Worldradio

Year 24, Issue 12 June 1995 • $1.25

FEATURED IN THIS ISSUE


Worldradio
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"T" as in Tango, Typhoon—and Terror!

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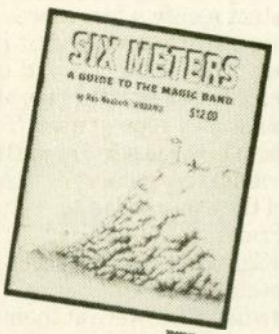

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Preparedness pays off in Oklahoma City disaster

On April 19th, 1995, Oklahoma City, Oklahoma became the site of the largest single disaster produced by mankind in the history of the United States. The A.P. Murrah Building, which housed many federal offices, was devastated by a huge car bomb just after 9 a.m. that morning. This is being written 48 hours later.

Oklahoma City has a number of dedicated, hard-working Amateur Radio emergency groups with a fine record of mutual cooperation. In the limited time available to ***Worldradio*** before this issue goes to press, we were able to contact a only a few representatives of those various groups; but every one of them stressed how proud they were of the selflessness of the operators and the groups they represented. The objective was to provide service to those in need —victims or rescuers or local officials— and they proceeded to do just that.

Frank McCollom, N5FM, is trustee of the Salvation Army's division headquarters station in Oklahoma City. He and his wife, Alice, were at their home about six and one-half miles from the blast. "We thought our water heater had exploded," Mrs. McCollom said of that morning. Frank was soon at division headquarters. He explained "The hams know to go to the correct frequency for assignment in a disaster, and that is what they did."

Advance disaster planning in the case of this organization includes a test net which is held every second Saturday on 3.900MHz phone, with a 2M phone net at the same time. It covers the Oklahoma/Arkansas border area. Quent Nelson, WA4BZY, then covers the Atlanta, Georgia, area to North Carolina on AMTOR at 14.060 MHz.

Oklahoma City's area disaster plan calls for the local hospitals to hold disaster drills every month. It paid off. They know "their" hams and how to use them, for everything from finding needed supplies to locating personnel and sending them where needed most.

Ultimately, five canteens were set up at the disaster site, and each had two Amateurs present at all times. They handled requests from the rescuers ranging from climbing and rappelling equipment, hard hats, flashlights, and many, many requests for batteries of differing sizes both for flashlights and radios. They also had a serious need for dry clothing that first night.

In the meantime, hams, many of them newly licensed and not yet trained in emergency communications, appeared at headquarters. In the best tradition of the Amateur Radio Service, they wanted to help. These volunteers were put to work logging and otherwise assisting the operators. After a few hours of helping, listening, and learning, they took their places out in the field and universally did an excellent job.

Jim Jones, K5PER, is Emergency Coordinator (EC) for Oklahoma County. For months he has been visiting the many clubs in the area promoting emergency communications. He has been telling them that Oklahoma was overdue for an emergency, and the time to practice is before an actual event. Jim feels that it is easier to work with each other when you have been able to become acquainted, and that familiarity with people and tasks improves efficiency. Fortunately, his advice was taken.

Relating the experiences of the last two days, Jim Jones emphasized how impressed he was at the willingness to help, not only within the Amateur Radio community but in the population in general. Emergency disaster units came from Tulsa and Ada, Oklahoma, among other places, and in most cases they brought their Amateur Radio operators as well.

As in all well-run communications events, there will be critiques made in the weeks to come. K5PER, as EC, hopes to have police, fire and medical representatives participate, in order to improve however possible, so as to be well prepared for future emergencies.

Thanks to: KB5YHR, K5JB, WW9E, N5FM, K5PER and KD5DL. WR

"T" as in Tango, Typhoon—and Terror!

Charles A. Haight, N6NMM

Whenever the wind blows through the palm trees in my backyard, I get a little tense because I recall the time 49 years ago when I was up to my eyeballs in salt spray and falling coconuts on a beach in the Philippines. The wind, out of the south, kept increasing in velocity, and the waves along the beaches nearby were becoming wild and frothy. The waves were akin to the great waves at Sunset Beach in Hawaii where surfing contests are held each year.

The incidents I am about to relate occurred in 1946 on the island of Leyte in the Philippines and included a real live ghost. But let me go back to the beginning.

After spending 27 months in China and then the winter of 1945-'46 in the snows of the East Coast, I was ready for some warmer climes. I applied for and landed a job with the U.S. Signal Corps as a transmitter supervisor at WTA in Manila, the main Signal Corps station. I arrived in the islands just prior to their independence from the United States. Manila was okay, but when it was decided that I would be sent to Leyte, I was elated! I would have a station to run all by myself and plenty of time to devote to my first love—ham radio. Although my license was more than five years old, I had not had much time to use it. Between March 1941, when my ticket was issued, and July 1941, when I enlisted in the Army Air Corps, I had just enough time to fall in love with my new hobby. You can imagine my excitement when I discovered that I had a kilowatt rig into a rhombic antenna at my disposal. The fact that I was the only ham on Leyte did not bother me a bit.

(please turn to page 6)

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— *Worldradio* NEWSFRONT —

Some information has been supplied to ***Worldradio* Newsfront** courtesy of *Newsline*.

Enforcement called 'dismal'

The ARRL has told the FCC that its recent track record inAmateur Service rules enforcement has been "dismal." It is the agency's record in Amateur Service rules discipline that has prompted that description. It is demanding an immediate policy change.

The League's criticism of the FCC's inaction comes in comments filed on a commission proposal to adopt a standardized schedule of monetary forfeitures for rules violations in all services. The League says that while there have been only a few cases in the Amateur Service where prompt enforcement action was badly needed the necessary action did not take place, "despite repeated FCC promises."

The League notes that in these cases of amateur rules violations in recent years, FCC promises of action have not materialized and the problems persist. The ARRL suggested that forfeiture amounts for amateur rules violations be adhered to instead of greatly reduced, and that collection efforts be strictly enforced.

As to the new schedule of fines, the ARRL says that the Commission has probably arrived at a reasonable forfeiture schedule, but that administration of the schedule, is the more pressing matter. The League said that at issue is whether the fines were sufficient to cause recipients to not violate a particular rule in the future, and deter others from violating the same rule.

The ARRL adds that the forfeiture proceeding in CI Docket 95-6 should be far broader, to include a review of the overall effectiveness of monetary forfeitures as an enforcement tool. This, given that as presently used such forfeitures are often either ignored or contested.

FCC monitoring cutback

It may soon get a lot harder to track down unlicensed broadcasters and other regulatory violators. The FCC is cutting back on its HF monitoring operations as it gets ready for future automation. Monitoring stations in Baltimore, Maryland, Boston, Massachusettes, Buffalo, New York, Grand Island, Nebraska, Miami, Florida are among the first to go. For the moment, their functions are being transferred elsewhere. But more closures are expected as the FCC converts all monitoring to remote control from a headquarters location in Laurel, Maryland.

Satellites destroyed in fiery launch

Two amateur satellites were lost in a fiery explosion March 28th. It now appears as if the two ham radio birds were lost when their launch vehicle exploded.

The Israeli-built Gurwin-1 TECHSAT and the Mexican UNAMSAT were part of the payload of a Russian SS-25 rocket originally built to carry ballistic missiles and recently converted to launch satellites. The Reuters News Agency said the rocket, which was launched from Russia's Plesetsk Cosmodrome, came down in the Russian far east, in the Sea of Okhotsk, on March 28th. Two Russian satellites also were lost in the failed launch.

In November, 1993, the first test launch of a converted SS-25 was successful, but with a lighter payload. Radio amateurs, particularly in Europe, have hoped that the Russian rockets will provide an inexpensive way to launch amateur radio satellites.

Ban on HF bulletins sought

A petition to the FCC by a ham radio newsletter editor aimed at banning all one-way information bulletins regardless of mode of transmission, along with code practice and shuttle audio retransmission has been assigned a rule making number by the Commission. In early April, the FCC assigned the file number RM 8626 to the request.

Its sponsor, Fred Maia operates the W5YI VEC and is the editor publisher of the *W5YI Report* Newsletter. He contends that code practice, bulletins and other one-way transmissions are not conducive to modern ham radio communications. He calls the FCC rule that permits one-way transmissions on the amateur bands as a very permissive category and taken in its broadest context. He says that this permits just about anything to be transmitted that is even remotely associated with the Amateur Service.

Again, Maia's anti high frequency bulletin petition has been assigned the file number RM 8286. It carries a very short commentaty cutoff date of May 4th and will have passed by the time you read this.

ARRL says petition threatens W1AW

The ARRL says that a petition for rule making before the FCC that will eliminate all one-way transmissions on the amateur bands below 30 MHz is a threat to headquarters station W1AW. Its going on the offensive to try to kill the measure.

As reported last week, the FCC has assigned file number RM 8626 to the petition, which was filed by Fred Maia,

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Worldradio (USPS 947000) is an international conversation. You are invited to participate.

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 to this avocation. You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio.

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PUBLISHER'S MICROPHONE

We now present a list of those who always check the frequency before calling CQ, take good notes during QSOs so as to make intelligent conversation, have shacks so neat that they are pleased to show it to visitors at any time, go on Field Day every year and volunteer to hold office in their radio clubs. Well, if they didn't quite meet those specs before, now they have to because they have a reputation to uphold.

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*

Our thanks to the newsletter of the American Legion's Amateur Radio Post 380 which recently printed: "It has been said that the best Amateur Radio magazine is ***Worldradio***. It is even and balanced in the coverage of Amateur Radio events and features a variety of operating interests." They went on to give the toll free number for subscriptions, etc. And, the bulletin of the Pioneer Radio Operators Society (Buffalo, NY) said: "We think ***Worldradio*** is TOPS." We also thank the many club publications that reprinted a part of this column.

*

I remember at a convention forum, many years ago, one amateur kept saying that if we dropped the Morse Code requirement "many electronic geniuses" would come into Amateur Radio. The speaker kept using the phrase "vice-presidents of electronic companies" who would come beating our doors down if the onerous CW requirement were gone.

Well, as it turned out we did get a big upswing in numbers. But, oddly enough, none of the publications, (including the ARRL) reported a proportional growth. In actual fact none of them reported much growth, if any at all.

It appears that all the expected "technical types" who were kept away due to having to learn something they thought was useless didn't join the parade after all. The reason is that a lot of people "don't want to do the same thing at night that I do during the day."

I even knew one ham who gave up his TV repair job and became a janitor because he prized Amateur Radio so much that he didn't want to get technical burnout, as he called it.

On the other hand, or was that in Amateur Radio's Golden Era, the broadcast engineers, after the midnight signoff, would put the station's tower on the 160 Meter amateur band. The great names of radio were usually first amateurs, and then went into it as a profession because it was fascinating!

They were in RADIO, day and night. It may have been broadcasting, aviation, industrial, manufacturing or whatever facet but they were in it with both feet. Today, I suppose, it would be called communications. There are avid amateurs who work at two-way shops, maintain police radios, microwave facilities and on and on, and they think it is great!

They are far, far more fortunate than those who came into electronics via reading about a school on the back of a matchbook cover. Ho, hum, another job, but it beats driving the milk truck.

As a rule, our VHF/UHF repeaters are maintained by those who are technically employed, thankfully. They are having a great time and don't whine about doing the same thing for a job and a hobby. The idea of "the same thing for a job and a hobby" probably never crossed their minds.

It really wouldn't be too much of a stretch to liken it to a spoken line from a movie. In explaining his job as a police detective he said , "This isn't what I do, this is who I am." Are some of the luckiest hams those who work at the ARRL lab?

Some of the top amateurs, during the day, in the defense industry, are working on the most intricate circuitry, in deep hush-hush gear. And they probably think about it at night, too, as they sit in their shacks chasing the latest DXpedition.

—Armond, N6WR

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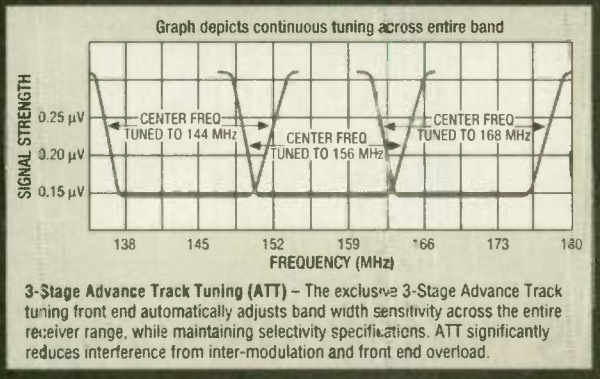

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Typhoon

(continued from p.1)

I liked the tropical climate and the people, and I had 20-Meter pile-ups in my future! What more could I ask for?

About a mile north of the village of Palo on Leyte where I worked, was the monument to General Douglas MacArthur. It had been placed on the beach where he "returned" to the Philippines. A few miles farther up the road was the main Army base at Tacloban replete with Bachelor Officers' Quarters, a hospital, Officers' Mess, PX, supply warehouses, and other buildings. In addition, the Navy maintained a presence there. It was from the Navy people that I first learned that a typhoon was building up in the Gulf of Tonkin, known as "The Womb of the Typhoon," and was headed toward the Philippines. This storm, of course, was the cause of all that wind and high surf.

Chuck Haight, N6NMM, at Palo, Leyte, Philippines in 1946.

Nearly every time I went on the air, one of the stations I was sure to hear and work was WØNVF/KG6, a station on Guam operated by Navy personnel at their base. A normal day's operations would usually include contacts with stations in Manila, then into Guam, followed by United States stations in Japan, the Aleutians, Alaska, the Pacific Northwest states, then down to San Diego, where my older brother, a sailor, operated W8UHF/W6. He reported that he could hear me a few hours before I could hear his signal. He always said my signal sounded like "lightning striking the outhouse."

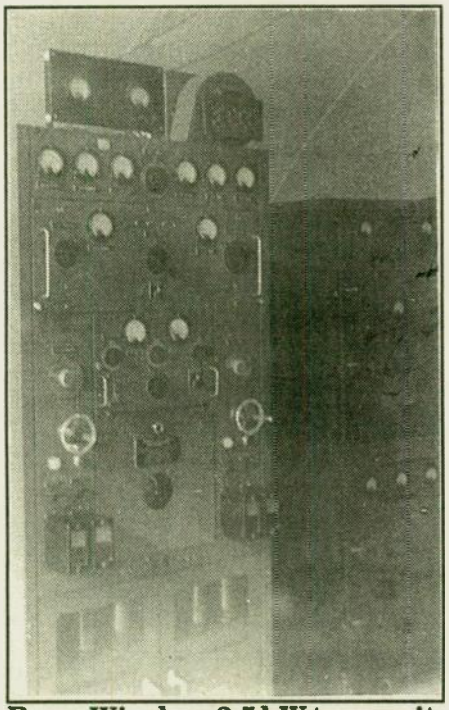
This tale began on September 19, 1946, when we noted the huge waves and the bending of the palm trees along the eastern side of the island, the side where the Gulf of Leyte is located. My apprehension about being in a typhoon was based on a recent experience. On the trip across the Pacific to the Philippines, my ship made a scheduled stop at Naha, the main city on Okinawa. From the deck of the ship, the devastation and the awesome power of nature were visible to all. The full-size ocean-going ships which lay twisted and rusting more than one hundred yards past the high tide mark were mute evidence of nature's fury. One ship lay almost vertical against a cliff behind the dock area. This disaster had occurred in the days prior to Hiroshima during a typhoon less than one year before. I shuddered at the thought of being caught in such a storm! While in port, our ship made a hasty departure when word came to the Captain that a similar storm was currently heading toward Okinawa. The threat of this storm forced the Captain to leave some crewmen and passengers behind on Okinawa while he attempted to outrun the storm. We certainly did not want our vessel to join the relics on the beach! However, we had our own thrill ride as we ran just ahead of the storm, traversing the roller coaster of the troughs and crests of the massive waves whipped up by the winds. When we finally returned to Naha three days later, the intensity of the storm could be observed in the faces of the stranded crew and passengers. They were relieved to be back on their floating home.

So when I went on the radio that afternoon with the current storm approaching, the Manila ops wanted to know how we were making out. So, too, did Wayne and George at the Guam station. The poles that supported my antenna — a Rhombic directed toward San Francisco — were groaning as the gusts of wind tore through the grove of trees that surrounded my Quonset hut. I told everyone that we were ready for the storm but might have to QRT and head for high ground if conditions on Leyte got any worse. George was operating just then and sent out a "hi hi" to indicate his response. George was normally quite serious, but his reaction let me know that he had a lighter side. Of the several operators on Guam, George had the best fist by far. There were times I considered asking him to QRS when he must have been sending about 40

wpm...way over my 25 wpm capability at that time. Nevertheless, I could get enough of his messages to understand essentially what he was saying to me, and I enjoyed listening to him go wild on his Vibroplex™.

