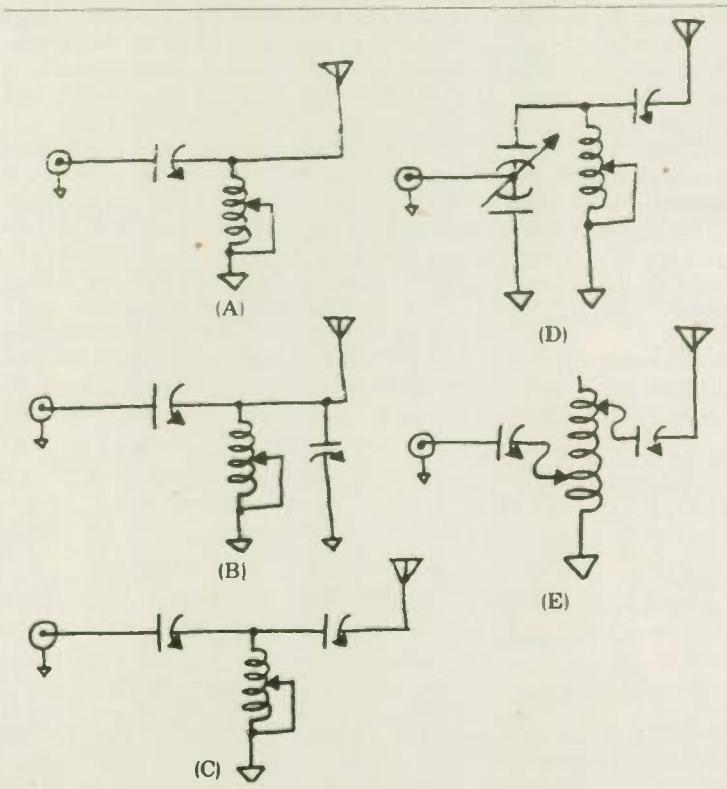


Figure 1 — **Antenna tuner circuits**

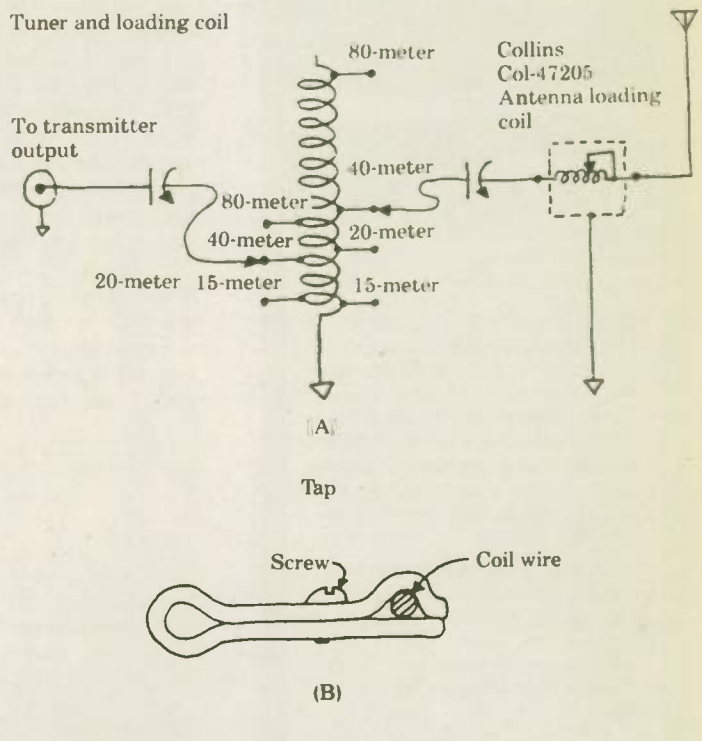


Figure 2 — **Antenna tuner, loading coil and taps**

Don Wallace

Roll for the past three decades with 366 confirmed countries.

Several years ago, at the opening of the commemorative amateur station on board the *Queen Mary* in Long Beach Harbour, it was Don Wallace, W6AM, who was invited to make the first contact. The station Don contacted was a former wireless operator from the *Queen Mary* from its days as a World War II troop transport ship. (Bill Pasternak, WA6ITF, now editor of Westlink, was on hand to tape record the event.)

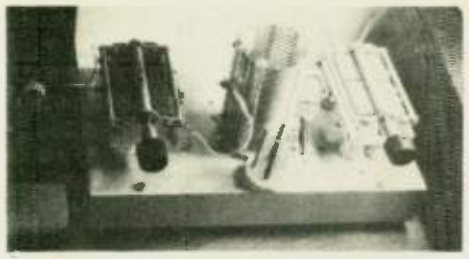
Don Wallace is survived by grown sons and thousands of friends in the amateur fraternity worldwide who loved him, respected him and are very sad at his passing.

(Information from Bill Pasternak, WA6ITF; Lenore Jensen, W6NAZ; Bob Jensen, W6VGQ; Fried Heyn, WA6WZO; Joseph Merdler, N6AHU, and others; also thanks to John Troster, W6ISQ) □

something occurred to me. Why have just one tap on the coil? Why not two? Alligator clips are cheap. So I tried the circuit of *Figure 1E*, and I'm still using it.

I visualize the circuit of *Figure 1E* as an autotransformer which performs the impedance transformation with series capacitors to tune out excess inductance in the transmitter output and antenna circuits.

Now I could match my transmitter to my antenna while keeping the two variable capacitors near maximum capacitance, which I had learned from my reading should result in the radiation of less spurious energy (not that I was having any trouble in that department).



Simple antenna tuner

My tuner was looking more than a little seedy by now, so I built a better looking version on an aluminum chassis.

Tuner construction

The photograph shows the tuner I built. I mounted an air core inductor salvaged from another defunct HF marine rig, two variable capacitors ordered from Fair Radio Sales Co., and an SO-239 coax connector and four rubber feet on an aluminum chassis salvaged from a dumpster.

I used a rubber mallet to beat the dents out of the chassis. I used a rubber grommet to insulate the short piece of hookup wire which runs from the coax connector on the chassis rear apron to the first series variable capacitor mounted on insulators above the chassis. This minimal insulation works fine for me because I run very low power. You may require a somewhat more robust feedthrough if you want to run high power.

I mounted my surplus variable capacitors on surplus ceramic stand-off insulators from Fair Radio using home-made sheet aluminum brackets. You could probably find an easier way to do it. Remember that the two variable capacitors are hot with RF on both rotor and stator. Insulating knobs or shaft couplings must be used.

Fair Radio apparently doesn't have any more capacitors just like the two I used, so just find two that have about 200pF maximum capacitance and enough spacing for the power you want to run. I was fortunate to have the 50-turn, 2.5 inch dia. air core inductor, which I used. The turns are spaced about one wire diameter (about AWG #14). Total inductance is about 70 uHy. The coil has its own epoxy base for vertical mounting and came with the little clamp-type taps you see in the photo and *Figure 2B*.

These taps simplify band-changing because once you've found the correct tap points for a given band, you can put a pair of taps on the coil at those points and go back each time you want to work that band. Very convenient. Unfortunately, I don't know where to get another coil just like the one I used or any more taps.

My coil has every other turn pushed back part of the way around to make it easy to tap. Perhaps you can make or buy something that will work as well or better. You need enough turns to cover the lower frequency band you want to work.

The coil I use will work 40 meters, and I can work 80 meters by putting the Collins Col-477205 antenna loading coil I happen to have in series with the antenna as shown in *Figure 2A*. The Col-477205 is set to position 2 when I use it for 80 meters (max. inductance is on position 0).

In the photos you will see a small coil mounted in front of the large coil. It's there to allow me to work 10 meters when I have a rig for 10 meters. It almost, but not quite, works for 15 meters, so I'm sure it will do the job on 10 when the time comes. Things get a little crowded down near the bottom of the large coil, so a wider spaced coil with fewer turns can be mounted on the chassis for higher frequency bands. Just make sure the clip leads from the capacitors can reach both coils, top to bottom.

I stood my little coil upright in a paper cup and poured in enough epoxy to cover the first turn or so. After the epoxy cures, the cup can be cut or torn off and a mounting hole drilled in the epoxy. Don't forget to bring a bottom lead out through the epoxy to ground to the chassis.

Now, you will no doubt notice that my tuner is mostly unshielded. It would be very difficult to change the taps if the whole tuner were enclosed in a box. I run low power (about 3 watts input, now) and don't have any TVI problems. I didn't have any when I ran 46 watts input on 40 meters. But it's something to keep in mind.

It might be possible to build a version of this tuner using toroidal inductors in series with the tap points brought out through a front panel or to rotary switches. With a metal enclosure and proper insulation of the cores, it might be possible to run really high power. But if you're going to go to that much trouble and expense, why not build a conventional roller coil, split stator capacitor tuner? Assuming it will match what you want to match. I suspect the tuner I have built is best suited to low-power operation.

See *Table 1* for a list of parts.

Tuner operation

Figure 2A should give a pretty good idea of how the tuner is adjusted to match an antenna on different bands. *Figure 2A* reflects my experience in matching a random wire of about 75-foot length to a 50 ohm output transmitter. What the situation would be, for example, with a really long-wire on various bands I don't know from experience.

As I mentioned above I have used this tuner with a two tube, crystal controlled transmitter and random wire antennas from about 45-foot length to about 75-foot length on 40 meters. I have used the tuner with a single 2N2222, 400mW transmitter[1] (and made three contacts), and lately I have used the tuner with an HW-8 on 80, 40, 20 and 15 meters (and have made contacts on all four bands).

Since getting back on the air in late 1977, I have worked (but not confirmed all of) 49 states and about 15 countries (also not all confirmed).

My best DX, so far (worked with 46 watts to the 6DQ6B which replaced the 807), is Alexandra ZL4KE on 40 meters (confirmed) and JA2BAY on 40 meters (unconfirmed). Each of the above stateside and DX contacts were made with a random-wire and the tuner being described or an earlier, developmental version of it.

I have found it easy to keep the little relative power meter on the HW-8 at or near maximum on 80, 40, 20 and 15 meters. And while S number reports have been down with the HW-8, they have been down consistent with a 12dB drop in power.

My random-wire antenna is surrounded by tree branches. (I really don't have any choice; we have 40 or so trees on our lot, *(please turn to page 45)*

TABLE 1

Description	P/N	Quantity	Source
Chassis, aluminum or steel,	Size to fit	1 ea.	Various
Variable capacitor	0-200pF	2 ea.	Fair Radio Sales Co., (See p. 28 1982 catalogue)
Air core inductor	70uHy, 50 turns 2.5 inch dia. (see text)	1 ea.	Various
Coax connector	SO-239	1ea.	Various
Alligator clips		2 ea.	Radio Shack, etc.
Stand-off insulators	p-4H-.75D	8 ea.	Fair Radio Sales Co., p. 29, 1982 Cat.
Rubber feet		4 ea.	Hard to find
Knobs		2 ea.	Various
Screws, nuts, washers, etc.			Junk box hardware store, etc.

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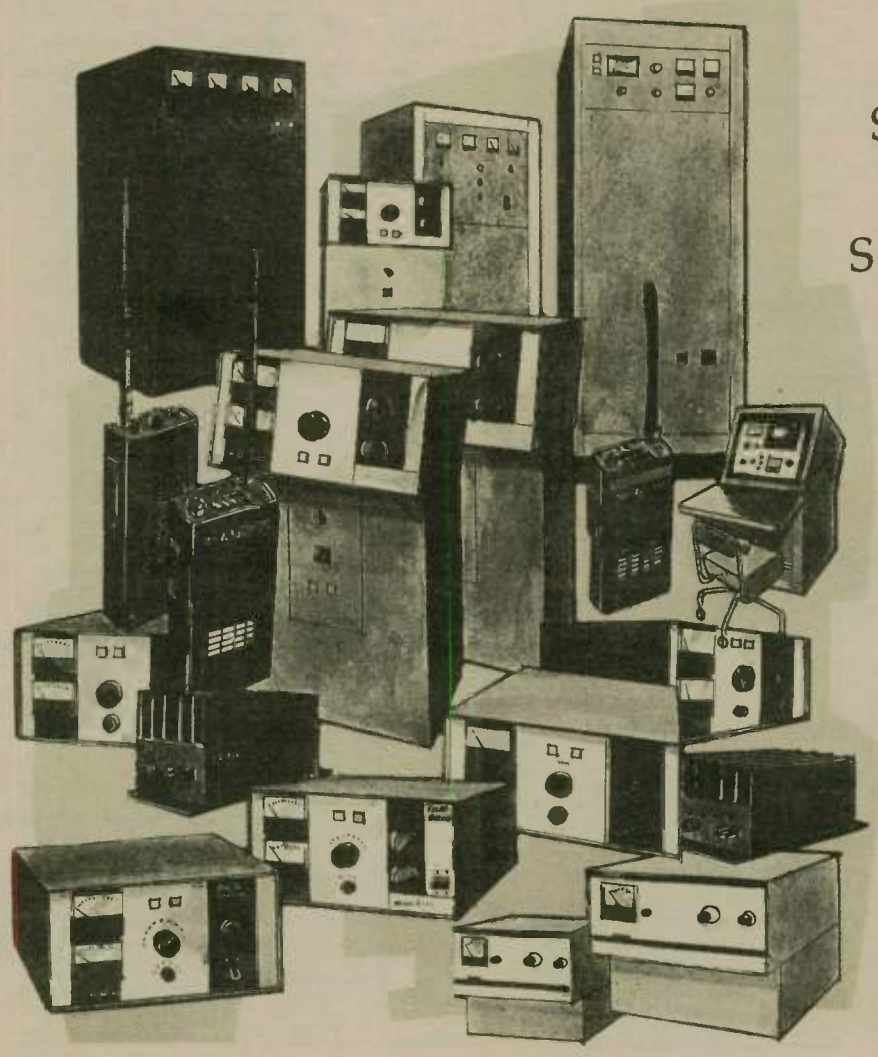

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PUBLIC SERVICE

Sunnyvale honors Amateurs

As part of the recent "State of the City" ceremonies, the Sunnyvale (California) City Council recognized the Sunnyvale Amateur Radio Emergency Services, SARES.

In presenting the award, Councilmember Ron Gonzales said in part: "The Award of Merit is presented to a group that works behind the scenes — many of us are unaware that they contribute to our safety on a daily basis. The group I'm referring to is the Sunnyvale Amateur Radio Emergency Services group...This 40 member group of Amateur Radio buffs has donated hundreds of hours and their own personal funds, to assist the City's Public Safety Department in addition to coordinating the logistics for numerous special city-wide community events. Over the past several years, the Sunnyvale Amateur Radio Emergency Services group has installed a network of communication centers throughout the City. These centers can serve as an emergency backup and support system to the City's Public Safety Department of emergency services. It is indeed my honor to ask that Walter Rees, the chairperson of the group, please come forward to receive the Award of Merit for the entire Sunnyvale Amateur Radio Emergency Services Group." □

Shown with the plaque which was accepted by Walter Rees WA6BAX, EC for Sunnyvale CA, a group of SARES members pose in front of one of the city's fire trucks. Standing: Rita Hallyburton, N6HEF; John Hallyburton, W6BCY; Patricia Winter, N6BIS; Walt Rees, WA6BAX; and Hope Antasek, KB6FEE. Kneeling: Keith Butts, KN6K; Robert Mammarella, KB6FEC; and Ray Antasek, WA6TKV. (Photo by Jim Koski, KT6W)

Hams honored

On Friday night 10 May 1985, the Salvation Army of Monmouth County, New Jersey, held their 16th Annual Civic Awards dinner. On this occasion, the local Amateur radio operators who are also members of RACES were honored with the Salvation Army's Red Shield Service award. Receiving the award on behalf of all the participating amateurs was John Croft, Jr., WA2GIE, Monmouth County, N.J., RACES Communications officer. Major Schoch, Divisional Commander of the Salvation Army, presented the award and said in part, "This award is given in recognition of the voluntary participation of local Amateur Radio operators in the RACES program."

Also receiving similar awards were local Rotary and Kiwanis clubs, and Nets basketball star Otis Birdsong. Guest speaker for the evening was Denise Richardson, popular TV Ch-9 anchorwoman.

The Salvation Army Red Shield Service Award is presented to groups and individuals who serve faithfully in their respective communities for the good of the community, without consideration for personal recognition and/or reward.

How nice it is to know someone cares about us HAMS. *de Charles J. Gspann, W2ZEE* □

Major Schoch, Divisional Commander of the Salvation Army (left), presented the Red Shield Service Award to John Croft Jr., WA2GIE — a RACES Communications Officer.

Florida regatta

Amateur Radio operators from Cape Coral and Fort Myers, Florida were on the scene, Saturday, 18 May, to help with communications for the exciting Offshore powerboat Regatta, near Fort Myers Beach.

Louie Bal, WD9AEP, and Gene Herrman, WA2EXI — who were located at Race Control Headquarters — were in radio contact with the hams, who were stationed in checkboats, and received information from them concerning the race boats, their race times, etc., as the boats passed by.

This information was then given to Frank Shorkley, KA4UIR, who in conjunction with his XYL, Ruth, coordinated the data that they received and relayed it to the chief scorer of the regatta.

The hams positioned in the checkboats to identify the race boats were: Dave Fox, KA8CXQ; Monte Gurwit, NØABC; Egon Loeckel, N8EL; and Tim Philomeno, WD8ABP. Among other amateurs who assisted in some way were: Frank Ade, KB8GV; Charles Creswell, KA4GDU; and Carl Habermann, W4MFD. — *Peggy Cummings KY8Y* □

Bike-a-thon benefits Cancer Society

Rich Bauer, N9DKO

On Sunday, 19 May, the Tri-Town Radio Amateur Club participated in the annual American Cancer Society Bike-A-Thon. Held in Chicago's far southern suburbs and sponsored by the Park Forest Jaycees. Tri-Town's mission was to furnish all communications for the event. This included manning all checkpoints as well as several observation (safety) points where bicycle riders had to cross busy roadways. Also provided were mobile communications for the planners and organizers of the ride, as well as in the "Sag-Wagons" used to pick up disabled bikes.

In previous years, Tri-Town had been able to erect a temporary antenna on the roof of the American Cancer Society headquarters. In early 1985, the South Suburban Chapter of the American Cancer Society moved to the basement of a three-level office building.

As might be expected, the building had no windows that would open. What was worse, the owners of the building would not permit the club to erect a temporary antenna on the roof. Alternate means of establishing a base station operation had to be sought.

Club president Doug Lee, W9SPC, had previously attached a 30-foot bend-over tower on the rear of his motor home. The motor home and tower were pressed into service. Parked near the building, AC power and telephone lines were strong from the office into the motor home. The RV's generator was used as a backup power supply. A 120 watt VHF transceiver with pre-amp was used by net control operators Hank Dexter, K9IJC, and Waldo Gunderson, WA9WLN. The tower combined with the pre-amp insured that all units were heard over the entire length of the 50km course, even those using HT's.

At last count a total of about 250 bike riders had generated about $25,000 in pledges.

•••••••

Check your license expiration date.

ABOUT YOUR SUBSCRIPTION

When does it expire?
Printed on your address label in the upper right-hand corner is a 4-digit number, such as 0286. This tells you that the last issue of your subscription is February, or the second month of 1986.

Why does my renewal notice come so early?
Advance planning is essential in producing a periodical. We have to plan for the time the issue will be in the mail, the time it takes to get it ready to mail, and also the time it takes to process new subscriptions and renewal information at the computer house. If you wish uninterrupted service, we need to have your renewal instructions at least six weeks prior to the beginning of the month in which your subscription expires.

How can I ensure that my renewal will be added to my present subscription?
By making sure you include your subscriber number, the 6-digit number that precedes your expiration date, in all correspondence about your subscription. It enables us to serve you better.

AMSAT's emergency system

"There's a new acronym for you to remember. It's ASECS, the AMSAT Emergency Communications System," announced Dr. John Champa, K8OCL, at a presentation at the Dayton Hamvention 27 April 1985. "It would be better if you don't try to pronounce it, because it sounds like some kind of strange behavior."

"ASECS is a group of Amateur Radio operators, like yourselves, who are interested in emergency traffic communications, much like ARES, RACES or MARS. ASCES is different in that the primary method of communications is via satellite.

"If you watch the data about solar activity published by various geophysical labs, you learn that sunspot numbers are coming down dramatically and staying down there. Jud King, WB8WKA, and I did a linear aggression analysis of this sunspot data, and learned that we are not only headed for a very low sunspot number in the next year or two, but that you ain't seen nothin' yet. One theory is that there is both an 11-year sunspot cycle and also a 200-year cycle, and that this time the low spots of the two cycles coincide. Needless to say, HF conditions are, and will be, very noisy and unpredictable.

"For regional disasters, such as hurricanes, floods, etc, a lot of the communications must be handled on the HF bands. These sunspot predictions mean that handling emergency traffic on the HF bands will be very difficult.

"We have an answer. Use satellites. They are very predictable. When Phase 3C goes up, along with OSCAR-10 which is Phase 3B, we will have access to a reliable communications medium over 15 hours a day. In addition, PACSAT, with its code forward and store feature, will give us reliable digital communications.

"If there is a serious disaster, say, in Nebraska, it would be possible to link the emergency site directly with the headquarters serving the emergency. Thus, the Red Cross team in Nebraska could communicate directly with the Red Cross national headquarters.

"Local emergency communications would still be provided by existing emergency communications groups. We're not duplicating something they're doing. This would give *them* an additional resource."

Has ASECS participated in any emergency exercises? Yes. ASECS did participate formally in the last ARRL Simulated Emergency Test. They used the special service channel on OSCAR-10, and relayed traffic from two places in the United States back to ARRL headquarters.

Will packet radio be used? Yes. Packet radio has tremendous capability for handling large volumes of data, error-free. Using PACSAT, we can send a portable ASECS station directly to the scene of a disaster.

"We are in the process of recruiting satellite stations interested in handling emergency regional communications traffic. We hope to have one or more in each city."

If you're interested in this sort of activity, or even if you think you'd *like* to get involved, send your name, call and address to Dr. Champa via AMSAT Headquarters, P.O. Box 27, Washington, D.C. 20044. □

Cable TV can help hams

In the midst of innumerable stories of leaky cables, interference, antagonism and intimidation between amateurs and cable TV companies, there is at least one ham club that has developed a spirit of splendid cooperation with its local cable TV company.

The Hughes Aircraft ARC in El Segundo, California is earning its publicity bonus points this Field Day by capitalizing on a little-known feature of many modern-day cable TV franchises: public access channels.

Oftentimes cable TV companies, to "sweeten the pot" during franchise negotiations, include provisions for some sort of no-cost community channel space, equipment access, and often training to the general public. Rarely, however, does the public capitalize on this fabulous resource.

Viewing it as an opportunity not only to earn publicity bonus points but also to raise the profile and interest in Amateur Radio in the community, the Hughes club tested the cable TV waters recently by asking the Group W franchise in neighboring Torrance to air "Amateur Radio's Newest Frontier" on channel 19, the local public access channel. Air it they did, nearly 30 times! It seems Group W was starving for material, and this high-quality professional tape fit the bill beautifully.

Flushed with success, the Hughes club now plans to prepare tapes of their own, with Field Day '85 the first attempt. To secure professional no-cost help, the Hughes club contacted another channel 19 user, the Volunteer Center of the South Bay-Harbor. The Center has developed script-writing expertise, equipment familiarity, an invaluable rapport with Group W and its personnel, and were very pleased to assist the Hughes ARC with its plans. Interviews with key hams have begun, script preparation is well under way, and thoughts have turned to sources of professional cameramen and narration for the finished product.

In addition to Field Day bonus points, the airing of the completed tape should greatly increase awareness of Amateur Radio and its emergency capabilities in the community, stimulate inquiries from the public about Amateur Radio, and will hopefully lead to expansion to some of the remaining 29 cable TV companies serving 830,000 homes in 76 communities throughout Los Angeles and Orange Counties.

Look into cable TV in and around your own community. Call their central office and inquire about public access channels, equipment and training. In addition to helping Amateur Radio, you and your club will have a great time making and airing tapes. And, of course, you will have a leg up with your local cable technicians, in the event a leaky cable problem does arise some day. — *C. W. Lobb, KN6H* □

SPREAD THE WORD ABOUT AMATEUR RADIO!!!

Sound of heavy brass

Dick, AAR4PP/FL

It was March 9, 1985 (six days before the Ides, for you members of Roman MARS) that Florida Army MARS gang assembled to meet with Colonel Bob Woodside, Eastern Area Director, and Mr. Larry Warren who is Chief of Army MARS, period. There isn't space even to summarize all that was said, but here are a few highlights from Larry's address.

The most modern of communications methods are being set in place in Army-run MARS stations — including packet radio. Also included will be gear that can read CW, so the old excuse, "We got no brass-pounders here," will no longer be acceptable from gateway and European stations.

The Army now recognizes the immense value of the Ham-operated HF MARS networks, especially in case of emergencies. Apparently there was a time when the entire Pentagon was convinced that HF frequencies would become obsolete, once the "umpty-ump giggle-Hertz" military gear began working through satellites. Then it was discovered that satellites become just a wee bit unstable in the presence of high-altitude nuclear explosions, after which the Pentagon executives decided to buy lunch for Hams they hadn't broken bread with for years. Live and learn, huh?

Don't join MARS in order to get obsolescent military communications gear; the red tape is getting ridiculous. The story that somebody was jailed for failing to stuff and return the corpse of a WW I carrier pigeon is probably apocryphal — but don't bet on it. — *Florida Skip*

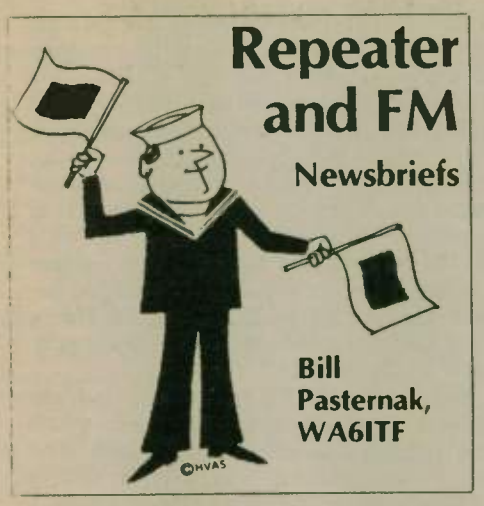
Detective work

Richard Hay, W1LE

Received phone call from W6ANS, advising that the wife of Jerry "Boyce" had died and suggesting a condolence card from PARS. He stated that Jerry had recently upgraded his license and had a new call sign; new call sign could be found in the San Diego SCM report in QST.

Consulted QST and found call to be KG6LF. Looked in 1984 Callbook; not there. Looked in San Diego telephone directory; no Jerry Boyce. Called SCM; out of town. Went through back issues of the *Call Letter*; Jerry *BOYD, W6CUP*, listed as guest speaker, October 1984 meeting. Back to the Callbook; Jerry Boyd, *WA-6CUP*, listed with address: P.O. Box 1234, Coronado, CA 92118. Hope the card got there!

—Poway ARS, CA □



Living together

Living together means a lot more than physical co-habitation. In Amateur Radio, it indicates a willingness to cooperate in the solution of a problem, the use of a given spectral parcel, or what have you. In its simplest term, it means we learn to get along. But of late, we are not doing that on the 2-meter band in relation to repeater coordination.

Currently there is a kind of fervor across the land in regard to 2-meter repeater coordination. We have, to our lasting chagrin, permitted the "politicians" to commit one state after another to either the 15kHz or the 20 kHz repeater bandplan "camp" without giving any regard for what a neighboring state or area might be doing. I will not bore you with details, but as someone with two decades of experience in frequency coordination matters, I want to make a couple of quick points.

1) RF does not respect geographic borders. What is transmitted in Illinois can have an effect on hams in Indiana and vice-versa. In the same vein, RF from a Mexican repeater can be heard in the United States. With this in mind, I bring you to point #2.

2) A pair of repeaters separated by only 5 kHz cannot co-exist. The laws of physics preclude this. Yet, you do not have to be a mathematician to figure out that with some states opting to go 15 kHz while their "next door neighbor" goes to 20 kHz, there will come a time when repeaters within earshot of one another will be separated by only 5 kHz. In those areas of the nation, your expensive investment in your base or mobile radio will become worthless junk. You will no longer be able to communicate over it.

Since 1973, this writer has publicly advocated the establishment of a single national bandplan that all geographic regions would be mandated to follow. Such a bandplan would force the politicos to "eat crow," but I say once again that such a mandatory plan is the one and only way to avoid eventual anarchy on 2 meters.

Which plan is best? 15 upright, 15 inverted or 20 upright? Frankly, I do not think this is anywhere near as important as adopting one of the three, and then living with it until such time as some new and more esoteric mode unseats the FM repeater as the mainstay of VHF operation.

The concept of the "regional autonomy" is foolhardy. It bypasses all sound technologic principals for political consideration. While I agree that the local coordinator should remain autonomous, I see nothing wrong with giving him the proper guidance to do his job in a way that causes no adverse effect on neighbors. So, I again call for the adoption of a single unified national bandplan for 2 meters so that this silly nightmare can end once and for all.

ARRL board yes on mandatory coordination

The ARRL's Executive Committee has recommended to the Board of Directors that the League's position on frequency coordination of amateur repeaters be that such coordination be "mandatory." They do not want to see the establishment of any national super coordinator to do everything, favoring instead leaving the matter in the hands of local and regional bodies.

The Executive Committee also feels that priority in the coordination process be given to "open" or public access repeaters, the so-called "private" and "closed" category systems being given secondary consideration.

The "E-Board" took this position because the FCC has not yet acted on an ARRL request for a time-extension in the commentary cutoff date on PR Docket 85-22. The League had made such a request to permit the full Board of Directors to discuss and act on the matter at their upcoming summer meeting.

The Executive Committee position is already evoking some criticism from the Southwest. There, with the exception of 2 meters, the vast number of repeaters now on, or coming to the other VHF and UHF bands, are "private." In fact, they are far more "private" than anywh else in the country, with tightly controlled access and highly select usership. In southern California alone, for example, there are known to be at least 350 or more repeaters on the 450 MHz band.

Few appear as listings in repeater directories. The owners of these repeaters voted many years ago to never, "...under any circumstance, permit even the publication of the fact that these repeaters exist!" They collectively feel that "privacy" of operation is a "right" — one which is constitutionally guaranteed, and one which they have vowed to protect under any circumstance.

If the League's Board of Directors adopts the Executive Committee position favoring open repeaters over the privates, some observers in the West feel it could cause a rift between western states coordinators and the League that will never be healed.

RM 4983

RM 4983 is yet another petition for rule making aimed at giving non-amateurs access to the 220 MHz band. The petition was filed on by Robert Snyder, who operates a communications consulting firm in Rockpoint, Illinois, that specializes in oil exploration-related activities. It's called LAOOAD.