As the storm approached, it was decided that Guam would keep an eye on us and alert Manila should we get into grave danger. Although our emergency generators were filled with diesel, I had decided that my crew and I would head for higher ground to the west. Our Quonset hut was only about four feet above normal tides. Caves, dug by the Japanese Army into the hills near Palo, would afford us some protection when the "stuff hit the fan." I didn't want to leave the radio though, until the last minute. As the hours of monitoring turned into a full day, it became clear that Leyte would be spared a direct hit; the storm veered to the east of Leyte and by the next day was bearing down on Guam. Now it was our turn to watch out for the guys up north.

We agreed to keep an hourly sked with WØNVF/KG6 beginning at 20:00Z, September 20th. My log and the marginal notes, tell much of what

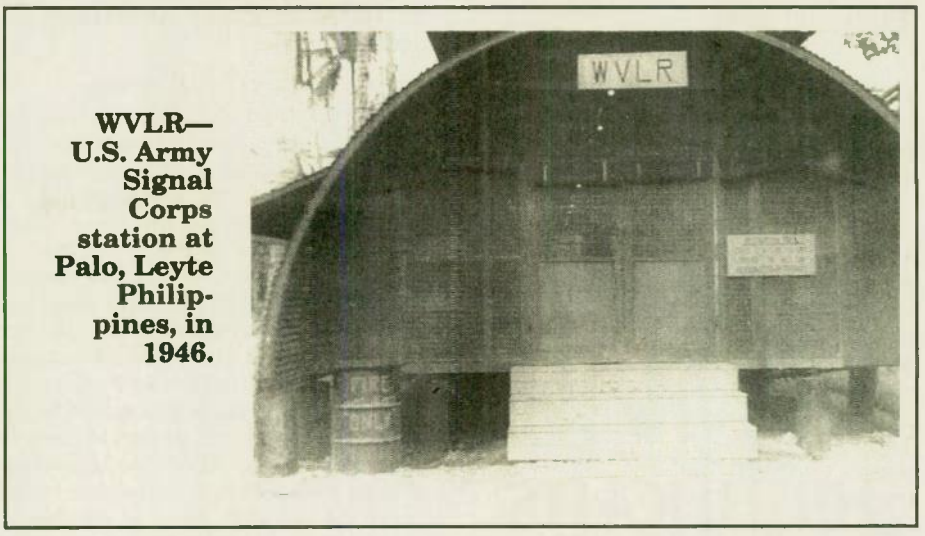


Press Wireless 2.5 kW transmitter. Used by W2NSI/KA5 in 1946.

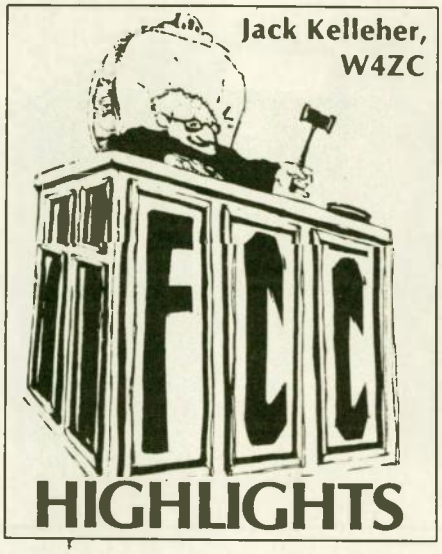
followed. For a while it looked like the storm might pass to the north of Guam, but it took a direct hit. By 03:00Z, WØNVF/KG6 came on to tell me that their generator had been flooded out by the severe rain. Obviously they had cured that problem. But they didn't respond to my 04:00Z call. No answer to my calls came in at 05:00Z, and by 06:00Z when I still couldn't raise them, ZS1M in Capetown, South Africa, said that if I wished he would try to raise them. He also had no luck. I notified WTA in Manila and was told that they would alert the proper authorities who would mount a relief effort if necessary. That was good news to me, so I went to bed for a few hours.On September 22, a Sunday I believe, I had a call from Wayne on Guam who told me that they had all survived the storm. Their Quonset hut, mounted upon stilts, had blown off its perch. During the time they were in the eye of the storm, George had mused that when the eye passed and the wind came from the opposite direction, perhaps it would put their hut back up on the stilts. However, the wind did not provide the assistance they had hoped for.

At this point in the storm's aftermath, the "ghost" appeared to me. I mentioned to Wayne that I really respected George's great operating skills. He asked me if I knew who George was, and when I said I didn't have a clue, he told me that I had been working the famous "Ghost of Guam," George Tweed. His story had been told in bold headlines in papers and news magazines around the world just months prior to the close of World War II. Radioman First Class George Tweed was found to have survived nearly three years hiding out on Guam. He had been given up for dead. When he was finally rescued, it was said that he could hardly speak from not being able to converse with anyone for those long years. The Navy promoted him to Chief Radioman retroactively. In those days, that promotion meant quite a large sum of money. I had read many accounts of George's adventures, including a feature in *Reader's Digest*, and was thrilled to realize that I had been working this ham for the past several months.

Many years have passed, and I do not know who the call WØNVF belonged to; it is not listed in my *Callbook*™. Hopefully someone will finish this yarn by providing information about both of these fellows. Should you have any knowledge regarding them, we all would appreciate a note to ***Worldradio*** to fill us in. **WR**



WVLR—U.S. Army Signal Corps station at Palo, Leyte Philippines, in 1946.



Vanity call sign system

More information on this subject is in FCC Public Notice No. 52540, March 3, 1995, which is essentially a plain language elaboration on the information contained in the Report and Order issued on February 1st.

Among other things, it confirms that applicants for previously held calls are not bound by the class of license now held, e.g., a General Class licensee may apply for a one-by-two call previously held by him or her or by a close relative and which is still available. The language for Gate 1 is as follows:

"Gate 1: Any class operator who is applying for:

A. The call sign that was previously shown in his or her primary station license, or

B. The call sign that was previously shown on the primary station license of a deceased spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law, or

C. The call sign that was previously shown on the club station license for which the applicant is currently the license trustee."

Applicants vs. call areas:

During the period leading to the Report and Order, some commenters recommended against any policy that would permit a licensee to apply for a call sign from any call area block (other than that in which he now resides), or a call sign block dedicated to specific island and insular areas. In response the Commission said they decided not to impose that limitation because, among other things, the applicant's choice of vanity call signs would be reduced to ten percent or less of the call signs that would otherwise be assignable to the station. A limitation based upon the person's place of residence, moreover, could easily be circumvented by using a mailing address in another call sign region.

On March 3rd the ARRL filed a Petition for Reconsideration, requesting that the Commission revise this finding and require that the call sign requested by an applicant be from the call sign region of the then-current mailing address of the applicant.

ITU World Radio communication conference

The American Radio Relay League has submitted to the FCC its comments on the WRC that will take place this fall, and on other matters to be considered in later conferences. (WRC-95 will be the first conference held under the ITU's new accelerated conference cycle to discuss substantive spectrum allocation and regulatory matters. WRC-95's agenda pertains primarily to the Mobile Satellite Service (MSS), Subsequent WRCs will occur every two years).

The League noted that certain MSS proponents have suggested that some spectrum allocations at 13 cm (2.4 GHz area) currently available to the amateur service, are candidates for MSS allocations. ARRL noted that they have regularly opposed the nomination of these bands as MSS candidates. They referred to the recent elevation of 2390-2400 and 2402-2417 MHz from secondary to primary allocation status in the United States, pursuant to the FCC conclusion that the best use of these bands in the U.S. was for amateur and Part 15 operation.

Referring to other UHF allocations having a potential for MSS allocations, ARRL said: "...any additional MSS spectrum requirements can be satisfied in bands outside those allocated to the Amateur and Amateur Satellite Services...."

The League also addressed worldwide amateur allocations at 40 Meters, saying "...an important goal of the League and the International Amateur Radio Union (IARU) is to create a worldwide allocation (to the amateur service) of not less than 300 kHz bandwidth around 7 MHz. Currently, the amateur allocation is 7000-7300 kHz in Region 2 and 7000-7100 kHz in Regions 1 and 3."

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 the first of April 1995.

For more information about the call assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325-7245.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	AAØWZ	KGØVF		KBØRVU
1	AA1MX	KE1AZ	N1USY	KB1BOI
2	AA2WW	KG2CB		KB2UCB
3	AA3LD	KE3SJ	N3UXM	KB3BHC
4	AE4GC	KS4TL		KE4YMF
5	AC5BV	KK5NB		KC5NRI
6	AC6LV	KO6TA		KE6SNC
7	AB7JE	KJ7MD		KC7JYT
8	AA8TA	KG8QJ		KB8YQE
9	AA9OG	KG9BH		KB9JVL
N. Mariana Is.	KHØQ	AHØAV	KHØDW	WHØABC
Guam	WH2M	AH2CZ	KH2NM	
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6OB		WH6CUD
Amer. Samoa	AH8N	AH8AH	KH8CG	WH8ABB
Alaska		AL7PZ		WL7CLX
Virgin Is.	WP2R	KP2CD	NP2IA	WP2AHV
Puerto Rico		KP4ZC		WP4MXF

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Thank you!

Subscriptions received by the 20th of the month will begin with the issue dated two months from the month of receipt, i.e., if we receive the subscription by April 20, your first issue will be June, and will be mailed to you in early May.

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

At WARC-92, the United States proposed the realignment of these bands to provide the Amateur Service a worldwide allocation of 6900-7200 kHz, and the Broadcasting Service an expanded worldwide allocation above 7200 kHz. It was not possible to accomplish this realignment at WARC-92, but Recommendation 718 was adopted by WARC-92 which called for a future competent conference to consider the possibility of aligning the allocations of the Amateur Service around 7 MHz.

ARRL said: "It is the League's considered assessment that this matter should not be placed on the agenda of a WRC prior to the year 2001. Considering it any earlier would likely defeat the entire purpose of the exercise, given the rate of migration from HF technology for fixed and mobile communications infrastructures of various countries to satellites and cable. Further, the HF broadcasting allocations have not been determined in that range." (Note: Another factor favoring the League's position is the fact that there are more than 600 kHz allocated to the Maritime Mobile Service in the 8 MHz range, the need for which may be greatly diminished after the 1999 deadline for change over to GMDSS (Global Marine Distress Safety System). Most routine maritime operational and navigational traffic is already being handled via satellite systems).

Addressing the matter of an international Amateur Radio permit (IARP), the League said: "It was originally requested that the IARP be added as an agenda item for WRC-97. The concept was an international 'roaming' amateur license, by means of which U.S. amateur licensees could travel to other countries, and other countries' amateurs could travel to the U.S. and operate amateur stations based on a combination of the amateur license of the visitor's home country and an endorsement based on an international licensing agreement. The U.S. has entered into ad-hoc bilateral agreements which permit such operation and the statutory basis for entry by the U.S. into multilateral agreements is in place...."

"The IARU, having gained support within Region 2 for an IARP, continues to urge the inclusion in the agenda for WRC-99 the issue of an international Amateur Radio permit".

SSB and HF broadcasting

For years SSB (single sideband has been advocated for HF broadcasting, to reduce the amount of spectrum required for the service, improve fidelity, and enhance power utilization. Those favoring the status quo over that receivers are not readily available, are prohibitively expensive, and represent a very small fraction of the HF receiver market.

ARRL's position is that, while SSB receivers may be more expensive than AM receivers, "that is not to say that they are prohibitively expensive. It has been well-established that there should be a phasing-out of AM DSB (double sideband) emissions in the HF bands allocated to the Broadcasting Service...The use of SSB instead of DSB modulation techniques would lead to improved spectrum utilization...." The issue is not whether SSB emissions should be required in light of new replacement technologies, but rather when DSB emissions should be terminated. The Amateur Service and most other radio services converted to SSB transmissions many years ago."

Amateurs gain limited access to 219-220 MHz

As announced in ***Worldradio's*** May issue, the FCC has allocated the 219-220 MHz band on a secondary basis to the Amateur Service for point-to-point fixed digital message forwarding systems. (The primary occupant of the band is the Automated Maritime Telecommunications Systems [AMTS]). The allocation had been requested by ARRL as partial compensation for the loss of the 220-222 MHz band in 1991.

When the new rules take effect (a date has not yet been announced), Technicians and higher class amateur licensees will be permitted to use digital emissions of up to 100 kHz bandwidth, and no more than 50 watts PEP output.

To protect the primary occupant, the ARRL has been designated the national contact point for all amateur operations in the band, and is responsible for maintaining a database of all amateur operations in the band. All amateur stations will be required to notify the ARRL at least 30 days before initiating operations in the 219-220 MHz band.

Amateur stations within 50 miles of an AMTS coast station will be required to obtain written approval of the AMTS licensee before operating. Amateur stations within 398 miles of an AMTS coast station will be required to notify the AMTS licensee in writing at least 30 days prior to initiation of operations. The ARRL will assist amateurs in fulfilling these requirements.

FCC and HF monitoring

Also in *The ARRL Letter* for March 24, ARRL reports that the FCC is cutting back on its HF monitoring. Several field offices are in the process of closing, including Baltimore, Buffalo and Miami, and their functions are being transferred elsewhere. Other closings are not expected. The FCC is said to be converting all monitoring to remote control from Laurel, Maryland. **WR**

Newsfront

(continued from page 3)

W5YI. In a public release on the matter the ARRL points out that Maia is the publisher of the commercial newsletter the *W5YI Report*. The effect of the petition, says the ARRL would be to silence its W1AW bulletin and code practice transmissions, among others.

Nor is the ARRL alone in opposing RM 8286. Several other prominant groups have already made public their opposition and the packet boards are crowded with comments on this issue.

There is fear among packet radio advocates that, if enacted, the Maia proposal could mean the end of high frequency bulletin board operations. This, because they say that the vast majority of postings to these boards are one-way bulletin type transmissions to the general ham public. And the texts and intent of these bulletins are in no way different than a general interest bulletin transmitted by W1AW or anyone else.

George Wilson home

ARRL President George S. Wilson W4OYI is home. At least he is near his home in a transitional care facility in his hometown of Owensboro Kentucky.

Early on Friday March 31st, President Wilson was released from a Fairfax Virginia hospital where he had spent the last month an a half in the initial recovery from a stroke he suffered on February 11th. He was transported to Washington Dulles International Airport for the flight back to Owensboro accompanied by his wife Marian.

Late word is that President Wilson fared very well during the move. He will remain in the Owensboro facility for a short time and then transferred to a nearby rehabilitation center to begin a regimen of physical therapy.

Get well wishes can be sent directly to President Wilson at 1649 Griffith Avenue, Owensboro, Kentucky 42301.

ARRL will not be a coordinator

The ARRL has reaffirmed that it has no interest in being a frequency coordinator. This league says that the FCC has agreed with other commenters who feel that the existing local frequency coordinators are the best qualified to accommodate amateur radio operations in the new 219 to 220 MHz band. As a result, the League says that the ARRL's role is defined as serving only as the national contact point. The League will also maintain a database of all amateur radio operations in the new band.

Ham-Sat show taped

Ken Ernandes N2WWD reports that a PBS tape crew spent a very productive day, Sunday March 19th at the QTH of John Gordon, KD2JF, preparing material for a forthcoming segment of the program "Signal to Noise," apparently featuring the transition of military systems to commercial endeavors.

During the taping Ken and John made 5 contacts on AO-10. Stations worked via the satellite included: HB9OBR in Switzerland, Italians IK8MRD and IW5CNU, EA6SA in Spain and N8TDL in Ohio. A live, on-camera, capture of AO-13 telemetry was also accomplished with Ken doing some voice-overs explaining the purpose of what was being seen.

Some video footage of satellite tracking software was also recorded as well as nice background footage of KD2JF's OSCAR antennas in motion. QSL cards were shown off, including some for SAREX and MIR contacts as well as two-way OSCAR QSOs.

Caribbean grid square

On June 18 through 25, several hundred amateur operators will take part in a Yaesu DX Caribbean cruise that will place specific emphasis on VHF and UHF operation.

Yaesu's Chip Margelli, K7JA, stated, "We plan to be on the air on both VHF as well as UHF aboard our cruise ship in some really rare grids. Course corrections, due to ship traffic, weather, and tides, may effect the grids entered, but I guarantee our excursions into these rare grids will find us on the air."

Grid Square	Dates
FK-42 - Aruba	June 16, 17, 18
FK-53, 63, 74, 84, 85, 95 - Dominica Operation	June 19, 20
FK-95, 94, 93 - Barbados Operation	June 21
GK-03, FK-93 - Martinique Operation	June 22
FK-94, 84, 83, 73, 63, 62,52 - Curaçao Operation	June 23, 24
FK-52, 42	June 25

According to VHF/UHF maritime mobile DXer Gordon West, WB6NOA, "We have an ambitious operating schedule planned for our cruise to give out these valuable grid squares, and we have equipment for 50 MHz, 144 MHz, and 432 MHz SSB." The equipment also includes major antennas and power amplifiers for moon-bounce operations on board ship as well as on shore. "Amateur operators who plan to work us maritime mobile as well as ashore during our Yaesu DX Caribbean cruise in June should contact us well ahead of time to set up some specific schedules," adds West.