According to 220 notes editor Art Reis, K9XI, those letters are not only the name of the company but are also a Norwegian call sign issued to Snyder. Snyder is also licensed in the United States as W9GT.

As a petitioner, Snyder seeks reallocation of both the Private Land Mobile Radio Service and the Inland Waterways Communications Services in the 216-220 band to provide 1033 narrow bandwidth ACSSB channels. Some would be 5 kHz wide for voice and data, while others would be 2.5 kHz wide for data only. Snyder also asks that the FCC approve a co-equal shared status for oil exploration telemetry with Amateur Radio.

This, for a 350 kHz assignment somewhere in the 220-222 MHz portion of the amateur allocation. Under his plan, users of this type of gear would be required to pre-notify the ARRL of its existence, location and time of operation several weeks (at least 60 days) before it went on the air. The League would then be mandated to pass this information along to the amateur community.

Kansas reaffirms upright 15 kHz

Kansas will remain a non-inverted 15 kHz state! On 02 June, the Kansas Amateur Repeater Council, meeting in Salina, Kansas, voted to remain with the non-inverted 15 kHz repeater bandplan for the 146-148 MHz repeater subband. The decision came on a unanimous vote of the council and its members after a lengthy discussion of the pros and cons of 15 kHz v 20 kHz.

The KARC felt that remaining with 15 kHz, in accordance with the ARRL 2-meter bandplan which mandates non-inverted 15 kHz channelization east of the Continental Divide, best suited the needs of the repeater owners and users in Kansas. This decision places the state of Oklahoma in a "squeeze-play" situation, since its northern neighbor has elected to remain with 15 kHz, while to the south, Texas is in the process of implementing the Pacific Northwest 2-meter plan.

Oklahoma will make known its decision on the weekend of 27 July, when that state's coordination council meets at the Oklahoma Hamvention in Oklahoma City. Tnx: KCØHF, N5DKQ

Texas 20 requests

Almost two dozen Texas repeaters have already requested that the Texas VHF-FM Society re-coordinate them onto 20 kHz 2-meter channel pairs. The Spring 1985 issue of the society's newsletter contains a list of 20 repeaters which have filed requests with the Society for this type of reassignment, even though such a move may mean an expenditure for the retuning of duplexers and the recrystaling of repeater receivers and transmitters.

What is surprising is that the majority of these requests are not coming from the "15 kHz split-split" machines, but rather from systems now on standard "odd-numbered 30 kHz" channels such as 146.01/.61, .07/.67, .13/.73, etc.

A quick desire on the part of the 15 kHz splits to move to 20 kHz channels was predictable, but the desire of some long-established 30 kHz systems to do the same appears to have been totally unexpected.

Final parting shot

With the abiding interest by almost every active radio amateur in the day-to-day operation of repeaters and their dedication to the FM mode, it is to this writer all but appalling that so little space is devoted by most publications to this very important mainstay of today's Amateur Radio "scene." Currently, only this publication and QST magazine devote space on a regular basis to the portion of Amateur Radio that is "FM Relay Operation and Technology." This writer hereby challenges all other publications to do what Worldradio and QST are doing. That is, to provide space on a month-to-month ongoing basis, which is really dedicated to FM and repeaters. I challenge you to go out and solicit articles on the subject, or better yet, that you assign a staff or outside writer to this task.

While there are many facets to Amateur Radio as depicted by the various departments you will find in this publication, there are two that appear to evoke the most interest today. They are DX operation and FM repeaters. Every publication seems to address the former on a month-to-month basis, but the latter is left to fend for itself. Yet the number of U.S. hams who inhabit the more-than 6,000 repeaters in this country is probably far greater than the number who devote their hours to chasing those rare ones. So, by ignoring the "repeater people," both owners and users, how many readers are you losing? Think about that one. □

Welcome to Cape Breton Island

"CIAD MILE FAILTE" (A Hundred Thousand Welcomes)

In Gaelic or English, the members of the "Sydney Amateur Radio Club" extend a warm Highland welcome to all amateur Radio operators visiting our island to drop in any Saturday morning for coffee and a friendly eyeball DX contact.

Open all year round, talk-in on 14634/94 or 14724/84. Address otherwise is #11 St. Bridget Street, Sydney, Nova Scotia.

Cape Breton Island provides very special historical interest to radio amateurs from all over the world. Marconi and Alexander Graham Bell both were residents of our island, each a pioneer in his field of communications.

Come and enjoy our Highland hospitality. — *Bud Theriault, VE1CI, President, Sydney ARC* □

OFF THE AIR

ATTN: Old-timers

I am 84 years old and have had a license since October 1916. I am trying to find out how many hams are still alive who were operating in or before 1916.

My first call was 1ABN, Portland, Maine, and I'm still operating. I work the 160-meter band; mostly use CW — love it. Worked 160 all over the world; been on that band since 1930 and many years before. Hope you can help me.

LEON A. HARRIS, K1JGM
Box 154
Brewer, ME 04412 □

Transceiver stolen

On 25 April 1985, Kenwood model TR-7950 2-meter FM amateur (ham) radio transceiver S/N 5050504 was stolen from my automobile while it was parked in the parking garage under my apartment complex.

It is possible that the person who stole the equipment might attempt to exchange it for cash by selling it to a dealer that handles new or used Amateur Radio or other electronic equipment. The thief may also attempt to match it to a power cord as the original cord was left in my car intact.

In the event that someone should try to sell the equipment to or through you, it would be appreciated if you would do what you can to assist in recovering the equipment and advise either: Police Headquarters, Borough of Haddonfield, 242 Kings Highway East, Haddonfield, NJ 08033; Attn.: Patrolman Gasparovic; phone: (609) 429-3000, or the undersigned. I can be reached by telephone at (609) 795-6856 evenings and weekends.

Many thanks for your help.

FRANKLIN WIDMANN, WA2VYA
Haddonfield, New Jersey. □

New Amateur fun

We are new to traffic-handling (started in February), and for us, it's one of the most exciting facets of Amateur Radio. We didn't have any idea of the fun we were missing out on before we got involved in traffic.

It's a great way to keep in touch with family and friends and the recipient is usually thrilled. We feel as if we are finally putting something back into Amateur Radio, by performing this public service.

Sending messages is good public relations for Amateur radio and acquaints many people with ham radio who otherwise wouldn't be familiar with the hobby.

It's surprising to us that most people for whom we offer to send a message, find it difficult to believe that there isn't any charge for this service.

Every traffic handler that we have come in contact with has been so patient, understanding and helpful. They really are a "breed apart."

We would like to suggest that any hams who are interested prepare a message and send it out; if you need help, anyone in traffic will be most happy to assist you. So come on and join in the fun!

PEGGY CUMMINGS KY8Y
Cape Coral, Florida □

Open 10 meters

A couple of days ago 10 meters was open. Don't laugh — it does happen!

As usual, most FM simplex activity was on 29.6. That's right; just one simplex frequency nation-wide.

How about some more FM simplex spots? Try 29.59 and 29.61, and between repeater output frequencies.

Just keep deviation under control.

10 FM can be a lot of fun. Let's make it more fun by un-crowding a bit.

BUD MOIST, AE7K
Elk, Nevada □

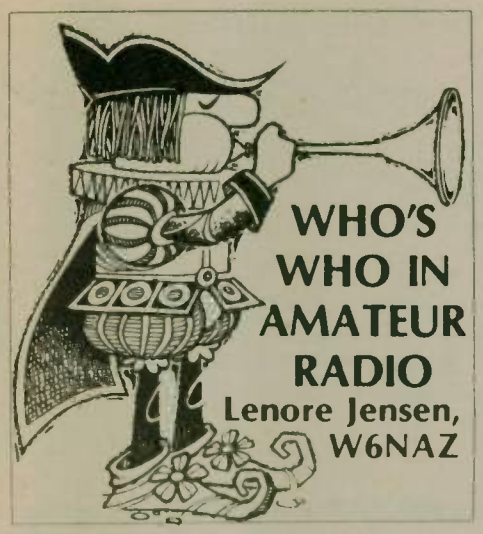
Antenna experiences

When I think of the new amateurs who are anxious to get on the air with a good signal, my mind goes back a few years when I was willing to try any device offered in the advertisements. And because I had to relocate very often, I had the most trouble with trying to find a suitable antenna.

Needless to say, you can have the best transmitter in the world, but without an antenna it is worthless.

Well, if it was advertised, I tried it. And

(please turn to page 21)



Next time you see *The Love Boat*, it may remind you of Dick Brinkman, N6AYV. That's because he is Vice President, Air/Support Services for Princess Cruises.

He and his department of 29 people handle air travel for 122,000 passengers a year, to and from ports as well as frequent hotel accommodations before or after sailing. It's a very busy activity.

But he also manages to find time for considerable Amateur Radio operation, a pastime he considers an ideal relaxation for anyone working in the modern fast-paced business world. "When I first went on CW as a Novice, I found the necessary concentration a welcome change from a busy work day," says Dick.

As a matter of fact, he found CW so fascinating, his wife, Carolyn, complained that it was *too* fascinating! "That may be because I was in the radio shack in the garage during all my spare time, seven days a week — at first!"

But her opinion was to change for an excellent reason.

"One day I had the good fortune to QSO an Australian, Pete Taylor, now VK2DAB. We exchanged letters along with QSLs and started an acquaintance that has grown to very best friends!"

Pete was also a Novice but allowed some voice privileges. One day, Dick heard his voice and couldn't stand it until he had upgraded and could talk to Pete with a mike.

Good fortune made possible a tour of the USA by Pete and his family. The Brinkmans entertained them and discovered many common interests.

Richard Brinkman, N6AYV, with a portrait of the new large *Royal Princess*. *(Photo by Bob Jensen, W6VGQ)*

"Strangely, Pete and I are approximately the same age and build, both wear beards and people sometimes take us for brothers."

Eventually, Dick and his family of five visited their new friends in Griffith, Australia, 40 miles west of Sydney. Their children visited each others' schools. So, because of Amateur Radio, hands touched in person as well as across the seas.

Dick Brinkman has been in the cruise industry for 21 years, since he started out as a reservations clerk for the Matson Navigation Company. ("When I answered their ad, I thought they made compasses and charts — only to discover they were in the cruise business.")

He worked for several companies, mostly in sales, before joining Princess. Obviously talented, he has risen in rank and outlook until reaching his present office on the 31st floor of a Century City (Los Angeles) high-rise. Dozens of computer terminals are adjacent to his office in the smoothly run operation.

Amateur Radio first came to his attention when he was a teenager "with a neighbor who had a fine telephone pole with an array atop. For Christmas, I received a crystal set and enjoyed listening but didn't get involved."

However, after joining the Army in 1961, Dick was sent to a CW class before going to Germany to work in Army Security as a monitor. "My job was to listen to guys in tanks, etc., to be certain they did not compromise themselves inadvertently. We also had RTTY and usually first established contact by CW."

He admits he entered Amateur Radio courtesy of CB. After becoming disillusioned with it, he discovered a co-worker who drove home at the same time and they would talk from their respective cars. "One day a station broke in explaining he would like to show me his Amateur gear. We pulled off the road, and I was impressed with his mobile installation. It was Rick Layton, WB6WFH. He introduced me to other hams and soon I became a Novice."

Dick's Amateur Radio career has followed the traditional and ideal path...a good Novice operation, upgrading after inspiration, well-rounded (all bands, most modes, including a seige of DXing), with plenty of public service thrown in. "I am Assistant EC of Simi Valley and we are very proud of Ventura County's ARES activity. We've been involved in fire, flood, train derailment, parades and bike-a-thons — and we have excellent rapport with our local officials."

He believes "we amateurs have something very valuable that others would like to have — our frequencies, and we *must* justify that." So he has tried to give back to Amateur Radio his time, in appreciation. Dick has even taught several Novice classes.

Awhile back, three cruises aboard Princess ships hosted Amateur Radio. Jeanie (WA6GUA) and Gene (W6DQH) Clark recall two of them. "Travel Agent Nancy Smallhouse, XYL of Chuck WA6MGZ, had the idea for a ham cruise. It came to Dick's attention and he was able to assist them in their plans for the *Island Princess*." A low-band transmitter was duly installed on a rear deck, vertical lashed to a rail, and the gang made about 1,500 contacts with more than 40 countries. On another trip aboard the *Sun Princess*, a group of YLs had similar fun.

Dick was able to be aboard for a couple of days on the first trip. Total disaster was avoided when the super-energetic deck crew washed down the deck and hosed the Kenwood 820 thoroughly. "Believe it or not, Chuck took the rig to his cabin and dried it out and to everyone's delight, it continued to work perfectly."

Asked how other hams should approach cruise lines, Dick advises, "First, well in advance, write to your cruise line reservations department and explain what you would like to bring — a description of the rig, etc. Explain you would want permission of the Chief Radio Officer and would cooperate completely." It is important to know all FCC and international rules for such maritime operation.

Most VHF equipment is not apt to interfere with ship radios, but it should be shown to the radio officers, of course.

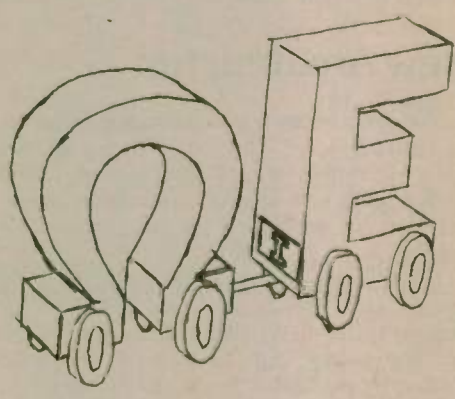
"Ham passengers on Alaska's Inside Passage seem to enjoy working the repeaters along the way." (Each cruise line has its own policy about radio operation.)

Another Amateur cruise is being planned by Nancy for a trip through the Mediterranean. A special joy for Dick is that his and Carolyn's daughter, Anne, is KA6WJK. "She has her own complete station in her room."

Dick just wishes he had time to make a ham cruise of his own. But his travels, for business, take him to London, Naples, Lisbon, etc. — all by air! Meanwhile, he manages a little time now and then for that shack in his garage, and we hope you'll hear his CQ. □

Ohm-Brew

Steve Silsby, WA4BRL, of Newport News, Virginia wins a free year's subscription with this Ohm-Brew entry. Be sure to notice all the clues in the picture. The answer is on page 44.



All "Ohm-Brew" entries should be neatly drawn on 3" × 5" cards, for easy handling. On the backs of the cards, print or type your name, address and call sign. Entries not used will not be acknowledged, due to the volume of entries received. □

STATION APPEARANCE

Kenneth J. Smith, VE3GQV, of Islington, Ontario, Canada is our August winner, winning a free year's subscription to **Worldradio**. His description of his station and ham activities follows.

I am a member and past president of the Skywide ARC of Toronto, and my main interests in Amateur Radio are DX and contests. I took an early retirement in 1983 for health reasons and, while my time on the air has not increased very much, I have had some time recently to go through my logs and start to sort out the Amateur Radio awards I am eligible to apply for.

One of my first applications was for the **Worldradio** W100N Award. I have also obtained the CQ 2 x SSB DX Award No. 1375, the ARRL WAS SSB Award No. 40139, the IARU WAC SSB Award, the RSGB "Worked the British Commonwealth" 2 x SSB 14 MHz Award, the RSGB "British Commonwealth Radio Transmission" Award, the RSGB IARU Region 1, 2 x SSB Award, the CARF Canadaward 14 MHz SSB, and the Canadian Islands Award No. 95.

I am currently preparing my applications for several more awards, including the ARRL DXCC Award, the CQ WAZ and WPX Awards, the Trans-Canada Award and the Canadian Provincial Capitals Award, and others.

Prior to my retirement I was active almost exclusively on 20M SSB, but my activities now include a high percentage of time on CW and RTTY. I have recently acquired a Commodore 64 Computer which I use for ham-related activites such as logging and MUF plotting, as well as personal activities involving such programs as Multiplan, The Consultant and Omniwriter.

The equipment I use includes: Drake TR22C and AC-10 power supply, Yaesu FRA7700, indoor antenna, Drake RCS-4 Remote Coax Switch, CDE Rotor Control, Bearcat 250 Scanner, Drake MS-4 Speaker, Heathkit SB-614 Monitor Scope, Drake L-4B Linear, Drake R7A Receiver, Drake TR7A Transceiver, Drake MN-2000 Matchbox, Drake P75 Phone Patch, Ten-Tec KR50A Keyer, Robot 800 Terminal and Video 100 Monitor, Atlas 210X Transceiver and Power Supply, Shure 444 Microphone and a SpotGlobe 2000.

On the desk to the right of the station is a Craig cassette recorder and a Commodore 64 with a 1702 Monitor, a 1541 Disk Drive and an Epson RX80 Printer.

Not shown is an Azden PCS-4000 and an ICOM IC2AT. Antennas include a 2-meter quarter-wave groundplane, a Hy-Gain TH3MK3 beam and a 40-80 Inverted Vee and several mobile antennas.

Not seen also are the displays of QSL cards and certificates, which include W100N Certificate No. 245. □

Off the Air

(continued from page 19)

the way it worked was along the line that if you had a 3-foot-long piece of spaghetti and a loading coil, that would guarantee great results. Spaghetti I had to find. The loading coil was $7.95.

Then the inquiry about what would give best results in lower Manhattan. The reply? You can do better with a rhombic than with any other antenna. So I ordered the rhombic. This I never received, for whatever reason.

Then I sent for an antenna comprised of five wires of various lengths with plastic separators, and this good arrangement would bring in the world. And it did! But only on my all-wave receiver, and that I could do by hooking a wire up to the window screen which kept out insects but allowed Europe to come through.

Then there was an antenna from England that could be locked outside the window frame and that would get fantastic DX. As it was, I received it in the dead of winter and what I got was pneumonia.

But like any "ham" worth his salt, I was not about to quit. I bought another antenna...a vertical and found out it required a spider-web of ground radials, whatever they were. So the radials had to be placed under the landlord's driveway, and he was having nothing of the sort. So that took care of that part of my exuberance.

Anyway, it has been years since I have seen any such ads in "ham" publications. Or at least, I am catching wise. And it's about time. When "hams" find a product less than acceptable, they vote against it at their favorite dealer.

I think I will have no more trouble. I have tried all the antenna systems and all the "rigs," and I have concluded that I will buy one more item which I know will solve the problem.

After all, for $16.98 where else could you get a pump that will remove water from the rectifier?

IAN MacDONALD, W1GMC
Leominster, Massachusetts □

UTC or GMT?

Peter Van, WE4Q

The time zones which we use — such as EST, MST, etc., or, for that matter, Zulu time — are all related to Coordinated Universal Time (UTC). For the purpose of radio communications Greenwich Mean Time (GMT) is out.

GMT was based on solar time (i.e., the Earth orbit around the sun). It was, if you wish, astronomical time. Because the orbit of the earth around the sun is not circular, corrections had to be made, thus creating "mean solar time". The system served us well for many years until something better came along in the form of atomic oscillators.

Atomic oscillators are extremely accurate, and give us the benefit of a very uniform time scale. On the other hand, navigators require a clock tied to the exact position of the Earth and are therefore less impressed with uniformity of time. In fact, precise navigation requires conversion back from UTC. So you see, you cannot please all at the same time.

In fact, the new UTC system, which was adopted in Geneva in 1971 and became effective in 1972, is a compromise between the scientist's desire for a uniform time scale and the navigator's need for solar time, which is referred to as UT1.

UTC is maintained by atomic clocks at a uniform scale up to an error of 9/10 of a second, as compared to the navigator's time. At that point, a leap second is introduced as correction.

If you listen carefully to WWV, you may hear double ticks or pulses after the start of each minute. This gives you the UTC - UT1 correction, in units of 0.1 second. The location of the double tick within the minutes indicates the sign (+ or −) of the correction.

— BARC Bulletin □

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

DX WORLD

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

Activities Calendar

10-11 August	DARC European DX Contest (CW)
24-25 August	JARL All Asian Contest (CW)
14-15 September	DARC European DX Contest (SSB)
26-27 October	CQ World Wide DX Contest (SSB)
23-24 November	CQ World Wide DX Contest (CW)

Details for these events can be found by referring to your latest issue of CQ or QST.

W-100-N

The following DXers were awarded Worldradio's Worked 100 Nations certificates during the month of May:

254. WD5DOM Hugh Gene Glasson
255. KA8CKA Gerald V. Seimetz

Afghanistan (YA1)

There has been a report of activity about a couple of months ago of a station signing YA1KBL. He was heard to be working a Russian station. He gave his QSL information as P.O. Box 570, Kabul. Nothing else has been heard on this one.

In addition to the above station, *QRZ DX* also reports another station from this one signing UB4XWK/YA on 20 meters.

Mount Athos (SV/A)

The June 3rd issue of *QRZ DX* printed the following letter that was addressed to the civil authorities of Mount Athos, dated 21 February 1985:

"Dear Director: As an answer to your letter . . . of 15.1.85 the request made by the radio amateurs to visit and to transmit from Mount Athos, we are sorry to have to tell you that the Sacred Community has decided *to forbid forever* the making of such transmission from Mount Athos. Truly yours."

The letter was reported to have been signed by all the representatives and directors of the 20 monasteries of Mount Athos.

But in the May 17th issue of *The DX Bulletin* there is a report that SV0DK said he has received permission to operate on Mount Athos for a period of two days.

Franz Josef Land (UA1)

This one has been active recently with UW3HY/1 being worked regularly. He has been reported near 14.025 MHz (plus or minus a few kHz). There seemed to be no particular time as he had been reported at such times as 0230, 1000, 1330, 1700 and 2300 — all in UTC, of course.

UA1OT had also been active from Franz Josef Land, but has since left the islands.

Other stations reported on the bands from this one included EO1AOK between 14.176 and 14.180 MHz around 1200 to 1300 UTC, and RZ1OWA on 14.271 MHz around 1530 UTC.

China (BY)

Several stations have been reported recently from the People's Republic of China. This one was dormant for many years until BY1PK came on the air. As of now the following stations have come on the air, along with times and frequencies where they have been reported:

BY1PK	14.059 MHz	1245 UTC	12 May
BY1QH	14.182 MHz	0545 UTC	20 May
BY4AA	14.210 MHz	1400 UTC	22 May
BY5RA	14.026 MHz	0900 UTC	23 May
BY0AA	14.010 MHz	0230 UTC	10 May

In addition to the above, station signing BT0NMN has shown on the bands. The BT prefix is not normally used, although it has been used in the past for testing or inaugural activities according to *QRZ DX*.

Ascension Island (ZD8)

Ian Shepherd, G4LJF, had hoped to operate from Ascension Island for one day near the end of May signing ZD8LJ. Also, to have operated during that month was ZD8JP signing ZD8ADF. Ian did get on the air, although it appeared that only Europeans were worked with reports given for 15 and 20 meters.

The Long Island DX Bulletin lists activity of ZD8KM, who shows often near 14.050 MHz after 2100 UTC. QSL cards for this one go to ZD8AR. Also, on from Ascension is ZD8JP who has been found near 21.327 MHz from 1700 UTC.

East Germany (Y2)

The German Democratic Republic had a call sign change a few years back. Formerly using the DM (or DT) prefix, the East Germans now sign with a "Y" prefix followed by two digits. This, of course, created a field day for prefix hunters. Basically, the DM prefix was replaced with the Y2 prefix. The second digit was the letter in the former suffix of the DM call, (i.e., DM2BJD would become Y22JD). The last letter of the old and new calls designated in which of the 15 districts he was located.

During the month of May, at least six different calls were reported, which included on 40 meters: Y73WH on 7.008 MHz at 0300 UTC, Y22JD on 7.006 MHz at 0400 UTC, and Y41ZM on 7.005 MHz at 0415 UTC; on 20 meters: Y23DM on 14.024 MHz at 2100 UTC, Y23EK on 14.182 MHz at 2000 UTC, and the special call Y40BER in Berlin on 14.033 MHz at 1530 UTC.

Indonesia (YB)

Indonesia has been well represented on the bands recently. Part of the East Indian Archipelago, this former group of islands, the Dutch East Indies, was once on the ban list. During the month of May, at least 16 different stations were reported in the pages of *QRZ DX* and *The DX Bulletin*.

YC9VPB	3.795 MHz	1300	08 May
YC9VX	3.793 MHz	1315	05 May
YC9ZNO	3.794 MHz	1245	19 May
YB0ARA	7.004 MHz	1330	09 May
YB1CC	14.032 MHz	0100	03 May
YB2BNJ	14.047 MHz	1230	08 May
YB3CEV	14.175 MHz	1330	24 May
YB3DCL	14.215 MHz	1230	24 May
YB4FW	14.207 MHz	1345	14 May
YB4HW	14.220 MHz	1545	05 May
YB8AY	14.206 MHz	1330	24 May
YB8QD	14.153 MHz	1345	10 May
YB9ARA	14.236 MHz	1230	11 May
YB9ARN	14.270 MHz	1330	24 May
YB9ARZ	14.194 MHz	1345	21 May
YB0ARA	14.034 MHz	1400	10 May
YB0ARA	14.198 MHz	1215	19 May
YB0BZZ	14.186 MHz	1345	24 May

The above times, as usual, are UTC. YB0ARA is listed three times in the above listing, on 20 meters SSB, and on CW on both 20 and 40 meters.

Prior to 01 May 1963, Indonesia was broken down into five DXCC countries, which was part of the former Dutch East Indies. This included Java (PK 1, 2, 3), Sumatra (PK4), Netherlands Borneo (PK5), Celebe and Molucca Islands (PK6), and Netherlands New Guinea (JZ0 or PK7). They are now on the deleted list, although you can still obtain DXCC credit provided you worked them before that 1963 date.

Several of these former DXCC countries have been represented in the "Antique QSL Department" with such calls as PK6HA (1947), PK2LZ (1940), PK3BX (1936) and PK6NQ (1949). Prefix hunters would love to have some of those cards.

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IOTA

Each issue of *DX News Sheet* lists various islands that have been reported for those enthusiasts of the Islands-on-the-Air program. The program was created by Geoff Watts, who also established *DX News Sheet*. Geoff no longer handles the publication, which was assumed by the RSGB, and he recently retired from the IOTA program. But the IOTA program is still going strong. Here is a list of recently reported islands or island groups:

EU-11	Scilly Isles	G0AEA	3.756 MHz	1200 UTC
EU-12	Shetland Isles	GB0HFC	7.070 MHz	2200 UTC
EU-13	Herm Island	GU4WTN/P	3.795 MHz	1330 UTC
EU-36	Hitra group	LA9PX/P	14.206 MHz	1115 UTC
EU-37	Oland Island	SM7CRW	21.265 MHz	1615 UTC
EU-45	Palmarola Island	I8UDB/IB8	14.198 MHz	0700 UTC
EU-46	Senja group	LA1CI	14.235 MHz	1015 UTC
EU-55	Bokn Island	LA5ZO	3.787 MHz	2000 UTC
EU-57	Usedom Island	Y41TJ/P	7.046 MHz	1215 UTC
EU-58	Ile Marguerite	FD6KTI/P	14.104 MHz	1300 UTC
EU-83	Bergeggi Island	IP1XOI	14.237 MHz	1000 UTC
AS-05	Dickson Island	UA0BDU	14.010 MHz	1630 UTC
AS-18	Sakhalin Island	UA0FEP	14.175 MHz	1830 UTC
AS-29	Stolbovoy Island	UZ0QXG	14.045 MHz	0545 UTC
NA-19	Kodiak Island	KL7AF	14.152 MHz	0600 UTC
NA-75	Pender Island	VE7FLA	14.165 MHz	0700 UTC
OC-24	Christmas Island	T32AF	14.179 MHz	0600 UTC
OC-67	Bora Bora	FO8LV	14.200 MHz	0745 UTC
OC-67	Raiatea Island	FO8MN	14.110 MHz	0645 UTC
OC-70	Saparua Island	YC8VCE	21.255 MHz	1245 UTC

•••••••

The above frequencies and times favor Europe, where the reports originated. No doubt these stations are readable this side of the pond at other times.

Since Geoff Watts no longer administers the IOTA program, it was taken over by Roger Balister, G3KMA. *DX News Sheet* also reports that there is an informal IOTA Net that operates on 14.260 MHz at 1800 UTC on Saturdays.

If you need a directory which lists the islands for the IOTA awards program, send $2 to Roger Balister, G3KMA, La Quinta, Mimbridge, Chobham, Woking, Surrey GU24 8AR, ENGLAND. Telephone: 09905-8224. The IOTA awards program is now sponsored by RSGB.

Ham Radio from U.S. military bases in Japan

An extensive article prepared by Jack Wichels, W7YF, was printed in *The Totem Tabloid*, the monthly newsletter of the Western Washington DX Club. Only a few of the paragraphs have been reprinted and may be of interest.

"Two-by-two call letters, beginning with the letters 'KA', identify Amateur Radio stations operating rom U.S. military bases in Japan. For example, KA2CC is at Camp Zama, near Tokyo; KA8HW is at Misawa Air Force Base in northern Honshu. These stations are permitted to use the same HF amateur frequencies as the States, with 500 watts maximum power below 10 meters.

"In typical government bureaucratese, these ham operations are called 'Auxiliary Military Radio Systems'. These AMRS operations are *not* armed forces MARS operations, which use military fre-

A few of the Clipperton DXpedition team made it to Fresno and were the "heroes" of the convention. Meet young Kay Saki, JG3LZG, who represented Japan for this international DXpedition team. Kay, only 22 years old, made his first trip abroad to visit beautiful downtown Clipperton.

France was represented by two DXers, Jaques Calvo, F6GXB, and Jean Joveneaux, F9LX. Here Jean sits behind the Clipperton DX Club booth with various wares dating back to the 1978 DXpedition. (Both photos courtesy N6JM)

quencies. These AMRS operations in Japan are permitted by a supplement to the Status of Forces Agreement between the government of Japan and the United States, but specific restrictions are imposed to these ham operations. AMRS hams are prohibited from QSO'ing Japanese hams. Ham operation is permitted only from within the boundaries of U.S. military bases, with no provisions whatsoever for portable or mobile operations. AMRS hams are not permitted to engage in third-party traffic. AMRS hams must log and report all amateur QSOs they have with Communist Bloc countries to the local Office of Special Investigations (OSI).

"AMRS QSOs count as Japan for DXCC purposes, just as any JA QSO counts as Japan. However, the Japanese Amateur Radio League (JARL) does not accept a QSO with a KA station for any JARL award, nor does the JARL permit KA QSOs to count in the All-Asian DX Contest.

"Headquarters, U.S. Forces Japan, issues these KA call signs. The FCC has nothing to do with this licensing of U.S. hams in Japan. An AMRS license with a KA call sign may be issued to any civilian employee or member of the U.S. armed forces in Japan who already has a valid U.S. FCC license or commercial radiotelegraph license. The single-class AMRS license has privileges similar to those of an Extra Class license here in the States. Both AMRS club stations and private stations exist; in the latter case, the licensee owns the equipment.