For more information about the Yaesu DX Carib cruise in June of this year, contact Yaesu USA, Chip Margelli, K7JA, 17210 Edwards Road, Cerritos, California 91703; FAX 310/404-4828. WR

Attention DXers!

The San Francisco Shriners Hospital for Crippled Children has a stamp club for inpatients as well as recovering outpatients that have an interest in stamp collecting.

Children are given a stamp album when they are in for treatment, and stamps are regularly distributed and forwarded to club members. Their current need far outweighs present contributions. They would greatly appreciate any foreign stamps (and/or foreign coins and currency) being forwarded to them at:

Stamp Club
San Francisco Shriners Hospital
1701 19th Avenue
San Francisco, CA 94122.

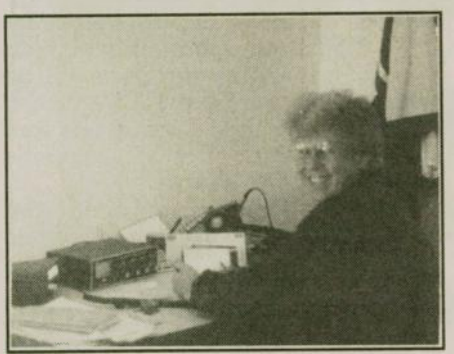
—*submitted by* Michael Pilotti, N3IRZ

Palestine on the air

Jim Gordon, KA6ISE

Palestine is back on the air. ZC6B, Dr. Sami Tarazi, operates from his station in Gaza, the principal city of the Gaza Strip. I was fortunate enough to visit him while working on a technical assistance project there.

The Palestinian National Authority's communications ministry, established when Israel ceded some authority over gaza and the West Bank last year, authorizes operations using the ZC6 Palestine call sign series allocated to the British government during their mandate over the area. The arrangement reportedly has been accepted by the U.K. Government but still needs to be finalized through the ITU. Nevertheless, the ministry is prepared to authorize ZC6/ operating privileges for visiting hams according to their authorized privileges at home.



Sami, ZC6B —*photo by* **KA6ISE**

Dr. Sami, as he is familiarly known, checks in often, especially on Fridays or Saturdays, on the 20 Meters W7PHO Family Hour Net. Unfortunately, his reception is often hampered by S9 + QRM. It's unclear whether the problem results from supply conditioning on the heavily loaded Gaza Strip power grid or simply a transformer problem on the pole adjacent to his house, but it's often very difficult to make out any signals through the noise. Send QSLs via: P.O. Box 1008, Gaza Palestine, via Israel.

ZC6B's antenna farm consists of a two-element beam and one wire dipole.

We cut and prepared another dipole for 40 Meters, but didn't get it put up.

There are only a few Palestinian hams, most of them still living outside the West Bank and Gaza. Youth clubs and community centers, now being reestablished, would provide an excellent avenue for using ham radio to teach young people about electronics and give them a means of international contact. As can be expected though, a lack of trainers and Arabic-language materials is the biggest barrier, followed by a lack of gear.

One excellent location for a young hams project would be the Sina'a Boys' Vocational Secondary School in Nablus, on the West Bank. This school has a modern electronics classroom, with lab benches that are equipped to teach and demonstrate electronics principles and component functions up through semiconductor and RF devices. Students can even make their own circuit boards. The classroom has a 386 computer to monitor the lab benches when in use, and the instructors would most welcome donation of a CAD program for DOS, to use when the benches are shut down. **WR**

Patron saint for radio amateurs

Flavius Jankauskas, K3JA/ LY2JA

In June 1994, I met Sakalas (Sak) Uzdavinys,LY2BO, among a group of hams who traveled from Lithuania by bus for their first post-WWII visit to HAM RADIO at Friedrichschafen, Germany. HAM RADIO is the European version of Dayton's Hamvention™.

Later I visited Sak in Lithuania, and he called my attention to an article in the Polish magazine *PZK* concerning a Polish radio amateur who had been canonized a saint. A local Philadelphia amateur, James Samuels,W3BG, had attended a Catholic church named in this man's honor and had heard that he had been a radio amateur, but did not know his call or the story behind his canonization. What a coincidence! So Sak translated the article. The pertinent facts were:

Maximilian Kolbe was born 1894, in Zdunska Wola, Poland. Fr. Kolbe joined the Franciscan Order at a cloister in Niepokolanow and was editor of a popular magazine entitled *Knight Niepokolanow*. Later, he was sent to Japan as a missionary. In Japan, he founded small radio nets which were installed in cloisters, abbeys, etc.

After returning to Poland, he wanted to install such a radio station at Niepokolanow, but was not given a license since all stations were government owned. Fr. Kolbe didn't lose hope. He became a radio amateur, SP3RN, and a member of PZK. Understandably, the letters 'RN' meant Radio Niepokolanow. During 1937-38 he was operating on about 7200 kHz. In those days 7 MHz was also heard on most short-wave receivers.

Early in the Nazi occupation of Poland, Fr. Kolbe was arrested and deported to the death camp, Auschwitz. In July of 1941, the Nazis selected ten men to starve to death as punishment for the escape of another prisoner. At that point, Father Kolbe volunteered to die in place of Franciszek Gajowniczek, a prisoner who had a wife and children. Gajowniczek, the man whose life was spared by Fr. Kolbe's sacrifice, died peacefully March 13, 1995, at the age of 94 at his home near the Polish capitol, Warsaw.

In 1982, Fr. Kolbe, SP3RN, was canonized a saint by the Roman Catholic Church.

Radio amateurs in Argentina consider him as the patron saint of radio amateurs. **WR**

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Connect with us

"Right" that newsletter

Gary E. Meyers, KYØB

Writing a club newsletter involves more than club news and events. This article tells why...and shows how to do it.

"It's been heard that some club members have to sit down and make themselves read the newsletter." I read this comment toward the end of a recent issue of a club's newsletter with whom I exchange copies each month. The editor was leading to the question of whether or not the club should continue publishing a newsletter. I reread it and found it full of news which any club member should want to know. So why did those members feel they had to "make themselves" read it? My conclusion is that it lacked the ability to draw the reader to it. It was simply hard to read.

Before we cast stones, however, let's remember that club editors are usually volunteers. Most do their best for the club. They put a lot of hours into that paper you receive in the mail. Unfortunately, very few volunteer editors have experience editing a newsletter. If this describes you, or if you'd like to put out a better newsletter, read on. This article will unveil a few "trade secrets" which, if followed, will help you produce a more attractive and functional newsletter.

Getting started

Take a few minutes to look over the last issue of your club's newsletter. Do you like what you see? Read it again. Is it fun to read? Did your eyes flow along with the printed line, or did they wander over the page? Now read aloud. How does it sound? Is it pleasing to the ear? If you can't honestly answer "yes" to these questions, your readers probably feel the same way. If your publication is put together so people can't enjoy reading it, they probably won't try. As club editor, it's your job to make the newsletter a pleasant reading experience. This means you must give some thought to style before sitting down at the keyboard. For our purpose, style refers to your paper's appearance. Your newsletter's style determines whether it gets read or not. Let's look at a few choices you, as editor, must make.

Typeface

With hundreds of typefaces (fonts) readily available on the personal computer, you should try to use as many as possible in your newsletter to dress it up a little, right? Actually, experts advise against it, suggesting instead that you select a serif style typeface and use it throughout your paper. Serif fonts have small strokes at the top and bottom of each letter. Tiny as these strokes are, they serve to keep the reader's eyes flowing with the printed line instead of wandering around the page. This results in smoother reading, less eye fatigue, and encourages the reader to keep reading.

The size of the type used to write the text of a newsletter is also important. Font sizes are measured in points. If you use smaller than a 10 point, you may force the reader's eyes to strain. That might lead to scanning headlines instead of taking time to read the "meat and potatoes" of your articles. Clubs with older members would do well to consider using even larger type.

Headlines are used to catch the reader's attention and are written in 18 point type or larger. Be sure the size doesn't make the page look cluttered. More on headlines later.

Using columns

Some people feel that writing in columns is a waste of valuable page real estate. Actually, this isn't the case. Most pages typed in column format have room for as many words, and sometimes more, as those typed without columns. Since the goal is better eye appeal, use columns. The number of columns to use is a matter of personal taste. While I prefer three, newsletters written in a two-column format can look equally appealing.

The white spaces which separate columns of printed text are called gutters. It's important that they be of sufficient width so as not to crowd the text. Professional printers use what is called the pica rule to determine a gutter's width. It states that printed text must have a minimum of one pica (1/6th of an inch) of white space around it. It's all right to make it a little wider, but once you choose a gutter width keep it consistent throughout the newsletter.

Occasionally you will see columns of text separated by very thin lines. This method is another area where personal taste rules. If you choose to use lines, keep them as thin as possible and double the width of your gutters to maintain good eye appeal.

The banner

A newsletter's banner is placed at the top of the first page. It identifies the newsletter. The current month and year are included in the banner, and some organizations also include a volume number signifying the number of years the newsletter has been published and the number of the current issue within that volume.

The design of the banner is limited only by your imagination. It's a good place to use those fancy typefaces we ruled out when writing the text. Take your time and design it with care, keeping the type size proportional to the page size and the text size so it doesn't look cluttered. The banner will become synonymous with your newsletter and club. Strive to have it make a good impression.

Article headlines

Experts tell us five times as many people read the headlines as read the articles. Therefore, if you want your readers to read both, and you should, use headlines which speak to them. It's the editor's job to write headlines which will capture the readers' attention and encourage them to keep reading. Headlines should be printed in bold type (not in italics) and written in the present tense whenever possible. For instance, writing "10 year old wins door prize" would be a better choice than writing "Door prize won by 10 year old." While you might think they mean the same, the wording of the first captures the reader's interest better than the second. Use as few words as possible, just enough to summarize what the article is about.

Writing headlines in all capital letters (every letter of every word printed

in capitals) is another common error. Stop and think about it. Almost everything you read, including this article, is written in lower case. When something is printed in all caps it puts the readers in unfamiliar territory, forcing them to slow down. People are used to reading in lower case and expect to do so. Follow the same rules for capital letters applied to regular text, and you won't disappoint them.

Another tip, never use full justification when writing headlines. Doing so stretches the spacing between words and can make it difficult to read. Most word processors and desktop publishing software allow you to change justification (flush left, center, flush right for example) at will. Take advantage of this feature. It will make your newsletter look much better.

Page layout

If you try to cram too much onto a page, it will look exactly that way. People read more and enjoy doing it if their eyes get a frequent break from the text. Start by leaving at least ¼ inch around the outside edges of the page. Providing an ample border for the outside margins not only affords a break for the reader, it also gives it a neater appearance.

Arrange your articles on the page so a clear break (white space) is made between them. When fitting a shorter article, try writing it in several short columns of equal length, spaced across the page, instead of in a single column running from top to bottom. In this way you will automatically separate your articles from each other and have the advantage of being able to type the headline across two or more columns if necessary. Place the body text far enough below the headline so there is a clear separation between the two. A double space is a good rule of thumb.

Separating articles on a page is also important. Make the distance greater than between the headline and text of a single article, but use only enough white space to ensure a clear separation between them. Remember, you're after good eye appeal. If your articles are of such length that too much white space is left, place it in equal amounts at the top and bottom of the page, not in the center.

What to include

If you've been writing your club's newsletter for very long, the problem of finding enough material is probably nothing new. What to write and where to find it is something that plagues most editors. The following suggestions should make your task a little easier.

First, every newsletter should have a masthead. This is a listing of your club officers by name, address and phone number (very important). It can be advantageous to include the dates and times of meetings, frequency of publication, dues charged, repeater frequencies, etc.; you never know when a prospective members might come to a meeting if they have this information.

Is it to inform? To entertain? To educate? Are you trying to persuade the reader to do something?

The masthead may be placed inside a box or written in paragraph form. The page location isn't critical, but once you decide where you want it, keep it consistent. The same applies to monthly feature articles, such as packet, ATV, a president's column, or an editorial. Some readers prefer to read their favorite features first, then go back and catch the rest of the newsletter. They will appreciate these features being located on the same page in each issue.

Next, have the purpose of the newsletter firmly fixed in your mind. Is it to inform? To entertain? To educate? Are you trying to persuade the reader to do something? Does your club lean toward a special interest? By now you probably realize most newsletters have a combination of purposes. Once you know what those purposes are, you're ready to gather the material.

The best source for articles is to get other club members involved in writing. Topics such as packet radio, satellite communications, old-time radio, license upgrading, upcoming events, and such make excellent regular features which members could write. Members' contributions also have the advantage of keeping your newsletter alive and more interesting. Keep in mind, however, that creative writing isn't everybody's cup of tea. If you find people reluctant (fortunate is the editor who doesn't), an offer from you to assist with the writing process might persuade them.

Don't fall into the trap of thinking that only club members read your newsletters. If you get an idea for an article that's different from the norm, use it.

One of the best received ideas I've done is to write a profile on various club members. A different member is featured periodically. A questionnaire covering the basic information wanted—dates, elmers, where living, first rig, awards earned, etc.—is given to the member to complete. A brief summary of how he or she became interested in amateur radio is also requested. Armed with this information I can write the feature article.

Another method of collecting article ideas is to train yourself to be a good listener. It's amazing how many ideas

surface just by paying attention to what others are saying. You hear a club member telling about a new project or an unusual on-the-air contact. Another just purchased the latest model from Kenwood or Icom, or discovered a brand new manufacturer. A member and his family who just returned from a vacation trip will have a story to tell. The ideas are there if you'll look for them. Don't trust them to memory. Jot down everything! You will find your notes invaluable when writing the story.

Crossword puzzles and word search games will give variety to your newsletter. Check with local software dealers for these. A good assortment of clip-art, used sparingly, will spice up a newsletter's appearance and help to catch the reader's eye.

Articles may also be gleaned from other club's newsletters. Most clubs exchange copies of their newsletters when requested and allow their articles to be reprinted. If you do decide to copy another author's work, be certain to give full credit to that author. Also give credit to the source in which the article appeared. There are strict laws which prohibit using the work of another publisher or author without proper consent. Doing so could put you in serious trouble, even if it's only used in a small club newsletter. While not usually a problem for the average club editor, you should become familiar with the copyright laws. Your local library will have books giving the information needed.

Grammar and spelling

Even if your paper has good eye appeal, it'll be difficult to hold some readers' interest for very long if it's full of grammatical errors and misspelled words. Help for the latter is readily available by running the spelling checker included with most word processors. Don't rely on them to do your thinking, however. Spelling checkers neither can, nor will, read your mind. So do yourself and your readers a favor—use the dictionary.

One last thought on the subject of grammar. Whenever possible, write in the active instead of passive voice. In active voice, the subject acts on the verb or its object, instead of being acted upon by the verb or its object. The following examples will make this clear.

Active voice: "Mary's computer controls her station."

Passive voice: "Mary's station is controlled by her computer."

Notice in the active voice the subject of the sentence (computer) is doing the action (controls). In the passive voice, the subject of the sentence (station) is receiving the action. Sentences written in passive voice appear dead and make an otherwise interesting article more difficult to read. On the other hand, note in the example above how much smoother the sentence reads when written in active voice. It keeps the article alive. Train yourself to write in the active voice—your readers will thank you for it.

I'm well aware what has been covered concerning grammar barely scratches the surface, but if I've nudged a few of you into wanting to do a better job, my objective is met. There are different programs available for the PC designed to check your documents for grammar. Most of them do a good job; however, you'll still need a basic understanding of grammatical rules. These programs merely make suggestions. You must make the final decisions.

Duplicating

Once you've run the spelling checker and the grammar checker, you're ready to print the copies and drop them in the mail, right? Maybe not. Regardless of how ready I think my paper is, there has never been an issue in which at least one spelling or grammatical error wasn't found when someone else proofread it. After spending hours staring at the text it's easy to overlook even the obvious typos. Ask a friend, a family member, or another club member with a good knowledge of grammar to proofread it. After correcting any errors found, consider it ready for printing.

Two basic methods of reproducing the needed number of copies are available. Clubs mailing several hundred copies a month usually enlist the services of a professional printer. A first-class job and expertise in page layout are side benefits of using such services.

Smaller clubs not able to afford the luxury of a professional printer will need to rely on the standard office copier. That doesn't mean their newsletters have to look second rate. Technical advances in the photocopier field have made it difficult for the untrained eye to tell the difference between copies reproduced on office copiers from those done on a printing press. In fact, some printing companies now use photocopiers entirely for smaller jobs.

Regardless of the method you use, take extra care when printing the originals off your computer. If possible, use a laser or ink jet printer when printing originals and place them in a file folder for protection. If you must use a dot matrix printer, be sure to install a fresh ribbon.

Wrapping it up

This article has discussed some of the basics of writing a more attractive newsletter. If you'd like to learn more, the Amateur Radio News Service (ARNS) is a group dedicated toward improving Amateur Radio journalism and is an excellent source of help to club editors. Their members receive a large monthly newsletter packed full of articles designed to aid the club editor. For information about joining this group, or to receive a free sample of their newsletter, write to the organization's secretary, Pam Myers, N8IAK, 510 West Harrison, Alliance, Ohio 44601.

Remember, your newsletter is an extension of your club. People often decide whether they'd like to become part of a group by the opinions formed while reading it. Give it an attractive page layout, good eye appeal, and correct spelling and grammar, and it will become your club's lifeline. WR

The early days in broadcasting

Irwin Wolfe, W6HHN

Editor's note: Author Irwin Wolfe, W6HHN, recently was awarded a plaque from QCWA for being a licensed amateur for 75 years.

Radiotelephony experimenting began in the early 1900s when the generation of undamped radio waves by means of an arc transmitter was discovered. Keying the continuous waves (CW) was accomplished by de-tuning the resonant frequency slightly by coupling a coil to the tuned circuit and keying by shorting out the coupled coil. By using a carbon microphone in the coupled coil instead of a key, the first voice modulation of a carrier was accomplished. Despite the relatively low power in the coupled loop circuit, the RF currents would heat up the carbon granules in the microphone and render it inoperative. To solve this problem, the early broadcasters would cool the mikes by wrapping a copper tube around it and circulating water through it. In 1906 one of the very first broadcasting stations using an ARC transmitter and water cooled microphones was KQW in San Jose, California.

The Perham Foundation Electronic Museum in San Jose has some of the original equipment and the water cooled microphone on display. In the early '20s, radio hams using vacuum tubes to generate CW, would often use loop modulation for their low powered rigs. The RF currents in the microphone circuit would heat up the carbon granules in the mike and cause them to stick together or 'pack,' and hams would tap heavily on the mikes to unpack the granules.

Broadcasting became popular after the WWI. There were few stations broadcasting but everyone was enthused about this new medium. Small receivers using crystal detectors were being marketed along with the first vacuum tube jobs with their large horn loudspeakers.

The Department of Commerce was in charge of all radio activities but was superseded by the Federal Radio Commission and later the Federal Communication Commission. In 1927, a suit was brought against the FRC by someone who had applied for a broadcasting license and had been refused. The federal judge ruled that the Federal Radio Commission was obligated to issue a license to anyone who had the equipment and facilities to operate a station.

"Since radio hams were the principal source of technical help available, many stations were either owned or operated by them."

This ruling opened up a Pandora's Box of broadcasting activities. The FRC was deluged with applications for broadcast permits. Hundreds of stations throughout the country went on the air. Since radio hams were the principal source of technical help available, many stations were either owned or operated by them. There were very few commercial broadcast equipment manufacturers and most of the small station equipment was home brew.

I joined the broadcasting community by odd circumstances. An old ham friend (W2QH) and I were wireless operators aboard the *SS Orizaba* plying the Atlantic between New York and Havana, Cuba, and one day we decided to give up our sea-going careers and become entrepreneurs in the radio amateur supply business. We pooled our rather meager financial resources

MFJ TUNERS

MFJ's world famous 3 KW Antenna Tuner

If you won't settle for less . . . here is the finest 3 KW tuner money can buy!

The MFJ-989C is not for everyone.

However, if you make the investment, you'll get the finest 3 KW antenna tuner money can buy.

Here's why . . .

Massive Transmitting Capacitors

You get two *massive* 250 pf transmitting variable capacitors with detailed logging scales. They can handle *amps* of RF current and withstand 6000 RF volts because the plates are smoothed and polished and have extra wide spacing.

Precision Roller Inductor

A precision roller inductor, 3 digit turns counter and spinner knob gives you *exact* inductance control for absolute minimum SWR.

Ball bearings on steel shafts give you a velvet smooth vernier feel and long term durability.

You won't have arcing problems with this roller inductor. Firm springs put high pressure on a plated contact wheel for excellent electrical contact.

Wide, low inductance straps are used for high currents and a new core minimizes RF loss.

MFJ-989C **$349.95**

Cross-Needle Meter

You get a lighted *peak* and average reading Cross-Needle SWR/Wattmeter with 200 and 2000 watt ranges. Its new directional coupler gives you accurate readings from 1.8 to 30 MHz.

Super Heavy Duty Balun

You get a super heavy duty current balun for balanced lines. It has two giant 2½ inch powder iron toroid cores and is wound with *Teflon*® wire connected to high voltage ceramic feedthru insulators. It lets you operate high power into balanced feedlines without core saturation or voltage breakdown.

Ceramic Antenna Switch

A two wafer 6 position *ceramic* antenna switch with extra large contacts gives you trouble free switching.

Plus much, much more

You also get a 300 watt dummy load, full one year *unconditional* guarantee, flip stand, all aluminum cabinet, tough baked on paint, locking compound on all nuts and bolts. 3 KW PEP. 10¾x4½x15 in.

Don't settle for less, get yours today!

More hams use MFJ tuners than all other tuners in the world! Why settle for an imitation when you can have the real thing?

MFJ's *deluxe* 300 Watt Tuner

MFJ-949E **$139.95**

More hams use the MFJ-949E than any other antenna tuner in the world! **Why?** Because you get proven reliability, the ability to match just about anything and a one year *unconditional* guarantee.

You get a lighted *peak* and average reading Cross-Needle SWR/wattmeter, antenna switch, 4:1 balun for balanced lines, 1.8-30 MHz coverage and a *full size* dummy load that easily handles 300 watts of abusive tune-up power.

New 8 position antenna switch lets you pre-tune into dummy load to minimize QRM.

The inductor switch is designed for high RF voltages and currents--it's not a *plastic* switch made for small signals and wired with *tiny* gauge wire.

Each MFJ-949E cabinet is chemically treated and has a new tough scratch-proof *vinyl* cladding -- not paint that can scratch or chip off. You won't find a tougher, longer lasting finish anywhere.

MFJ's *versatile* 1.5 KW Tuner

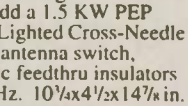
MFJ-962C **$229.95**

Use your barefoot rig now and have the capacity to add a 1.5 KW PEP amplifier later! Lighted Cross-Needle SWR/Wattmeter. *6* position antenna switch, *Teflon*® wound balun, ceramic feedthru insulators for balanced lines. 1.8-30 MHz. 10¾x4½x14⅞ in.

MFJ's *portable/QRP* Tuner

Tunes coax, balanced lines, random wire 1.8-30 MHz. Cross-Needle Meter. SWR, *30/300 or 6 watt QRP* ranges. 6x6½x2½ in.

MFJ-971 **$89.95**



MFJ's *super value* Tuner

MFJ-941E **$109.95**

The new MFJ-941E gives you a 300 watt PEP tuner with *lighted* Cross-Needle Meter that covers everything from 1.8-30 MHz for an incredible $109.95.

Antenna switch selects 2 coax lines (direct or thru tuner), random wire, balanced line or external dummy load. 4:1 balun. 1000 volt capacitors.

2 Knob *Differential-T*™ Tuner

MFJ-986 **$289.95**

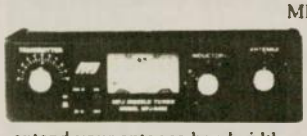
The MFJ-986 Differential-T™ 2 knob tuner uses a differential capacitor to make tuning foolproof and easier than ever. It ends constant re-tuning with broadband coverage and gives you minimum SWR at only one best setting. 3 KW PEP. 1.8-30 MHz.

Roller inductor makes tuning smooth and easy. Turns counter lets you quickly re-tune to frequency.

Lighted Cross-Needle Meter reads SWR/forward/reflected/*peak*/average power in 2 ranges. Current balun reduces feedline radiation and forces equal currents into unbalanced antennas.

MFJ's *mobile* Tuner

MFJ-945D **$89.95**



Don't leave home without this mobile tuner! Let the MFJ-945D extend your antenna bandwidth so you don't have to stop, go outside and adjust your mobile whip.

Small 8x2x6 inches uses little room. Lighted Cross-Needle SWR/Wattmeter makes tuning easy while in motion. Has lamp switch. 1.8-30 MHz. 300 watts PEP. **Mobile mount,** MFJ-20, $4.95.

MFJ's *smallest* Versa Tuner

The MFJ-901B is our smallest --5x2x6 inches --(and most affordable) 200 watt PEP tuner -- when both your space and your budget is limited. Great for matching solid state rigs to linear amps.

MFJ-901B **$59.95**

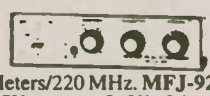
MFJ's *random wire* Tuner

Operate all bands anywhere with any transceiver with the MFJ-16010. It lets you turn a random wire into a transmitting antenna. 1.8-30 MHz. 200 watts PEP. Ultra small 2x3x4 inches.

MFJ-16010 **$39.95**

MFJ's *VHF or UHF* Tuners

MFJ-921 or MFJ-924 **$69.95**



MFJ-921 covers 2 Meters/220 MHz. **MFJ-924** covers 440 MHz. SWR/Wattmeter. 8x2½x3 in. Simple 2-knob tuning for mobile or base.

MFJ's *artificial* RF Ground

Creates artificial RF ground. Eliminates or reduces RF hot spots, RF feedback, TVI/RFI, weak signals caused by poor RF grounding. Also electrically places a far away RF ground directly at your rig by tuning out reactance of connecting wire.

MFJ-931 **$79.95**

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MFJ . . . making quality affordable

MFJ Dual Band Mobile Antenna

For an incredible $14.95, you get a dual band 2 Meter/440 MHz mobile antenna with strong magnet mount, stainless steel radiator, 15 feet of coax and BNC adapter for your handheld -- It's the fastest selling mobile antenna in ham radio!

MFJ-1724B
$14.95 For an incredibly low $14.95, you get an MFJ dual band 2 Meter /440 MHz mobile antenna!

It's the fastest selling mobile antenna in ham radio!

You get excellent gain for solid, noise-free QSOs. On 440 MHz, it's a high gain ½ wave over ¼ wave radiator. On 2 Meters, it's a *full size* ¼ wave radiator.

Its tough *stainless steel* radiator is only 19 inches tall -- won't knock off when parking in your garage.

An extra powerful magnet holds it steady -- even at highway speeds.

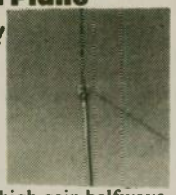
You get 15 feet of coax with a standard PL-259 coax connector for your mobile rig.

You get a BNC adapter so you can also use it with your handheld!

Your MFJ-1724B is protected by MFJ's famous one year *No Matter What*™ unconditional guarantee.

Dual Band 144/440 MHz Ground Plane

MFJ-1754
$24.95 *New!*



Dual band ground plane antenna for 2 Meters and 440 MHz gives you extra long range on 440 MHz with a high gain halfwave over quarter wave radiator. On 2 Meters you get solid quarter wave performance. Mounts on 1 to 1½ inch mast with single U-bolt. Easy-to-tune.

1/4 Wave Ground Plane

MFJ-1740
$12.95

The MFJ-1740 brings up 2 Meter repeaters as well as any ¼ wave ground plane made!

You get easy tuning, low loss ceramic antenna insulator and strong lightweight aluminum construction.

Single U-bolt mounting for 1 to 1½ inch mast. Cutting chart included for 220/440 MHz. Made in USA.

MFJ Pocket Roll-Up™

2 Meter halfwave J-pole antenna

MFJ-1730
$14.95

Roll up this *halfwave* 2M J-pole antenna and stick it in your pocket! It's the perfect *gain* antenna for traveling.

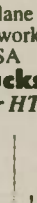
Get home station performance on the go. Just hang your *MFJ Pocket Roll-Up*™ in the clear and plug the BNC connector into your handheld.

It's omni-directional and has significant gain over a ¼ wave. It does not need a cumbersome ground plane so it's convenient for indoors and works great with handhelds. Made in USA

Dual Band *flexible* Ducks

144/440 MHz flexible ducks for HTs

A. *High Gain FlexiDuck*™. **MFJ-1717, $19.95.** Enjoy dependable QSOs when other rubber ducks give you noise. High gain ½ wave on 440 MHz, full size ¼ wave on 2M. Won't jab you -- bends, twists, flexes with you. 15¾ inches.



B. *FlexiDuck*™, **MFJ-1716,** A. B. **$16.95.** Similar to MFJ-1717. Full ¼ wave on 440 MHz, efficient loaded ¼ wave on 2 Meters. 8¾ inches.

Shorty Duck™ for HTs

Add this *short*, 4¼ inch *ShortyDuck*™ to your 2M handheld for a Q-5 signal! Impedance matched for maximum gain. High-Q helical wound radiator.

MFJ-1718
$12.95

5/8 Wave 2 Meter Mobile Antenna

MFJ-1728/B
$24.95

For *maximum range* while mobile, use MFJ's *Maximum Gain*™ 5/8 Wave 2 Meter Mobile Antenna. You'll get the maximum possible gain of any single element mobile antenna!

Competitive 5/8 wave mobile antennas can't work any better -- no matter how much more they cost.

You get low SWR so your rig can safely deliver maximum power into your antenna. It's rated at 300 watts PEP so you can use any mobile rig plus a mobile amplifier.

You get a heavy-duty magnet mount that holds your antenna tight at highway speeds and a black magnet base that'll look good for years.

You get a stainless steel radiator that'll endure years of harsh mobile use and 12 feet of coax cable.

You get MFJ's one year *No Matter What*™ unconditional guarantee.

Order MFJ-1728 with standard PL-259 coax connector or MFJ-1728B that also includes a BNC adapter for your handheld.

Stacked 5/8 Wave for 2 Meters

gives twice the omni-directional gain of a single 5/8 wave

MFJ-1764
$34.95

MFJ's stacked 5/8 wave radiators give you *more than twice* the *omni-directional* gain of a single 5/8 wave radiator!

Wide 10 MHz 2:1 SWR bandwidth . . . excellent ferrite choke balun feedline decoupling . . . shunt choke for bleeding off unwanted static . . . strong lightweight aluminum.

Fully assembled -- simply attach radiators -- no tuning required. Mounts vertically for FM/Packet or horizontally for SSB. Installs with single U-bolt on 1 to 1½ inch mast or tower leg. 1½ lbs., two 47 inch radiators, 23 inch boom. Made in USA.

Also works as excellent *6 Meter* full halfwave centerfed antenna.

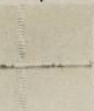
MFJ-1766, $89.95, gives you *four times* the gain of single 5/8 wave. Includes 2 MFJ-1764, phasing cables. Doubles gain on 6 Meters.

MFJ-1765, $29.95, phasing cables for 2 MFJ-1764s, other 2M ant.

MFJ *dual band* 144/440 MHz Yagi

5 elements on 440 MHz . . . 4 elements on 2 Meters . . .$49.95

MFJ-1768
$49.95 *New!*



Get two Yagis for the price of one . . . enjoy two Yagis in the space of one with single coax feed!

MFJ's *exclusive* dual band balanced feed with *FerriteChoke*™ decoupling prevents pattern skewing and gives you low SWR.

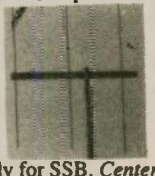
The MFJ-1768 is based on the *National Bureau of Standards* design that's optimized for maximum forward gain with high front-to-back ratio and a clean symmetrical pattern.

Mounts vertically for FM/Packet or horizontally for SSB with single included U-bolt on 1 to 1½ inch mast or tower leg.

High strength 6061-T6 aluminum 5 foot, 1⅛ inch diameter boom. 2 pounds. Elements are electrically isolated from boom. Made in USA.

Portable 3 element Yagi for 2 M

MFJ-1763
$39.95



You can set up or take down MFJ's *portable* 3 elements 2 Meter Yagi in seconds! Elements simply screw into the boom.

You can take it with you wherever you go and have the "oomph" and directivity of a beam.

It's easy to store and sturdy enough to use as your home station antenna.

Mounts vertically for FM/packet or horizontally for SSB. *Center* or *end* mounts with single U-bolt. Great for packet/PacketCluster™.

It's compact 2¾ foot boom gives you a calculated gain within 1 dB of a four element Yagi with a boom nearly twice as long.

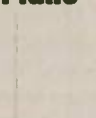
Extra thick elements maintain high gain and directivity over entire 2 Meter band. MFJ's *FerriteChoke*™ decouples feedline.

Elements and boom are made from strong lightweight aluminum and protected by MFJ's *Permanent Molecular Bonding Technology*™.

Weighs just 2 pounds. Boom is 30½ inches. Made in USA.

5/8 Wave Ground Plane

MFJ-1750
$19.95



For a low, low $19.95, you get a *high performance* 2 Meter 5/8 wave ground plane home station antenna -- you'll get the maximum gain of any single element antenna.

More expensive 5/8 wave ground planes can't work any better -- no matter how much they cost.