"The AMRS area boundaries do coincide with some of the Japanese (JA) area boundaries. The JA1/JA0/JD1 area is the same as the KA2 area; the JA2/JA9 area is the same as the KA3; the JA3 area is the same as the KA4, the JA4 area the same as KA5; Okinawa, part of JA6, is KA6; the JA6 area (less Okinawa) is KA7; the JA7 area is the same as KA8; and finally, the JA8 area is the same as KA9. There is no KA1 or KA0 area.

"The KA hams in Japan have frustrating experiences when they try to work DX from the Far East. JA's sometimes call them, not realizing the KA's are not stateside and also are not permitted to work JA's. Some U.S. stations calling 'CQ DX' refuse to come back to a KA reply, probably figuring these KA's are only a few bumbling Advanced Class folks in the States who don't know what 'CQ DX' means. Other U.S. stations have accused these Far East KA's of being pirates or 'Slims'. Some KA's have given up DX contests because it's too much trouble trying to explain where their QTH is and why they're using a 'Stateside' call."

Note that it was said there is no KA1 call area. This is just as well as the FCC a few years ago began to issue the KA1 prefix to Advanced Class licensees in New England. The KA1 prefix was already in use at the time and coincided with the Japanese call area of JD1 for Iwo Jima and Marcus Island. The KA1 call area was cancelled and moved into the KA2 call area.

The 1985 Pacific Northwest DX Convention

The British Columbia DX Club announces the 1985 Pacific Northwest DX Convention at the Richmond Inn, 7551 Westminster Highway, Richmond, B.C. CANADA V6X 1A3. The activities will begin on Friday, 26 July, and continue through Sunday, 28 July.

The program will commence on Saturday at 10:00 a.m., which will include the following speakers: Reg Beck, VE7IG — 5BWAZ from the Northwest; Tom Wong, VE7BC — China update after his recent visit; Rusty Epps, W6OAT — Clipperton DXpedition (FO0XX); Bob Smith, NA6T, and Bob Winters, KD7P — Midway Contest operation; Pete Dalton, W6NLZ — 80-meter beam update.

The pre-registration deadline is 01 July 1985 and this will give you a chance at the pre-registration prize. Pre-registration is $42 (Canadian) which includes all program sessions, Saturday banquet, Sunday breakfast and prizes. There is also a "meals only" fee of $32 (Canadian) for your spouse or non-amateur guest, (must be accompanied by a full convention ticket).

After 01 July the fees are $45 (Canadian) and $35 (Canadian), respectively. This announcement was received mid-May and the conversion rate stated was $1 (U.S.) is equal to $1.36 (Canadian). Make all checks (or cheques) payable to the B.C. DX Club. Send your convention registration to: Ken Thompson, VE7BXG, 12467 - 53rd Ave., Surrey, B.C. V3W 1A4, CANADA.

Norwegian license structure

Hal Torgersen, LA2AD, sent us the latest on the Norwegian call sign structure in response to the request by KD0HN, (see **Worldradio**, April 1985 'DX World', page 32).

LA prefix: Class A
LB prefix: Class B

Norway has no call areas, and the calls are made up of a single or three-letter suffix. The digit in the call can be any from one through nine. The class B license is valid only for two years.

Club stations may get a one-letter call (suffix) which has not been used for some time, or letter combinations from the name of the organization in question (such as LA1IOTA, LA1JAM). Repeaters will have two or three-letter suffixes with the last letter an 'R'.

The LC prefix is used by organized emergency nets.

When operating from a Norwegian territory, the following prefixes are used: JW — Svalbard or Bear Island, JX — Jan Mayen, 3Y — Antarctic and Bouvet Island. The suffix of the call will remain the same, (i.e., JW2AD is LA2AD).

All visitors to Norway who are staying for at least one year will receive the LA0 prefix.

Those LF, LH and LJ prefixes that you may have heard are commercial, scientific and educational stations that may be permitted to operate on the amateur frequencies.

The special call of LG5LG is for Morokulien, which is located on the Swedish border. (They also have their own special call — SJ9WL.)

DXpeditions by Eric

One of the latest DXpeditions by Eric Sjolund, SM0AGD, was to Mauritius, where he operated as SM0AGD/3B8. Eric had hoped to continue on to Saint Brandon Island along with two other operators. But, at least as of that time of writing, they had run into some licensing problems.

Beginning in 1972 with CE3, Eric has been to the following locations: VP8, HK0 (San Andreas, Serrana Bank, Bajo Nuevo), 3C1, TA2, A2, 7P8, S2, CR3, 9N1, XW8, CR9, J5, 9X5, 3D6, A22, ZK1, 3D2, C21, T30, T2, FW0, KH8, ZM7, T31, KH1, T32, 5W1 and 3B8.

Prefixes

Active during the month of June were the French stations FV6PAX and TV6JUN. The first station (also FV1PAX on VHF) was active for the first 15 days in June. QSL cards for this one go via F8BO. From Utah Beach, TV6JUN operated for a week, 02-09 June. QSL that one via F6EYM.

Several eastern bloc countries were active with commemorative calls to celebrate victory in Europe 40 years ago. Even East Germany got in the act with the Y40 prefixes. Such calls included Y40BUC operating from Buchenwald

Concentration Camp, Y40TOR from Torgau, the site on the River Elbe where the Americans and the Russians met, Y40BER in Berlin, and Y40POT probably in Potsdam.

The Italians were on with a station signing II2ARI to celebrate the 111th anniversary of the birth of Marconi.

The Swedes were in there with the special prefix of 7S to celebrate 60 years of the SSA, their national Amateur Radio society. Such calls included 7S1SSA, 7S2SSA, 7S3SSA, 7S5SSA, 7S7SSA, and 7S0SSA. Refer to the QSL routes for the above calls.

Going to the French Antilles?

We received a note from the St. Maartin Amateur Radio Club (PJ7A/PJ7R), regarding operating in the French Antilles, which reads as follows:

"Could you please re-emphasize on your reciprocal licensing data for the French Antilles, FM, FG (FS), etc., that the maximum legal transmitter power is 100 watts, and thus linear amplifiers are normally not allowed on French territory.

"This has caused some concern to French-licensed DX stations when comparing contest results! Many new operators are unaware of this power limit due to the difficulty in obtaining PTT regulations!"

Heard on the repeater

1st Voice: "W6TI, this is . . . can anyone tell me the basic unit of overseas airmail postage?"

2nd Voice: "Forty-four cents"

1st Voice: "Was that forty-four?"

2nd Voice: "Roger! Four-four, four-four, One, two three, four, One, two, three, four. QSL?"

1st Voice: "I QSL the four-four. You are also four-four. Back to Net."

3rd Voice: "That's a good contact."

The above item was lifted from the pages of *The DXer*, the official newsletter of the Northern California DX Club.

First real DXpedition?

Dirty Mick McDaniel (that's what his QSL card says), W6FGE, a regular contributor to this column, wonders when and who made the first for real DXpedition? Not a business trip, but for the purpose of a DXpedition, is what the question is. Anyone have an answer for that one?

The first person to come to our mind is Danny Weil, who held such calls as VP2VB, VR1B, KZ5WD, G7DW, FO8AN and VK9TW. Danny was busy sailing around the world during the latter 1950's aboard the sloop *Yasme*. We are not sure how many different *Yasme*'s Danny went through in his travels as he did lose at least one of those sloops. Danny eventually settled down and gave up DXpeditioning, and, we are not sure, but we think he dropped out of Amateur Radio.

Kansas City DX Club

The Kansas City DX Club reports that their Hospitality Suite at the Stouffer's Hotel in Dayton during the annual Hamvention was the best ever. They had a new high of 1,300 to 1,400 enthusiastic DXers stop by. Also, a record number of CW types tried their hand in the KCDXC CW Pile-Up Contest.

Although there were many brand new young CW operators taking the test, it was an old-timer who came in on top. Actually, there were two contests — one at the Hospitality Suite and the other during the Contest Forum. Fred Laun, K3ZO, came out on top in both of them.

In comparing the results, we noticed there were eight DXers who had placed in the top 10 for both contests, (there were actually 12 in the suite test, being that there was a three-way tie for 10th place, and a two-way tie in the forum test). Credit for this year's CW Pile-Up Contest goes to Tom Hammond, NØSS, and Larry Wilson, KØRWL.

And, speaking of this go-getter DX club, a check of their club roster lists 51 members. Of those 51 members, 39 hold an Amateur Extra ticket, 10 are Advanced and two are General, (that's a big 76% Extra, 20% Advanced and 4% General).

New club

A new DX club in Illinois has been formed under the name of DX Incorporated. The only requirement to join is an interest in DX, with no minimum number of countries worked and confirmed — a requirement many DX clubs require. The group is also open to SWLs.

Richard Breckinridge, WA9BXB, who submitted the information, reports, "We are a brand new DX association with an international membership. We will specialize in assisting the new ham or new DXer in the art of DX'ing and QSL'ing. Our group is headquartered in the Chicago area and the association officers are: Richard Breckinridge, WA9BXB, president; Jenny Breckinridge, N9EWE, secretary; Carlie Craig, AD9S, treasurer."

DX Incorporated features an attractive membership certificate, a monthly newsletter, a weekly 2-meter DX information net, monthly meetings, and a staff of amateurs accomplished in DX'ing, QSL'ing, electronics, antennas, contesting and DXpeditions. An HF DX net is proposed.

Further information is available from: DX Incorporated, P.O. Box 1082, LaGrange Park, IL 60525. Be sure to include with your request a business-size SASE.

Trondheim DX Award

The Trondheim DX Club offers the Trondheim DX Award, for working at least five amateur radio stations in the Trondheim area. Send your certified list of log excerpt, plus QSL cards for the stations worked, (if you have not previously sent them to those stations), to: Trondheim DX Club, P.O. Box 929, N-7001 Trondheim, NORWAY.

There is no fee for this award, but return postage would be appreciated, (i.e., 5 IRC's).

Isle of Wight Radio Society Award

This award is available to any licensed amateur who has had two-way contacts with at least five different stations on the Isle of Wight. To apply for this award send a certified log extract with a fee of $3, or 10 IRCs, to E. Westmore, G3RXC, 10 Alvington Road, Carisbrooke, Newport, Isle of Wight PO30 5AR, ENGLAND.

Jersey Island Award

Jersey Island is divided into 12 parishes and the object of this award is to work a station in each of those parishes. The award is printed on parchment paper depicting the outline of Jersey, showing each parish and the heraldic arms of the Bailiwick. A rule sheet and full details are available from Ken Kirk-Bayley, GJ6OZB, P.O. Box 338, Jersey, Channel Islands, U.K.

People's Republic of Bulgaria Award

To qualify for this award, one must contact five different stations with the LZ1 prefix and five different stations with the LZ2 prefix on both 3.5 and 7.0 MHz, for a total of 20 contacts, (non-Europeans are not restricted to the above bands, but must still contact 10 different stations in each of the two call areas). Send your list of confirmed contacts, certified by two licensed amateurs, or a local club official, with a fee of 10 IRCs, to P.O. Box 830, Sofia 1000, BULGARIA.

DX station needs beam

Franz Langner, DJ9ZB, reports that Victor, 4S7VK, is looking for a 2- or 3-element Yagi beam. Victor says that such an item in a Third World country is very expensive and is looking for a used beam that would not cost as much. Shipping is no problem as Victor knows of someone who could get it to him at no charge. Anyone who can help Victor can write him at Victor Goonetilleke, 32/4A, Malwatte Road, Dehiwela, Sri Lanka, or contact Franz, DJ9ZB, his QSL manager.

Antique QSL Department

Twenty-six years old may not be considered antique, but in the case of many DXers who were not even licensed that many years ago, we can count it as such. The FQ8HA card was submitted by Bob Truhlar, W9LNQ, which is another item from the state of Roy Weisbach, W9UX. The call FQ8HA was assigned to Alan Quéré, of Fort-Lamy, in Tchad, French Equatorial Africa. Roy worked this station on 10 meters, CW, back on 29 November 1959. Alan's transmitter consisted of a VFO and a single 807 final.

Less than a year later French Equatorial Africa was added to the deleted list, and was broken down into the four new

Propagation

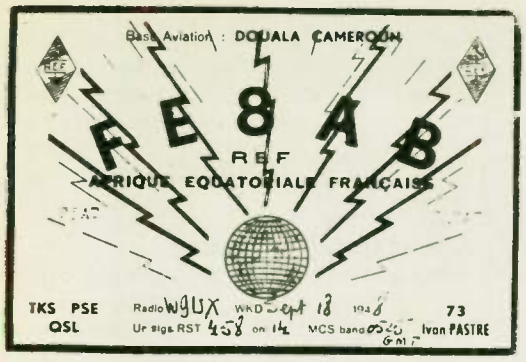
Maximum Usable Frequency from Burbank, CA
(courtesy of W6LS)

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

You can get a free *complete* set of these predictions for low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to Bill Welsh, W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (54¢) envelope at least 9" × 11½".

SEPTEMBER 1985

UTC	AFRI	ASIA	OCEA	EURO	SOAM
0100	15.8	22.2	24.2	10.4	21.9
0200	11.9	21.5	24.3	9.6	18.7
0300	10.9	20.4	24.0	8.9	15.3
0400	12.9	18.6	23.2	8.7	13.7
0500	11.9	16.5	19.3	9.8	13.7
0600	11.2	14.7	16.5	11.0	14.1
0700	10.4	13.6	15.3	10.7	13.8
0800	9.6	13.0	14.8	10.3	11.5
0900	8.9	12.7	14.6	9.8	13.2
1000	8.7	12.4	14.6	9.5	13.6
1100	9.3	11.8	14.4	9.6	12.4
1200	10.9	10.9	13.3	10.5	12.9
1300	13.2	10.7	12.1	12.3	15.7
1400	15.5	12.2	13.2	14.6	18.9
1500	17.1	13.6	14.4	16.5	20.7
1600	18.0	13.2	13.2	17.5	21.3
1700	18.4	13.1	11.2	17.5	22.2
1800	18.7	13.3	10.5	17.2	24.0
1900	18.9	14.6	12.6	16.6	26.0
2000	19.1	16.9	16.5	15.3	27.5
2100	19.4	19.7	19.9	13.6	27.3
2200	19.8	21.6	21.8	11.9	26.1
2300	20.1	22.2	22.9	10.9	24.1
2400	18.7	22.4	23.7	10.3	22.3



countries of Chad (TT8), Central African Republic (TL8), Congo (TN8) and Gabon (TR8).

The next card says "Afrique Equatoriale Francaise" which is really from the French Cameroons. The call FE8AB was assigned to Ivan Pastre, who was with Base Aviation in Douala. Roy worked FE8AB on 18 September 1948, on 20 meters, CW. The card is of green stock with blue printing. The call FE8AB and other symbols are in red. Ivan also held the calls FQ3AT and F3AT, the latter call still being held as of 1982.

IRCs for sale

Two reports of DXers with IRCs (International Reply Coupons) for sale were received this month. Norm Koch, K6ZDL, reports that he has several for sale, with a minimum order of 50 at 40 cents each, or $20. Norm is **CQ Magazine**'s WPX Manager. Send your order, along with a 39 cent SASE to Norm Koch, K6ZDL, P.O. Box 1351, Torrance, CA 90505.

Down in South America, Mario Raul Andraca, LU8DPM, will sell IRCs in lots of 30 for $10 (U.S.), or lots of 130 for $40 (U.S.). This works out to be 33 cents and 31 cents each, respectively. A word of caution! Do not send cash to South America. It would be best to send an international money order made out to Mario. Mario's address is P.O. Box 45, 7150 - Ayacucho, Bs. As., ARGENTINA.

I'm not sure what the post office charges are for IRCs. Before the last postal increase, they were 65 cents each. Therefore, that cost of 40 cents would be a tremendous saving. Many DXers now send "green stamps" which is sometimes less expensive when an airmail reply would require in excess of three IRCs. Also, it is not wise to send "green stamps" to certain countries. Use judgement.

QSL information

Lew Wilhelm, W7TB, reports that he operated as ZK1XU for several days in March from the Rarotongan Hotel. Lew says the license shows only that address and is sure that is how it will be published. Victor Rivera, ZK1CG, will pick up any mail for Lew there. If you worked Lew while he was operating as ZK1XU, you may contact him at P.O. Box 1437, Sedona, AZ 86336.

In the last issue we made mention of sending a follow-up letter to the Radio Club of Chile if you had not received your CE0AA card(s). The official address was given as P.O. Box 700, Santiago. Two additional addresses have also been reported: Radio Club of Chile, P.O. Box 13630, Santiago, CHILE, or to Mickey Gelerstein, CE3ESS, P.O. Box 9834, Santiago, CHILE. The story was that some of the cards sent down there were not received, (from what we have seen, this looks like most never made it).

So, if your second request that you mailed after 15 May to P.O. Box 700, doesn't bring a response in a couple of months, try one of the above.

QSL help

Need help in getting a QSL from a DX station that you can't find a route for? The following letter is a note of thanks that one DXer wrote in appreciation of the help he received:

Just a short note to thank you and all those who took the time to respond to my plea for help with some cards.

I was amazed at the number of folks who wrote direct to me with suggestions! Most of the suggestions were ones I had already tried, but all were appreciated!

It pays to advertise! I now have the elusive 8R1RBF and 7X2LS safely tucked away in the shack after verification by Don Search at the Dayton Hamvention. The system that finally worked with both of them was to go with meter-stamped envelopes with a green stamp.

The above letter was written by Jon Casamajor, N0DJJ, of Chico, California.

What do you need help on? There are a few I need help on such as AH0C who I worked in the November 1982 World Wide DX Contest on 40 meters. Three requests with SASE have been sent to N6BT, (the route given as the QSL manager), but no response; 5T5JD (1979), OX5RM (1983), HF0POL (1981), 4X2BYB (1982), TO7GAS (1983). Most of the above have been listed in the W6GO/K6HHD list, and if any of the routes had been in error, we would appreciate a correct route, (and so would Jay and Jan). What are your needs?

QSL routes

A22BW	—DK3KD	SO9FY	—LA9FY
A92P	—G4SOK	SV1RP	—SV1NA
AH8A	—NE4S	SV0DV	—WB4TDB
AH8B	—NE4S	SV0DW	—WB4TDB
C21BD	—WB0TEC	T30DB	—J6LDB
C30LBS	—I1FOU	TG9VT	—W3HNK
DA1WA/HB0	—*(See Note 1)*	TL8KH	—W2MZV
DX1N	—JH3OII	TU4BR	—KN4F
EB2ITU	—EA1QF	TZ2XN	—DK3HL
EL1G	—WD9IDS	TZ6FE	—DL4BC
EL2AL	—KW9Z	TZ6WC	—DL4BC
EL7C	—DK5VI	V2A	—W2JT
EU0G	—UG7GWA	V2ACW	—WB4OSN
FE5RV/TK	—F5RV	V2AZL	—W2HWS
FK0AE	—F6EWK	V2AZM	—WB8SSR
FM5BW	—MF7BW	V3C	—N5DDV
GB0SGD	—G4KHF	V44KM	—WA6ZEF
GV2TW	—GM2TW	VP2MO	—WB2LCH
GV2VER	—G3JKS	VP8VK	—G4RFV
GV3RAF	—G8FC	VQ9CK	—WB3CQN
GV4MRS	—G3YOA	VQ9FS	—WA4CYR
GV4PIE	—G4STH	VQ9QA	—N3QA
GV4VE	—G4KIE	VU2ISV	—N4JR
GV4VIE	—G3NBC	WB4Y1X/VP2M	—K14NHU
GV0FYO	—G4KHF	XE1IF	—K4IIF
GV0IPA	—G4TRF	XX9LL	—DL9LL
GV0NRG	—G4BCP	Y40BUC	—Y21QI
GV0SLH	—G4SLH	Y40POT	—Y57ZD
HG40A	—HA5KDB	Y40SEE	—Y52SE
HG40M	—HA7KLJ	Y85HUB	—Y2400
HG40Q	—HA8KAX	YB0ARA	—WA6AHF
HG40X	—HA4KYN	YT3B	—YU3CST
HL1CG	—JA1ADD	Z21AO	—VE3HK
HL4CCM	—JF1JLW	Z21GN	—KV3D
HP1XKR	—JA7AGO	ZD8JP	—G3ATK
HW4OB	—FD6ILC	ZD8LJ	—G4LJF
HW5LE	—F6FNB	ZP5XGG	—N4DW
HZ1FM	—DJ9ZB	3A5EE	—FE9RM
HZ1HZ	—N7RO	3B8FP	—IK8DYD
I2ART	—I2AOX	3D2RN	—JH1RNZ
IY4FGM	—I4IKW	3D6AJ	—WB3CQN
J28E1	—FC1JEN	3D6AK	—G3WPF
JT0APE	—UZ3AZO	3X0HAB§	—DL8CM
JV1UB	—JT1KAA	4N3E	—YU3HAM
JV2HG	—JT1BH	4S7NMR	—KZ8Y
JW6VDA	—LA5NM	4U0ITU	—*(See Note 2)*
JW0EQ	—LA5NM	4X73ID	—4X4HQ
JY8AD	—A71AD	5A1A	—I5SDV
JY9CL	—G3MUL	5B4LP	—KA3FIB
JY9MG	—JR3XMG	5H3YL	—SM6BDW
JY9WR	—G4ATS	5N6CJR	—K6EDV
KC6HA	—K6EDV	5N6RTF	—DK2IF
KP4USN	—KA4YUX	5Z4DU	—KE4DA
LG5LG	—LA2ZN	5Z4ED	—JH6FMU
LZ40B	—LZ2VP	5Z4MX	—SM3CXS
LZ40C	—LZ1KRB	7S1SSA	—SM1ALH
LZ9MAY	—LZ1KDP	7S2SSA	—SK2AU
N5HFR/1P1	—N5HFR	7S3SSA	—SM3CWE
OD5AS	—I5WVI	7S5SSA	—SM5CAK
OG1AA	—OH1AA	7S7SSA	—SM6CVE
OH0AY	—OH4GG	7S0SSA	—SM5KF
OK6RA	—OK2FD	8J1XPO	—JARL
OX3AX	—OZ5DX	8J2ITU	—JARL
P29KY	—JR1EMT	9M2DC	—G4RZQ
P46S	—K3UOC	9V1VY	—N6HHY
PJ3HEC	—Direct	9X5WP	—WB6VKD

A24SC	—Steve Craggs, "Arrochar", High Pit Road, Cramlington, Northumberland, ENGLAND
A71BK	—P.O. Box 1556, Doha, QATAR
BY1QH	—P.O. Box 2654, Beijing, PEOPLE'S REPUBLIC OF CHINA
BY0AA	—P.O. Box 202, Mulumuqi, PEOPLE'S REPUBLIC OF CHINA
CE0FFD	—P.O. Box 4, Easter Island, CHILE
CE0FQV	—P.O. Box 59, Easter Island, CHILE
CM6DD	—P.O. Box 95, Caibarun, CUBA
FK8FF	—Guy Eschembrenner, 2 Rue du Cdt. De Bovis, Valle des Colons, Noumea, NEW CALEDONIA
FK0AT	—P.O. Box 2899, Noumea, NEW CALEDONIA
FR5DX	—P.O. Box 200, Tampon, F-97430 FRANCE
FW8AF	—P.O. Box 92, WALLIS ISLAND
FY4CD	—P.O. Box 747, Cayenne, FRENCH GUIANA
FY5KRU	—Radio Club de Kourou, P.O. Box 450, F-97310 Kourou, FRENCH GUIANA
J6LDB	—P.O. Box 198, Castries, ST. LUCIA
NY6M/KH2	—Gary Dein, 216 Holden St. NCWP, FPO San Francisco, CA 96630-1800
TA1C	—P.O. Box 188, Istanbul, TURKEY
TA1D	—P.O. Box 1167, Istanbul, TURKEY
TR8JYC	—P.O. Box 2E827, Libreville, GABON
TV8MAY	—P.O. Box 201, F-51100 Reims, FRANCE
VP8ALJ	—P.O. Box 68, Port Stanley, FALKLAND ISLANDS
VS6JH	—P.O. Box 541, HONG KONG
YA1KBL	—P.O. Box 170, Kabul, AFGHANISTAN
YB8AY	—P.O. Box 77, Makasar, INDONESIA
YN4CB	—P.O. Box 3733, Managua, NICARAGUA
ZC4YC	—B. Couchman, 6 Canada Way, Lower Wick, Worcs WR2 4DG, ENGLAND
6W1MS	—P.O. Box 950, Dakar, SENEGAL
9M8EN	—ETS 26 SSB, Miri, Sarawak, MALAYSIA
9Y4KB	—P.O. Box 1167, TRINIDAD

NOTES

1. All QSLs from Europe for DA1WA/HB0 should be sent via DJ0LC; all others go via KN6G.
2. Contacts made with 4U0ITU on or about 11 May 1985 go via K4XL; contacts on or about 03 May 1985 go to F6EYS.

Our thanks go to the following contributors who helped prepare this month's DX column: N2UN, K6DR, W6FGE, K6NA, K6ZDL, W7TB, WA9BXB, W9LNQ, N0DJJ, KB2DAW/KH2, NY6M/KH2, DJ9ZB, LU8DPM, The Carolina DX Association (W4WMQ), Kansas City DX Club (AB0X), Southern California CX Club (W6ABW), Northern California DX Club (WA6O), Western Washington DX Club (K7ZR), British Columbia DX Club (VE7BXG), St. Maartin Amateur Radio Club, *Radio Communication*, *The Month of The Air* (G3FKM), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *QRZ DX* (W5KNE), and *The DX Bulletin* (K1TN).

No doubt everyone has heard of the passing of Don Wallace, W6AM, the grandfather of DX! A DXer he was, and he was reported to have been at the top of the DXCC list for nearly 30 years. But that wasn't all he was known for. Other items included the famous Palos Verdes antenna farm, where rhombics were raised, or operating a kilowatt mobile rig cruising the freeway at 60 — using CW! Yes, Don was the grandfather of DX, and up there long before many of you were even born. Seventy-five years of Amateur Radio is quite a showing. 73, Don! de John, N6JM.

Real estate and the radio amateur

Ray Dennis, W0DQ

As an amateur and a real estate broker, I have made some observations on some considerations that should be taken into account when purchasing property. We can't all afford that ideal QTH with a two-acre antenna farm siting up on the hill, but there are locations in all price ranges that would make good ham QTH's.

Elevation above average terrain is an obvious factor, especially for VHF and UHF work. For HF, being somewhat above the immediate surroundings and in the clear would be the most important things. Before purchasing, find out if there are any antenna height restrictions imposed by the city, county or — in the case of many new housing developments — in the form of protective covenants. These covenants would be on file at the courthouse.

Some of the new developments allow no outside antennas — it might be hard to get a TH-6 in the attic. Being near an airport poses some additional restrictions in antenna height — especially in the flight path.

Look for probable generators of interference, such as power lines, commercial properties or a neighbor with an arc-welder, etc. Are the power lines underground? The noise is usually lower in these areas; however, prices may be higher. How close together are the houses? The closer your neighbor is, the greater chance for you to bother each other. Again, price may dictate a compromise in this area.

Generally, a QTH in close proximity to a broadcast station is not a good idea, especially an AM station. All it takes is one bad connection in the antenna system, and you could have Loretta Lynn singing all over the 40-meter band.

Trees may be a help in supporting wire antennas, but too many can make it difficult to get antennas in the clear. Would you want to remove some trees? A wire antenna should never have to cross a power line. Along this same line, if you are going to put up a tower, it should be in such a place that it won't blow down across a power line.

The house should have at least 220 volt 100 amp service. This is code in most areas. If not, you may want to take the cost of installation into consideration.

Where are you going to put the shack? Does the XYL (or OM) have other plans for the same room? It might pay to discuss this. If the shack is to be in the basement, is it dry? How will the feedlines be routed outside? Also, how close is the nearest amateur? If he is close and active, you may blow each other off the air, or may have to restrict your operation to separate bands sometimes.

I am sure there are other considerations, and of course, the regular ones you would have in purchasing a house as a non-amateur. If you find a good QTH, your next job is to sell the XYL or OM on the place.

HINT: with a super ham QTH, you will be staying home more.

—San Fernando Valley, ARC, CA

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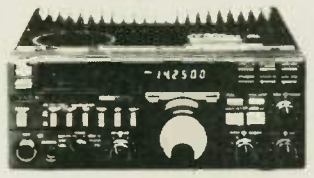

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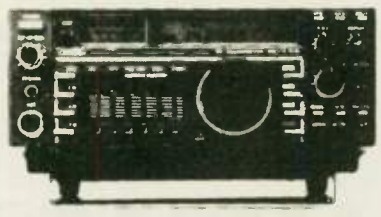

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AMSAT Phase 4 Project

Norm Brooks, K6FO

What will amateur satellite communications be like at the end of this decade? If you were going to design an ultimate amateur satellite system, what would it be like? For mind-boggling answers to these and other questions, you should have heard Vern "Rip" Riportella, WA2LQQ, describe the AMSAT Phase 4 Project — "A Series of AMSAT Geostationary Satellites" — at the Dayton Hamvention, 27 April 1985.

I can see a time in the near future when we will have six or seven different classes of satellite on which to operate. Not six or seven satellites, but six or seven *types* of satellites. Here's what I see happening by the end of this decade, just four-and-a-half years from now.

1) We'll have Phase 2 satellites in low Earth orbit operating Mode A, J and K. (See sidebar for Modes.)

2) By 1990 we'll see three Phase 3 type satellites operating Modes B, L, JL or S.

3) PACSAT will see dedicated digital store and forward satellites.

4) Dedicated research satellites such as UOSAT.

5) Space Shuttle activities, plus space station activities — a permanent ham radio station in orbit.

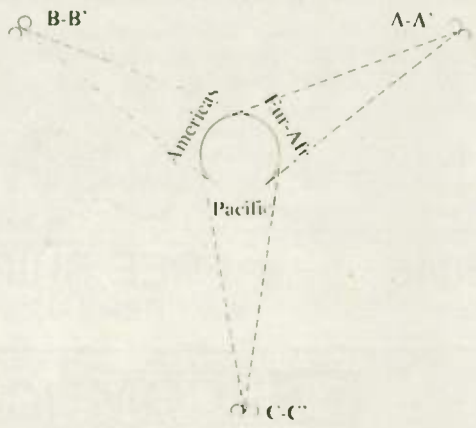
6) Perhaps the most exciting and challenging — Phase 4.

What is Phase 4?

Phase 4 is a concept for a constellation of geosynchronous Amateur Radio satellites. Before the end of this decade, or shortly thereafter, amateurs can organize, design, build, test, launch and operate the most complex Amateur Radio satellite system yet conceived. It will be the ultimate realization of the OSCAR concept formulated two-and-a-half decades ago.

Simultaneously we will realize a dream — on-demand world-girdling DX conditions 24 hours a day, 365 days a year, regardless of the sunspot cycle. Phase 4 will challenge the technical ability of our best, and provide a personal communications capability which few of us have ever dreamed of.

As presently conceived, at least six satellites — three "prime" and three spare — will be placed at 120 degree increments over the equator. AMSTAR A & A' will cover Europe and Africa, B & B' North and South America and C & C' the Pacific. (See sketch) We estimate they will cover 90% of the Earth's surface which contains 95 to 98% of the world's amateur population. All will cover from 70 degrees north latitude to 70 degrees south latitude. Cross links between the satellites will afford modest capacity for global communications between the geosynchronous satellites.



The Phase 4 Concept

Phase 4 may become a turning point for Amateur Radio, and shape all that happens thereafter for the balance of the century. Phase 4 is not without risk. You can't do big things without taking sizeable risks. At the very least, it is an enormous challenge. The only question is — is it a manageable challenge? If we embark on this course, we will ultimately involve millions of dollars, and thousands of amateurs directly in the program. It will involve governments at the national level. Can the political forces be mitigated or avoided?

Nothing of this magnitude ever gets done by one person or one group of people. There are some key contributors to the Phase 4 concept. Jan King, W3GEY, and Gordon Hardman, KE3D, have done engineering to establish the feasibility of the satellite concept. They believe it is feasible. Moreover, the concept has been reviewed by the top satellite designers in the world, Karl Wetter, DJ4SC, M.N. Sweeting, G3YJO, and others. Nobody has found any fatal flaw.

It is do-able. Conceptual levels, architecture and marketing have been done by Rip Riportella, WA2LQQ, over much of the past year. There have been important inputs from AMSAT Chairman John Browning, W6SP, as he has, for many years, been involved with geosynchronous satellites on a professional level, as also Dr. Al Dayton, KA4JFO. Former AMSAT President Tom Clark, W3IWI, and J.E. Kasser, G3ZCZ, have been visionaries in this area as well.

The overall concept of Phase 4 is that it is perceived to be in the public good and therefore deserves national government support. The launch will have been provided free by a national launch authority in recognition of the public service aspects and technology innovation embodied in the project.

All six spacecraft are contained in a single payload canister. The mass at launch is about 1000kg — about an English ton. The launcher places the payload into a geosynchronous transfer orbit with apogee of 38,000kg and perigee 500km with 0 degrees inclination to the equator. A pair of kick motors raises the perigee to 35km, and later an apogee kick motor circularizes it at geosynchronous altitude. The six spacecraft ride on a single mechanical bus structure, which drifts slowly over the equator in a west to east direction. When properly positioned over Europe, AMSTAR A & A' are deployed as a pair. A few weeks later, AMSTAR C & C' are deployed over Indonesia in the Pacific. Finally, about a couple of months later, AMSTAR B & B' are deployed over Ecuador, to serve North and South America. Each pair of satellites, on station, is spin stabilized and uses a de-spin platform to keep the antennas pointed in the right direction.

Each satellite pair is self-sufficient. It is designed so that single point failures detrimental to both satellites are essentially absent. Each pair of satellites shares common system elements; for example, the bus structure, the integrated housekeeping unit, the power system, telemetry system, etc.

Each pair of satellites is customized for the specifically identified requirements for the region being served. For example, for AMSTAR B & B', which would serve North and South America, there are four separate tiers of communications services specified — four appliques. Two of the appliques are common with the other satellites A & A' and C & C'. Two are unique to America. Let's look at what, in concept, might serve

To help you understand some of the satellite terms that may be unfamiliar to you

Phase 1 — Beacons only.

Phase 2 — Satellites in low circular orbit, approx. 900 miles high. They whiz by in 20 minutes or less.

Phase 3 — Satellites in an elliptical orbit, up to 19,000 miles from the Earth. Usable up to 10 hours or more per orbit.

Phase 4 — Satellites in geosynchronous orbit, which appear to sit still in the sky. Altitude 22,200 miles. Usable 24 hours a day.

North and South America at the end of the decade:

GALINT-L. General Access LINear Transponder. This essentially what we have in OSCAR 10 mode L right now. This would be on all three pairs of satellites. Users will experience no spin modulation, no Doppler shift. Users' antennas can be aimed and locked in place. Upward signals will need to be 2kW, EIRP. ICOM has already introduced a 24cm 10 watt all-mode radio. There will be others on the market, plus 100 watt amplifiers, when this satellite is available. 1296 MHz equipment will get a big boost from developments in the land mobile 900 MHz band. Inexpensive 6-foot dishes will be available. On the downlink side, users will require a 1 to 1.5dB noise figure at 70cm. 70cm equipment already abounds.

The second baseline communications system on all three pairs of satellites is TROC — Thin ROute Cross link between satellites. This will be a high speed data link between AMSTARs B and C to the west, and B and A to the east. This will provide an inter-region path for voice data, digital data and command and control signalling.

Now the two special appliques for North and South America. The first is SLARS — Satellite Linked Amateur Repeater System. This is the exciting concept of a system which would provide a voice switched digital data network for up to 100 terrestrial amateur repeaters, selected in various combinations, through the AMSTAR control center, by the individual user.

Uplinks will be established by specially equipped repeaters. SLARS will use a 24cm uplink and a 13cm downlink. The receiver will consist of a 3 to 4-foot dish, and an integrated Low Noise Amplifier/Mixer would be right at the dish. Equipment would be right off the shelf.

On the uplink, SLARS will require a relatively modest power — 300 to 1000 watts ERP. Twenty watts to a 15d B gain 24cm antenna will do it. This much 24cm power is relatively inexpensive, even now.

The AMSTAR control center can be likened to a crossbar type switch. The horizontal lines are uplinks, the vertical lines downlinks. The virtual channel is established with the AMSTAR Control Center saying, "I see this signal on this uplink channel and I'll regenerate that signal on this downlink channel." This technology is not something hams would have to develop. It is based on mobile cellular radio techniques which are already developed and well understood. Uplinks will be digitized voice transmitted on 24cm, 4.8 kilobits or less using PSK modulation, and an advanced type of voice encoding called LPC 10.

Visualize an amateur here in Dayton, using a hand-held radio through a repeater here in Dayton interfaced to the satellite. With touch-tone commands he would call up his home repeater in Los Angeles! Communication will be hand-held to hand-held. This may seem far out, but gateways have already done this.

The second "Americas" applique is LABOR — Limited Access Broadcast Over Repeaters. It will broadcast to any selected group of repeaters. With nearly 8,000 repeaters already licensed in North America alone, the potential of a network comprising only 10% of these repeaters would be enormous. Eight hundred specially equipped repeaters will have "S" band receivers with code-activated selective calling interfaced to their audio network. The LABOR system could, at the option of the repeater owners/operators, be used for the receipt of bulletins, training materials, software distributed by a national radio society, etc. Let your imagination roam.

The uplink to LABOR would be a specially protected, jam-resistant, high-power uplink at "C" band. Did you know we amateurs have an allocation at about 3.5 GHz, right next to the commercial "C" band? The uplink could be at ARRL headquarters, and/or at a national facility, such as FEMA (Federal Emergency Management Authority).

In case of a regional emergency, such as hurricane or earthquake, repeaters in the affected area could be specially addressed for special bulletins on the emergency. The repeaters would otherwise be available for emergency traffic on a local basis.

We have learned a great many things about the Amateur Radio community and its taste for space things over the past 10 years. In the early '70s, we surmised that the Amateur Radio satellite community was fairly small, perhaps 1,000 or so. The group was bound to grow, given a few essentials.

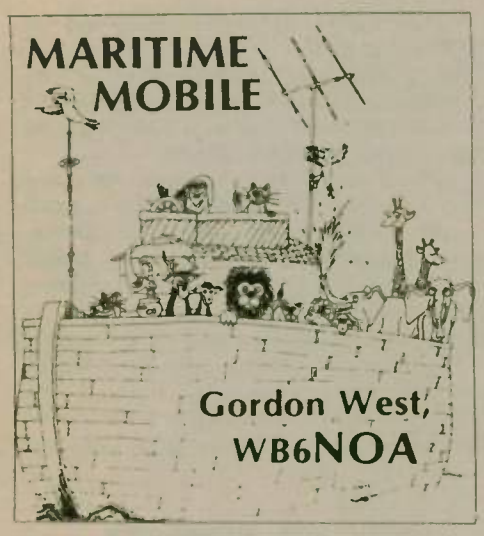
We looked at the Phase 2 satellite folks and found a group of adventuresome people who liked satellite tracking. We grew to a 5,000-member organization, but DX was not there and contacts were limited to about 20 minutes per shot.

Now we have Phase 3, with elliptical orbits that allow DX communication over 10 hours at a time. What is the result? We're still at a 5,000-member level.

What does that say to us? To appeal to a broader Amateur Radio community, we must emphasize one fundamental element — ease of use. If we don't make satellites easy to use, we'll continue to be a small special-interest group. So, in the future, we should be thinking about utility. Utility means reliability, accessibility, predictability, ease of tracking (or none at all), a good quality of service and convenience.

We believe the stage is set for AMSAT and others to move into the Phase 4 era. Whether Phase 4 is realized or not depends on whether *you* get behind it and support it.

Amateur Radio makes the world that much closer. Get close to Amateur Radio; read **Worldradio.**



Mobile audio systems

Now come on, folks, you're not going to be playing Amateur Radio all the time aboard your boat, in your mobile home or in the car. Sooner or later you're going to want some soothing sounds of music to come over those stereo speakers — not the clatter of a pile-up on 20 meters or an endless ragchew on that popular 2-meter repeater.

Your faithful companion will also appreciate the sounds of a nice audio system as opposed to all those noises from your ham set. So read on — let's take a look at some spectacular music boxes that are ideal for mobile installation.

For you mobilers out on the high roads, in-dash sound units are plentiful. You can buy an inexpensive AM-FM/cassette playback unit for as little as $50, or go for an exotic $500 sound system that turns your care or mobile home into a concert hall. I recommend going with a slightly more expensive unit than $50 because the inexpensive sets don't last too long, and usually will devour a tape after a few playings. And just think, if they should devour one of our code test preparation tapes, you would really be mad! I suggest choosing a nice in-dash sound system priced above $100, but certainly less than $200. Speakers may be extra.

For you mariners, the marine electronics industry has been slow to develop marine audio sound systems. Some of the first manufacturers of AM-FM/cassette audio systems for marine installations were Cybernet Marine Products Division (7 Powder Horn Dr., Warren, NJ 07060); Combi (40 Signal Road, Stanford, CT 06902); and Regency Electronics (7707 Records St., Indianapolis, IN 46226).

Marine sound systems specifically designed for a wet boat would include the following products: Cybernet Model CMS-3000, Combi Model CS-3001, Combi Kenwood Model CK-4500 and Regency Model MS-5000.

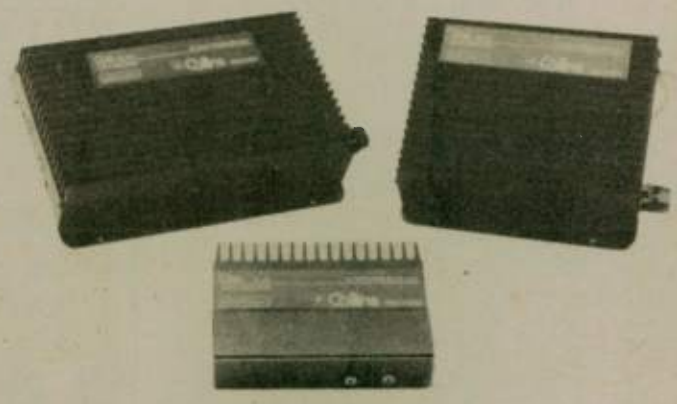
Each sound system features an AM-FM stereo tuner, a cassette deck for playing code tapes (and if you must, music tapes), and a built-in audio amplifier that will normally deliver about 25 watts per channel. Some models also include an additional amplifier, to include a graphic equalizer.

SDT 4000 FF Filters

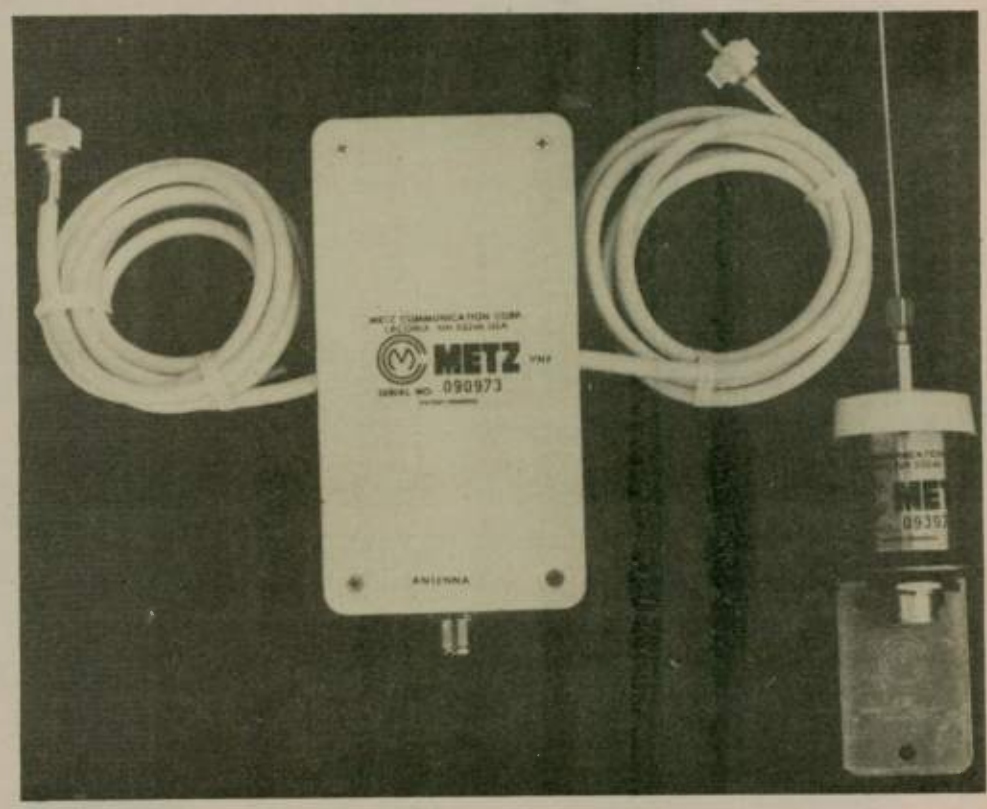
Newport Sound System

Displays

Polypropylene
Auto/Marine Speakers



MK150 MK36 MK100 Amplifiers



AM/FM antenna system from Metz

All units would normally be housed in a white plastic cabinet along with a mounting bracket system for easy installation. Instead of having to cut out small holes and custom-fit the stereo system, the marine system could either hang from a console or easily be built into any nav station.

Aside from the white plastic case that surrounds the AM-FM/cassette player, I doubt that there is anything on the inside of a marine system that really makes it better around the water. The cassette mechanism requires a spring-type door with which to insert the cassette for playing. There's not much you can do to keep water out of the innards when the cassette is in and playing and you should take in some spray. Even with the cassette out, there is little weather resistance against salt water seeping in through the cassette spring-loaded door.

There is not much a manufacturer can do to protect this type of delicate mechanical and electrical equipment against the harsh marine environment, so the best

thing they do is enclose the entire set-up in a leakproof, white plastic shell; add a clear plastic protective door; and make it easy for anyone to install the equipment without having to bore a lot of small holes for a custom installation.

If you are really wanting the ultimate in sound performance with a set that you would custom install yourself, try some of the specialty hi-fi auto sound dealers and look toward a model that might retail near $400. Four hundred dollars for a sound system? You bet — and here are some of the features you might expect:

Recessed, custom-install kit with all hardware included; AM-FM memory synthesized tuner section; Built-in AM stereo reception capabilities; FM anti-multipath discriminator circuit; High-end cassette record/playback unit, built-in; Laser compact digital audio-disk player, built-in; Illuminated graphic equalizer; Illuminated power amplifier control; Remotely mounted power amplifier system; Speaker selector control module; Waterproof for acoustically balanced speaker system for custom installation.

Installation

For good sound performance, you don't just slap in a marine or mobile audio sound system and expect it to work well. The first time you transmit on your HF or VHF set, the poorly installed system will immediately start squawking at you. If you do a good job of installation, chances are you can run all your rigs and never hear a peep out of the sound system.

The power leads should only go directly to an accessory ship's battery or a major power feed. Tacking the power cables onto some existing wiring that's running in back of the instrument panel is foolishness. Not only might you encounter voltage drops, but chances are you'll pick up extraneous noises from your Loran, SATNAV, radar, and even radio transmissions from your VHF set. The power lead must be run all by itself to a major power source.

It's also a good idea to ground the metal chassis of the audio equipment to the main ship's ground. You can usually find this by looking for the Loran or marine sideband ground connection. The ground connection is always run separate of the black power lead — ground and negative battery leads are also separate affairs.

Once you have power to your audio system, the next consideration is the antenna circuit. Several manufacturers of antennas offer AM/FM marine antennas designed for external or hidden mounting: Hy-Gain Corporation (9600 Aldrich Avenue South, Minneapolis, MN 55420); Shakespeare (P.O. Box 733, Newberry, SC 29108); and Metz Communications (Route 11 and 11C, Gilford, NH 03246).

The Hy-Gain and Shakespeare antennas are white fiberglass and have their own built-in ground system for efficient operation on the AM and FM broadcast bands. The antennas feature a ratchet mount for lay-down purposes on smaller boats and are shipped with about 30 feet of coaxial cable.

The Metz antenna is a stainless steel, base-loaded whip with a built-in groundplane that works well on AM and FM music channels. The stainless steel antenna may be mounted above deck, and is also quite adaptable to being hidden below decks for good reception.

The recommended antenna polarization is vertical to prevent fading as the vessel may turn. Most AM and FM broadcast radio transmissions are vertical or cross-polarized for maximum reception, even when the vessel is rolling.

Mariners with an AM/FM tuner should expect to receive FM signals up to 100 miles offshore with good, clean stereo separation. On the AM broadcast band, nighttime reception may go well over 1,000 miles, and there are over 250 AM stereo broadcasting stations now on the air for receivers with the Motorola AM stereo receiver system.

The speaker system is probably the trickiest part of installing the marine AM/FM stereo sound center. It's important that you follow the manufacturer's suggestion as to the wiring of the speaker system. Wiring techniques are fairly straightforward — a pair of wires will feed each speaker module, and the installer should follow the suggested wiring format precisely.

What they may not say is these speaker wires also act as a dipole antenna system, and can very easily pick up onboard electrical noise, ignition interference, as well as radar transmissions.

It's always recommended to run two-conductor, shielded cable for each speaker module. The outer shield keeps the audio in and the noise out. The outside shield is grounded to the chassis of the radio equipment. At the other end of the circuit, the outside shield should then be terminated into a local ground source. This leaves the two speaker wires that go the speaker system for each channel and each speaker module.

Run shielded wires regardless of what the manufacturer may recommend — it won't hurt, and it will help minimize noise pickup.

If the marine setup comes with speakers, use those that they recommend. You might also check with an audio electronics specialist who might recommend substitute speakers that will give better sound reproduction. There are also electronic cross-over networks that might be integrated within the speaker system for added audio brilliance. Again, always run shielded speaker lines.

A speaker selector switch is a necessity for marine installations. On a long sail, the crew sleeping down below certainly doesn't want to hear the vibes of rock-n-roll music that might accompany the person on the helm. Selector switches might include the following positions: All speakers, Forward speakers only, Main salon speakers only, Master stateroom speakers only, and Helm speakers only.

You might even include a stereo headphone jack for those who may wish to listen or tune in music down below without disturbing others.

While there are literally hundreds of brands of speakers, few are impervious to moisture. This means you either keep the speakers dry, or plan to install speakers with special moisture-proof characteristics. While there are numerous manufacturers that produce top-quality, moisture-resistant cones, the following manufacturer has probably done the most in providing the marine industry with a truly waterproof speaker: Polly Power Products, 785 W. 17th Street, Bldg. H, Costa Mesa, CA 92627.

Their "Polly-Planer" line of speakers is what everyone seems to refer to when they talk about marine sound systems where the speakers may be mounted out in the open.

Noise filters

The chances of turning on the marine sound system with everything else onboard running and not picking up interference is slim. Don't plan to leave an installation until you start troubleshooting for noise pickup. Specialty filters are available to help knock out audio sound system interference in marine installations.

Here are the top three that actively serve the marine industry in providing marine-type audio noise filters: PAC — Pacific Accessory, 3613 W. MacArthur Blvd., #603, Santa Ana, CA 92704; New Mar, P.O. Box 1306, Newport Beach, CA 92663; and Marine Technology Corporation, 2780 Temple Ave., Long Beach, CA 90806.

These noise filters are applied first at each individual noise source. If a fuel pump causes racket on all the aft speakers, the filter goes on the offending pump. If the alternator whines throughout the entire system, independent of volume, filters go on the alternator. If electronic tachometers zing over the smooth sounds of your cassette, the tachs get the filters.

There are also general application filters that might go on the power feed input. It's always a good idea to put these filters in line when the installation is first put on the boat. There are also bypass filters that may go on each speaker lead to minimize the effects of radiated radio frequency energy from onboard transmitters from getting into your sound system.

The receiver itself may also contain noise blanking circuits. These are effective when someone fires up an outboard and slowly cruises by. Since you can't filter out someone else's ignition interfer-

ence, you can stop it with noise blanker circuits.

After everything is installed and all the filters are in place, try out your different ham rigs and make sure they don't interfere with your new sound system. Shielding those speaker leads (that act like a dipole antenna) will greatly reduce audio rectification within the amplifier and tuner section of your new auto sound setup.

That's it for this month, and please keep those cards and letters coming. Remember, if you need an answer to an installation problem, be sure and include a sketch of the layout as well as a self-addressed stamped envelope.

I am receiving announcements from maritime Volunteer Examination organizations that are offering upgrades in many distant ports throughout the United States and in local foreign waters. Congratulations to those of you who are giving your time to make the Volunteer Examination program work — especially for mariners thousands of miles from home.

If you are preparing to upgrade to General or Extra Class, don't forget to study our 13 wpm or 20 wpm stereo test preparation cassette. The 11 practice QSO's on each cassette closely parallel the information that will be on your code test and are an exact duplicate of the dit-dah ratio and tone specified by the FCC. These tapes are available for $9.95 plus $2 postage and handling. Be sure and specify whether you want the General or the Extra Class, 1½ hour-long, test preparation tapes.

Happy sailing, and see you next month. □

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

International 500 of-the-World

When a 10-10 member reaches the 500 bar, he automatically becomes a member of the "International 500 of the World" and receives a VP number. The VP number designates the members serial number in attaining his 500th 10-10 contact. A certificate is issued (for a small fee) by the Bar Awards Manager, Willie Madison, WB7VZI.

The International 500 of-the-World was the brainchild of Frank Orcutt, W4JO, back in May 1971. Frank was the 10-10 Net Awards Manager at the time. Frank had received his 500 bar (number 2 to be issued) and assumed that THAT had to be the end of number collecting! 500 bar #1 had been issued to Grace Dunlap, K5MRU, 10-10 #218, and during a QSO between Frank and Grace they talked about all of the activity and QRM around 28.8, the 10-10 Net frequency, with so little use of the band above 29 MHz. As a result of this QSO, Frank was convinced that something should be done to encourage full band occupancy. Frank proposed his idea of a 500 Club to Grace.

Frank proposed that she should be the president and he would be the secretary and "do all of the work." Grace says "who could ask for a better deal than that?", so the 500 Club was born. Members of the 500 Club were to use 29.5 as a calling frequency and urge others to "move up the band". During the early days, the 500 Club group sponsored many contests and special activities. A monthly news letter was written by Frank and outlined 500 club activities, contests and included articles of a technical nature with particular attention being paid to sunspot activity. As the 500 Club had no dues or other income, the group operated on the SASE system to mail members their monthly news letters. In 1974, a stamp bank was established where members could send "no more than ten first class stamps (if not retired) and were asked to send no cash, money orders or checks." Remember in 1974 first class postage was 10 cents!

The "VP" Award started as a one-year contest to see which 500 Club member could contact 100 of the VP's in the shortest time. K5AK was the winner — 9 months. In 1974, with most 10-10ers on SSB and sunspot activity near the minimum, the 500 Club calling frequency was moved down to "28.5 plus 5," and a one-year contest began on May 5, 1974 and ended on May 5, 1975. The purpose of this contest was to popularize the 500 Club's new calling frequency of 28.5 plus 5 and make as many contacts as possible — each contact lasting for at least 5 minutes. It is still a requirement today to obtain a VP Award (for each 100 VPs contacted) that the contact be for a minimum of 5 minutes at 28.5 plus 5

To date the following VP certificates have been issued: VP-100, 73; VP-200, 17; VP-300, 8; VP-400, 5; VP-600, 700, 800, 2; VP-900, 1. KA4DDY is the current champion VP number collector with PJ2WG a close second. They are the 500 club's biggest boosters!

A 10-10 member is automatically issued a VP number when applying for his 500 Bar. By the way, VP stands for Vice-President. Every member is an honorary Vice President — and there are now over 1600!

Frank Orcutt, W4JO became a silent key in 1978, and Grace Dunlap, K5MRU, (without whose help this story would have not been possible) is still president and VP Certificate Manager for the International 500 of the World.

10-10 Summer QSO Party

Harry Syring, WB1FTO, 10-10 #23934, has announced the Summer QSO Party will begin at 0000Z, 3 August and end at 2400Z, 4 August. If you are a paid-up dues member of 10-10, work as many contacts as possible and send your log information to S.H.O.T. c/o Jack Streets, WA5HZM, 5609 Whitehaven, Bellaire, TX 77401 before 1 September, 1985. A dupe sheet is required. Speaking of dupe sheets, I have one that I use and I will be glad to send a copy, with instructions for its use, to anyone for a SASE (no. 10 business size) to 18130 Bromley Street, Tarzana, CA 91356. This dupe sheet is a simple one to use and can be kept current during the contest period to eliminate dupe contacts.

If you are not a 10-10 member, the Summer QSO Party is an excellent time to work your contacts with 10-10 members and join the 10-10 gang. Number collecting is fun! If you need info about joining 10-10, just ask any 10-10 member or an SASE (No. 10 size) to me at the above address will get you all the information.

ARRL Southwestern Division Convention

HAMCON, the ARRL Southwestern Division Convention, will be held aboard the R.M.S. Queen Mary at Long Beach, CA on 9-11 August. 10-10 will host a booth on the convention floor. If you plan to attend, stop by the 10-10 booth and meet other 10-10 members and lets talk about 10-10 and 10 meters.

Novice phone privileges on 10 meters

A recent news release by *Westlink News* reported that the ARRL may soon file with the FCC for a rules change that would give Novice and Technician class license holders phone privileges on the 10-meter band. The ARRL proposal will be for SSB phone operation for the entry level license holders from 28.3 to 28.5 MHz. There would be no AM phone authorized for this band segment. This would not be a "no code" proposal, and would require the additional requirement of additional examination questions on voice operation. Remember, this is only an ARRL proposal under discussion at the time of this writing, however should it be forwarded to the FCC and result in a FCC rule making docket, we all can submit comments. Before you make a decision as to the merit of expanding phone privileges for the Novice and Technician Class license, think about the pro's and con's and if and when the ARRL or FCC asks for our comments, you will be ready to reply.

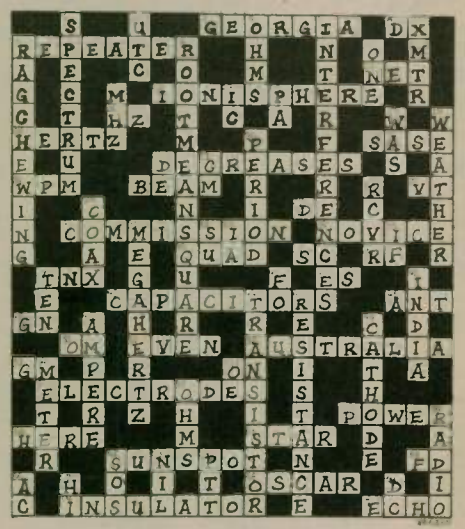
Closing notes

Remember to keep your dues current if you are a 10-10 member. If your dues have expired, there is no penalty for the renewal of your membership. Send your $4.00 ($5.00 foreign) to your call area manager. Your call area manager is the manager with the number of your call, regardless where you live.

If your call is a "1" district call, you have a new manager. Send your dues to John Schmitt, WA1ZLK, 66 Edward Road, Wattertown, MA 02172. If you are a "3" area call, send your dues or renewal to Jim Duppins, WA3RBQ, 2317 Windsor Ave., Baltimore, MD 21216. More district managers next month.

If you would like to receive a sample copy of the *10-10 International News*, the quarterly 32 page official news magazine of 10-10, send me 56 cents in stanps for a sample copy of the latest issue — Spring 1985. □

Puzzle Answer



TEACHER

Alan Kline, KB1DJ
P.O. Box 54
West Lynn, MA 01905

School stations — Part I

All the years that I have organized code and theory classes, I have always been disappointed with the passing rate of the kids under 21 years old. At the beginning of each Novice class, as many as 12 kids would show up. However, we were lucky if two or three stayed the full length of the course and passed.

Why is this so? Well, today's young adults just have too much to do already. With public school, religious school, scouts, organized sports and other personal hobbies all competing for their time, there isn't much left for Amateur Radio. But if we want our hobby to go into a growth mode and survive, we have to get these kids interested in Amateur Radio.

All around the country, there is a pattern developing that we hams can capitalize on. Many public school systems have been forced to cut back in spending due to budget cuts. Here in New England, school budgets were cut along with all municipal funding in order to lower property taxes. When the school budgets are cut, the school systems extracurricular activities are the first to go.

We have always had educational programs, such as the OSCAR Educational Program, that could be easily brought into the schools. As we do these types of Amateur Radio demonstrations for free, the schools have always welcomed us.

To get the kids interested in Amateur Radio, we could try to start a club station at every school in town, but we don't have the time or manpower to undertake such a project. What I suggest is that each ham radio club pick out one school system to work with. I propose a systematic educational program at each grade level to build up the students' awareness of our hobby. That way, the kids will be exposed to Amateur Radio enough to know if they ever want to make the time for it.

The most important age to gear your presentations to is the 4th to 8th graders. Somewhere around 4th grade, when the students are learning to become good readers, they start to think about possible career choices. By the 8th grade, many have to decide what their high school course of study will be.

They have to decide whether to stay at their local high school and pursue a college course of study or switch to a regional vocational high school to pursue a trade. As we all know, Amateur Radio has much to offer them no matter what they choose. Amateur Radio is one of the few hobbies that can have a great influence on one's career choice. It also adds to the quality of one's life.