You get . . . shunt fed matching that bleeds off unwanted static and gives you low SWR . . . strong lightweight aluminum construction . . . low loss ceramic antenna insulator . . . MFJ's *RapidTune*™ radiator . . . MFJ's one year *No Matter What*™ guarantee. It mounts on 1 to 1½ inch mast with single U-bolt and is Made in USA.

MFJ-1752, $19.95, for 220 MHz .

HT Range Extenders

Telescoping antennas for handhelds

A. *Long Ranger*™ 2 Meter Halfwave, **MFJ-1714, $16.95.** For really long range this MFJ endfed halfwave is hard to beat. It outperforms a ⅝ wave on a handheld because the ⅝ wave needs a ground plane. The MFJ halfwave doesn't. It's shorter, lighter, has more gain and places less stress on your antenna connector than a ⅝ wave antenna. When collapsed, it performs like a rubber duck. 40" extended, 10½" collapsed.

A. B. C.

B. *Dual Bander*™ for 2 Meters and 440 MHz, **MFJ-1712,** $14.95. Got a new dual band handheld or separate units? One antenna fits all. It's a ¼ wave for 2 Meters and a ⅝ wave with gain for 440 MHz. 7¼" collapsed, 19" extended.

C. *Pocket Linear*™ ⅜ Wave, 2 Meters, **MFJ-1710, $9.95.** Carry this pen size antenna in your pocket like a ballpoint pen. When you're using your rubber duck, on the fringe and noisy, put on the *Pocket Linear*™, extend it to 24½" and carry on your QSO. Has pocket clip. 5¼" collapsed.

144/440 MHz Duplexer

MFJ-916
$29.95

Lets you use dual band 144/440 MHz antenna with separate transceivers *or* separate 144/440 MHz antennas with dual band transceiver.

Nearest Dealer/Orders: 800-647-1800
Technical Help: 800-647-TECH (8324)
• 1 year *unconditional* guarantee • 30 day money back guarantee (less s/h) on orders from MFJ • *Free* catalog

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FAX: (601) 323-6551; Add s/h

MFJ . . . making quality affordable

and rented a small office in downtown Manhattan, bought a half page ad in *QST* and the Amateur Radio Specialty Co., (ARSCO), was launched. ARSCO was selling one tube receivers and low power transmitters when the demand for broadcast equipment came along with the sudden ease of obtaining broadcasting permits. We started building and selling such equipment, then decided to get into business ourselves. Many transmitters were built on wood frames with wood shelves and panels. Since the plastic age had not yet arrived, even the copper tubing in the transmitter output circuit was wood braced. Aluminum or steel, we believed would cause power losses. Triodes were the only tubes available, tetrodes and pentodes did not arrive on the scene until the thirties. The two principal tube manufacturers were RCA and Western Electric. A few small transmitting tube manufacturers merged in the late twenties and early thirties, but the big stuff was either of the Big Two.

The growth of the broadcasting industry from the mid '20s thru the '30s was phenomenal, the local airways were filled with small broadcast stations. There were dozens of broadcast receiver manufacturers, many with elaborate cabinetry and phono-turntables. In the downtown section of Manhattan, there was an area known as "radio row," where dozens of small retail stores sold receivers as well as parts and kits to build your own. It was a hectic time in the booming broadcasting business. Operating a broadcasting station and an Amateur Radio supply business was quite a chore for a couple of hams in their early twenties who were interested in ham radio operation, cars, boats and YLs.

"....there was a big flash ... and off the air we went..."

The big Depression that began in 1929, played havoc with both our enterprises. ARSCO was closed down and the broadcast station was sold. I was offered and accepted the position as chief, and only, engineer at a small 250 watt broadcast station in Newark, New Jersey. The transmitter at this station (WGCP), was an antique even in those days. It was located in a garage in the residential section of Newark. The studios were in a local downtown department store. The equipment consisted of a single Western Electric 212D tube, a low mu triode with a 250 watt plate dissipation, as a self excited oscillator, modulated by another 212D in a Heising circuit. The plate supply was a three unit motor generator delivering 1500 volts DC. A sudden high surge of audio would often trigger the oscillator into a parasitic oscillation, and cause the line fuses to blow. The transmitter frequency would drift considerably and since there were no frequency monitors available, a broadcast receiver was used as a monitor. If a heterodyne was heard, the tuning on the oscillator was adjusted to avoid the heterodyne on an adjacent channel.

After much coaxing, I convinced the station owner that we had to have a new transmitter. He insisted he could not afford a commercially built job but would finance one if I could build it. I agreed and built a job using a pair of RCA 203A tubes, (a low mu triode with a 50 watt plate dissipation) in parallel as a class C RF amplifier, driven by a RCA UV 210, a 10 watt triode, as an oscillator. This circuit was known as a MOPA, Master Oscillator, Power Amplifier type. Another pair of 203A tubes were used as push pull modulators in the then new class B biasing. I encountered difficulty obtaining an output transformer for this job since the transformer manufacturers we contacted never built any and were not interested in designing one. Fortunately the American Transformer Co. of Newark agreed to build one if I could supply the design data which was obtained from the author of an article on the subject in the *I.R.E. Proceedings*. A prototype was then made for test, but after a few minutes, a flash over the windings zapped it. They wound another job which they assured me would not break down and it performed well in testing. The new power supply now used a plate transformer and vacuum rectifier tubes and filter, all built into a unit one fourth the size of the old transmitter. To celebrate the installation at the new job, the boss decided to give a big party at the studios and invited local VIPs, including the Mayor of Newark.

We arranged to start the day's program using the old transmitter, and upon cue, connect the new job to the antenna. All went as scheduled, with the announcer saying, "the new high quality equipment would now reach a larger audience and better serve the people of Newark, etc." and ended with "and now ladies and gentlemen, standby for our new modern transmitter." At this point, I shut down the old junk, switched the antenna to the new job, and gave a ring on our interphone to go ahead. The announcer then shouted at the top of his voice, "here is the new WGCP transmitter." Before I could get to the gain control to attenuate the audio, there was a big flash in the modulation transformer and off the air we went...and back on went the old antique.

A replacement transformer was soon installed, which did survive many a modulation surge without mishap. When the new transmitter was again put into service, it was without any fuss or fanfare and operated for many years until the station went from 250

to 5000 watts, years later. In the mid 'thirties, many broadcast stations began increasing their power. The 100 watt stations went to 1000, the 250 and 500 watters to 5000, and the 5000 to 50,000 watts. The FCC granted many of these increases if interference to other stations in the vicinity was not a problem. Many stations were granted power increases if they installed directional arrays. Some stations were granted power increases for daylight operation but were required to reduce power after sunset. Such was the case with WGCP. We were permitted to increase power to 5000 watts for daytime operation and reduce power to 1000 watts after sunset. A 5kW station in the Midwest that had increased its power to 50kW, advertised its old Western Electric 5kW job for sale and we bought it.

We now moved the transmitter site to a 15-story garage building in the downtown section of Newark and the 5kW job was installed there. Besides the inverted L broadcast antenna, a stacked array for 10 Meters and an 8JK beam for 20 were installed on the roof, resulting in 20 over 9 reports from the west coast. That old Western Electric job occupied a caged area of about 8' x 15'. The plate transformer was about five feet high and must have weighed a few tons. The filter choke was just slightly smaller. There was a double banked stacked array of filter capacitors. The rectifiers were the vacuum type with water cooled anodes. Three 212D tubes were used as the first linear amplifiers driving a pair of 10kW, water cooled triodes as the final linear. To bring the equipment to the new FCC requirements for frequency stability required the installation of a temperature controlled crystal oscillator and a buffer stage.

Many of the small stations could not afford studio help and frequently the chief and only engineer would act as DJ (disc jockey), read the commercial announcements, and operate and service the equipment. There was a comradeship among broadcast engineers and we would often visit each other and exchange new technical developments and scuttlebutt.

The FCC issued directives requiring frequency stability to within 20 Hz of the assigned frequency and began monitoring stations for adherence to the new limits. The monitoring station for our area was in the Midwest and could not hear us during our normal operating hours. We were directed to go on the air at certain dates and times during an early morning period.

We operated from the transmitter site for these tests using phonograph records interspersed with our station call. One early morning the studio operator joined me for the test program and decided to vocalize a bit. We received one fan letter for his efforts which stated, "I listened to your test program; were you testing the peoples' nerves?" Microphones in general use for broadcasting were of the double button carbon type manufactured by the Western Electric Company. The constant DC flowing through the circuit would eventually deteriorate the carbon granules causing a loss in sensitivity and quality. The usual procedure was returning them to Western Electric for overhaul. Some of us learned how to disassemble and do our own carbon granules replacement.

The plate transformer was about 5 feet high and must have weighed a few tons.

With the advent of condenser microphones in the late 'twenties and then the moving coil types, carbon types were phased out in the early 'thirties. Many people were eager to get into the broadcasting field but jobs were few for the inexperienced. To gain experience as announcers, studio and transmitter engineers, they would apply to small stations and volunteer to work without compensation to gain such experience. Most of the announcers at our station were such volunteers and some did make it to the big stations and national networks. There was quite a bit of good natured horseplay among them when the boss was away and the usual ploy was to cause a fellow making a commercial announcement to break up by such antics as making grimaces, moving the mic stand away from him, doing handstands, etc. Once the sheet the announcer was reading from was set afire by a fellow announcer. Incidentally, commercial announcements of local businesses were the sole source of income for small stations and the salesmen would often get commissions of 30% to 50% of sales.

The audio quality of the early broadcasting was definitely not high fidelity. It did not matter since the receiving equipment could not reproduce good quality. In the 'thirties, good quality receiving equipment became available and broadcast stations began using good quality records made for broadcasting. I recall hearing high quality stereo, it was called 'bi-naural,' for the first time.

I attended a meeting at the IRE (Institute of Radio Engineers) now IEEE in the auditorium at the Engineers building in Manhattan, along about 1933. It was sponsored by the Bell Telephone Labs and the announcer said that a well-known orchestra and would perform for us. The music began behind the curtained stage. There was no question in my mind of the realism of the band when after a few minutes the curtains parted to reveal two large speakers. The audience burst forth in enthusiastic applause and that demonstration was the big topic among broadcast engineers for quite a while.

Although I left the broadcasting field in 1940 to enter the general field of electronic engineering, I maintained an interest in the new technical developments in that field. After retirement, I was back in the broadcasting field again as a consultant in the design of FM transmitting equipment for Granger Associates. Strip lines were used in the output circuits and I could not resist building a kilowatt amplifier for 2 Meters, as described in *Radio Magazine* July 1970, using this technique.

I still marvel at the sophistication of modern broadcast equipment. The transmitters are remotely controlled and monitored. The programs of many small stations are also pre-programed and automated....there is no one around anymore! WR

Adventist Amateur Radio Association

Bert Tinker, KJ6NK

In the 1960s, and quite by accident, Barney McLarty, M.D., W4STU, Memphis, Tennessee, met on a ham band with some of his Adventist friends. During their QSO the suggestion was made for organizing a net for both United States and Canada for the purpose of communicating with the widespread missionary family of Seventh-Day Adventists throughout the world. It was discovered at this time that a member of the Seventh-Day Adventist's general conference, the governing body for the world-wide church had just earned his ham license for just this purpose. That person was Ed Peterson, K3LJP (Love, Joy, Peace). Soon after this QSO a net began operating with Barney, W4STU, as Net Control.

From that small beginning the nets, sponsored by the Adventist Amateur Radio Association have grown to 24 as listed in the *AARA News*, the quarterly publication of the Adventist Amateur Radio Association.

These nets are divided into three main groups: Worldwide Nets, Regional Nets, and North American Nets. The Worldwide nets meet on 20 Meters on Sunday at 1445 UTC, 14.305 MHz; the second Sunday net on 21.405 MHz at 2000 UTC; and a third net meets M-W-F at 1700 UTC on 14.328 MHz.

There are eleven Regional nets, all managed by hams outside the United States. From South Africa, Europe, the Caribbean, the Pacific Ocean area, and the Far East, Adventists communicate with others; never are the nets exclusively for only Seventh-Day Adventists; all other licensed radio amateurs are welcome. In fact I handled traffic for missionaries in the Philippines not of the SDA group who had been out of contact with family from the state of Iowa, and were concerned about their well-being.

The ten North American nets are scheduled by geographical areas or time zones. Three of these nets are Bible Study nets, and meet each early morning, seven days a week. Some of the other nets meet only on a certain day of the week.

In 1994, there were some 2300 licensed amateurs listed in the Association's ham directory, including hams licensed outside the United States. It is probable that some hams carried in the list are no longer active in ham radio, and some Adventist church member-hams are not listed. Even so, there appears to be a lot of interest in ham radio within the Adventist Church group.

The reason for all this ham radio operation is that the Seventh-Day Adventist Church is a world-wide church.

Student missionaries

This was a program begun many years ago for college and university students who leave their studies for a year, serve in many areas of the world, and some of these young people are hams. For example, Weimar Institute's College sends student missionaries to places where there are no telephones, mail service is very slow, and travel is difficult. Andrew Corbett, N6VMV, served in Papua New Guinea, and maintained contact with Weimar Institute through ham radio. His call in PNG was P29AI, and his location was on the Yellow River in the Sepik River area. He was several days journey by powered canoe from the nearest store or telephone. In the Philippines' SuluArchipelago on the island of Tawi Tawi, several student missionaries were serving as teachers at the Adventist-run high school. The requirement for service on Tawi Tawi was that one of the two SMs would be a licensed amateur operator. Several hams have served in this remote area; Bob Hancock, N6TXH, from California, was first, then Jared Alan Blake, KD6NQD, also from California, and finally, Nicole Sowa, KC7ZFC, from Oregon.

Officers

The Adventist Amateur Radio Association officers are elected for five year terms. There are regional representatives from various areas throughout the world, and a group of people listed as "Special Representatives." These include the *AARA News* Editor, Directory Editor, Ambassadors-at-large, the QSO Party Director, Disaster Preparedness Committee, and others; altogether seventeen people are involved as "Special Representatives."

In January each year the AARA conducts a QSO Party, a contest to work as many different Adventist-operated stations in the U.S., Canada and throughout the world. The director is Dick Sowler, W8FEM. Contacts made with stations outside of North America give more points, and using low power (under 200 watts) also

gives a multiplier. The rules specify that contacts count only if the contacts are with Adventists or people who routinely check into any Bible Study Net.

Who are the people who make up the membership of the Adventist Amateur Radio Association? Physicians, college and university professors, contractors, pastors, business owners, radio and television evangelists, homemakers, retirees, all just plain people. Adventists come from all "walks of life."

Meet some Adventist hams

Pastor Harold Richards, WD6BDZ, Glendale, California, is one of the Ambassadors-at-large. A former Director/Speaker for the Voice of Prophecy Radio broadcast before his retirement, Harold is well known among ham circles worldwide, for his travels have taken him to many areas of the world where he has met with local hams and encouraged them to become active in the nets operated by the Adventist Amateur Radio Association. Harold's family has many hams, including his wife, Mary, KA6DOE; brothers, Ken, WD6ECB; Jan, KA6EED; sister, Virginia Cason, KA6PHJ; and son-in-law, Greg King, KB4NCJ. And Harold's 90-year old Mother enjoys listening to the ham bands on her own receiver.

Walt Bolinger, N6UX, Rio Vista, Texas, a retired college teacher and also Registrar at Loma Linda University (my electronics instructor at Pacific Union College), has helped to set up broadcast transmitters and antennas in Italy, Central America, and KSDA, the high-power, short-wave station on Guam. All this after he retired.

Stan and Freda Wilson, retirees, now living at Weimar Institute in northern California, N6HHZ and N6MIA. They represent the large group of retired people who have chosen to be volunteers in service for the church or at a supporting ministry operated by laymen of the Adventist church. Stan serves as Accounts Payable clerk, while Freda is a piano instructor in the Weimar College Music Department. Stan comes from a ham family; his brothers are licensed amateur operators.

Lil Ringering, WH2ACV, Hubbard, Oregon, formerly lived on Guam where her husband was a pastor. Now living in Oregon, Lil often takes check-ins for the West Coast Bible Study Net beginning at 5:30 a.m. Lil's daughter is also a ham operator.

Guy Welch, W6ZTY, Visalia, California, is one of the founders of the West Coast Bible Study Group, which has been continuously on the air each day at 6 a.m. for more than 30 years. He is the moderator for the Bible study group almost since its beginning. Guy is retired and one of the volunteer operators of an FM station operated by lay people of the Adventist church near Visalia.

....working to aid the victims of disasters, whether earthquake, fire, flood, hurricane or tornado, ...

Larry Botimer, WA6NVN, retired chemistry professor, lives near Colfax, California. Larry taught at La Sierra University and Caribbean Union College. In retirement he has taught physics chemistry at Weimar College and Academy.

Stanley Hall, W6OWT, North Fork, California, retired after working at the Radio Science Laboratory of Stanford University as a research assistant for 20 years. During WW II Stan, a member of the U.S. Naval Reserve, served at Pearl Harbor in communications after being called to active duty, and then spent a year at 12th Naval District Headquarters in San Francisco as Headquarters Communications Officer. Ham radio was his preparation for service when his nation needed his talents. Stan received the 50 year ARRL Member Award in 1993. Even though retired, Stan has continued to work with radio science people doing ionospheric research projects. Wife Geva is KB6GFP.