Let's look at some examples of how to promote Amateur Radio at different educational levels.

Name _____ Skill Association

Coded Holidays

Write the holiday name.

1. _•_•/••••/•_•/••/•••/_/__/•_/•••
   C _ _ _ _ _ _ _ _ _
2. •/•_/•••/_/•/•_•
   _ _ _ _ _ _
3. _•••/••/•_•/_/••••/_••/•_/_•__
   _ _ _ _ _ _ _ _ _
4. •••_/•_/•_••/•/_•/_/••/_•/•/'/•••/
   _••/•_/_•__/ ,
   _ _ _ _ _ _ _ _ _ _ _ _ _ _
5. __/•_/_•__/_••/•_/_•__
   _ _ _ _ _ _ _ _
6. ••••/•_/•_••/•_••/___/•__/•/•/_•
   _ _ _ _ _ _ _ _ _ _

Write the number of the holiday under the picture.

Morse Code

A	•_
B	_•••
C	_•_•
D	_••
E	•
F	••_•
G	__•
H	••••
I	••
J	•___
K	_•_
L	•_••
M	__
N	_•
O	___
P	•__•
Q	__•_
R	•_•
S	•••
T	_
U	••_
V	•••_
W	•__
X	_••_
Y	_•__
Z	__••

Brainwork! On the back write the names of three other holidays. Use Morse Code.

Figure A

Elementary

Whether or not the elementary teachers realize it, their goal is the same as ours — successful communications. Be it reading, writing, speaking or listening, we are all concerned with the methods of communications. Kids communicate on short haul, one-to-one; hams communicate on long haul, one to one — the longer the better.

To introduce Amateur Radio to 4th graders, I suggest first supplying the teachers with some background literature about our hobby. I loan them a copy of Vince Luciani's (K2VJ) book entitled *Amateur Radio-Super Hobby*. After they read it, I donate it to their class's library.

On the day I visit the 4th graders, I bring four to six Heathkit CPO's, my IC-2AT walkie and a worksheet taken from the Cub Scout leaders idea book (see *Figure A*). I give a simple talk on communications and Morse code.

The worksheet is an exercise in translating code into the names of holidays. Some of the kids try their hand at sending their names in CW, and usually the discussion ends with a talk about electronics/communications careers that they understand, such as computer operators and programmers.

All this time, the walkie is turned off so they won't be distracted. But at a prearranged time, I turn it on, and lo and behold — someone is calling me. Don Robson, KA1FCC, is looking for me on our local 2M repeater. Don pretends not to know I'm at the school and he puts the mike of his 2M rig up to his ICOM low-band rig and we listen to some interesting 20M DX.

This bit of showmanship does not have to be explained to the kids, but it leaves them with a positive feeling about Amateur Radio, and that is all we want to accomplish.

Middle school levels

The next level to work with is the 5th and 6th graders. They are studying about the Americas and some foreign countries so they are already primed for an on-the-air demo where you talk to a few U.S. states and some DX. Usually I show this group the STS-9 Flight videotape and then talk about Amateur Radio a bit.

The demo is more elaborate than for the 4th graders. A simple trap dipole is hung by the kids, and we call CQ. The QSO's

(Continued on next page)

NJ Masonic ARC

Alfred Bein, K2BWQ

The power of communication is so great that man, who is amongst the most suggestible of creatures, is influenced to commit the most vicious and most horrible crimes as well as some of the most altruistic.

It is said that music soothes the savage beast. We know that words can stir up a storm of hate or calm the most violent. If it weren't for diplomacy and tact, the world would forever be at war. But words can and do effect entente cordiale.

Amateur Radio enables people from every phase of life — be it religious, intellectual or financial — and from everywhere in the world to "reach out," to talk, sometimes to meet, to understand each other, and to banish the fears and hatreds with which we are often imbued from childhood. Amateur Radio builds respect, understanding and trust.

A known medical fact is that many infants do not survive without love. Those who do manage to reach maturity are generally anti-social. Relate this to older people — especially to those who are handicapped, without the mobility to socialize, and you will find a morose, depressed and frustrated personality.

Retirement and nursing homes probably make efforts — to the best of their abilities — to design projects that keep guests mentally and physically occupied. It is most important to make people feel needed. If people are kept from concentrating on themselves and their problems, and are not treated as though they are a burden and are expected to die, they respond with alacrity.

We had hoped that an Amateur Radio station, operated by members of the New Jersey Masonic Amateur Radio Club and sponsored by Past Grand Master Most Worshipful Carl Brodin, could be established at our Masonic Home in Burlington, but the Trustees of the Home have temporarily deferred the offer.

An individual occupying a wheelchair is not necessarily incapacitated. He may be immobile, but he may not be senile. Many disabled people who receive therapy have been rehabilitated. This holds true for young as well as old, and many are returned to a full and active life.

Let me cite a microbio of some people:

Bob Gunderson, W2JIO, Edison Award winner (this is the highest award given to an Amateur Radio operator), teacher at the New York Institute for the Education of the Blind. He appeared on the radio program "This Is Your Life." Bob taught a deaf, dumb and blind boy Morse code and electronic theory, and though the FCC said it couldn't be done, to their amazement the boy passed the test!

What is so amazing about Bob? He was born blind. By the way, we had Bob down to the Burlington Home where he spoke to some of the guests and showed how he managed to do some of his intricate jobs. Want to meet Bob? We can arrange it!

Some years ago, the *Newark News* interviewed my son and daughter and me and ran an article depicting us as a "ham family." A severely handicapped victim of cerebral palsy read the column and had his dad call us. He was invited to see our station. David immediately stated that he, too, wanted to be a "ham."

We explained that to obtain a license it was necessary to pass an exam in code at a given speed and answer questions on radio theory. He said he was aware of the difficulty his ailment imposed but wanted to try. We warned him that failure and

Teacher

(continued from page 33)

are aimed toward the parts of the country they are studying about. Before the actual QSO, I ask the kids to make up a list of questions they would like answered. Most of the time, they are the standard QTH, WX, age and why are they home during the day.

Junior high school

Our next academic level to work with is the junior high school grades — 7th, 8th and 9th. I try to set up a completely portable low-band station on 80 to 10 meters, plus a simple 2M rig. The station is manned for two weeks in some central location, like the school cafeteria.

Prior to the actual station setup, some advance PR work is done. I contact the chairman of the Industrial Arts, Science and Social Studies departments. I invite them to a meeting about how they can use Amateur Radio in the classroom along with their daily lesson plans. Nothing beats a DX QSO with a Spanish- or French-speaking ham to get everybody's attention.

The station set-up usually consists of some simple computer, like the VIC 20 or Commodore 64 used for CW work. The use of the computer with a video screen readout helps to draw many to the exhibit. Over the two-week period, many students and faculty find the time to come by and visit with us.

Be prepared to have station operators who are active hams, knowledgeable about new licensing procedures and available from 7:30 a.m. to 4:00 p.m. A good source for these ops is your club's retired hams. Whether they are QCWA members or recently licensed, as long as they like kids and understand our goals, they will make good station operators.

High school level

In the 10th, 11th and 12th grades, the same format as the junior high school level can be followed. The high schoolers may not have time to take a code and theory course now, but at least you have educated them about Amateur Radio. They will know whether or not they are interested and someday, later in life, will make the effort to get their ticket.

Continuity

Now if you follow this educational plan for three to five years, you will have junior and high school-aged kids who are knowledgeable about ham radio and many will want to get their licenses. After following this format for a few years in three different school systems, I know it works.

From these experiences, I have come to some conclusions about how to start up a high school ham radio club and club station. In Part II of this series, I will discuss these aspects.

(To be continued) □

Visit Your Local RADIO CLUB.

ALABAMA

Birmingham Amateur Radio Club, Inc. (BARC)
Meets at the American Red Cross Building
2225 3rd Ave. North in downtown Birmingham, Alabama
1st and 3rd Thursdays/monthly at 7:30 p.m.
For info call David Black, KB4KCH, (205) 933-1313

Telephone Pioneer Amateur Radio Club of Alabama (TPARCA) 1st Thurs/monthly — 11:30 a.m., Rm N102, SCB Data Ctr 1st Fri/monthly — 11:30 a.m., Caf Pvt Rm, SCB HQ Bd WD4BXA/R 147.88/28 Coco Cmptr, Net Mon/wkly 8 p.m. K4FUM/R 449.3/444.3 — Info. N4DLE 205/663-2171, Bhm,AL

ALASKA

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

ARIZONA

Arizona Repeater Assoc., Inc. (ARA)
P.O. Box 5291
Phoenix, AZ 85010
4th Thursday/monthly except July/Dec. 7:30 p.m.
4250 E. Camelback Rd., Suite 475-K

Tucson Repeater Association
P.O. Box 40371, Tucson, AZ 85717-0371
2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.
Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)
(602) 747-8903 or 899-4776

CALIFORNIA

Amador County Amateur Radio Club
P.O. Box 1094, Pine Grove, CA 95665, Pioneer Elementary School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.
WA6WIY Rptr. — 146.835, 146.235.
Net Tues. 7:30 p.m.

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

East Bay Amateur Radio Club
Salvation Army Center
Rheem Ave. & 36th Street
Richmond, CA 94804
2nd Friday/monthly — 8:00 p.m.

El Dorado County Amateur Radio Club
P.O. Box 451, Placerville, CA 95667
W6HBH Repeater — 147.825 Out/147.225 In
Net Thursday 7:30 p.m.
Meets 4th Tuesday/monthly • Call for location

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

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

Golden Empire Amateur Radio Society (VEC)
Al Biegler WA6WJZ
Phone (916) 343-6141/call 146.25/85
Meets in conference room 3, Enloe N T Memorial Hospital, W 5th & Esplanade, Chico • 3rd Fridays/monthly - 8:00 p.m.

Livermore Amateur Radio Klub
3508 Gresham Ct., Pleasanton, CA 94566
Meets: Valley Memorial Hospital
Multi-purpose room, Livermore, CA
2nd Saturday/monthly — 9:30 a.m.

North Bay Amateur Radio Association (NBARA)
Homestead Savings
440 Santa Clara
Vallejo, CA 94590
4th Wednesday/monthly — 7:30 p.m.

North Hills Radio Club
Meets: 3rd Tuesday/monthly — 7:30 p.m.
Carmichael Elks Lodge
5631 Cypress Ave. • Carmichael, CA.
Net 145.19 Thur. at 8:00 p.m.

Sacramento Amateur Radio Club, Inc.
Contact: Norm Nelson, KA6YRC, (916) 428-7122
after 6 p.m. Meets: Army Reserve Ctr., Army Depot, Fruitridge and Florin-Perkins Road
2nd Wednesday/monthly — 7:30 p.m.

San Fernando Valley ARC Inc. (W6SD)
Red Cross Building
14717 Sherman Way
Van Nuys, CA 91704
3rd Friday/monthly — 7:30 p.m.

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

Sierra Foothills ARC
P.O. Box 3262, Auburn, CA 95604
Office of Education Bldg.
360 Nevada St., Auburn, CA 95603
2nd Friday/monthly — 1930

Simi Settlers ARC (SSARC)
P.O. Box 3035, Simi Valley, CA 93063
3rd Thursday/monthly — 7:30 p.m.
Bank of A. Levy (across Larwin Sq.)
K3HZP/R 147.165/.765 Simplex 147.48

South Bay Amateur Radio Association
P.O. Box 91 • Fremont, CA 94536
Fremont School, 40230 Laiolo Rd
3rd Wednesday — 7:30 p.m.

Stanislaus Amateur Radio Assoc. (SARA)
P.O. Box 4601 Modesto, CA 95352
Stanislaus Co. Administration Bldg.
12th & H Streets • 3rd Tues./monthly — 7:30 p.m.
145.39 MHz WD6EJF

Sonoma County Radio Amateurs, Inc.
Box 116, Santa Rosa, CA 95402
Hank Davis, W6DTV (707) 823-7885
County Office of Emergency Service
1st Wednesday/monthly — 7:30 p.m. rpter 146.13/73

South Bay Amateur Radio Assn (SBARA)
Fremont School, Laiolo Rd, Fremont
3rd Wednesday/monthly - 7:30 p.m.
Talk-in 147.015 MHz
Frank Kibbish, WB6MRQ/(415) 657-5730

Southern Calif. Amateur Transmitting Society (SCATS)
Vine Elementary School
1901 E. Vine St.
West Covina, CA 91790
1st Monday/monthly — 7:00 p.m.

Stockton-Delta Amateur Radio Club, Inc.
U. of the Pacific, Rm 122
Kensington & Mendocino
2nd Wed. monthly, 7:30 P.M.
Rptr. 147.165/765 Net Wed. 8:00 P.M.

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

West Valley A.R.A. W6PIY
Meets: Los Gatos Red Cross Bldg.
18011 Los Gatos - Saratoga Rd.
Los Gatos, CA 95030
1st and 3rd Wednesdays/monthly

Yolo Amateur Radio Society
Box 659 • Davis, CA 95616
Meets: Conf. room — Heart S. & L.
3rd & F Sts. (opposite police station)
First Friday — 7:30 p.m.

FLORIDA

Dade Radio Club, Inc.
Museum of Science
3280 South Miami Ave.
Miami, FL 33133
1st and 3rd Tuesdays/monthly — 8:00 p.m.

Platinum Coast Amateur Radio Society
1150 S. Hickory St., P.O. Box 1004
Melbourne, FL 32902-1004
Meets: 2nd Monday/monthly at Melbourne Red Cross
Talk-in on 146.25/85 or 146.01/61 rptr.

HAWAII

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

ILLINOIS

Bolingbrook Amateur Radio Society
532 Sheffield Rd.
Naperville, IL 60565
(312) 369-0747 / call in 147.93/33
3rd Monday/monthly — 7:00 p.m.

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

Dupage Amateur Radio Club W9DUP
Mid-America Savings and Loan
55th & Holmes (55th St. near RT 83)
Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.
(312) 971-1156 for more information

Fox River Radio League
Valley National Bank, Lower Level
Northgate Shopping Ctr. & RT. 31, Aurora, IL
(312) 898-2779 for more information
2nd Tuesday/monthly — 7:30 p.m.

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

Schaumburg Amateur Radio Club
Meineke Rec. Center, Schaumburg
3rd Thursday/monthly — 7:30 p.m.
Net on remaining Thursdays — 8:00 p.m.
147.285 and 443.625

Six Meter Club of Chicago - K9ONA
Rptrs. 146.37/146.97 448.300/443.300
Info net - Tues. 9:00 p.m. 146.37/97
Annual Hamfest 2nd Sunday in June
Santa Fe Park, Willow Springs, IL.

INDIANA

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

IOWA

RSCB (Radio Society of Council Bluffs)
Richard Swig, WA0ZQG, Secretary
46 Rolling Hills
Council Bluffs, IA 51501
2nd Tuesday/monthly — 7:30 p.m.

MARYLAND

Frederick Amateur Radio Club
Old Frederick Court House
Rick Ogden, N3RO
(301) 845-2670
Meets: 2nd Tuesday/monthly — 8 p.m.

MASSACHUSETTS

Billerica Amateur Radio Society (BARS)
1st Wednesday/monthly - 7:30 p.m.
Honeywell Cafeteria
300 Concord Rd., Billerica, MA 01821
Near Jct. Rte. 3 - Info - Rptr. 147.12

Quannapowitt Radio Assn. (QRA)
United Methodist Church
Vernon St.
Wakefield, MA 01880
4th Friday, September-May at 8:00 p.m.

Whitman Amateur Radio Club (WARC)
Pine Street, P.O. Box 48
Whitman, Massachusetts 02382
Call-in 147.825/225
1st & 3rd Mondays/monthly — 8:00 p.m.

MICHIGAN

South Eastern Michigan A.R.A.
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15
Grosse Pointe North High School
Building C, Cafeteria Commons
For info contact N8CDY (313) 885-5557

MISSOURI

Heart of America Radio Club
American Red Cross
3521 Broadway
(816) 756-2365 x65
3rd Tuesday — 7:30 p.m.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG
P.O. Box 911, Dover, NH 03820
(603) 742-0130/332-8667
2nd Sunday/monthly — 7:00 p.m.
Dover Dist. Court. Talk-in 147.57

NEVADA

Las Vegas Radio Amateur Club
P.O. Box 27342, Las Vegas, NV 89126
Operating 146.34/94 — open autopatch — Net Tuesday 8pm
Meeting 2nd Sunday 7:30 pm at Royal Ridge Clubhouse
4601 S. Decatur near Tropicana Ave — Talk-in 34/94

NEW JERSEY

Central New Jersey Chapter No 138, QCWA
Net: Ea Tue. evening - 10:00 p.m. 147.645/147.045 MHz
Mtgs: Quarterly; Membership or more info:
Ray Rogers, KA2QOC, Sec., 71 Crestview Dr.
Middletown, N.J. 07748 (201) 741-1759

Gloucester County Amateur Radio Club (GCARC)
Woodbury V. F. W.
1st Wednesday/monthly 8:00 p.m.
Woodbury, NJ
For info call K2JF (609) 589-2318

NEW YORK

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

Orleans County ARC
Civil Defense Center
West County House Road
Albion, NY 14411
3rd Wednesday/monthly - 7:30 p.m.

Staten Island Amateur Radio Assn. (SIARA)
P.O. Box 495, Staten Island, NY 10306
3rd Friday/monthly — 8:00 p.m.
Rm. B-201, College of Staten Island, Sunnyside
Club Repeater — KA2PBT/R — 440.825/445.825

Westchester Amateur Radio Association (WARA)
Scarsdale Village Hall
Scarsdale, New York 10583
Bernard Dubbs, President, WA2FSR
1st Wednesday/monthly — 8:00 p.m.

Westchester Emergency Communications Assn. (WECA)
147.66/147.06, 222.80/224.40, 447.475/442.475
Mtgs: 2nd Monday/monthly - 7:30 p.m. Little Theater
County Center, White Plains, N.Y. For further info write:
P.O. Box 131 N. Tarrytown, N.Y. 10591. Call (914) 631-7424.

NORTH CAROLINA

Rowan Amateur Radio Society
Supplementary Education Building
Salisbury, N.C. 28144
2nd and 4th Mondays, 7:30 pm

OHIO

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

C.A.R.S. (The Clyde Amateur Radio Society)
Ervin Remaley, KA8CAS, Secretary
2nd Tuesday/monthly — 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 144.75/145.35

NOARS - Northern Ohio Amateur Radio Society
P.O. Box 354, Lorain, OH 44052 - 3rd Mon. 7:30 p.m.
K8KRG — Home of the WW II Submarine USS COD
WB8JBM — Noars Contest Station — K8KRG/Repeaters:
— 146.10/70; 144.55/145.15; 449.8/444.8; 223.10/224.70

OREGON

Oregon Tualatin Valley ARC
Beaverton Elks Lodge
3500 SW 104th Ave.
Beaverton, Oregon
2nd Wednesday/monthly — 7:00 p.m.

U.S. VIRGIN ISLANDS

St. Croix Amateur Radio Club
Florence W. Williams Public Library
49-50 King Street, Christiansted
St. Croix, U.S. Virgin Islands
1st Saturday/monthly - 1:30 p.m.

VIRGINIA

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

Southern Peninsula Amateur Radio Klub (SPARK)
Repeater 146.13/146.73 - K4DHO (804) 851-5573
Salvation Army Community Center (Big Bethel Rd.)
P.O. Box 4128, Hampton, VA 23664
1st and 3rd Tuesday/monthly — 7:30 p.m.

Virginia Beach Amateur Radio Club (VBARC)
Open Door Chapel
3177 Virginia Beach Blvd., Va. Beach, VA
1st Thursday/monthly — 7:30 p.m.
For information (804) 497-1235

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc.
Bob Morris, WA8CTO, Sec.-Treas.
308 Edgewood Cir., Ripley, WV 25271
First National Bank of Ripley, WV
1st Thursday/monthly — 7:30 p.m.

frustration could be damaging to his morale. He persisted. Obviously such desire could not be turned aside. We agreed to help, and David and I studied hard together.

In the interim, my lady and I attended a dinner at which the Director of the Clifton Cerebral Palsy Center was present. She sought me out as she had been told that I was encouraging David.

She berated me because she said that David, who was a student at the Center, was so bad his mother had to hold his head in order for him to drink. All this was true; his hands and his head shook. To watch him could move a heart of stone to tears. But his spirit, mind and will were greater.

Well, I believed in David and felt he could overcome his adversity — *and he did! He got his license!!*

So much for the handicapped, old or young. All that is needed is the will to accomplish, and all they need is our belief in them, our help and the knowledge that we care.

Amateur Radio is a great stimulant, and sooner or later, many supposedly "over-the-hill" people would respond to this great hobby which takes so many into every corner of the world. We're not asking anyone to obtain a license or otherwise operate a station; we're only asking for a chance to enable others to enjoy the fruits of the hobby. □

Virginia Beach ARC Certificate

Congratulations to the following stations who have been issued a Virginia Beach ARC Certificate: Carolyn Johnson, KB4EOQ, of Daytona Beach, Florida; and Jack Stahl, VQ9YR, of Diego Garcia.

If you're interested in receiving one of these certificates yourself, read on.

1) Work five different VBARC club members OR one club member and club call WA4TGF when designated as a special event (must be a different member from the one using the club call).

2) *Must be outside a 90-mile radius.*

3) Send with confirmation a list of members worked with QSL information and an SASE to: WA4TGF Virginia Beach ARC, 4821 Rosecroft St., Virginia Beach, VA 23462

An Extra at 13

An Extra Class Amateur Radio license at the age of 13 is the accomplishment of Joel Kluender, KA9SAD, of South Bend, Indiana.

Joel, a member of the Michiana Amateur Radio Club of South Bend, moved from Novice to Extra within a year. He got his Novice ticket on 21 May 1984 after completing a class sponsored by the club with his General in August and Advanced in January at the South Bend Hamfest.

He also interested his dad in Amateur Radio and the father, Harold, passed the Novice test on 06 May 1985, the same time Joel got the Extra. Joel has worked 53 countries. — *George A. Scheuer, WB9SCC* □

Joel Kluender, KA9SAD, of South Bend, Indiana is proud of his new Extra Class call.

• Share your knowledge with your fellow amateur and Worldradio reader •

Maureen Pranghofer, KFØI

I sat with the 2-meter hand held and asked if someone could take a piece of traffic for me and put it out over the hf bands. There was no response. I tried another repeater and changed my tactic. "Do you know how I might get a message out over hf? What's the best way to pass an hf message out here?" The answer came back. "Well, I'm not sure."

I'm sitting in the HANDI-HAM Headquarters station with a rig on in the background. There is a net on the air and someone has traffic for a large metropolitan city. Although I have heard people check in from that city, no one answers the net control's request for a station from that area. It's true that it is not possible to stay glued to the rig and stations may not have been around, but more likely I think, the problem is the fear of traffic which keeps amateurs quiet when the time comes.

When I like to impress people with the thrills and fascinations of the amateur radio hobby I always tell them how it can be used to send messages. But to tell someone this and then go to the rig to show them how it is done and find someone who doesn't seem to know the first thing about traffic, or to not find a recipient for it when it is going to a populated area, is almost embarrassing.

Surprisingly enough traffic handling is one area in which many HANDI-HAM members excel. Often times the person on the other end does not know that the fellow taking his message is using a tape recorder, keeping track of it in his/her head, or may be using a Braille writer or even a computer with speech or Braille output.

One of these people is Bill Schober, N6FWG, of Novato, Calif. I recently had the opportunity to visit Guide Dogs for the Blind in San Rafael, California for a three week period while I was in training with my new guide, Kelly. Bill and his wife appeared at the school one Saturday night after class and asked who had any messages they wanted to send. Many of the students did. In our class there were 15 students from all parts of the U.S. and Canada. Many of these people were eager to let families know that they and their new four-legged friends were doing okay.

Each message was sent with ARRL 7 or a request for a response. In a few days students received phone calls from the traffic recipients indicating that the messages had gone through. This was a great service for the students and a good exposure to ham radio. One of the people in the class said it was a highlight of her stay at the school. A couple of other students asked some serious questions about what ham radio involves. Who knows? It may have been their ticket to someday becoming licensed.

About two weeks after the initial traffic was passed, the Schobers were back again taking traffic from people before they left the school. This was so that any last minute travel arrangements could be gotten to people who hadn't been contacted by phone, or it would reconfirm plans.

I asked Bill and his wife, Arlene, how they got started with their bi-weekly visits to the school. They indicated that they had felt that just being on local two-meter nets was not enough and they wanted to provide a service.

There are many ways in which hams provide public services, but sometimes it takes some creativity to find a place in which service is truly needed which is not over run. What I mean is that if you decide you want to provide a public service and get on 2-meters and ask how you might help, people will probably either give you a lot of direction or will tell you about some upcoming event in which many area hams are participating.

A couple of years ago I heard that help was needed for a local marathon. I signed up to help and arrived with 2-meter rig in hand. Although I was kept quite busy, there were many people who had given up their valuable time and had nothing to do. So be daring, branch away from what everyone else is doing and you may find a way in which you can provide service, feel good about yourself, and show others what ham radio is all about. □

Offer a friend a whole new world

Most of us know a friend, neighbor or family member who is confined to a "Lonely Island"—whether it's a bed or a home—because of physical or visual handicaps. With services available, you could offer them a new world of communication and service. Amateur Radio is fun, too—it's the thrill of traveling to famous and faraway places without ever leaving your "shack," and the fellowship that results from making new friends around the country on the air!

There are hundreds of handicapped amateurs who enjoy the hobby every day. They've found that with a little perseverance, patience and practice, a ham ticket and its accompanying rewards can be attainable. It takes some hard work, but it's worth it!

A valuable therapeutic tool, Amateur Radio continues to hold a profound appeal for individuals with physical handicaps. It is a means of people-to-people contact on a basis of absolute equality.

Sources of training materials pertaining to Amateur Radio are available in non-printed form. A good supplement of home study is a class, or a course in Amateur Radio sponsored by a local club. Addresses of clubs in your area are available from the ARRL Club and Training Department. Many clubs hold classes and have members who may provide personal assistance in studies.

The Courage HANDI-HAM System can help, too. The HANDI-HAMS are an international service organization of over 2,000 handicapped and able-bodied radio amateurs working together to bring Amateur Radio to individuals with physical handicaps.

There are HANDI-HAMS members in every state and in 20 other countries ready to help. They can provide textbooks (on tape, if necessary), code practice tapes, a key and a code practice oscillator. There are local HANDI-HAMS to assist in studies at home. Once the license is obtained, the organization may loan basic Amateur Radio equipment to get the person started on-the-air! There are no dues to join, only a pay-what-or-if-you-can.

The ARRL membership fee, which includes **QST** magazine, is currently $25. However, visually handicapped members pay dues of only $2 per year, without **QST**. (**QST** is available on flexible discs from the Library of Congress through its Regional Library system.) This gives blind members who are already licensed an opportunity to vote as League members, run for offices, and otherwise share in the privileges of full membership.

One of the services the League offers is the Program for the Disabled. Administered by the Membership Services Department at HQ, the program serves as a clearing house for requests from the amateur community and maintains a resource file containing schematic diagrams and sources of special devices for the handicapped ham. The program heartily supports the fine work of organizations such as the HANDI-HAM System and the Hadley School for the Blind.

There are many addresses available for information. Here is a partial list:

National Library Service for the Blind and Physically Handicapped
1291 Taylor Street NW
Washington, D.C. 20542

National Braille Assn.
Braille Book Bank
422 Clinton Avenue South
Rochester, NY 14620
(716) 232-7770

Correspondence Course:
Hadley School For The Blind
700 Elm Street
Winnetka, IL 60093
(800) 323-4238

Southern California Regional Library for the Blind and Physically Handicapped
Braille Institute of America, Inc.
Library
741 North Vermont Avenue
Los Angeles, CA 90029
(213) 663-1111 ext. 285

Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
(612) 588-0811

Worldradio offers blind amateur cassettes of their publication of happenings in Amateur Radio. A $3 fee for tapes is made on a one-time-only basis; this contribution funds the costs. Send your name, call sign and address to: George Hickin, W4GH, P.O. Box 7453, Macon, GA 31209.

A more complete list of available services is included in the ARRL Program, more than space will permit listing here. If you have any questions regarding additional services, I'll be happy to share the information. Usually I'm monitoring the repeater, or you may write to me: Bob Pickett, N6EYV, 2735 Arlington Ave. #13, Torrance, CA 90501.

— Mt. Wilson Repeater Association □

Send NEWS and PICTURES to WORLDRADIO

Esther Given, W6BDE

The Quarter Century Wireless Association is anxious to attract the favorable interest of all amateur radio operators who were licensed during or prior to 1960 (25 years ago). The interim term may have been interrupted by a lapse but the requirements are that a candidate for membership must have held an amateur license 25 years ago and hold a present license. The exact anniversary of the date of first licensing is not critical. Anyone who received a license any time in 1960 is eligible to join QCWA any time in or after 1985.

It is difficult for an organization which bases its membership eligibility on a quarter century time element to project a youthful image. However, QCWA can be attained by many who were licensed in their early school years who now are in their late 30s or early 40s. Many who entered our hobby as novices in the last three decades have contributed much in amateur experimentation and electronic advancements. QCWA wants and needs these "middle-aged" amateurs and urges them to look upon attainment of eligibility as an achieved milestone.

The QCWA executive board is accutely conscious of the need to improve the organization's image and to project it favorably to the eligible amateurs of the world. QCWA CW and phone nets are conducted by the host organization and also by many of its 154 chapters. It is often a surprise to find someone checking in who has all the qualifications to become a member but has never heard of the organization. QCWA wonders not "Where has he been?" but "Where have we been?"

In recent years several QCWA chapters have set up a booth at a convention or hamfest in their area. Such promotional efforts have attracted many new members to QCWA, giving chapters increased membership not only from signing up new QCWA members but attracting members not previously affiliated with the local chapter.

Promotional kits for use at conventions or hamfest contain pertinent information on the organization, application forms for membership or for certificates available to members. They may be obtained by writing QCWA Headquarters, 1409 Cooper Drive, Irving TX 75061.

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QCWA Chapter 154, Palm Springs, California is the latest addition to the QCWA chapter family. Twenty charter members form the nucleus of the group which held its initial meeting on April 17, 1985. Officers include president, Robert Kileen, N6EHR and Secretary, Gene Todd, W6BBY.

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Two honorees of QCWA's Hall of Fame have recently become silent keys. Each had distinguished himself in amateur radio circles and had been recognized for outstanding achievement. They served their hobby well and will be long remembered for their accomplishments.

RAY MEYERS, W6MLZ, was selected in 1979 as the first recipient of this coveted award. His first amateur license was issued in 1910. At age 15 he was a licensed telegraph and cable operator. Serving in the U.S. Navy in both World Wars I and II, his duty included service as a crew member aboard the trans-polar submarine, "Nautilus" on its ill-fated mission in 1931. He retired from the Navy in 1947 having risen to officer in charge of CIMPAC Radio Pools.

One of Ray's most outstanding contributions to humanity was his lifelong devotion to aiding the disabled. He sponsored the first International Handicapped Net which numbered some 2400 handicapped radio amateurs all over the world. He was a member of President Reagan's Committee on Employment of the Handicapped. Recognition of his tireless efforts brought Ray decorations, citations and medals from all over the world.

DON WALLACE, W6AM, 1983 recipient of QCWA's Hall of Fame award and considered by many the "Dean of DX" had been licensed since 1912 at age 14. He served in the Navy in WW I and was chief radio operator aboard the *USS George Washington*. President Wilson's yacht and handled the U.S. diplomatic traffic at the Peace Treaty in Versailles.

Don became famous for his designs and experimentation in amateur radio early in his ham career. He was proficient in both International and American Morse codes.

In 1945 he purchased the ridge-top site of the old Press Wireless facility near Palos Verdes, California, a 24 acre "ranch" dotted with antenna poles ranging from 75 to 140 feet in height. Until he reached his 80's, Don climbed the poles and did his own antenna maintenance.

He had gleaned top honors in over 60 DX contests in his 73 years of amateur activity. By 1980 Don had confirmed 365 countries worked.

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QCWA's 1985 annual convention will be held 26-29 September, at the Hyatt House in Winston-Salem, North Carolina. Piedmont Chapter #126 will host the convention with assistance from Palmetto Chapter #89. Extensive plans for the enjoyment of members and their guests are underway.

Convention activities include the annual board meeting, an open forum, a breakfast with entertainment, a banquet, activities and tours for guests and unlimited enjoyment for everyone.

Winston-Salem, a cultural haven, features the Southeastern Center for Contemporary Arts, The Museum of Early Southern Decorative Arts in the restored Moravian settlement of Old Salem and Reynolds House, where a major collection of American art is housed in the former home of tobacconist, R.J. Reynolds. □

A moment of silence

At a summer meeting of the Northern Lights Chapter 92 QCWA held at the Pioneers Of Alaska Snyder Park, Wasilla, Alaska, the following resolution was adopted:

BE IT RESOLVED THAT

WHEREAS, a moment of silence in tribute to soldiers of past wars in every land who gave their lives in battle, is a memory and tribute to their sacrifice;

AND WHEREAS a moment of silence also recalls the loss of life by friends near and dear in the past year;

AND WHEREAS a moment of silence in communications by Amateur Radio throughout the world would serve to remind us of the need for peace and understanding among mankind;

AND WHEREAS, Armistice Day serves to mark the end of hostilities in World War I — "The War To End All Wars";

AND WHEREAS that Armistice Day was set on the 11th day of the 11th month at the 11th hour;

Now be it hereby resolved by the Northern Lights Chapter 92 of the Quarter Century Wireless Association of Anchorage, Alaska.

That one minute of silence be observed by Amateur Radio operators throughout the world on the 11th day of the 11th month on the 11th hour at the 11th minute GMT in honor of those who gave their lives in past conflict and in honor of the living seeking peace on this Earth.

— *H. W. Hitchen, KL7PG* □

Getting together on schedules

Sometimes after agreeing on a time and frequency, you find the "spot" loaded with so many signals, you sense the hopelessness of even trying to make a call.

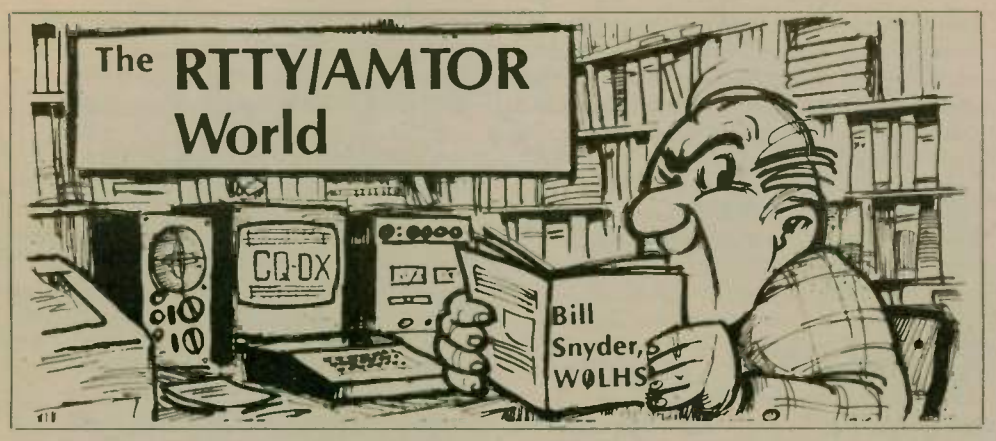
It helps, of course, to have agreed on who should do the calling. When both call, it is much like trying to find each other in the woods, when both keep on the move. It makes more sense for one to stand in one place and keep calling.

If it is not an emergency and you find conditions against you — such as during times of QSB (heavy fading signals can make it too difficult to carry on a good QSO, and doubly hard to get together in the first place) — rather than disrupt all those who are already there struggling to stay in contact, far better to give up and think about it for the next try.

While meditating your plight and making plans, think of the need to have a place to come back to for further instructions and setting up a better "spot" or change of mode or method of attack. To help you, write to ARRL and procure a *new* edition of the Net Directory. Nets change or drop off at times, so check it out.

If possible, locate a net that might be heard by the station you seek to sked. Then, instead of just assuming you are welcome to use such net's sessions for helping you maintain contact with a regular sked, listen or check in to the net operation. If you happen to be in an area where you might occasionally assist the net by making a delivery of traffic, offer your services.

And if you suspect I'm trying in a sneaky way to get you into net operation, it is not "sneaky" at all. I'm merely suggesting a good means whereby you might be able to make skeds and have a better means of assuring success, rather than do all the wild calling I sometimes hear, that surely must disturb many and tire you out. — *Armond D. Brattland, K6EA/Ø* □



If you have entertained the idea of making a DXpedition to Africa the following story should give you an idea of some of the hazards you might encounter. When Bob Leo, W7LR, and I were operating from VQ3 and VQ4 lands, the wheels through customs and licensing had been greased by experts, so we had no troubles whatsoever. But Walter Skudlarek, DJ6QT, bumped smack dab into a situation that can happen in some countries — and particularly in those we rate as "juicy DX."

If you are smitten by RTTY DX ing, you probably have more than one rare QSL in your DXCC collection with Walter's name on it. Here's the list: C5AAN, 3B8RS, 8Q7CC, DJ6QT/CT3, 3V8AS, D44BC and most recently, 5V8WS. Walter is very well-known in RTTY circles!

Walter's recent trip to Africa began in Togo. There he made 300 RTTY contacts with 40 countries. His plan was to work a few days from there, then move on to neighboring Benin where he has held the license for TY0ABD since 1970. Prior to moving his station to Benin, Walter took a taxi from Togo to the little African country and discussed the validity of his license with the Post and Telegraph authorities. He was told everything was in order. There was no termination date on his TY0 license, it apparently had been issued for his lifetime. With such assurance, Walter went back to Togo and filled the demand for 5V8 QSL cards.

On 15 March, Walter moved to Benin with all his gear. He arrived late in the evening. The next day he was granted permission to mount his antenna on the roof of the hotel. After installing the groundplane and checking the SWR, Walter made three test QSOs. At this point he answered a knock on his hotel room door. It was a member of the hotel management staff who demanded to see Walter's permission to install the antenna. Walter showed him his papers and told the questioner the name of the person who had authorized the erection of the skywire.

Fifteen minutes later the man was back with a security officer and an interpreter. Walter tried to explain to them what it was all about, and also promised to refrain from operating until Monday when he would re-check with the licensing authorities. With that, they left his room.

After 30 more minutes passed, another knock on the door brought nine people who lifted Walter's passport and then escorted him to another part of the hotel. The group also dismantled all of Walter's ham gear and removed it from the premises.

Walter was taken to a room guarded by police who were brandishing machine guns. The hotel supplied Walter with two interpreters to help with translation, and as Walter puts it, probably for his security. Then the group loaded Walter and his gear into two automobiles and hauled them to the Ministry of National Security for hours of questioning.

Later, after being instructed to return the following morning for more interrogation, he was allowed to go back to his hotel. The officials kept his ham gear and passport.

Upon Walter's arrival at the hotel, he received a phone call from the German Ambassador who had been advised of his arrest. Walter explained it all to the ambassador and then asked him not to do anything at that moment, but to wait.

The next day the interrogation lasted five hours. Walter had to teach his questioners all about Amateur radio, and through interpreters, try to explain why "a crazy German would come to Benin with a transmitter and try to contact people he doesn't even know!" At the end of this session, the official promised to give back his equipment and passport the following day.

When contacted the next morning, the officials again promised to deliver the gear and passport the "next day." After three more days Walter called the German Embassy and told them to get to work on his problems. It was now Wednesday. At 10:00 p.m. the authorities contacted Walter, gave him his passport, and offered to return his gear on Thursday.

But nothing really happened until Saturday, when Walter was scheduled to leave the country at 1:00 a.m. At 9:00 a.m. that morning, the police phoned and said he could come in and claim his equipment. When he did, Walter had to explain to them how everything fit together and worked. The officials were especially interested in the Tono 9100. Apparently they could not believe it is just a teleprinter! So, after a week of exasperating effort, Walter had his gear back — with only one hour to plane time.

Will Walter quit bringing us new and rare countries on RTTY? I don't think so. He says he will try again to put RTTY on the air from Benin. If he succeeds it will be his ninth "first-time ever" DXpedition. I think Walter deserves to be nominated to the RTTY DXer's Hall of Fame! Any seconds to the motion!

Steam RTTY

"Steam RTTY," as Minoru Tsuda JA1DSI, so aptly calls it, does put a thermal strain on any ham transmitter which is not designed for continuous 100% duty-cycle operation. Many rigs must be run at reduced power due to heating. RTTY requires a full-duty cycle, while AMTOR with its off/on operation is not so demanding.

When I had a Kenwood TS-180, I paid little attention to the warning to run it at low power. Now and then, the thermal protective circuits would drop the power if the heat-sink temperature got too high. I solved that problem with a little muffin fan blowing on the heat-sink. It ran like a charm full tilt!

Next I owned a TS-930. No outside blower was required for steam RTTY; the internal fans took care of the heat problem quite well. I did, however, limit my transmissions to 10 minutes — a figure suggested in the instruction book. After this length of time, the heat-sink would get fairly warm, but the protective circuits never chopped the power like on the TS-180. The 930 was the ideal rig for RTTY and AMTOR use. I had to modify the AGC to make it work properly on the chirping mode. In two years on AMTOR, I never had a bit of trouble with sync problems.

When I read the ads about the Kenwood 940 being able to handle a 100% duty cycle for one hour, I had to try one. Well, it's true — the 940 runs as cool as the proverbial cucumber. It's amazing! At last a manufacturer has taken steam RTTY into consideration when they designed a transceiver.

I'm still learning to manage the memories (40 of them) and the scanning features (great when watching for OSCARs to appear).

So far, the only things I would like to improve are the meter face and one of the memory input switches. The meter must have been designed by either an advertising man or a "stylist." Whereas the 930 had a back-lit yellow face, the 940 has a black background with red and yellow lettering. It is hard to see the needle against the background, particularly in dim light. I suppose they changed the dial simply to change it cosmetically, not to improve its utility.

The other fault is the placement of the "memory input" enabling push-button. It should have been located where two fingers of one hand could input a frequency; instead, you must use both hands to log in a QRG on some of the 10 key pad buttons.

Other than that, I think it is just great for RTTY operations. I haven't had it long enough to evaluate it on AMTOR, but I'll get around to it shortly.

Mailbox 1514

A few columns ago, I said AMTOR programs written for the USA will not work on the 50 cycle lines in Europe. Well, I was wrong. A nice note from Travis Brann at Kantronics informed me that their programs for the C-64 include an automatic PAL routine for 50 cycle operation. Travis also sent a sample copy of *Computers and Amateur Radio*, a bi-monthly publication featuring equipment news and computer programs for Amateur Radio use. The article on packet in the March-April issue was very interesting. The address of the publication is 1202 East 23rd Street, in Lawrence, Kansas.

Mickey McDaniel, W6FGE, is looking for help. He has a Tono Dragon model 64 computer and would like to hook it up for RTTY. Mick would appreciate hearing from any readers who could help. Write him at 940 Temple Street, CA 92106.

Al Webb, W1HOD, brought back a lot of memories with his letter about the early days of RTTY. Al and the late W1EVZ had the first Model 12 TTY machines in the New England area. At that time they were operating AFSK on 2 meters only; the FCC had not opened the HF bands to RTTY transmissions.

Al also mentions the work of John Williams, W2BFD, one of the real pioneers of amateur teletype. John was instrumental in obtaining Model 12 machines from Associated Press for those who could afford $50. John also designed a tuning unit, supplied the coils for the filters, and printed a TTY newsletter by running the punched tape over and over again. Yes, Al, I recall those days — for I, too, got my Model 12 and filters through John way back in 1952. I was ready to go the day the FCC said it was legal to operate on 40 meters. What a thrill!

Lou Mihalyfy, W8UML, asks for help in copying press stations outside of the ham bands. I suggest, for starters, Lou obtain a copy of Dave Ingram's, K4WTJ, book entitled RTTY TODAY. There is a list of press and commercial station frequencies which might be helpful to him.

DX activities

I had a very nice chat with Dick Beaman, KF6ME/DU2, at Clark Field in the Philippines. Dick indicates his QSL address is OK in the 84/85 Callbook and can be QSL'ed with domestic USA postage.

Dick will only be active until Spetember, when his duty station changes. Another station soon to be active from Clark is KA3DWU/DV2. The "V" indicates a license comparable to our General Class.

When the 20-meter band is open to Asia, look for these regulars: C21RK, VI8HA, YB2BGZ, WA0OII/KH2 and HL9AV.

Congratulations go to George Hitz, W1DA. He is the proud possessor of ARRL RTTY DXCC#99. It only took George a little over one year to accomplish the feat. That should prove DX is out there!

Sable Island, that little spot on the east coast of North America, may be on RTTY from time to time through the courtesy of Wayne King, VE1CBK. Wayne makes a business trip to Sable every seven or eight weeks. DXer Andy McLellan, VE1ASJ, has arranged for Wayne to take a Tono 7000 along on these two or three-day junkets. So RTTY from Sable may be a reality. The Canadian government only allows work-related trips to the tiny island because of troubles in the past with other visitors.

JH2PDS operated 8J2ITU, a special event station in Japan during a short period in May. QSL's via JARL.

Eavesdroppings

"I AM A GREEN THORN TO RTTY."... "WONDER WHEN THIS BAD IS GOING TO GET BETTER?"..."HAD MY DUMMY LOAD HOOKED UP — AND WORKED 32 LOCALS ON THE DUMMY."..."I'M GETTING SO I CAN'T STAND THE DRIVEL ON SSB."... "I JUST TOOK MY DOG AND WIFE TO OBEDIENCE SCHOOL."..."THE HONEY-DO'S ARE ALWAYS IN A HOLDING PATTERN HERE."..." I AM OKAY IN ANY CALL BOOK BUT THE ADDRESS IS WRONG."..."I WAS MARRIED TO A GIRL FOR 3800 YEARS WHO REALLY THOUGHT SHE WAS GOD!"..."WE GOT A DIVORCE AND PLAYED GOLD MINE — SHE GOT THE GOLD AND I GOT THE SHAFT."..."I MARRIED A GIRL WHO LOOKS 30 BUT IS 50. SHE HAD BEEN MARRIED TO A PREACHER AND HER LIFE WAS PRETTY ROUGH."..."THE COMPUTER SCRABBLE GAME HAS 12,000 WORDS IN MEMORY — I ONLY HAVE ABOUT 600."..."I HAVE MORE FUN WITH A FOOD PROCESSOR THAN A WORD PROCESSOR."..."I NEED TWO DISK DRIVES HOOKED TO MY BRAIN."... "MISSED YOUR NAME DUE TO A GREEDY WOODPECKER."..."IT'S THE RAINY SEASON HERE SO WILL BE DUCKING OLD 'FLICKER AND FLASH!' ...THE COPY THAT TIME LOOKS LIKE A PICASSO, I DON'KNOW WHAT IT SEZ."..."A NURK IS THE LOWEST FORM OF A NERD."..."MY BUFFER IS EMPTY AND THE BLADDER IS FULL." ..."QTH IS WYOMING, MICHIGAN."... "QTH IS A SORE ISLAND."..."I'LL CUT HIS COAX THE NEXT TIME I'M IN VANCOUVER!"..."THIS MODE IS BEAUTIFUL. IT'S RIGHT UP MY NOSE!"..."I HAD A SPELL IN CALIFORNIA AND ENJOYED IT VERY MUCH."..."PSE PSE PSE FOR A NEW COUNTY."..."LOCATED 62 MULES FROM SYRACUSE."...CALLSIGN IS THE CLUB STATION OF PRAVDA NEWSPAPER STAFF."..."I CALL MY WIFE 930 CAUSE SHE IS THE NEXT BEST THING TO MY 940."..."I LIKE RTTY BECAUSE I COUGH A LOT."... "MY GARDEN GROWS A TERRIFIC CROP OF WEEDS."..."FORGOT YOUR NAME AND MINE."..."SURE LIKE THIS KEEN WOOD GEAR:"..."I MAKE A LOT OF SPELLING MYSTAKES."... "BEST COMPUTER GAME IS FRONTIER FREDDIE — I LIKE THE MUSIC." ..."HAVE A GOOD DAY IN THE WORK HOUSE."..."LAST NIGHT WE WATCHED A RENTAL MOVIE: FIDDLER ON THE ROOT."

I have noticed that some computers do not transmit the carriage return and line feed signals that return the printer to the left side of the page. The computer may wrap-around on the CRT, but it's necessary to send the C/R L/F signals to the far-end station if he is going to make a readable hard copy of the text.

I like to get mail, I'm on 20 meters each day. I work a little OSCAR, so when you see my call, please say hello. 73 Bill Snyder, W0LHS, 1514 So. 12th St., Fargo, ND 58103. DIT DIT. □

MARS support team tests installation

Overall view of the portable communications set-up with the temporary 3-element tri-band beam in place at San Pedro Hill AFS, Palos Verdes, California.

Interior of Barry Mitchel, NØKV's communications trailer.

The Military Affiliate Radio System (MARS) 32nd Worldwide Space Division Net exercise was conducted on 13 April 1985. This net provides backup communications to the U.S. Air Force's Space Division and selected subordinate commands located throughout the globe. It is organized and conducted by members of the Los Angeles Air Force Stations MARS Base Support Team.

Occasional variations, to simulate unusual operating conditions, are included as part of the program to test and evaluate different scenarios. The 32nd test provided this opportunity through the use of a special mobile communications trailer belonging to Barry Mitchel (Lt. Col. USAF) AFB6OC/NØKV, and a member of the Base Support Team.

His Air Stream Argosy, 20-foot travel trailer, is totally self-contained for housekeeping, has multiple battery power supplies and a Honda 800 watt 115VAC/12VDC generator. Its radio complement consists of a Yaesu FT-726 FM CW SSB transceiver to cover the VHF and UHF bands, with 100 watt, 150 watt and 160 watt amplifiers for these bands.

On HF, a Swan/Cubic Astro 150 100W CW/SSB transceiver is used. A Regency 250 25 watt, 150 to 162 FM transceiver, with a 10-channel scanner and a GE 40-channel AM CB transceiver rounds out the communications equipment. A total of eight whip antennas are available to be mounted on the trailer as required.

The trailer is pulled by a 1984 Jeep Cherokee automobile, which is equipped with a roof carrier for mounting additional antennas or to carry, for example, the dismountable 3-element triband beam and push-up mast used during this test.

The site chosen for this test was the 1400 foot peak of Palos Verdes, location of the San Pedro Hill Air Force Station. This site has a commanding 360° view and is the location of more than 250 separate radio installations, consisting of commercial and government repeaters.

In spite of the site's heavy RF VHF/UHF signal density, the HF environment was remarkably noise and interference free. Propagation was good to all areas, north, east and west. The carefully arranged equipment within the trailer left sufficient space for personnel indicating that the unit can be used as an effective portable command post. The trailer installation is well engineered to survive the rough transportation environments often encountered in such instances. In addition to AFB60C, Barry's XYL Pat, N4EPY, Paul Turkheimer, AFA6YJ/WA6NKL, and Richard Mills, AFA6PF/WA6LML, the group's Base Support Team Manager participated at the portable installation. — *Paul Turkheimer, WA6NKL* □

Despite the fact Ten-Tec stopped making them several years ago, the Argonaut 515 transceiver remains a much sought-after rig among QRP enthusiasts.

Whenever a 515 surfaces at a swapfest or in the for-sale columns of an Amateur Radio publication, it's usually snapped up quickly. There are not that many 515's floating around, since Ten-Tec manufactured only about 800 before suspending production because of costs. By comparison, almost 5,000 Argonaut 509's were produced before it was dropped in favor of the 515.

Among the pluses for the 515 is the fact Ten-Tec used the receiver front end from its popular Model 540 (formerly the Triton IV) transceiver and boosted the power output of the transmitter by about a half-watt.

The 515, however, suffers from a somewhat marginal filtering system, especially for CW. As produced, the 515 was equipped with a four-pole, 2.7 kHz crystal filter. While this was fine for sideband, CW operators had to rely on an outboard active audio filter for improved selectivity. Ten-Tec offered the Model 208-A filter with a tunable notch as an accessory which plugged in the receiver chain between the i.f. and audio boards.

Even with the 208-A or similar filter, the 515's performance is still not what it should be in contest or similarly crowded conditions. Steven E. Mann, N4EY, offered one solution — adding an outboard crystal filter. Although his article in the September 1981 issue of QST dealt with the 540 transceiver, he suggested the modification would work for the 515 and possibly the 509 Argonauts. While I have not tried this for the 509, it works for the 515.

This modification involves inserting the crystal filter in the receiver chain between the single sideband board and the i.f./agc board of the 515. To compensate for the insertion loss of the new filter(s), a small amplifier based on Steven's design is included. The whole thing goes together quickly and inexpensively and enhances performances far beyond the costs.

As recommended, I used the Ten-Tec 217 eight-pole, 500 Hz crystal filter, which sells for about $60 as an accessory for the Argosy transceiver. If even narrower filtering is designed for CW, there's the Model 219 six-pole, 250 Hz crystal filter, while improved SSB filtering may be had with the Model 218 eight-pole, 1.8 kHz crystal filter. These can be used singly or in a switched fashion (see schematic).

My version went together in about an hour. I used small pieces of perf board to hold the filter and accompanying amplifier, which I wired in "ugly fashion." I used quarter-inch stand-offs to support the whole assembly.

Modification of the 515 is simple and direct. Remove the 515 SSB board, the i.f./agc board and their insulating strips and set them aside. Locate the seven-pin sockets these boards plug into at the back of the transceiver.

Unsolder the wire (it was blue in my 515) from pin 6 of the i.f./agc socket, flip the rig over and unsolder the other end from pin 6 of the SSB board socket directly beneath the other one. Discard the wire.

Prepare two pieces of miniature 50-ohm coax (RG-174/U) — one about 2 inches long and the other 4 inches. Solder the center conductor of the 4-inch strip to pin 6 and the braid to ground at pin 7 of the SSB board, and insert the other end through the rubber grommet into the top of the rig. Check your wiring. Replace the insulating strip and the SSB board and fasten in place.

Turn the 515 over and connect one end of the 2-inch coax to the socket of the i.f./agc board in the same fashion — center to pin 6 and ground the braid. Check your wiring. This board and insulating strip may be replaced now or after the next steps.

It's necessary to drill some holes in the rear panel of the 515 above the i.f./agc socket. Although the accompanying photo shows RCA-type connectors, these were replaced with BNC types for signal lines. RCA connectors were used for the 12-volt line to power the amplifier, however.

Solder the coax from the SSB board to one BNC connector and the coax from the i.f./agc board to the other. Pick up 12 volts from the pilot lamp on/off switch on the underside of the chassis. If the crystal filter is pulled out of the circuit, jumper across the two BNC connectors or wire a small jumper with BNC plugs at each end.

In my modification, the amplifier has no effect on the transmit functions and appears to boost the audio output somewhat. If the version you wire proves too "hot," try disconnecting the 0.01mFd capacitor in parallel with the 220-ohm resistor in the emitter lead. Or try a transistor with less punch.

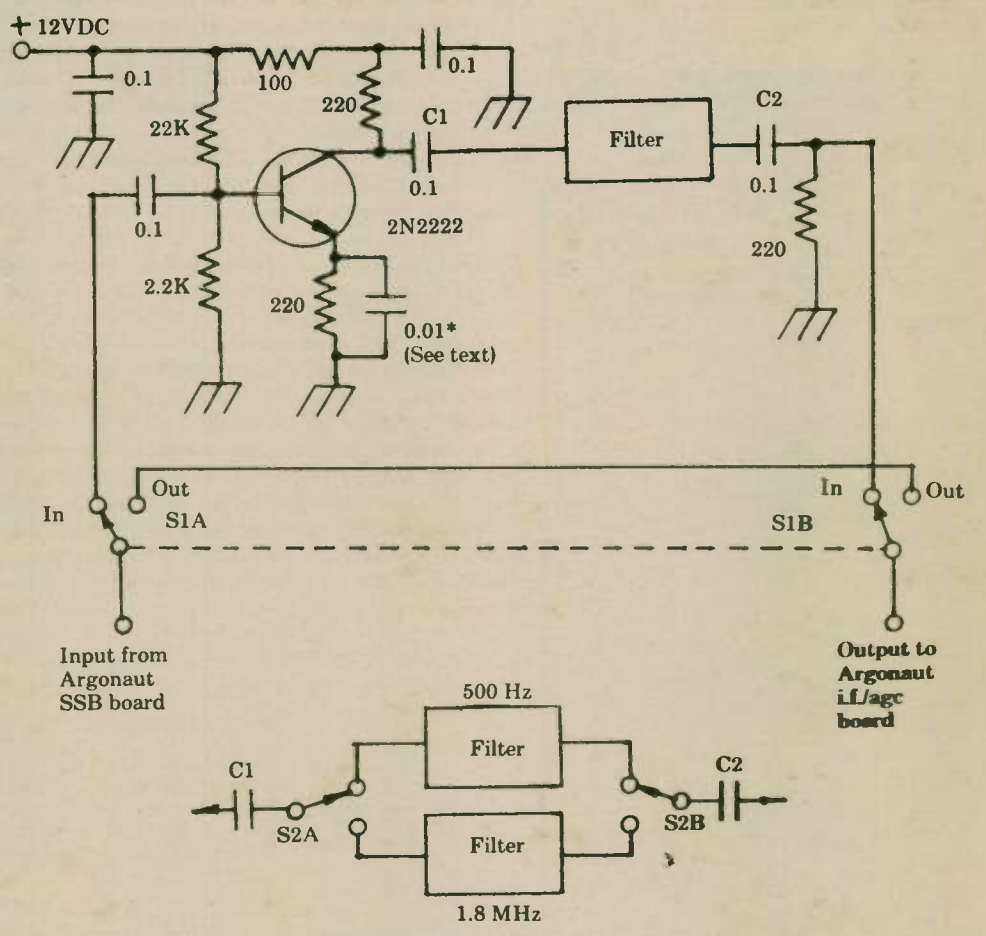
As shown in the schematic, it's possible to use more than one filter in this arrange-

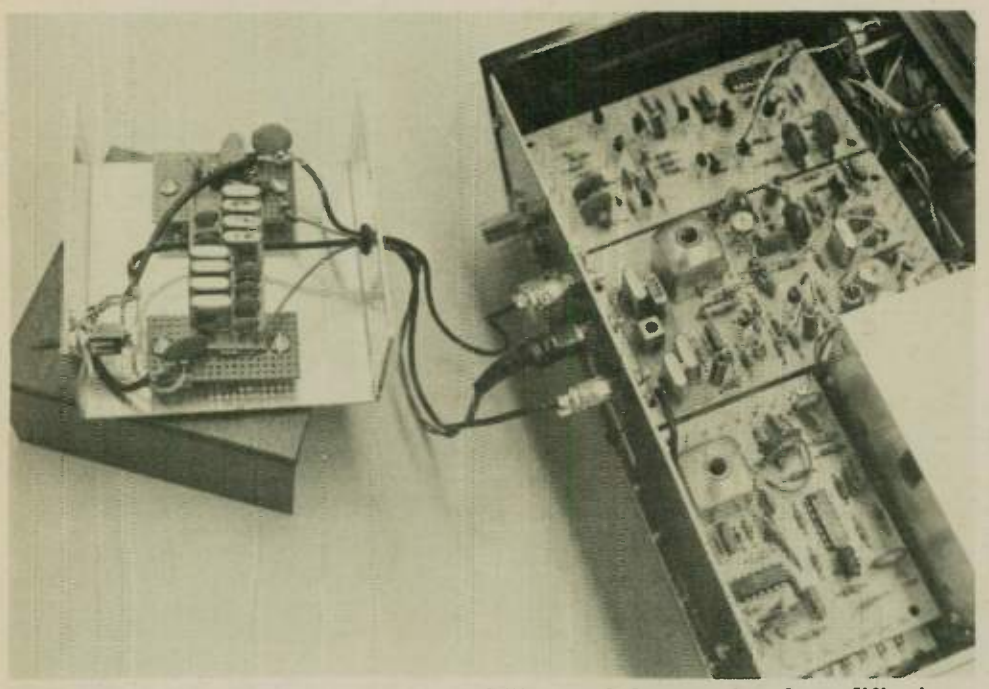
The deadline for news releases and special announcements is the 10th of the month, *two months prior to issue date.* Example: Deadline for the August issue, which is mailed in early July, is 10 June.

ment. A DPDT toggle switch may be used if only one more filter is to be added, while a 3PDT rotary may be used if all three filters are desired.

The combination of the 515's internal crystal filter, the 208-A outboard active audio filter and this 500 Hz crystal filter vastly improved selectivity in my 515 at a reasonable cost. □

The Argosy 515 transceiver topped by the 208-A tunable notch filter (left) and the new, outboard crystal filter (right) described in this article. At lower right is the patch cord for use when the crystal filter is unplugged.





Pieces of perf board support the crystal filter and the associated amplifier in an easily assembled unit. The RCA plugs shown here were replaced with BNC connectors for the signal lines.

Amateur Radio demo in Junior High

Dear Fellow Members:

I would like to tell you how my demonstration of Amateur Radio went at Tilford Junior High on 09 May. We (Wayne N0FST and myself) spent about an hour and a half the previous afternoon getting equipment set up and working. No problems were encountered during this time. We just hoped Murphy's Law wouldn't take over.

As day broke on 09 May, I woke up with a bad cold and exhausted. "Well, I can't keep my fellow classmates in the dark," I thought.