Ted Dunker, KFØVF/TI5, student missionary, a communications major from Union College, Lincoln, Nebraska, served in Costa Rica in programming and production at Adventist World Radio (AWR) in Latin America.

A unifying media

In preparation for disaster service each geographic area of the church has the Adventist Community Services (ACS), an organization registered with FEMA and the American Red Cross, for working to aid the victims of disasters, whether earthquake, fire, flood, hurricane or tornado, or just helping people with food, clothing, and other needs. Ham radio is included as an important function for emergency communication and coordination of activities.

The AARA and its many radio nets that operate from stations around the world is a unifying media and also keeps overseas families in contact with their loved ones at home. Remembering that ham radio must be non-commercial, great care is taken that church business is never conducted on the Amateur Radio nets. The only divergence from this absolute rule is with contacts between Pitcairn Island and the Voice of Prophecy Amateur Radio Club station K6DTT at Thousand Oaks, California.

Through arrangements made between the government of New Zealand and the United States State Department, catalog orders are allowed communications, as well as requests for supplies and notification that supplies are enroute via some ship traveling close to Pitcairn.

An organization such as the AARA exists for service, and the continued existence of this association is proof that this is still the case. **WR**

If you'd like copies of Worldradio to pass out at a local hamfest, contact our editorial office 4-6 weeks prior to the hamfest. 916/457-3655.

Silent Keys

Robert C. Walton, W6CYL

Whether he was writing letters on his newest computer, transmitting code to his Amateur Radio cronies or regaling his family and friends with his delightful narratives and Irish humor, Colonel Bob Walton was a great communicator.

Born in Palouse, Washington in 1909, Bob spent his early years in Wallace, Idaho, eventually settling with his family in the Bay area. A lifelong Amateur Radio enthusiast, he obtained his first ham license at thirteen. At seventeen, while still a student at San Mateo High School, he enlisted in the Naval Reserve. Following his high school graduation in 1928, Bob studied physics at San Jose State, earning his degree in 1932. During his college years he was also employed by the Federal Laboratories in Palo Alto, where he worked for Litton Industries. Upon graduation he was commissioned a second lieutenant in the United States Marine Corps Reserve.

After serving as a deputy sheriff for Santa Clara County, Bob became Chief of Police of Carmel, California, a position he held from 1938 until he was called to active duty in the Marine Corps during the reserve call-up of 1940.

Colonel Walton served in several Marine units during WWII, including the Second Marine Raider Battalion, the Fifth Defense Battalion, and the Third Amphibious Corps. Again, he demonstrated his expertise as a communicator, working behind enemy lines to establish coast watch stations in the Pacific campaign. At the end of the war, he served with the First Marine Division in the China Occupation Service. Following the war, Colonel Walton was sent to Berlin where he helped to recruit German scientists for U.S. government classified projects.

Receiving his commission in the regular Marine Corps, Colonel Walton went on to serve his country in many capacities. Following thirty years of service with the Marine Corps, he returned to San Jose in 1961.

At home in San Jose, he began a second career as a representative for various electronics companies. He was a senior member of the IEEE, elected a fellow of the Radio Club of America, and a life member of the Society of Wireless Pioneers.

Even a bout with cancer which cost him his voice could not silence Colonel Walton. He turned to the computer and became a prolific word processor. Enjoying his facility with Morse code, he maintained a busy Amateur Radio schedule with friends throughout the country.

Colonel Walton is survived by this loving family; three sons, two daughters-in-law, six grandchildren, one sister, and one great grandchild. —*submitted by* Amilcare F. Persichetty, W2NHB

Vern Carter, W6TVE

Vern Carter, W6TVE, died after a lengthy illness shortly after noon January 30 at his home in Coronado Shores, Oregon.

His career in electronics began when he was 11 years old. His father gave him a book, *Easy Lessons in Wireless Telegraphy.* Vern and a friend then built a neighborhood telegraph system with dry cell batteries and door buzzers. That was followed by short-wave listening, building crystal sets and one tube receivers. His dad had bought him a box of World War I surplus radio parts with which to experiment.

Vern and his friend got on the air five years later when a neighbor ham let them use his call. Vern received his ham license in 1929.

He was born July 14, 1912 in Fresno, California. He grew up there, graduated from high school, and entered Fresno State College. After getting his degree he went to work for Pacific Power and Light Co in Washington as a hydro-power plant operator.

That assignment was followed by field engineering assignments in five western states. He became involved in designing transmission and control systems

He retired from PP&L in 1975 and became a consultant.

His work took him to Rio de Janeiro, Brazil as an expert on power line carrier communications systems. Next he went to Quito, Ecuador where he served as a chief engineer on power line carrier communication systems.

While in Ecuador, Vern was assigned the call sign of HC1/W6TVE. He recalled that his call sign prompted a lot of DX calls.

His station was 9,500 feet above sea level with a stationary 3-element Yagi antenna aimed at the United States. But he was also delighted to have worked stations all over the world.

Vern's hobby was the study of the ancient Egyptian language. When he was a youth he took a course at UCLA and learned hieroglyphics. It was an interest that continued through the years.

In 1982 Vern retired. He and his wife Ethel moved to Gleneden Beach, the present family home. They have two grown daughters, two granddaughters and one great granddaughter.—*submitted by* Frank King, AA7XA, Lincoln County ARC *Newsletter*

Robert Cobaugh, W2AY

The amateur community has lost a great "voice of experience" with the passing of Robert (Bob) Cobaugh on Feb. 6, 1995. Originally licensed in 1931 with the call W2DTE ('don't tear easy'), he subsequently held the call W2NX and finally W2AY ('America yesterday').

An active low-bander, he was the classic ragchewer whose sphere of friends embraced all amateurs from the old timers to the newly ticketed (who were regaled with his fascinating anecdotes of radio history).

Bob was chief engineer of WQXR AM and FM, the radio stations of the *New York Times* in New York City until his retirement seven years ago. He was the trustee of the Electchester V.H.F. club's W2AY repeater, and held an Extra Class license. —*submitted by* Gary J. Roeburt, KA2UTF.

Kenneth Gaspar, KH6CHL

Amateur Radio in Hawaii lost one of its most ardent enthusiasts with the unexpected death of Kenneth "Sunny" Gaspar, KH6CHL, April 2, 1995. A lifetime Molokai resident, Sunny was the organizer, charter member and first President of the Molokai Amateur Radio Association.

As training officer for Hawaii Army MARS for many years, Sunny seemed to have memorized the infamous Field Manual, word for word.

He volunteered for many years as the local communication liaison for the Red Cross and Civil Defense. He served as cook on several Kalawao County DXpeditions, bringing happiness to other participants and to County Hunters worldwide.

"Sunny always had his truck loaded and ready to take out for all of us to enjoy when we flew in for those events," remarked Richard LaChance, AH6IO.

Sunny promoted the best in Amateur Radio through his tireless teaching and

training of younger aspirants in their quest of Novice and Technician tickets. He encouraged those who initially fell short to "try and try again." Largely through his efforts, the number of FCC licensees on Molokai has doubled in the past 4 years!

"All of us on Molokai have lost a dear friend," said Felix Cabalar, WH6RY, one of many who traces his Amateur Radio heritage to Sunny. His absence will be sorely felt by the entire amateur community. —*submitted by* James Koch, NH6YH

Dean Hildebrand, W6WAH

Dean Hildebrand, W6WAH, a longtime friend ofAmateur Radio in Northern California passed away April 16, 1995, in Sacramento, California. In addition to life membership in ARRL, he was a life member and past president of the North Bay Amateur Radio Club, and member of numerous other Amateur Radio clubs throughout his life.

Dean was a combat veteran of the U.S. Navy during WWII, and later retired after having served thirty years as an electronics technician at the Mare Island Naval Shipyard.

A native of Greene, Iowa, he published a quarterly newsletter for the Charles City Iowa High School class of 1939. He was instrumental in contacting and maintaining regular communication with more than 100 surviving class members and teachers.

W6WAH is survived by his loving wife of fifty years, Mary, their two daughters Victoria Condon, WA6IEC, and Patricia Payne, and three grandchildren. WR

SPECIAL EVENTS

Pioneer Village

The Hastings ARC will operate a special event station 3 June 1400Z-2200Z and 4 June 1300Z-1800Z from the Amateur Radio Display booth at Pioneer Village in Minden NE, celebrating the 42nd anniversary of the Village. Frequencies will be 3.980, 7.280, 14.250, 21.320, 28.400 and CW in the 15 Meter Novice band. For QSL, send SASE to HARC, P.O. Box 128, Hastings, NE 68902.

Bicentennial of Plymouth

Radio amateurs in Plymouth, Connecticut will operate stations to celebrate the bicentennial of the town of Plymouth on 4 June. A limited number of special certificates are being made available by the *Bicentennial Committee* to commemorate the contact. Operation will be in the General portions of 160, 80, 40, 20, 15, and 10 Meters as propagation allows. Send QSL with SASE (9.25" x 13.75" or No. 10 envelope for folded certificate) to K1EM, P.O. Box 12, Pequabuck, CT 06781.

Boy Scout Camporee

The Mt. Pleasant, Iowa ARC will operate WØMME, 10 June, 1500-2200Z at the Heritage Boy Scout Camporee, sponsored by Mid-west Old Threshers and the Southeast Iowa Council of Boy Scouts. Operation will be in the lower 50 kHz General class portion of the 80, 40, and 20 Meter phone bands. For QSL, send SASE to Dave Schneider, WDØENR, 1675 Old Hwy 34, Mt. Pleasant, IA 52641.

Old Time Radio Days

The Radio Amateur Downstate Illinois Organization (R.A.D.I.O.) will operate WD9GTW, 10 June, 1700 - 2300 UTC at the Old Time Radio Days 100th Anniversary of Meisner Radios. General phone subbands on 15, 20, and 40 Meters. 28.490 on 10 and 146.94(-) Mt. Carmel, IL repeater. For certificate, send SASE with QSL to R.A.D.I.O., 827 Broadmoor, Mt. Carmel, IL 62863. For more information, call 618/262-7111.

Crater Lake rededication

The Keno ARC will operate WD6EAW, 28 June, 1600Z to 0200Z as part of the ceremonies rededicating the Crater Lake National Park Lodge. The ceremonies will commemorate the 80th anniversary of the original opening of the lodge and completion of the National Park Services rehabilitation of the lodge. Operation will be in the lower portion of the General 80, 40, 20, 15 and 10 Meter subbands. For QSL, send SASE to Keno ARC, P.O. Box 653, Keno, OR 97627.

City of Oak Park

The Oak Park ARC will operate W8MB 17 and 18 June, 1600-2400Z, to celebrate the 50th anniversary of the incorporation of the City of Oak Park, MI. Suggested SSB frequencies are 7.280, 14.280, 21.380 and 28.480 MHz. For certificate, send QSL with SASE to: Oak Park ARC, 14300 Oak Park Blvd., Oak Park, MI 48237.

Guglielmo Marconi

The Somerset County ARS, Inc., will operate NW2P from Marconi Plaza in the Somerset section of Franklin Township (the actual site of an early wireless station developed by Marconi), 11 June, 1300-2100 UTC. Additional stations will be operating at other Marconi sites: Cape Cod, Newfoundland, and England. Stations that establish contact with any of these sites will be eligible to receive a commemorative certificate. Send QSL and 9 x 12 SASE to SCARS, P.O. Box 742, Manville, NJ 08835. Phone and CW: 15M Novice, 17M and 20M General, 2M and 6M SSB, 448.175(-), 146.58(s).

South Dakota Fire School

The Pierre ARC will operate AAØTS, 10 June 1400Z to 11 June 0200Z at the 66th annual South Dakota State Fire School from the State Capitol City. Operation will be at approximately 3.940, 7.240, 14.240, 28.340, 145.75(-) for phone, 7.125 for CW. For QSL, send 9 x 12 SASE to Pierre ARC, P.O. Box 1261, Pierre, SD 57501.

Never wrestle with a pig. You both get dirty, and the pig likes it. —WD1V, North Coast ARC *Communicator*

Amateur "Hi"

Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to **Worldradio!**

The day the FB-7 took flight

Bernie Peake, N4CR

Since this is my 62nd year as an active ham... the exact date in 1938 when the following happening occurred eludes me, but my best buddy, Wally Ward, then W9SUJ, and now K4AEA, and I were relaxing in his shack. He, to my envy, had a real shack at the back of his home QTH in Chicago. Wally was expounding on the marvelous merits of his new National FB-7 receiver. He reached for the filament switch but never touched it because at the same moment the FB-7 jumped up off his bench, flew zooming across the shack to the back wall where it slammed with a mighty bang and dropped 'kerplunk' on the floor. Ah me... #14 wire wrapped around the antenna 'binding-post' as they used to call the connectors in those days, does not readily act as a quick disconnect. A passing rubbish truck traveling up the alley behind the shack was just high enough to snag Wally's lead-in!

As a postscript, although traveling different paths through the years, Wally and I ended up in Florida and resumed eye-to-eye contacts. I still consider him my best buddy; I should, too, because he was 'best man' when I got married. **WR**

STATION APPEARANCE

Tim Durkin, WB6UAN

*Send **Worldradio** a picture of your shack and the staff will choose a winner to receive a free one-year subscription to **Worldradio**!*

Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.

After retiring from San Diego,California, I moved to the Grand Canyon state! I live in a remote area of the Coconino National Forest. Since I'm the only year-around ham in this area,I decided to set up a better than average ham station,since the weather can get very bad,and leave everybody stranded up here in the forest. My neighbors depend on me for communications to the outside world,when the power and phones go out. This occurs often during the winter. I just crank up my 5 kW generator,and my station is "on-the-air" communicating to my fellow hams for help. In a national emergency I would be set up to help with communication. I feel that this is the most *important* aspect of Amateur Radio.

When things are normal, which is most of the time, I use this station for DXing,and talking with all my friends inArizona,and throughout the states. My favorite bands are 10 and 40 Meters. I also enjoy VHF and UHF. I even have a packet node (AZRIM) to help with packet communication for other hams who cannot get into other nodes in our part of the state.

My station is at 7000' elevation,and with my extensive antenna system, I can talk into repeaters over 100 miles away. The low band antenna system is not far behind either. I've been a ham since 1966, and this is my first real station, so I spared nothing in setting it up. Ham radio is my favorite hobby,and I recommend it to everyone. My other hobbies include a stamp collection and astronomy.

I am an ARRL life member, Chairman, Ft. Tuthill Hamfest, Flagstaff, AZ.1993-94 Official weather Skywarn spotter for Mogollon rim. (Have complete WX station.)

I have DXCC (262 confirmed,10M phone and CW) WAS, ARRL worked all states,WPX, and WAZ awards.

I am a member of the following: Former Vice Chairman Amateur Radio Council of Arizona, Mingus Mt. repeater group, Coconino A.R.C.,Cactus Radio Intertie member.

I write a DX column for the *Kachina QSO*, and *Arizona Desert Airways* (ADAW) and am an A.R.E.S. member, Coconino and Navajo counties of Arizona.

My station consists of the following equipment:

Antenna system (HF)

Mosley, TA-33M WARC; Cushcraft, 40-2CD, 40M monoband beam; homemade one-quarter wave dipole for all lowbands (using ant. tuner); tower—Rohn 25 60' high; rotor—Hygain HAM IV model; antenna switching done with Ameritron RCS-4 and backup Alpha/Delta 4 (manual ant switch).

VHF equipment

Primary and back-up station:

Standard 5608DA (2) units for both primary and secondary stations. Both units are dual band radios for 2 M and 440 MHz FM. Other VHF and UHF rigs used as back-up to above TM-741, Standard C-5718 DA dual band. VHF 7 UHF (used primarily in car).

Linears

Linear amps for above station, RF Concepts 20117, 170 watt. I use two of them, one for primary, one for secondary station. Linears for primary/secondary 440 MHz station, RF Concepts 4-310, 110W linears (2).

Antennas for VHF/UHF

Diamond dual band vertical 500XA (primary, 86 ft); Diamond dual band vertical model 200XA (secondary); Hygain beam 4 element 64DX (primary, 60 ft).