With this in mind, I struggled to school. Soon, my first class was upon me. After giving my lecture on terms and general knowledge about Amateur Radio (emphasizing it wasn't CB), we started working the "black boxes." I was fortunate enough to get KL7BZ/mobile and find a volunteer from the class to talk to him.

Things went like this all day except for one period. During this class, no one was on meters, and I discovered a loose connection on the HF antenna. This caused most of my HF CQ's to go unanswered. Therefore, we spent most of the HF time "spying," which means just listening, according to my science teacher. (What does he call watching TV?—Jan Klute, KF0Z)

In closing, I would like to thank Roy Mesecher, KL7BZ, and Bill Birky, WB0SPY, and anyone else who responded. I felt my day was a success. As a whole, the classes were attentive but mike shy.

Matt Markland, N0FSS
—Cedar Valley ARC, Cedar Rapids, IA □

I sigh for a cipher

In the May column we said that it looks like the translator of Psalm 46 in the King James Bible left his name concealed in the 46th words from the beginning and end, *shake* and *spear*. Edward Gormley wrote to take issue with that suggestion. He detailed at some length the procedure followed by the scholars responsible for the translation and publication between 1604 and 1611, citing as his authority Gustavus S. Paine's *The Men Behind the King James Version*, Baker Book House, Grand Rapids, Michigan.

He writes: "Shakespear or no one resembling that name was on the translating committee. William Shakespeare was not a Hebrew or Greek scholar. In 1610, when Shakespeare would have been 46 years old, the translation was in its final stages before the select group."

The point is well made. When I wrote the column, I had some doubts, as I too had never thought of William Shakespeare as a Greek or Hebrew scholar or a learned divine, and so felt the probability of the story being true was rather low. But also the probability of all those 46 numbers being a pure coincidence was low too, so the story just could be true. Anyway, it's interesting, and if it got anyone to read the Bible, that's good too.

Unable to deliver

Red Barger, W3CVE, has strong words for amateurs who claim they are "unable to deliver" a message. He writes, "There is one statement in your last article that I believe should have been stated differently. You said, 'Not many messages are mailed today,' or words to that effect.

"A responsible traffic operator will mail a message to its destination if necessary. It is deplorable that so many who call themselves traffic operators refuse to mail a message and will handle only messages that contain phone numbers. There are many people who can't afford telephones and would get a big thrill in receiving a radiogram."

Well, percentagewise, I still say few messages are mailed today. But I also agree with Red that it's not the way it should be. Anybody who claims to be a traffic handler should be interested in making every effort to get a message through to its destination. There's no obligation for any amateur to be a traffic handler; most amateurs are not. But if you claim to be one, accept the responsibilities. And the first responsibility is to do your best to move any message that you have accepted on toward its destination exactly as you have received it and as speedily as you can. If you can't do that for a particular message, you should not accept it. If you're not willing to accept that responsibility, don't call yourself a traffic handler.

Yes, it costs 22 cents to mail a message. And that 22 cents will come out of your pocket unless you are delivering a MARS message and you belong to MARS (in some cases MARS operators are permitted to mail messages in "Official Business" envelopes). And it will cost you something to telephone a message if there is a toll charge or if you have metered phone service. But I don't think there's a better way to invest 22 cents in Amateur Radio's public relations effort.

Red says he doesn't find it too difficult generally to get the recipient of the message to accept a collect call when appropriate. He does it like this: "I tell the operator, 'I am a radio operator and have a radiogram for Mrs. John Doe in Sleepy Hollow, Maryland. Here is her phone number. Please tell her that I have a radiogram from Frank Doe and will give it to her over the phone if she will accept the toll charge for this call.'

"The telephone operators are very cooperative. Only once did anyone refuse to accept the charge. I mailed the message and said I was the one who phoned. She wrote back a nice letter saying she was sorry but didn't realize it was an important call and it wouldn't happen again. 'You Amateur Radio Operators are great people.' So you see, it pays to be responsible in handling traffic."

Red tells of another instance, "About a year ago I got a message to a lady in a small town in Maryland with no phone number. I knew there was a danger that if it got into certain nets, some irresponsible operator would QTA it because of no phone number, so I mailed it.

"Guess who was the lady who received the message. She was the wife of a well-known congressman. Now I ask you, what impression does that make for Amateur Radio?

"I received a nice letter from the addressee telling me how thrilled she was to get the message from her cousin, from whom she had not heard for several years. Amateurs who spend big bucks for some of this sophisticated stuff on the market today and refuse to spend a lousy 22 cent stamp to mail a message are not traffic ops and should not be handling traffic."

QTA

Red did not mention it in his letter, but it deserves a word here. QTA is a much-abused signal among traffic handlers. As a question, it is a request for authorization to cancel a message. Without the question mark, it is an order to cancel the message.

The abuse lies in operators who cancel a message and are not authorized to do so. I'm speaking about operators who send a service message to the originating station: "Your number 13 undeliverable, no phone number, we QTA." You have no right to cancel the message. Only the originating station may do that.

If you receive a message and then find out you can't deliver it, or if you are not willing to look up the number in the phone book, you have two options: send a service message back to the originating station explaining why the message can't be delivered, being specific enough for the originating operator to identify the message and correct any possible garbles in the address, or contact the station *from whom you received the message* refusing to accept responsibility for delivery.

QTA is proper in this case. It throws the responsibility back on the operator who sent you the message, and who might be a real traffic handler who is willing to lick a stamp occasionally. The latter option is the better one, as it might take several days for service messages to go through the system.

Things like this remind one that Amateur Radio's traffic service is a volunteer operation, and we have to make do with the people we have. When we accept a message and put it into the system, we can only hope it finds its way to the addressee intact, and happily it usually will. But, unlike a commercial operation, there is not much we can do about operators who do not take their responsibility seriously, except to write columns like this.

Code practice

Red included with his letter a reminder that WB3IVO, Club station of Brass Pounders Amateur Radio Club, transmits code practice on 7060 kHz Saturday, Sunday, Monday, Thursday, and on 14060 kHz Tuesday and Friday, beginning at 2000Z, speeds 20 to 60.

Don't think CW is dead yet. Red also operates the Institute of Radio Communications in District Heights, Maryland, and currently is training operators from Andrews Air Force Base in International Morse Code. "I don't fool around with the slow stuff," he says. "When they know the alphabet, I step it up to 20 or 25. When they return a few months later for additional training I will polish them off at 40 or 45. Real code proficiency is in the range from 40 to 60. And make solid hard copy at that speed."

So don't count CW out yet, folks. Digital communications may be the mode of the future, but the Morse code is digital too.

We hope that when packet systems and the like become common, they will include provision for telegraph communication by hand key in their software, permitting people with only a CW rig to access the system.

It is true that often results are less than ideal when you try to make a computer read hand-keyed CW, but it can be done. Incidentally, that's a good area for contesting. In fact, you could make two contests in one out of it. See who can design the best software for copying hand-keyed CW, and who can key so as to get the best copy from the most machines, and maybe add a bonus for the highest speed.

There will always be a need for C.W. It remains the most spectrum-efficient, energy-efficient, equipment-efficient means of communication that has ever been divised. Its one disadvantage is that it requires trained operators, and that can be serious if you have to pay them. □

A special purpose for Amateur Radio

Ed Hall, AF3S

I've been thinking a lot recently about the value of Amateur Radio as a hobby to the individual. I'm sure we all love the hobby, and we probably have a greater percentage of "old-timers" than any other state. There is one group of people, however, who have a special need to be introduced to the hobby. I was a member of this group, but was not introduced to Ham Radio when I needed it most.

I'm thinking of young people, specifically in the 9 to 13-year-old group, who are having trouble adjusting to life. I was a lonely child, intelligent, but with few friends and no incentive to do much. There are many others out there like me. Amateur Radio has so much to offer these kids: the sense of achievement that some so frequently need (first license, first contact, first DX contact, awards, contests, etc.), and the chance for a shy child to meet people in an easy way on the air, later to meet then in person with a friendship already established.

Ham radio has so much to offer in an almost therapeutic way to these kids, with the added plus of potentially opening the way to an interesting career in electronics and/or computers. I think we should all make a special effort to find these kids, and introduce them to our hobby.

I would like to hear from others of you who agree with me. We need to find ways of locating these kids. I've thought of schools, meeting with both guidance counselors and PTA groups.

It's not an easy job finding these kids, for they aren't the ones you usually see playing happily in the streets, or on the Little League fields or bowling alleys. They are hidden in their homes. Let us help make our hobby useful while adding to our ranks with potentially excellent operators. — *Florida Skip* □

Aerials

Bruce A. Ray

As you may know one of the good things about this magazine is that the readers contribute much to its pages. In so doing, an article on antennas slipped by our editorial review board on that subject. Our editorial board consists of Kurt Sterba, Lil Paddle and me!

I'm refering to "Shunt-fed Marconi" which appeared in our July issue, and was written by Frederick Race, W8FR, of Summerville, SC. It was a good article on a vertical quarter wave antenna, but unfortunately it has some information in it that may confuse some of you. We wish to clarify several points right here and now.

1) Radials are effective above, on, or slightly under the surface of the soil. Remember, radials collect RF current. They make up the missing part of the vertical antenna or the L antenna. Recent data (1) indicates above ground radials are the most effective, everything else being equal.

2) Ground connections to water well casings, aluminum wrap and the like, make excellent 60 cycle grounds, but are not at all good at 1,800,000 cycles and above! They are at best, very poor collectors of RF, which are needed to make up the rest of that antenna, which requires a radial system.

3) The ends of the radials may be connected to ground rods or together, without any great improvement. There's no further improvement when the radial lengths are greater than 0.4 wavelengths long. (2)

We also would like to call attention to some misconceptions in the article about antenna matching devices.

4) With the best ground radial system consisting of 120 radials each ¼ wavelength long, the radial (ground) system loss will be 2 ohms. (3) This is the value used by consulting engineers in presentation of standard broadcast station application engineering before the FCC.

A 50 ohm coax line connected between the ¼ wave vertical and the standard radial system would look like 37 ohms, all resistive. That's 35 ohms for the antenna radiation resistance and 2 ohms for the radial system resistance for 35 + 2 = 37 ohms. The resulting VSWR on a 50 ohm coax line connected between the radial system and the antenna would be 50/37 = 1.35 to 1.

If the quarter wave antenna is resonant, there is no reactance by definition. Contrary to what appeared in the article, there will not be a reactive mismatch — only a resistive mismatch of 50 - 37 = 13 ohms.

5) Reflected power can best be understood as rejected power in our example. A 1.35/1 VSWR is a reflection of 16.5 dB. This is a rejection of 2.25%. This rejected (reflected) power goes back to the final amplifier and is added to the forward power on the next cycle of RF. Since the VSWR hasn't changed, only a very tiny bit (2.25% of 2.25% = 0.0005%) returns on the second cycle. Of course there is a new 2.25% power to which it is added, and so on. This neglects power lost in the coaxial transmission line due to natural attenuation which is a function of the particular coax line. (4)

It is important to note that the reflected power is not zero as though it was reactive power in some way. It is also true that the reflected-rejected power from the antenna is not all dissipated in ohmic loss in the transmission line, or somehow in the final amplifier. Maxwell's articles (see reference 4) explains this very clearly.

References:

1) Effects of Real Ground on Antennas, *QST*, Feb. 1984, James Rautio.
Also see Ground System as a factor in Antenna Efficiency. Proc. of the IRE, Vol. 25., pp 753-787, June, 1937
2) Recent Developments in Medium and High Frequency Antenna Design, Archibald Doty and John Frey, IEEE Electronics Show, Jan. 18, 1983
3) See FCC Part 73, 73.189, (a) 5
4) Another Look at Reflections, Walter Maxwell, *QST*, April, 1973. □

Thinking about antennas

Ray Griese, K6FD

The physical size of HF antennas makes experimentation rather awkward and tedious. Accurate measurements of field strengths and directional characteristics should be made at a distance of 10 wavelengths or more; this requires the use of specialized test equipment which few of us possess.

The best course of action is to experiment with model antennas scaled down to 1/10 size, or smaller, for convenience. Those of us who are mathematically inclined can use mathematical models programmed for computerized computation which takes the work out of the calculations.

Fortunately for those of us who are in between these extremes, there are concepts that are readily learnable and which help with experimentation, understanding and evaluation of results. These concepts can be found in textbooks and magazine articles. Learning concepts are expedited by "reading and talking" antennas to each and everyone whom we suspect may contribute an idea or a clearer understanding of antenna fundamentals — the more we learn the more we can learn, and the easier it becomes!

Every licensed amateur knows the relationship of frequency, length and velocity of propagation of a radio wave. This information, some understanding of directional radiation pattern formation, plus a fairly decent idea of radiation resistance seem to be about all some licensees care about. There are a surprising number of other relationships which occur in antennas, and some of these are extremely useful once they are understood. Here's one to start with that may stretch the creditability of some. Here's how it goes.

An electrical circuit consists of a power source, a power receptacle or "sink", and a means of conducting the power between them. The basic form we all learned about in elementary theory is a battery, two conductors and a lamp. Moving up to AC, a similar circuit does the job. All forms of "wire" communication use a similar circuit.

Consider now a "wireless" circuit. Is it possible to have one? The answer is yes, but with a slight difference. There is no metallic connection between the power source and the power sink. The power source — the transmitter — is connected to an antenna and the power sink — the receiver — is connected to another antenna. The transmitter power produces an AC current in the transmitting antenna and this current produces a radio wave. The radio wave passes through the space between the transmitting antenna and past the receiving antenna. The passing radio wave induces, or recreates, an alternating current in the receiving antenna that is a duplicate of the transmitter frequency.

The power of the radio wave is reduced to a miniscule amount by the time it passes the receiving antenna, and the power developed and available for the receiver is so low that the efficiency of transmission is approaching zero. Transmitting power is in the range of low kilowatts, and the voltage on the receiver terminals is in the range of microvolts on most radio transmission paths.

The radio transmission path can by analyzed very much as one would analyze a wire path showing the attenuation, delay of the signals, distortion and other factors that might be of interest to an engineer. The concept of a "circuit" connecting the transmitter to the receiver is useful to amateurs as well as professional engineers, as the following example will show.

What difference can we expect on a 10,000-mile radio circuit using grounded 1/4-wave antennas, 1/2-wave dipoles and 3-element tri-band beams? As amateurs we are primarily interested in the signal strength between the various combinations. This means we must establish the attenuation of the path. Let us assume the transmitter power is 1kW DC input and the received signal a few dB above the noise level of the receiver. Now let's plug in a few numbers and see what we can learn.

Transmitter efficiencies being about 50% means we can expect about 500W of RF power in the transmitting antenna. To simplify the problem, let's see how much voltage this will be on a 50 ohm line — this turns out to be 165 volts. That is the

OLD TIME RADIO

Carl Drumeller, W5JJ

After Spark Days

Old-time radio didn't end with the death of Spark. To many of the present-day operators, anything back of SSB transceivers smacks of the pre-historic. It's for these I'll address comments on radio, as it was during the '30s.

This was the start of a new era in radio — not just Amateur Radio, but broadcast radio, too. In the latter, the old battery-powered receivers were being discarded in favor of ones powered from house AC (or, in a few cases, DC) wiring. The old receivers could be bought for little or nothing. And they were often stacked with components that could be used in building equipment, both receiving and transmitting, for an amateur's station.

Some of the very best components manufactured were made in the latter '20s. By the middle of the '30s, competition in the broadcast receiver industry had driven manufacturers to turning out "cheap and dirty" components, mostly worthless for use by the radio amateur.

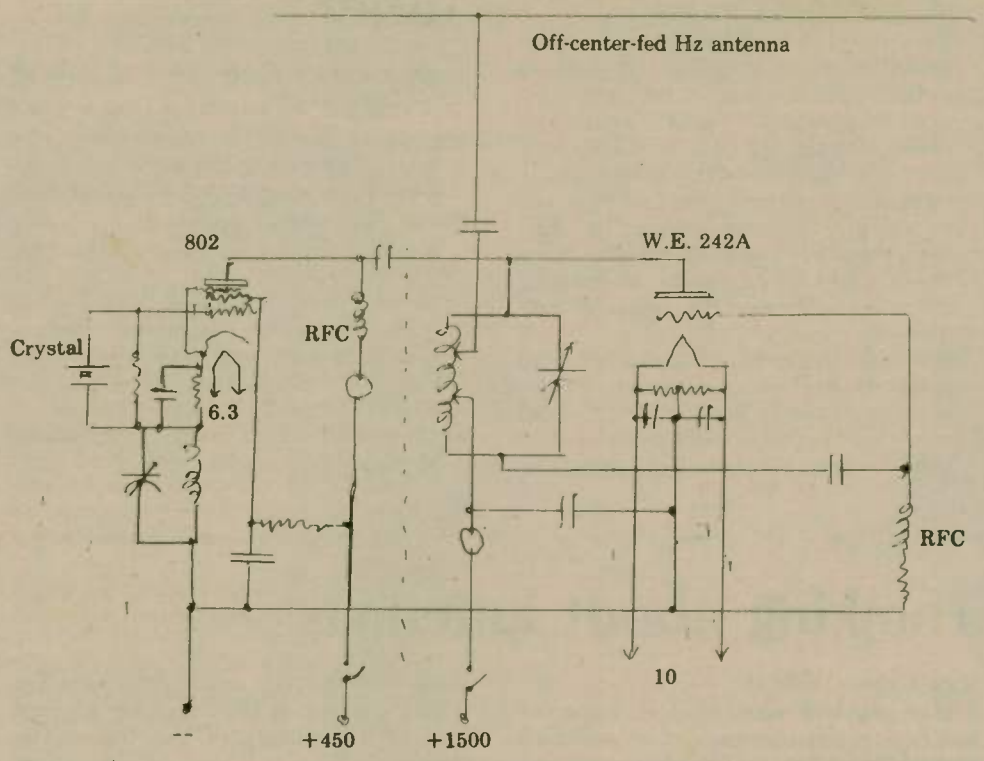


Figure 1 **Locked oscillator**

This availability of parts, plus the Depression, which dictated that the average radio amateur had to build his station with as near zero dollars expense as humanly possible, made home construction almost a universal rule. Then, too, one still could almost equate amateur to experimenter. At least, the amateur became very adept at adapting on-hand parts to the needs confronting him. He was a whiz at improvising!

So he built! Let's talk about his transmitters, as that was the field in which the most deviations from the norm were taken. Self-excited transmitters (Hartley, Colpitts, TPTG, TNT, etc.) were falling into disfavor. To be up to date, one had to have a crystal-controlled transmitter. The price of crystals had dropped from the $25 to $30 of the '20s to around $2.50; so most amateurs could, by hoarding their nickels, afford a crystal. Note that "a". One crystal had to do the job for all the bands you intended to work. The harmonic relationship was such that you could work a goodly number of bands from that single cyrstal.

A single-tube crystal oscillator could accomplish amazing results on radiotelegraphy. Loop-modulated, it would even get out fairly well on radiotelephony. (Never mind how it sounded!) Power to such an oscillator was limited, although one of the major vacuum tube manufacturers published a manual showing an 813 tube being used as a one-tube transmitter, crystal-controlled! Most radio amateurs found, though, that if you tried pushing your oscillator stage just a wee bit too much, you had the stark tragedy of a cracked crystal!

So, what to do? Why, add an amplifier stage. Ah, but amplifier stages must be neutralized. And in those days neutralization was the bugaboo, the bete noire that all feared.

One scheme that a few amateurs tried was the locked oscillator. The idea originated in Europe but was picked up by U.S. builders. Briefly, it was a system that coupled a weak crystal oscillator to the grid circuit of a more powerful amplifier, an oscillating amplifier. When the latter was tuned to the frequency of the former, they were locked; that is, crystal assumed control of the more-powerful amplifier. It worked. There was no need to mess with neutralization. Why, then, didn't it become popular?

Well, for one thing, if you didn't keep that output stage in close tune with the crystal-controlled oscillator, you lost lock, had a horrible note, and drifted off frequency.

Although I didn't mind neutralizing a stage, the idea of a locked oscillator intrigued me, and I played around with a circuit similar to the one shown in *Figure 1*; this was written up (by me) on page 55 of the May 1936 issue of QST. It didn't set the world on fire, but did attract a few experimenters.

Looking at it, you'll note that the left-hand side shows a conventional Tri-Tet oscillator, minus its plate tank circuit. Observing the right-hand side, you'll see a conventional Hartley self-excited oscillator feeding (through its single-wire feeder) an off-center-fed Hertz antenna.

To operate it, you removed filament and plate power from the W.E. 242A and tuned the Tri-Tet to crystal frequency; because of its being a Tri-Tet, you could tune to resonance instead of a bit off resonance as is required by the Miller oscillator circuit.

For the next step, you removed plate voltage from the Tri-Tet, applied filament

Thinking

voltage at the sending end of the radio circuit. A probable signal on the receiving end can be taken as 1.65mV — about an S5 signal. With these conditions, the path attenuation is 160dB. Let's say that these values are for a circuit with 1/4-wave antennas on each end with 1kW transmitters and decent receivers.

Now what happens if we change the antennas to dipoles? They have a gain of 3dB compared to a vertical, so the path attenuation will drop to 154dB — a 3dB gain on each end. The received signal is more like S6 now, which is not too impressive, but remember that a 6dB increase required a four times increase in power. The transmitters would have to be 4kW at each end to duplicate the 1kW signals with dipoles.

The use of a tri-bander is even more impressive as they normally run about 7dB over a dipole. So we add 7dB to the 3dB and come up with 10dB for the beams. Now the attenuation is down to 140dB. Quite impressive, but even more so when we consider that the transmitter power on 1/4-wave verticals must be raised to 100kW on each end to imitate the beam signal strengths. Now that's impressive!

Signal strengths decrease with distance, as we all know, but it might be of interest to consider that if dipoles were used in lieu of ¼-wave grounded antennas, the 6dB improvement is equivalent to reducing 10,000 miles to 5,000 miles. Again, the beam-to-beam circuit shows a remarkable improvement. A 20dB improvement is equivalent to reducing the 10,000-mile path to a 1,000-mile path.

Signal strengths vary from moment to moment due to the nature of propagation and the turbulence of the ionosphere, so it can be argued that these theoretical values won't hold up in practice. But they do — that's why there are so many beams up in the air. □

Ohm-Brew Answer

A VOLTSwagon with CURRENT plates pulling a mobile OHM

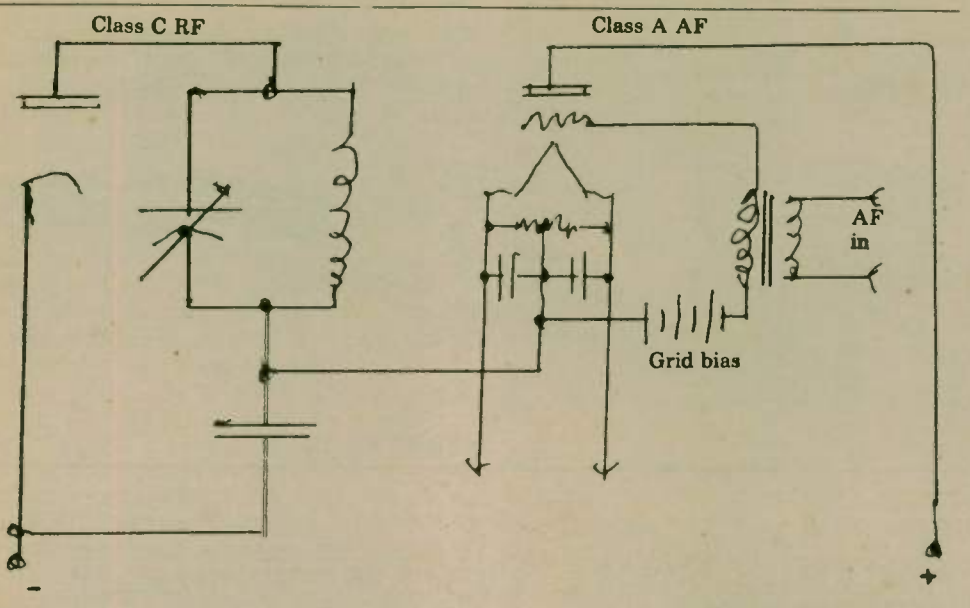


Figure 2 **Series plate efficiency modulation**

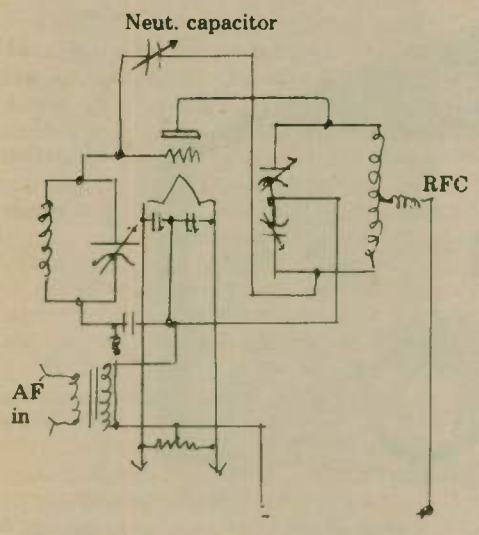


Figure 3 **Cathode modulation**

and plate voltage to the Hartley, and adjusted its "center-tap" (really, off-center-tap) for best note. Read that as stable operation.

Now, with the antenna tap set for desired loading, you were almost ready to go on the air . . . almost, for it was best to go back and retouch the Tri-Tet tuning, which was fouled up by the tap adjustments on the Hartley's coil.

Keying? Oh, I keyed it with a monstrous double-pole relay, keying both B-plus leads — a crude but positive method!

Well, that was one man's dodge around neutralization. But really, neutralization was not so bad after one became experienced with it. Having both grid and plate currents meters helped greatly.

The advent of tetrode and pentode transmitting tubes removed the necessity of neutralization. Most builders, though, elected to use push-pull triodes in the final amplifiers. They were a holy terror to truly neutralize. What appeared to be optimum adjustment often was over-neutralization of one tube and under-neutralization of the other. This often was acceptable, and most operators (even if they recognized the condition) were happy to accept it.

Screen-grid tubes, although they banished the bugaboo of neutralization, introduced a problem in modulation. You couldn't just modulate the plate, as with a triode. Theory said you had to modulate the screen grid, too. Very few did. Some bright soul discovered that if you put a choke, say 30 H, in series with the DC voltage to the screen grid, it tended to modulate itself. Maybe it wasn't perfect, but it did the job.

Not all triodes were plate power-modulated. A few were plate efficiency-modulated. This was done by putting an audio triode effectively in series with the plate voltage. The AF triode was biased to reduce the modulated tube's plate voltage to half. Then when audio was applied to the audio tube's grid, the modulated tube's plate voltage was varied from zero to full value. This system was employed on some early TV transmitters, as it involved no transformers to limit frequency response.

Another method of modulating triodes, popular in the '30s, was cathode modulation. A transformer having a rather low secondary impedance, around 500 ohms, was placed in the cathode (really, the center-tap of the filament transformer) lead. There its audio output modulated both the RF tube's grid and plate circuits.

Granted that the plate's portion was tiny, that the grid's portion was major, but it worked — and worked with very little audio power. As the requirements for good plate modulation were not compatible with the requirements for good grid modulation, purists shuddered, but radio amateurs continued happily using cathode modulation.

With a break for the wartime shutdown, Amateur Radio continued with only minor changes until the popularization of SSB. It was just too demanding, both in complexity and in frequency stability requirements, for the home constructor to cope with it. □

Tuner

(continued from page 14)

and anyway, we like trees.) So I find I have to readjust a little sometimes when a branch touches the antenna, but I can make a small adjustment and keep operating.

Suggestions

I have already mentioned some ways to extend the impedance and frequency range of the tuner. I think flexibility is a major advantage of this tuner. If one coil can't be found to do the job, put one or more in series. Use of variable capacitors with larger maximum value might permit somewhat easier matching with less searching for tap points. Just keep the plate spacing wide enough for the power being run.

It should be possible to put a 1:1 balun on the tuner output and match a balanced line, again keeping RF power in mind.

I don't yet know the lowest or highest frequency bands the tuner I have built will match. I'm not using maximum inductance on my loading coil to work 80 meters, and I don't see why my small coil or perhaps an additional even smaller coil couldn't be used for 6 meters say. 160 meters to 6 meters with one random-wire antenna and one antenna tuner. I think it's possible — not optimum, by any means, but possible and even fun. Of course, the new WARC bands should be covered, too.

Conclusion

An antenna tuner which I have built and used successfully over several years has been described with the hope that others will build and try it. I certainly don't claim any degree of originality for the tuner I have built. I have seen a similar circuit in the electrical engineering literature. It's basically, I think, just a "T-match" with one variation — two taps instead of one. If this tuner looks promising for your particular antenna and rig situation, give it a try.

If there's still anybody around who likes to build and operate tube circuits, why not try the circuit of *Figure 3?*

'73 Magazine, date unknown □

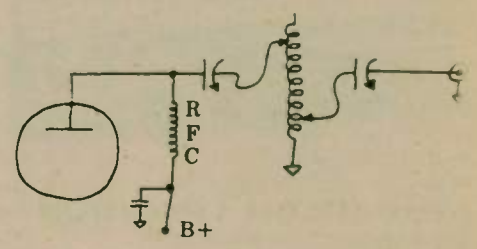


***Figure 3* — Vacuum tube RF amplifier output circuit?**

Who is reading **WORLDRADIO**? You are, of course. But there are others. Here is a list of the DX locations in which **WORLDRADIO** currently has subscribers.

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Ecuador	New Guinea
England	New Zealand
Fiji	Nicaragua
Finland	Norway
France	Panama
French Polynesia	Philippines
Germany	Pitcairn
Guam	Portugal
Guatemala	Puerto Rico
Greece	Saudi Arabia
Hong Kong	Singapore
India	South Africa
Spain	Yugoslavia
Sri Lanka	Zimbabwe
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Change of address?
If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Advanced Terminal Unit

Advanced Electronic Applications, Inc. announces its new Advanced Terminal Unit (Model ATU-1000).

The ATU-1000 is the most advanced HF RTTY modulator-demodulator available. The ATU-1000 is designed for interconnecting a communications transceiver with a computer (or mechanical communications device) using appropriate computer communications software. Operation on Morse, Baudot, ASCII, Packet and AMTOR teletype is provided.

Users of this unit will be able to set transmit or receive tones to 1 Hz (range of 1000-3000 Hz). Other specifications include: all shifts — 170 fixed, 0-2000 Hz adjustable; filters — 32 poles total; twin full-wave detectors; automatic single-tone fade operation; CW filter adjustable between 700 and 2500 Hz; built-in frequency counter that sets tones or filters; FSK, AFSK and scope outputs; key or keyer input; automatic DC coupled threshold correction; input level 5mV-5V with selectable AGC time constant; front panel squelch control and LED indicator; TTL logic inversion (use "any" software program); bargraph tuning; built-in TTL, RS-232 and current loop I/O.

Easy hookup plus a 19″ rack-mountable option. 13VDC operation, 110V adaptor supplied. The unit 5 lb. comes in a metal case, 16″×3½″×7½″.

For more information, contact Advanced Electronic Applications, Inc., P.O. Box C-2160, Lynnwood, WA 98036; (206) 775-7373.

Shared Repeater Tone Panel

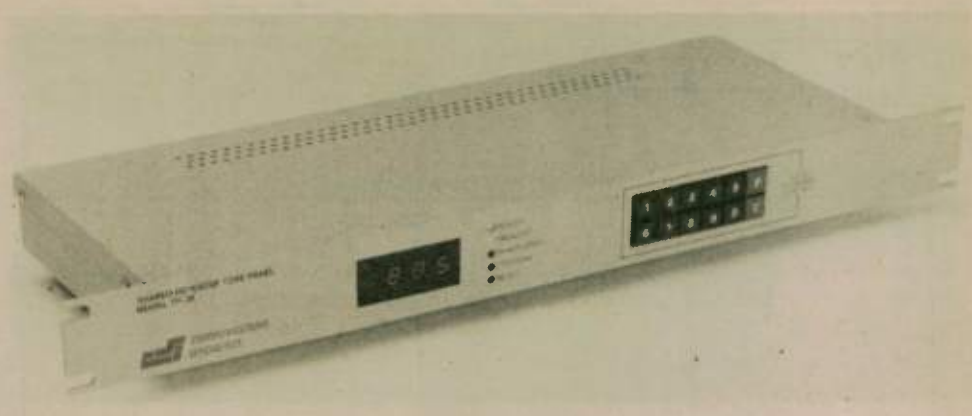
Communications Specialist in Orange, California has announced the introduction of their new TP-38 Shared Repeater Tone Panel. Microprocessor controlled, the TP-38 provides all 38 EIA standard CTCSS tones to allow up to 38 subscribers without the need to purchase additional cards or programming. All features are user programmable and provided with each unit at one price. Built-in time and hit counters record the activity of all CTCSS tones on the repeater channel.

The TP-38 has an ultra low current drain for solar or battery-powered repeater sites, and is static and lightning protected. A non-volatile memory retains programming if a power loss occurs. An LED display (which may be turned off to conserve power) shows all received CTCSS tones when they occur, whether they are active in the panel or not. An automatic self-test is activated with each power-up. Any of the 38 available tones may be initiated from the repeater to call down to a customer for testing purposes.

With the addition of the TP-DTMF, an optional, low-cost DTMF module, all functions may be performed remotely, using a common 12 or 16-button touch-tone pad (secured with a five-digit security code). This allows any of the 38 tones to be remotely turned on or off, and allows the time and hit information to be interrogated remotely.

The TP-38 Shared Repeater Tone Panel and the TP-DTMF Remote Control Module are both available for immediate delivery from stock and are covered by a full one-year warranty. Prices are $595 for the TP-38 and $59.95 for the TP-DTMF. A catalog is available on request.

Communications Specialists, Inc., 426 West Taft Ave., Orange, CA 92665-4296; (800) 854-0547 or (7140 998-3021; 24-hour FAX (714) 974-3420. □



Hustler 2 meter RF amplifier

Hustler has announced the availability of their new model HVA-225 Class C amplifier for 144-149 MHz 2-meter FM amateur mobile use.

Utilizing state of the art broad band microstrip design, the amplifier exhibits components and manufacturing techniques found only in higher priced commercial units for superior performance and reliability.

HAV-225 is conservatively rated at 25 watts with only 2 watts of drive while requiring only 4 amps at 13.8 VDC for full output. Separate power and RF indicators, on-off switch, SO-239 connectors, reverse polarity protection, plus extra capacity heat sink for high temperature reliability and efficiency.

The amplifier is housed in a black matt finish aluminum housing complete with gimble bracket and thumb screws for underdash mounting.

For more information on the HVA-225 amplifier see your Hustler dealer or write Hustler, Inc., 3275 North "B" Avenune, Kissimmee, FL 32758.

Super-CW

Pre-filter

The first filter, which may be selected for output in its linear mode in the FILTER position, is an 8th order Butterworth cascade of staggered pairs. This configuration is used to provide excellent skirt rejection without excessive response to impulse noise. The 3dB pass band is from 700 to 800 Hz with a 3 to 30dB shape factor of less than 3.

But there is more than just a good filter

The S/N BOOST function, which is driven by the pre-filter, provides a signal-to-noise ratio enhancement of over 10dB as compared with the linear filter position, and it does it for signals that are well below the noise in a typical 3 kHz audio bandwidth. This boost circuitry uses compound-complex filter/limiter/filter elements with added active circuits (patent applied for) that creates S/N enhancement for CW — or any pulse-code-modulation (PCM) signal — analogous with that enjoyed by FM communication systems.

A second — and very important — benefit is ear protection. When in the S/N BOOST position, the sudden onset of strong signals or noise pulses just can't happen. You get a clean, distortion-free signal at a sound pressure level uniquely determined by the AF GAIN control.

And that isn't all

A 2 watt power amplifier with a controlled voltage gain of 25 is included. This allows a reduction in receiver RF gain, which reduces the tendency toward non-linear disturbances in your receiver's IF and/or product detector when listening to a weak signal under the condition of strong signal QRM outside of the 700 to 800 Hz pass-band.

The unit receives its input from your receiver's speaker output power supply requirements are 12 to 15VDC at a nominal 350mA peak. The unit will drive a 4 to 8 ohm speaker.

The cost of the Model 10 is $69.95; wall transformer power supply is $9.95; shipping and handling $5. Order satisfaction guaranteed from: Hildreth Engineering Corp., P.O. Box 60003, Sunnyvale, CA 94088.

10-10 International Net QSO Party

The Summer 10-10 International Net QSO Party will begin at 0000Z 03 August and end 2400Z, 04 August. 10-10 QSO Parties are open to all amateurs, but only 10-10 members with paid-up dues are eligible for awards. 10-10 contests are conducted to encourage 10-meter operation and keep 10 active. Non 10-10 members may use numbers collected to qualify for 10-10 membership (only 10 numbers required), and members use numbers collected to qualify for bar awards.

All contacts must take place between 28.3 and 29.4 MHz.

Exchange: Call sign, name, city, state and 10-10 number (or "no 10-10 number"). Single-operator stations only allowed, and stations may only be worked once. SSB, FM and AM modes are acceptable. No QRP class in this contest. All contacts must take place within the 48-hour contest period. Logs must be in UTC (Zulu Time) and dupe sheets are required.

Scoring: 2 pts. for contact with 10-10 number exchange; 1 pt. for contacts without 10-10 number exchange.

Logs: Accepted from 10-10 members only with a cover sheet showing your name, call sign, QTH, 10-10 number, membership expiration date, chapter assignment (if any), total contacts and total points claimed. Logs to be postmarked no later than 01 September 1985, and mailed to SHOT, c/o Jack Streets, WA5HZM, 5609 Whitehaven, Bellaire, TX 77041.

Awards: First place certificates to all U.S. call areas; KL7 included with 7th area. Also Canada, South America, Central America, Caribbean (including Bermuda), Europe, Africa, Asia and the Pacific (including KH6, all Pacific Islands, New Zealand and Australia).

New Jersey QSO Party

The Englewood Amateur Radio Association, Inc., invites all amateurs the world over to take part in the 26th Annual New Jersey QSO Party.

The contest will last from 2000 UTC, Saturday, 17 August to 0700 UTC, Sunday, 18 August, and from 1300 UTC, Sunday, 18 August to 0200 UTC, Monday, 19 August.

Phone and CW are considered the same contest. A station may be contacted once on each band. Phone and CW are considered separate bands; CW contacts may not be made in phone band segments. New Jersey stations may work other New Jersey stations.

General call: CQ NEW JERSEY or CQ NJ. New Jersey stations are requested to identify themselves by signing DE NJ on CW and NEW JERSEY CALLING on phone.

Suggested frequencies: 1810, 3535, 3900, 7035, 7135, 7235, 14035, 14280, 21100, 21355, 28100, 28610, 50-50.5 and 144-146. Suggest phone activity on the even hours; 15 meters on the odd hours (1500-2100 UTC); 160 meters at 0500 UTC.

Exchange: QSO number, RST and QTH (ARRL section or country). New Jersey (NJ) stations will send county for their QTH.

Scoring: *Out-of-state stations* — multiply number of complete contacts with NJ stations times the number of NJ counties worked (maximum of 21). *New Jersey stations* — W-K-VE-VO QSOs count as 1 pt.; DX stations count as 3 pts. Multiply total number of points times the number of ARRL sections (including NNJ and SNJ — maximum of 74). KP4, KH6, KL7, etc. count as 3 pt. DX contacts, as well as section multipliers.

Awards: Certificates will be awarded to the first place station in each NJ county, ARRL section and country. In addition, a second place certificate will be awarded when four or more logs are received. Novice, Technician and mobile operator certificates will also be awarded.

Logs: Logs must show UTC date, time, band and emission, and be received no later than 14 September 1985. The first contact for each claimed multiplier must be indicated, and numbers and a checklist of contacts and multipliers should be included. Multi-operator stations should be noted and calls of participating operators listed.

Logs and comments should be sent to: Englewood Amateur Radio Association, Inc., P.O. Box 528, Englewood, NJ 07631-0528. A #10 SASE should be included for results.

Stations planning active participation in New Jersey are requested to advise the EARA by 01 August of your intentions so that we may plan for full coverage from all counties. Portable and mobile operation is encouraged.

Code Practice Disks

The INTERNATIONAL MORSE CODE PRACTICE PROGRAMS diskette for the IBM PC, XT, PC/Jr, and compatibles, contains three programs to help you pass your FCC/VEC amateur radio code tests. The code generated by the program conforms to FCC standards.

The three programs are: IDCODE, sends you random code that you identify by pressing the correct key; RNDCODE, sends you random code that you identify by pressing the correct key; TXTCODE, sends you code from a text file. All of the programs permit you to adjust the speed and tone frequency of the code sent.

The programs send characters at 13 wpm or faster. However, when you select transmission speeds slower than 13 wpm, the programs space the characters at the slower rates. In this way you do not relearn how the code sounds as you increase your recognition speed.

The programs that send random code also permit you to select the particular codes you wish to practice. You may halt a practice session and restart again changing the speed of the transmission, without having to reenter all your code selections again.

The diskette also contains four text files to help with your practice. Full user documentation is available in a file on the diskette. The diskette does not include source program listings. The programs require DOS 1.1 or higher. The cost of the diskette is $10 postpaid.

For more information contact: Andrew Modla, N3EGH, 5 Derby Place, Newton, PA 18940.

Alabama

The HUNTSVILLE HAMFEST will be held on Saturday and Sunday, 17-18 August, at the Von Braun Civic Center in Huntsville, Alabama. There is no admission charge.

There will be prizes, exhibits, forums, an air-conditioned indoor flea market, and non-ham activities. Walk-in FCC exams will be given at the Huntsville High School cafeteria, beginning at 9:00 a.m. Saturday, 17 August.

Tours of the Alabama Space and Rocket Center are available for the family. A limited number of camping sites with hookups are available at the VBCC on a first-come first-served basis. Flea market tables are available for $5/day and should be reserved prior to the hamfest.

Talk-in on 34/94.

For more information, write: Huntsville Hamfest, 2804 S. Memorial Parkway, Huntsville, AL 35801.

Arizona

The AMATEUR RADIO COUNCIL OF ARIZONA presents Hamfest '85 in Flagstaff, Arizona, 26-28 July. It will be held at Fort Tuthill, just a few miles south of Flagstaff Airport exit off of I-17.

There will be exhibits, women's activities and prizes. FCC exams will be given on Saturday. Prize drawing and ARRL Forum.

Talk-in on 147.6/147.00, 146.22/146.82, 147.86/147.26 on Towers Mountain, and 443.575/448.575 and 447.150/442.150, 450 repeater, serving Phoenix and northern Arizona.

Baja California

The XLVII National Convention of the Liga Mexicana de Radio Experimentadores will be held in Ensenada, Baja California 15-17 August.

There will be door prizes, luncheons, music, a sea food buffet, folkloric dances, and many other events and surprises.

For more information (in English or Spanish) write to: Mr. Manuel Navarro, XE2NNX, Box 1928, Ensenada, B. C., Mexico. Telephone: 8-16-18, or 6-18-38.

California

The VALLEY OF THE MOON ARC will be holding their 5th annual "Ham" breakfast and swapmeet Sunday, 11 August at the Sonoma Community Center, 276 East Napa Street, Sonoma, California from 9:00 a.m. to 4:00 p.m. Breakfast will be served from 9:00 to 11:30 a.m., with sausage, eggs, pancakes, 'taters, o.j. and coffee for the measly sum of $5, all you can eat, and includes table service to those at the swap tables.

Swap tables will be set up from 8:00 a.m. with swap spaces renting for $5 each. There will be 70 spaces, but we will have only 25 tables available, so plan on bringing your own. Admission is a $1 donation, with door prizes including a ride on the famed *Sonoma thunder* hot air balloon above Sonoma Valley. An open auction will be held at 1:00 p.m., so you won't have to drag that boat anchor back home. Displays will include operating RTTY, computer, high and low band stations, an ARRL Forum, or club/police department emergency communications van, and slide shows and dealer displays.

This is the perfect hamfest for the whole family with our fascinating Mission museum, historic Sonoma Plaza with its many shops, and the Sebastiani winery — all within a short two-block walk.

For reservations of swap spaces, or for further information, call me, Darrel Jones, WD6BOR, at (707) 996-4494, or write at 358 Patten St., Sonoma, CA 95476.

Illinois

The HAMFESTERS RADIO CLUB, Inc. announces its 51st Annual Hamfest — one of the Midwest's largest. It will be held Sunday, 11 August, at Santa Fe Park, 91st and Wolf Road, Willow Springs, Illinois (southwest of Chicago). Exhibitor pavilion and the famous swappers row. Tickets are $3 in advance, $4 at the gate.

Talk-in on 146.52.

Tickets can be ordered by check or money order sent to Hamfesters, P.O. Box 42792, Chicago, IL 60642.

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The VERMILION COUNTY ARA will be holding its Vermilion County Hamfest on Sunday, 25 August, at the W9MJL club house in Harrison Park West in Danville, Illinois.

Set-up on Saturday evening and Sunday morning. Free ladies bingo with prizes. Hourly door prizes. Main drawing at 3:00 p.m. on Sunday. Donation is $1 in advance, $1.50 at the gate. Saturday evening steak cookout; $5 for reservations. No separate vendor charges.

Talk-in on 146.22/82.

For information or reservations, contact Joe Mayer, KB9GS, 613 E. Kelly, Box 356, Westville, IL 61883; (217) 267-2946.

Indiana

The 6th Annual GRANT COUNTY (Indiana) ARC hamfest will be held on Sunday, 11 August, at the 4H-Fairgrounds, Marion, Indiana.

Doors open at 8:00 a.m. with refreshments, free parking, license exams and hourly prizes. ARRL sponsored.

Table reservations: $2 for 8-foot table. Donation: $2 advance; $3 gate.

For information/tickets, send SASE to: Brooks Clark, WB9EAP, 2202 South Boots St., Marion, IN 46953.

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The annual Bloomington Hamfest will be held on Sunday, 01 September, at the 147.18/.78 repeater site on Vernal Pike off SR-37 bypass. It will start at 8:00 a.m. and end at 2:00 p.m. Admission $2. Door prizes. Food concession available. No charge for setups. Bring your own tables.

For further information, contact Bob Myers, K9KTH, 306 S. Fairview St., Bloomington, IN 47401. SASE or call (812) 332-1105.

Pennsylvania

The 48th Annual SOUTH HILLS BRASSPOUNDERS AND MODULATORS Hamfest will be held on 04 August, from 9:00 a.m. to 4:00 p.m. at the South Campus of the Community College of Allegheny County, Pittsburgh, Pennsylvania. Tickets $3 each or two for $5. OSCAR, RTTY and packet radio forums plus flea market.

Talk-in on 146.13/73 and 146.52 simplex.

For further information, contact Bill Gardiner, N3DXE, 4756 Child Dr., Pittsburgh, PA 15236.

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The MID-ATLANTIC ARC announces its annual hamfest to be held on Sunday, 11 August, from 9:00 a.m. to 4:00 p.m., rain or shine. Tailgate setup begins at 8:00 a.m. Hamfest located at the Bucks County Drive-In Theatre, Route 611, Warrington. (5 miles north of Willow Grove exit of the Pennsylvania Turnpike.)

Admission: $3 with additional $2 for each tailgate space. Bring your own table. ample parking, refreshments.

Talk-in on WB3JOE/R, 147.66/.06 or 146.52.

For further information, write MARC, P.O. Box 352, Villanova, PA 19085, or call Bob Josuweit, WA3PZO, (215) 449-9727.

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The CENTRAL PENNSYLVANIA REPEATER ASSOCIATION, Inc.'s 12th Annual Hamfest/Computerfest will be held on 25 August, adjacent to Hersheypark, Chocolate town, USA. Registration $3; children 12 and under *FREE*. Special reduced admission to Hersheypark available for registrants and families.

Large indoor dealer and flea market area; large outdoor tailgate area; food and refreshments available.

Talk-in on 145.47 repeater or 146.52 simplex WA3KXG.

For further information, contact: Paul W. McDonnell, N3BKI, (717) 697-1880, from 12 noon to 8:00 p.m.

Texas

The PANHANDLE ARC will hold its Annual PARC — Golden Spread Hamfest on 10-11 August, beginning at 9:00 a.m. Saturday and 11:00 a.m. on Sunday, at the West Texas State University Student Activities Center, Canyon, Texas.

Pre-registration is $6. Admission at door is $7. There will be commercial distributors, dealers and a flea market. AMSAT will be represented, and there will be upgrading exams given.

For more info, contact Rusty Jessup, NU5P, at (806) 383-0818 evenings, or write PARC Hamfest, Box 1524, Amarillo, TX 79105.

Virginia

Don't miss the 1985 ARRL VIRGINIA STATE CONVENTION and 10th Annual Amateur Radio-Computer Fair at the Virginia Beach, Virginia Pavilion on Saturday and Sunday, 21-22 September. Featured are dealers, special displays, forums, computer equipment, ARRL license upgrading exams, free XYL bingo and movies for the kids.

Bring the family to vacation at beautiful Virginia Beach. Also visit the fantastic Waterside Festival Marketplace in Norfolk. She will love the specialty shops and restaurants.

Show time is 9:00 a.m. to 5:00 p.m. Advance ticket admission for both days is $5 and at the door is $6. Advance ticket drawing plus other valuable door prizes will be offered. Flea market tables are $5 one day, $8 both days.

For information and tickets, contact Jim Harrison, N4NV, 1234 Little Bay Ave., Norfolk, VA 23503; (804) 587-1695.

Wisconsin

The GREEN BAY MIKE & KEY CLUB's Summer Swapfest will be held Saturday, 17 August, at the Ashwaubenon Community Center (Anderson Drive, across from Baypark Square Mall).

Doors open at 8:00 a.m.; open to sellers at 7:00 a.m. Commercial exhibitors, food, drinks and prizes. Free admission and parking. Tables (8-foot) are $5 by reservation — limit of four. Send SASE with name, call, address and check made payable to: Green Bay Mike & Key Club, c/o Bill Johnson, N9CNO, 2177 Orrie Lane, Green Bay, WI 54304; (414) 494-8948.

Talk-in on 147.12/72 and 147.36/96.

For more information, contact Green Bay Mike & Key Club at above address.

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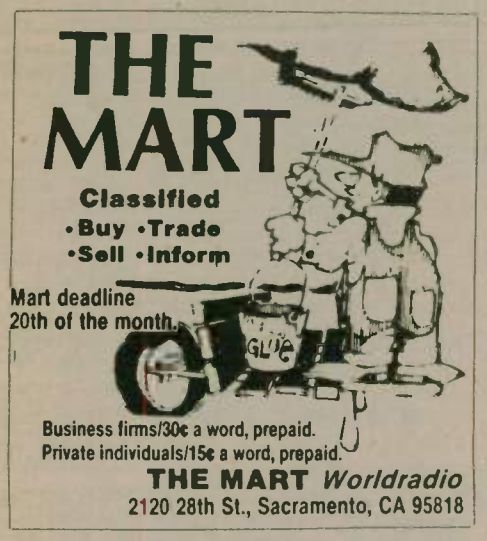

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RTTY JOURNAL — Now in our 34th year. New Beginners Handbook — $8.00 PPD USA, foreign add postage. Year's subscription to the RTTY JOURNAL, $10.00, foreign $15.00. Send to: RTTY JOURNAL, POB RY, Cardiff, CA 92007.

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EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write Fran Norrick, WB9WPS, Route 6, Box 239, Kankakee, IL 60901.

KW-1 COLLINS wanted. Condition determines price paid. Will pay truck freight for FB rig. Rush detailed description — Bob, K7RDH, 1903 West Holly, Phoenix, AZ 85009.

WANTED — HARVEY-WELLS BANDMASTER VFO. I'll buy transmitter to obtain VFO. Tony, WA3GKX, 1705 Ninth Ave., Irwin, PA 15642, (412) 864-4293.

COPY SATELLITE PHOTOS, WEATHER MAPS, press photos on our full size 18" wide facsimile recorders. We provide the equipment and information to get you started. FAX Guide, $1.00. ATLANTIC SURPLUS SALES, 3730 Nautilus Ave; Brooklyn NY 11224. (212) 372-0349 — Ask for ED, WA2FBY.

CHASSIS AND CABINETS kits. SASE, K3IWK.

SUBSCRIBE TO THE *DXers Magazine.* Gus Browning, W4BPD, editor. Only $15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

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CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC, each Saturday, Sunday, Monday and Thursday on 7060 kHz, starting 2000Z. Each Tuesday and Friday on 14060 kHz, starting 2000Z. Speeds range from 20 to 60 wpm.

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ALL ABOUT CRYSTAL SETS. New book by Charles Green shows you how to build crystal set radios. $7.95 ppd USA. ALLABOUT BOOKS, Dept W, P.O. Box 4155, Fremont, CA 94539.

TRADE: FREE VACATION TIME, Jersey Seashore in Sept. for anyone — IC-R71A, IC-751, TS-930/AT or FT-980. Walt, W3KDT, Box 611, Moorestown, NJ 08057.

AUTO-CALL KEEPS UP WITH THE LATEST Ham info from Washington, DC area. Subscription $6.00 a year, sample copies $1.00. Address: AUTO-CALL, c/o W2GHK, 2417 Newton St., Vienna, Virginia 22180.

$$$ SUPER SAVINGS radio computer electronic parts; accessories, supplies. SASE for catalog. Get on our mailing list. BCD Electro, P.O. Box 830119 Richardson, TX 75083.

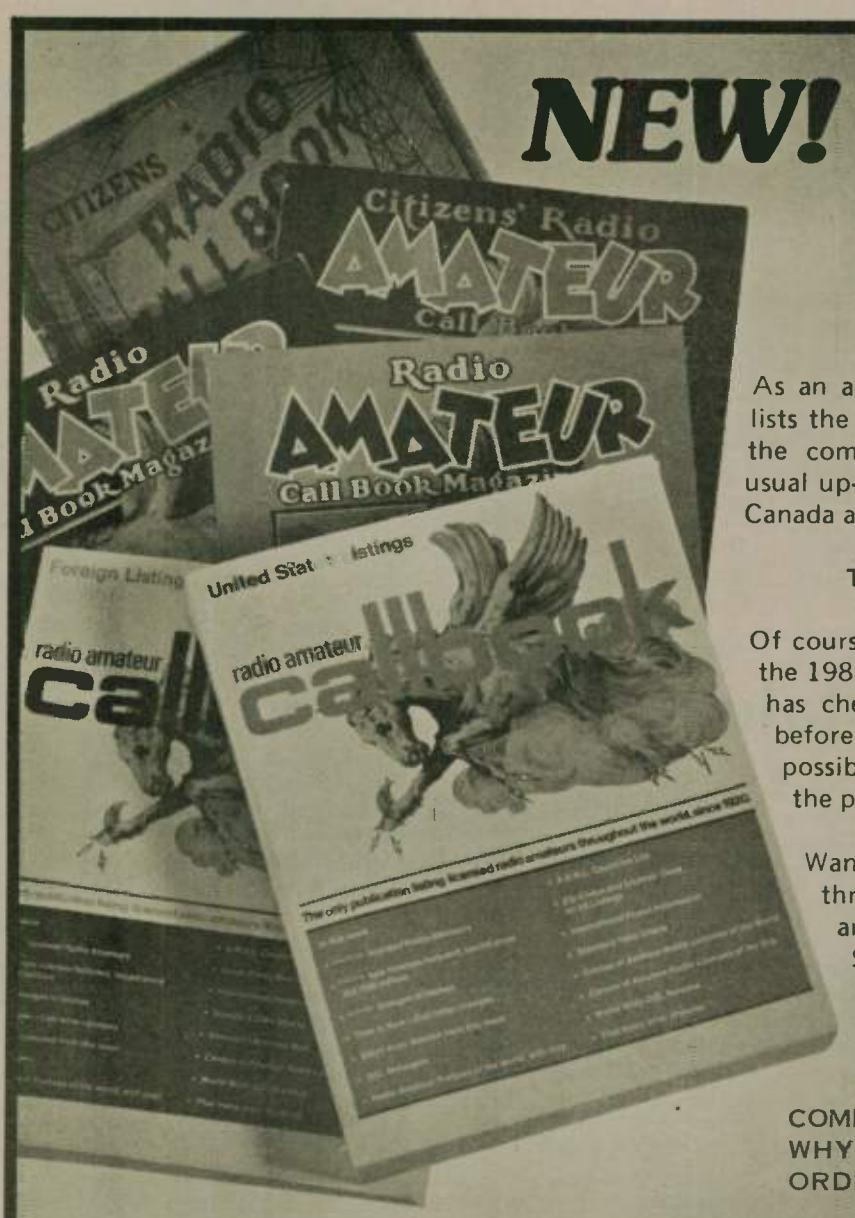
SOLID BRASS BELT BUCKLES. Name or call. One line — name or call — $8.50. Two lines, name and call — $9.50. Add $1.00 postage. S. Slonim, 320 Rose St., Massapequa Park, NY 11762.

STAMP BRINGS QSL samples and catalog. New designs from $7.00. WA6SOK, 4056 Acacia, Riverside, CA 92503.

CUSTOM REPORTS, QSLs and ad labels. Stamp brings flyer. LABELCRAFT, P.O. Box 412, W. Sand Lake, NY 12196.

IBM RTTY/CW split screen, buffers, and features beaucoup. SASE to: E. ALLINE, NE5S, 773 Rosa Ave., Metairie, LA 70005.

HAMS FOR CHRIST — Reach other hams with a Gospel Tract sure to please. Clyde Stanfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.



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A tale of two cities

"God works in a mysterious way, His wonders to perform." — William Cowper

The poet spoke better than he knew when he penned those words a few centuries ago. The Lord can draw good out of evil. Sixteen years ago, He did just that when He entered the lives of two people. He snatched them from their ordinary carefree existences and poured them into a crucible of suffering. From this torment, because of His grace and their own effort, they emerged far better people than before. Their suffering had made them soften into sympathy for others.

Both now dedicate their lives to alleviating the misfortune of others. And since they live in different countries, they use Amateur Radio to set wings to their words and bring swiftness to their deeds.

In 1966, Ruth Paz was living a comfortable life in San Pedro Sula, Honduras. She had been raised in Detroit, and there she met her husband — at that time a consul from Honduras. They moved to San Pedro where he owned a small ranch and they became the parents of five children. Then this quiet, undisturbed world of hers came to an end. Riddled with cancer, she was taken to a hospital in Detroit. For two years she was surrounded by pain. Surgical scalpels cut into her body 14 times during this period.

As she lay crumpled in a hospital bed, she found time to think about the meaning of life. She reflected that she was alive, had healthy children, a good husband, and much for which to be thankful. Back in San Pedro Sula lived thousands of people, sick and poor and hungry, their lives shattered and no one to help them. And Ruth Paz emerged from the mystery of her suffering a much greater woman.

In 1966, Bill Barry, living in Easton, Connecticut, was an executive with the Remington Arms Company. He had married his college sweetheart, Betts, and they raised two children. Then God in his mysterious way began to enter the life of Bill. For 20 years he had been living with the fear of inevitable doom. The shades were gradually being drawn over his eyes. The world of color and beauty was dimming; blindness, like a creeping fog, was enveloping him. Then one day, irrevocably, the lights of the world went out, and Bill stood alone in a world of darkness.

Wrapping himself in a blanket of courage, Bill became a new man. The tragedy of physical blindness gave him a vision he never had before. He now moved into the wonder of Amateur Radio so that he could bring the world that he could not see to his fingertips. "My wife and I knew I was going blind for 20 years, but Betts had more foresight than I had. She knew Amateur Radio would tear down the fences for me."

It took hour upon hour of agonizing study to prepare himself for the FCC exam. "I remember sitting and taking the test in Braille for six and one-half hours. I prayed to God, 'If you just let me pass this, I'll give you more than an hour a day for someone else.' "

In 1966, a third element entered the picture. A group of doctors in California decided to devote some of their time to helping poor people in Latin America. Stationed at Stanford University's division of plastic and reconstructive surgery, they now wanted to provide free reconstructive surgery to children with burns and birth defects. They called their organization Interplast. Ten years later, they formed another division of the group in Fort Lauderdale, Florida.

The members of Interplast twice a year visit Mexico, Honduras and Columbia, and treat as many as 300 patients per visit. This past spring, for example, the Stanford group — a team of 24 people, including doctors, nurses and medical technicians — went to San Pedro Sula. They spent nine days there, and during that time performed over 100 major operations, taking care of 350 people.

Interplast was the catalyst bringing Bill and Ruth together, and Amateur Radio gave them their common voice. Ruth got her ham license in 1961 as HR2RP and Bill got his in 1968 as WB4ELX. The two amateurs, both IMRA members, were now able to help the doctors.

When the Interplast team visits Honduras, Ruth arranges for their accommodations. She coordinates their trips, notifies the local people of the team's arrival, and arranges for passports and visas. She also makes arrangements for children with major problems to be brought to Florida for more extended treatment. Ruth will often bring the children herself. "I got involved with Interplast 13 years ago and, gosh, they haven't let me rest since," she said with an airy laugh.

On the Florida end, Bill acts as a communication center for Interplast. He and Ruth keep in constant contact with each other, sending information back and forth. He also arranges phone patches so that the children in the hospital in Fort Lauderdale are able to talk to their parents in San Pedro.

In this beautiful fashion, two people who looked beyond their personal calamities now use Amateur Radio as a blessing to others.

— IMRA Newsletter □

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