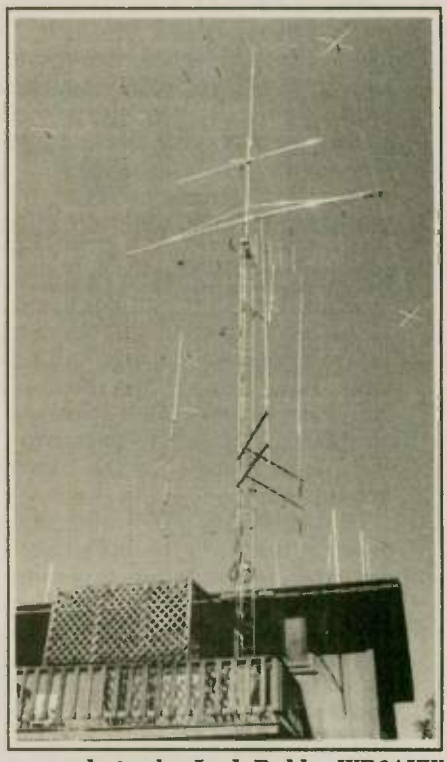
Digital station

Packet and all digital modes use the following equipment:

VHF: Radio, SM-213A Kenwood (2M)

TNC: AEA 232 MBX (all mode TNC).

Terminal: IBM model 355 laptop computer.



—photos by Jack Dobbs, WB6AXW

Packet node

AZRIM, (WB6UAN-1 VHF 2M. Freq: 145.07(S)

Antennas for both packet station and node, I use Diamond model F-23A verticals mounted off side of tower, also secondary station antenna 200XA mounted off the side of the tower. WR

Product Review

The ARRL Technician Class video course

Rich Arland, K7YHA

I teach vocational electronics for a living. One "perk" that I use in my classroom is the chance for highly motivated students to qualify to enter an Amateur Radio licensing class. Successful candidates are encouraged to learn the International Morse Code along with the necessary theory to pass their Novice and/or Technician Class license exam.

Until recently our Amateur Radio licensing class used the ARRL's *Now You're Talking"* book and computer generated tests to teach the theory for Novice and Technician Class licenses. Kirk Kleinschmidt, NTØZ, then Assistant Editor at *QST*, sent me a review copy of their video tape and computer software for the Novice/Technician license. Officially titled "The ARRL Technician Class Video Course," the package contains three VHS video tapes (a total of five hours of video instruction), a 164-page course booklet and six practice exams. The accompanying software titled "Hampass" is extremely useful for drill and review of all areas covered on the video tapes. In addition, the computer software can generate practice tests so the student is able to take a test very much like the test that the Volunteer Examiners will administer. This reduces the tension normally associated with test-taking to a minimum, drastically improving the chances of success for the newcomer to ham radio.

The tapes are professionally produced and are very informative. I immediately pressed these tapes into service in my classroom. Literally everything is covered in the video presentation that the newcomer to Amateur Radio will need to obtain a Novice Class or Technician Class or Technician Plus Class license.

The information contained on the tapes moves along at a brisk clip. Several of my students commented that the tape moved along a little too fast. The nice think about the video medium is that you can rewind the tape and replay those sections that are in question.

The tapes came with a workbook that has exercises which accompany the information on the tapes. This reinforces the students learning process. In my particular instance, I further reinforce my students learning by providing several computer generated tests from the current question pool. This allows me to gauge the student's progress and have them review weak areas prior to test day.

The combination of the ARRL video tapes and workbook coupled with the test in *Now You're Talking* (that the student can study in his/her free time), and the computer generated tests really does the trick when it comes to preparing my students for testing. Not to brag, but my students have a 100% pass rate on VEC exams administered for new and upgraded license. Obviously this system really works well. Is the ARRL Technician Class Video Course worth the money? In my humble opinion, yes. Since everyone learns differently, adding the dimension of video taped lessons to the arsenal of teaching aids is cheap insurance when it comes to results on test day. The ARRL tapes are very well produced and directed. The information is current and provides a visual instructional medium for the student. The presenters, Martha and John King, KD6SCZ and KD6SCY, of King Schools in California, do a very good job of holding the student's interest during a series of technically oriented discussions.

These tapes are a "must have" for anyone desiring to teach an Amateur Radio licensing course or for someone interested in providing an easy method of getting a newcomer involved in the hobby. Contact the American Radio Relay League, 225 Main St., Newington, CT 06111, for pricing and availability. **WR**

THE BIG DK-DX
Don Johnson, W6AAQ's
3.5 — 30 MHz mobile antenna,
manufactured by:
H. Stewart Designs
P.O. Box 643
Oregon City, OR 97045
See *Worldradio*, Oct. 1994 issue.

HAM-IT-UP PUZZLE

Bill Sawders, K7ZM © 1995

Locate each word below in the puzzle. Words can be horizontal, vertical, diagonal, and backwards. **10 letters will not be used.** Use these letters to spell a familiar word! Good luck! *Answer key on page 52*

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

AMP
BASS
BEAM
CALIBRATION
CHIP
CLUB
CODE
COED
CQ
CW
DAH
DB
DATA
DESK
DIODES
DIT
DSP
DXCC
EYEBALL
FADE
FAX
FILTER
HF
HOMEBREW
ICOM
KENWOOD
KIT
LAB
MFJ
MOBILE
MODE
MUF
OHMSLAW
PACKET
PADDLE
PILEUP
QSK
QSY
QST
QUAD
RECEIVER
RIG
SHOCK
SSB
TALK
TENTEC
TEST
THEORY
TICKET
TRAPS
TUNER
VFO
WAC
WAS
WATT
WX
YAESU

ANSWER: _ _ _ _ _ _ _ _ _ _ _

DX WORLD

John F.W. Minke III, N6JM
P.O. Box 310 Carmichael, CA 95609-0310

W-100-N

Congratulations to the following DXer for completing the necessary requirements for *Worldradio's Worked 100 Nations Award*:

491. Michael Weber, WA2RZJ

Spratly Islands (1S)

Two different Spratly Islands DXpeditions had been planned this Spring. 9MØA was scheduled for March 29 to April 3 from Layang Lagang Island with a group of DXers from Japan and Malaysia. The other group was a Philippine DXpedition scheduled for April 10 to April 16.

Back in the 1970s there were two DXpeditions that I recall. The first was that 1S1A with the next one signing with 1S1DX. There was also one of the Don Miller era that signed with 1S9WNV or something like that.

Conway Reef (3D2)

The DXpedition to Conway Reef was not without problems. According to The *DX Bulletin* the team encountered bad weather and was hampered by heavy surf conditions while áttempting to land. Two boatloads of operators and equipment capsized. None of the operators were injured, but about $10,000 worth of equipment was lost. This limited the team to two stations rather than three that had been planned. Obviously, this will add to the expenses to the team, so please keep this in mind when requesting confirmation for your contacts. I did not make an attempt to work them 80 through 10M, however, I needed them on the WARC bands. I did hear them on 17M SSB, but when the operator finished the contact his signal had dropped off. Two calls were used, and based on what I heard, 3D2CT was used on SSB and 3D2CU on CW. I hope you all got the contacts you needed.

Madagascar (5R)

From the end of February through March 10th a group of German DXers, including DL5UF, DK1CE, and DF5WA, operated from Madagascar, signing with the calls 5R8EI, 5R8EH, and 5R8EJ. These three calls were reported often with 5R8EH concentrating on SSB and 5R8EI and 5R8EJ settling with CW. 5R8EJ was very active on 40 M. Other active calls from Madagascar included 5R8AL, 5R8DS, 5R8ED and 5R8ZUP. From the DX newsletters I have the following reports:

5R8ZUP	3.512 MHz	0100 UTC
5R8AL	7.004 MHz	1800 UTC
5R8DS	7.003 MHz	0330 UTC
5R8AL	10.100 MHz	1700 UTC
5R8DS	14.004 MHz	1700 UTC
5R8ED	14.255 MHz	1830 UTC
5R8AL	18.075 MHz	1400 UTC
5R8AL	21.009 MHz	1500 UTC
5R8DS	21.008 MHz	1300 UTC
5R8ED	21.290 MHz	1600 UTC

Scheduled for the period April 28 - May 4, two Japanese DXers, JD8BKW and JH8CLU, were to have operated. The call 5R8DL is that of JH8CLU.

Guyana (8R)

On 75M, 8R1AK shows often near 3.797 MHz. Check the hours between 2300 and 0500 UTC. This station has also been reported on 12 M. Try 24.948 MHz around 2000 UTC. Other activity from Guyana includes the following reports:

8R1Z	3.792 MHz	0700 UTC
8R1AK	7.067 MHz	2300 UTC
8R1RPN	14.087 MHz	2245 UTC
8R1WD	14.205 MHz	0200 UTC
8R1XPO	4.265 MHz	2230 UTC
8R1Z	18.146 MHz	1730 UTC
8R1Z	24.945 MHz	1530 UTC

Ivory Coast (TU)

During the period from the latter part of February through the month of March at least ten calls were reported, with some of them on several bands. Eighty Meters was represented by only two calls: TU2XZ on 3.512 MHz at 2245 UTC, and TU4SR on 3.514 MHz at the same time. Then on 40 M I had TU2KC on 7.006 MHz at 0330 UTC, TU2XZ on 7.002 MHz at 0630 UTC and TU4SR on 7.005 MHz at 2300 UTC. Regarding the WARC bands look for the following:

TU2XZ	10.110 MHz	0430 UTC
TU4EY	10.100 MHz	2300 UTC
TU5EY	10.104 MHz	2230 UTC
TU2OP	18.141 MHz	2300 UTC
TU4EY	18.076 MHz	1900 UTC
TU4SR	18.070 MHz	1700 UTC

Nothing of the 12M band was reported. Twenty Meter includes the following active calls:

TU2JL	14.213 MHz	2245 UTC
TU2XP	14.043 MHz	2100 UTC
TU2XZ	14.011 MHz	2230 UTC
TU5DR	14.066 MHz	2115 UTC

The last report was RTTY.

Finally on 15M, TU2DP was reported near 21.343 MHz at 1230 UTC and TU2OP on 21.221 MHz at 1400 UTC. There were no reports on 10M. Most of these stations use QSL managers and usually with good responses. Cards for TU4EX are handled by HH2HM/F and TU5EV by W3HCW, all within a month or less.

Kazakhstan (UN)

If you need Kazakhstan on the lower bands look for UN7TX who has been found on both 80 and 40M. He has been reported at the lower end near 3.500 MHz after 0100 UTC, and between 7.004 and 7.009 MHz at 0130, 0200 and 1230 UTC. Other calls reported active from Kazakhstan include the following:

UNØPYL	14.029 MHz	1300 UTC
UN5J	3.507 MHz	1230 UTC
UN5PR	14.086 MHz	1500 UTC
UN9LX	18.071 MHz	1330 UTC

Chagos (VQ9)

A 160 Meter contact with Chagos

probably will not be possible until later in the year. The *Low Band Monitor* reports that on 160M a 100' top-loaded (yagi), shunt-fed tower with ten elevated radials for transmitting is used at VQ9TP. Four Beverage antennas, complimented with a W1WCR null steering array is used for receiving. With that arrangement, 160 Meter buffs should have a good chance to add Chagos to their Top Band collection. VQ9TP was still active on the top band during the month of March with his favorite hangout at 1.824 MHz. He was on often from about 2100 to 0100 UTC. However, 160M wasn't the only band to find VQ9TP. Try 40M between 7.005 to 7.015 MHz, usually after 1200 UTC; 30M near 10.101 MHz at 1400 UTC; 20M from 14.016 to 14.024 MHz at 1500 UTC; 17M from 18.074 to 18.079 MHz after 1500 UTC, and 15M near 21.025 MHz around 1700 UTC. Also active from Chagos is VQ9XX, on several bands. He shows on 75M at times and was worked on 3.799 MHz at 2000 UTC by the Europeans on March 13th. The best bet for North Americans is 20M between 14.002 and 14.017 MHz for CW, and 14.160, 14.191 to 14.195 MHz on SSB. Look for this one from 1700 UTC. Regarding QSL requests, VQ9QM is managed by W4QM, with a turn around of less than two months, and in some cases, one week.

St Helena Island (ZD7)

Checking the DX reports from the various DX newsletters I found activity from at least five calls from St Helena Island. The most active is ZD7CTO on SSB. Try 14.243 MHz at 2130 UTC or 21.266 MHz around 1800 UTC. ZD7DP can be worked via RTTY usually around 14.080 MHz at 2000 UTC. He has also been reported working SSB on 14.188 MHz at 1800 UTC or 21.292 MHz at 1500 UTC. These were European reports. Reports of the other three calls from St Helena include:

ZD7JP	21.275 MHz	1930 UTC
ZD7KT	18.151 MHz	2100 UTC
ZD7SM	21.271 MHz	1800 UTC

Paraguay (ZP)

There were several stations active from Paraguay during the SSB portion of the ARRL International DX Competition. However, if you don't like contests, perhaps ZP6CW can fill the void. He is another one of those multi-band types and has been reported on the following bands:

3.501 MHz	0645 UTC
7.011 MHz	0200 UTC
10.101 MHz	0300 UTC
14.028 MHz	0100 UTC
18.071 MHz	0100 UTC
21.030 MHz	0100 UTC
24.891 MHz	2230 UTC

Other calls to look for from Paraguay include the following that were worked during the month of March:

ZP5EDM	28.372 MHz	2000 UTC
ZP5XYE	14.175 MHz	2345 UTC
ZP6DN	14.224 MHz	0200 UTC
ZP9XB	10.101 MHz	0015 UTC

IOTA

George Chlijanc, UY5XE, reports that his YMØI/P DXpedition to Sican Island (AS-098) made 1,120 contacts in 18 hours of operation. The other operation, the TAØ/UY5XE DXpedition to Kekova Islands (AS-115) made some 430 contacts in 4 hours of operation.

As a special to ***Worldradio*** readers, Duncan Kreamer, W1GAY, will be glad to make schedules with those needing Martha's Vinyard (NA-046). Duncan, an old-timer at age 77, and has been licensed since he was 17 years old.

The following islands were active during the month of March:

EU-097 Orslandet Island	OH2BBF/P
EU-163 Sveti Nikola Island	4N73N
EU-167 Pessegueiro Island	CT1ESO/P
NA-036 Vancouver Island	VE7DUG
NA-083 Chincoteague Island	N2US/4
OC-079 Belep Island	FK/DL2GAC
SA-023 Itaparica Island	PY6JJ
SA-046 Itamaraco Island	PY7XC

I had a pleasant surprise working two new ones late one Saturday afternoon local time. I worked PY6JJ (SA-023) and PY7XC (SA-046) within a few minutes of each other.

In February, GM3POI in the Orkney Islands (EU-009) was active during the ARRL International DX competition. *DX News Sheet* reports that UA9OBA plans some traveling around the world working new ones from both the Arctic and Antarctic areas beginning in June. Some of the islands planned for possible operations include Nanskian, Scott and Bouvet islands.

UDXPF Award

The Ukrainian DX-Peditions Foundation, founded 1 February 1994 by George Chlijanc, UY5XE, Victor Rusinov, UT8LL, Nick Lavreka, UXØFF, and Anatoly Kirilenko, UT3UY, sponsors the UDXPF award, and is available for 150 points as follows:

DXpedition within Ukraine	1
DXpedition within Europe	2
DXpedition to island in Europe	3
DXpedition to other than Europe	4
DXpedition to island outside Europe	5
DXpedition to new DXCC/IOTA	8

Maritime mobile DXpeditions count as the same point value as islands. The DXpeditions to a new DXCC country or IOTA island also includes DXpedition to a new Antarctic Base. And, of course, the DXpeditions count only when the team includes DXers from Ukraine. The fee for this award is 5 IRCs and is available from George Chlijanc, UY5XE, P.O. Box 19, 290000 Lviv, UKRAINE. There is also a plaque available for 200 points. The fee is 10 IRCs.

Kamenney Pojas Award

The Kamenney Pojas Diploma is awarded for working Russian stations in oblast 154 (prefix UA9C and UA9D). To qualify for this award you must contact 10 stations since 1 January 1988. The same station may be contacted on different modes and/or bands for credit. Send your application with a list of contacts certified by your radio club officer or two licensed Amateur Radio operators to: Club Yupiter, Vlad Koroljov, UA9CVQ, P.O. Box 86, N.Tagil 622022, RUSSIA. Please include a fee of 15 IRC. The diploma is decorated with an old heraldic crest. Vlad says that there are 11 members of their local club RK9CZH.

DXCC processing status

The status of unprocessed applications at the end of February at the DXCC Desk was 186 (22,020 QSL cards). The DXCC Desk received 359 applications (35,063 QSL cards) for endorsements and new awards during the month of February. Applications being sent out the end of that month were received less than a week earlier. A few applications received prior to that time were waiting for paper record conversion, or were being audited, and had not yet been completed.

ITU prefix allocations

Thanks to Jean-Michel, F6AJA, editor of *Les Nouvelles DX* for the following call sign series that were allocated by the Secretary General of ITU from the end of the 1979 WARC through March 15, 1994. The allocations are as appeared in DX News Sheet:

EKA-EKZ Armenia
EMA-EOZ Ukraine
ERA-ERZ Moldova
ESA-ESZ Estonia
EUA-EWZ Belarus
EXA-EXZ Kyrgyz
EYA-EYZ Tajikstan
EZA-EZZ Turkmenistan
E2A-E2Z Thailand
J8A-J8Z St Vincent/Grenadines
LYA-LYZ Lithuania
OKA-OLZ Czech Republic
OMA-OMZ Slovak Republic
P4A-P4Z Aruba
RAA-RZZ Russian Federation
S5A-S5Z Slovenia
T7A-T7Z San Marino

T9A-T9Z Bosnia/Herzegovina
UAA-UIZ Russian Federation
UJA-UMZ Uzbekistan
UNA-UQZ Kazakhstan
URA-UZZ Ukraine
V2A-V2Z Antigua/Barbuda
V3A-V3Z Belize
V4A-V4Z St Kitts & Nevis
V5A-V5Z Namibia
V6A-V6Z Micronesia
V7A-V7Z Marshall Islands
V8A-V8Z Brunei Darussalam
YLA-YLZ Latvia
Z2A-Z2Z Zimbabwe
Z3A-Z3Z Macedonia
4JA-4KZ Azerbaijan
4LA-4LZ Georgia
9AA-9AZ Croatia

Those prefixes for Estonia, Lithuania and Latvia had really always belonged to those countries. When the Soviets annexed the Baltic states, they were assigned the prefixes of UR, UP and UQ.

QRZ DX

QRZ DX has been sold. Bob, W5KNE, and Bonnie Winn, longtime owners of this famous weekly DX newsletter, have turned over the reins to some new owners: Carl and Miriam Smith, N4AA and KB4C, P.O. Box 16522, Asheville, NC 28816. Bob and Bonnie produced some 600 issues of *QRZ DX* during the last 12 years. That is, says Bob, "12 years of Monday and Tuesday nights and Wednesday afternoons writing, labeling and stuffing. Our lives revolved around *QRZ DX*." Best wishes to the new owners, Carl and Miriam, and many thanks to Bob and Bonnie for their work in a fine DX publication. It has been appreciated here at ***Worldradio***. Twelve years is a long time. That reminds me of Hugh Cassidy, WA6AUD, and his now defunct West Coast *DX Bulletin*. Cass ran that one for 11 years before throwing in the towel. As for me, I have been doing this for 17 years!

To the past supporters of *QRZ DX*, please continue to do so. No publication can run without the support of the DX community. I cannot expect Carl and Miriam to manufacture DX news. Please support them as you did Bob and Bonnie. Thanks!

DX Convention status

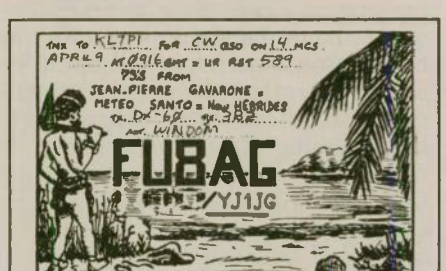
The Western Washington DX Club reports that the Northwest DX Convention will be at the Renton Holiday Inn in suburban Seattle. DX attendees will include Len, KHØAC, and Jon, NL7GP.

The 4th Annual New Orleans International DX Convention will again be held at the Royal Sonesta Hotel, August 25 and 26, 1995. A special rate of $99.00 per night plus tax has been granted for convention attendees. It is suggested that you call for reservations at the hotel now at 504/586-0300. For further convention information please contact Weston G. Strauch, W5VBX, 2238 Lake Oaks Parkway, New Orleans, LA 70122.

The annual RSGB HF Convention is scheduled for September 9 and 10 at Windsor, England. The convention chairman is John Greenwell, G3AEZ. More information later.

Antique QSL department

John Munroe, W7KCN, provides us with some more oldies of Joe Pacquette, KL7PI, now a Silent Key. The first contact dates back to 1 June 1951 (about the time your DX editor graduated from high school). Joe worked XU6F, Hong Kong, on 20M CW at 1350 GMT. Joe was residing in Juneau at the time. The card was printed in blue with two red horizontal bars. The second card is that of FU8AG, New Hebrides. Joe worked this one also on 20 M CW on April 9th. No year was indicated, but most likely it was during the same period. The operator was Jean Pierre Gavarone. New Hebrides



New Hebrides is now Vanuatu (YJ).

QSL managers

Marvin Tyndall, WB2VMV, offers his services as a QSL manager. He has recently retired and has time to devote to this project. Any DX station looking for a manager or a present QSL manager who wishes to be relieved of his duties can contact Marvin at 1023 Seaside Avenue, Absecon, NJ 08201.

The DX fraternity has learned of the passing of Ferne, the XYL of Rubin Hughes, WA6AHF. Known as the "silent QSLer" Ferne died on January 17, 1995. WA6AHF was listed as QSL manager for several DX stations. However, it was Ferne who did all the work, often having to research the logs due to erroneous times and dates made by the requesting party. Ferne has been credited for handling over 20,000 cards for Francisco, HKØBKX, also a Silent Key. Rubin and Ferne were married for nearly 57 years.

QSL information

Effective April 1, the League will now charge $3.00 per pound for all QSL cards shipped via the ARRL Outgoing QSL Bureau, (up from $2.00 per pound). This service is available to ARRL members only.

May Blakley, WA1EHK, sent us a copy of a letter she sent to Dr. Claudia Wulz, F5NYQ, of the International Telecommunications Union in Geneva, regarding QSL cards from 4U1ITU. She had worked 4U1ITU several times but had not received confirmation and was seeking help in obtaining a 4U1ITU QSL card. I hope this works for you, May. However, you should be aware of who the operator was at the time. I published QSL routes for 4U1ITU and you will notice that the routes will vary due to who the operator was for a certain date. I do not know the QSLing policy for 4U1ITU, but I assume it is the responsibility of the individual operator at the time. And, the operator may not be a

DX Prediction — June 1995

Maximum usable frequency from West Coast, Central US and East Coast *(courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).*

The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Tokyo, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio de Janeiro. Chance of contact as determined by path loss is indicated as bold *MUF for good, plain MUF for fair, and in parentheses for poor. UTC in hours.

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(17)*	14	*15	*(12)*	*13
10	*(19)*	12	14	*(12)*	*14
12	23	*(14)*	13	15	17
14	26	16	*(12)*	17	21
16	28	16	*(12)*	18	*24
18	*28	*(14)*	*(11)*	18	*26
20	23	*(18)*	*(22)*	17	*27
22	19	20	26	16	*25
24	*(16)*	20	28	13	*20
2	*15	19	28	*11*	*17
4	*16	*(18)*	26	*13	*15
6	21	17	*22	16	*14

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(14)*	*17	*14	*(12)*	*16
12	*(16)*	*14	13	*(12)*	*(15)*
14	*(19)*	*16	12	*(15)*	20
16	*(21)*	16	*(12)*	17	23
18	22	*(14)*	*(11)*	18	26
20	23	17	22	16	27
22	19	20	26	14	24
24	*(17)*	22	28	*(12)*	21
2	*(15)*	23	28	*(10)*	*18
4	*16	*24	27	*(13)*	*16
6	21	23	22	16	*14
8	*(17)*	*21	*15	16	*13

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(16)*	14	*17*	*(12)*	*13
9	*(18)*	*(12)*	14	13	*14
11	22	*(14)*	13	16	17
13	25	16	*(12)*	18	21
15	27	14	*(12)*	*19	*24
17	28	*(12)*	*(11)*	*19	*26
19	*25	*(13)*	*(14)*	*18	*27
21	21	*(16)*	*(24)*	16	*26
23	18	*(17)*	27	*15	*23
1	*15	19	28	*13	*19
3	*13	*(18)*	27	*11	*16
5	19	18	24	*14	*15

resident of Geneva. It is indeed unfortunate that you are having the trouble. I have received cards from guest operators who have automatically sent out QSL cards unsolicited. May reports the following contacts with 4U1ITU:

28 Feb 1992	1950Z	18.1 MHz	SSB
1 Jul 1992	2239Z	14.0 MHz (IARU Test)	SSB
24 Oct 1992	1415Z	28.0 MHz (WW DX CW Test)	SSB
27 Mar 1994	2214Z	14.0 MHz (WPX SSB Test)	SSB
24 Sep 1994	1940Z	14.0 MHz (WW DX RTTY Test)	RTTY

If you were the guest operator during any of these periods, please help May out. She had sent a card for each of the first three contacts via the bureau. The WPX test QSO was sent via DK7UY last year. This brings us to another similar subject. Many contesting types could care less about receiving a QSL card to confirm the contact. Some can't even be bothered to respond to those who do care to collect QSL cars. This is a sad situation. While these contact hungry contesters were all out collecting points - and many from a new DXer, (or seasoned for that matter), needing a confirmation for a new one, all they could think of was collecting points. Responding to a QSL request should be a thank you for the contact. If it were not for some of these casual operators giving points to the die-hard contesters they may not have been winning. Most likely, some would never call you if they knew getting a QSL card would be impossible. However, this does not mean the QSL request shall be made without the usual SAE. with sufficient funds for return mail. And, also be aware that some of the contest DXers also have QSL managers. Just prior to submitting my column, May informed me that she received her 4U9ITU card via the bureau, but nothing for the other contacts with 4U1ITU. And, of course, she received some other cards via the bureau, that she had requested direct with "green stamps." I can't blame her for her frustrations. A direct QSL with SAE and sufficient funds should bring a QSL back direct, either the DX station or mailed Stateside. However, never via the Bureau! That's tight!

QSL routes

These QSL routes come from several sources and cannot be guaranteed. Please report any errors.

1CØZZ	—Peter (UU6JF), P.O. Box 10, Kerch 334500, UKRAINE
A71CW	—Chris Dabrowski, P.O. Box 12101, Doha, QATAR
A92Q	—Admiral Scotty Redd, P.O. Box 116, Manama, BAHRAIN
AP2AMA	—P.O. Box 1452, Islamabad, PAKISTAN
CP6/LU5VC	—Raul Suarez, P.O. Box 151, Bariloche RN, ARGENTINA (See Note 3)
CT1ESO/P	—P.O. Box 207, 8900 V.R.S.A., PORTUGAL
DU7CC	—Tom Bevenheim, Villa Sea Q, Ronda, Cebu Island 6034, PHILIPPINES
E25CMU	—P.O. Box 19, Fang, Chiang Mai 50110, THAILAND
EL2NB	—P.O. Box 2751, Monrovia, LIBERIA
ET3IV	—P.O. Box 678, Addis Abbaba, ETHIOPIA
ET3KV	—P.O. Box 7633, Addis Abbaba, ETHIOPIA
GM3POI	—Clive Penna, North Windbreck, Deerness, Orkney KW17 2QL, UNITED KINGDOM
HH2/KBØQNS	—P.O. Box 15630, Port-au-Prince, HAITI
OD5NH	—P.O. Box 80903, Beirut, LEBANON
OD5NJ	—Gabby, P.O. Box 70647, Beirut, LEBANON
TM1ZZ	—Yvan Rouxel (F1SUY), 13 rue Delpeche, F-93100 Montreuil, FRANCE
TN7OT	—Hazel, B.P. 12, Impfondo, REPUBLIC OF CONGO
TR8IG	—P.O. Box 740, Libreville, GABON
V31VW	—Vancouver Mountain Radio Club, P.O. Box 1622, Vancouver, WA 98668
VI8TRACY	—P.O. Box 41251, Casuarina, NT 0811, AUSTRALIA
XE3BGM/1	—Bernardo Garcia Mendoza, P.O. Box 882, Pozarica, Vera Cruz, MEXICO
XFØC	—Hector Espinosa F, P.O. Box 231, Colima 28000, MEXICO
YA/UT9XL	—P.O. Box 207, 323012 Pavlograd, UKRAINE
YF8XM	—P.O. Box 151, Ambon City 97001, INDONESIA
ZA1MH	—P.O. Box 19, Tirana, ALNBANIA
ZA/Z32KV	—P.O. Box 10, Struga, REPUBLIC OF MACEDONIA

NOTES:

1. Use 1995 *Callbook™* address.
2. This route is for 26 Feb 1994 only.
3. Do not make any reference to Amateur Radio on the envelope.
4. This route applies for March 11-12 and March 25-26 only.
5. Please QSL direct only.
6. This manager requests cards via the bureau.
7. This is a new route; former manager (WB1DQC) now a Silent Key.
8. UAØMF is the new call for UWØMF.

Many thanks to the following contributors:

UA9CVQ, UY5XE, WA1EHK, W1GAY, WB2VMV, KC5ALW,

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from Hwy. 5 & 217

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John, KB4NUC, Mgr.
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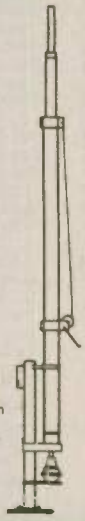

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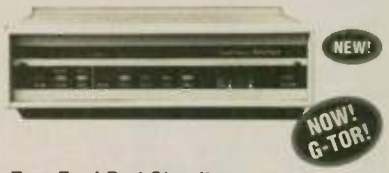

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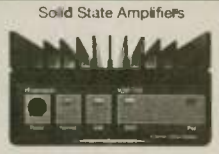

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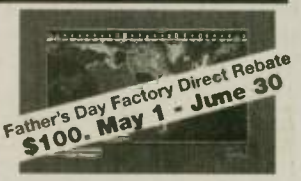

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QSL routes

3AØX	—Bureau	9J2/N6BFM	—W8CNL	EA6ABD	—W3HCW	KC6AS	—JA3JM	T93A/4U	—9A2AJ	VK9LM	—DJ5CQ
3A5ØLZ	—W3HCW	9J2AE	—F6FNU	EB5IGU	—EA5CDD	KC6CW	—JA2NQG	T94QE	—DL4KAX	VK9NH	—7K3UZY
3B6CD	—KC5I	9J2PI	—KBØKVA	EDØBAE	—K4MZU	KC6IY	—JF6BCC	TA4A	—W3HCW	VK9NH	—7K3UZY
3C1/TU5EV	—W3HCW	9K2/KIØK	—KC4ELO	ED5OPC	—EA5OL	KC6WW	—JA2NQG	TA8N	—TA1KA	VK9NV	—VK4CRR
3D2AA	—VE6VK	9K2/NØYKI	—KC4ELO	EL/TU5EV	—W3HCW	KG4DX	—KØIEA	TF1T	—TF3T	VK9XY	—DJ5CQ
3D2CT	—G4WFZ	9K2F	—9K2RA	EO2CWO	—IK2QPR	KG4WH	—KD4NKW	TGØAA	—KA9FOX	VP2E	—KCØZC
3D2CU	—SM7PKK	9K2HA	—ON6BY	EP2ASZ	—W3HCW	KH2GR	—JF6BCC	TG5ITS	—K3BYV	VP2EN	—AA4NC
3DA/ND3A	—ND3A	9K2MA	—W3HCW	EP2DL	—W3HCW	KL7FBI	—AAØNN	TI1C	—TI2CF	VP2ENR	—YU1NR
3DAØCA	—W4DR	9K2MU	—WA4JTK	EP2HSA	—W3HCW	KP2AD	—AA9DW	TI9/AA2JS	—AA2JS	VP2EWW	—AA7VB
3W6JP	—JA1IED	9K2ZZ	—ON6BY	EP2MA	—W3HCW	KP4TQ	—NP4QH	TJ1/F5SOI	—F5SOI	VP2MDE	—K5GN
	(See Note 1)	9L1JB	—W3HCW	EU3FT	—W3HCW	KP6AL	—K9ECE	TL8BC	—F5IPW	VP2MDO	—WB4NFS
4G9RG	—DU9RG	9L3GB	—W3HCW	EU6MM	—IK2QPR	KP6BD	—K9ECE	TL8CK	—F8EWM	VP2MDQ	—K6TSQ
4L8A	—OZ1HPS	9MØA	—JA9AG	EW1MM	—W3HCW	LT5E	—LU1EYW	TL8MS	—DL8NW	VP2MDY	—NW8F
4L8T	—LY1FF	9MØPFB	—PBØALB	EW3LB	—W3HNK	LU7XR	—LU8XW	TM5G	—Bureau	VP2MEJ	—W5ASP
4M5AJ	—YV5AJ	9M6BH	—KU9C	EW6WW	—IK2QPR	LV1V	—LU1VV	TN1M	—DL1YFF	VP2MEM	—W4MYA
4M6L	—YV6DNP	9M8/OH2LVG	—KE7LZ	EW8VD	—DK1RU	LX4A	—LX1NO	TN2M	—DL7VRO	VP2MFM	—WD4KXB
4N73N	—YU7FIJ	9M8X	—KU9C	EX2M	—DL4MFM	LX95VEC	—LX1NO	TN4U	—DL7VRO	VP2MFP	—WD9DZV
4SØAA	—K5GO	9N1/DF8AN	—DF8AN	EX8MF	—IK2QPR	LX9UN	—LX1NJ	TO2DX	—F5VU	VP2MFT	—KA4RRU
4UØITU	—F5JYD	9N1MWU	—JA8MWU	FJ/N9SW	—N9SW	LZØA	—LZ1R	TR8JH	—W3HCW	VP5PP	—KØPP
	(See Note 2)	9Q1UE	—DL1KAT	FM5CD	—F5VU	OD5VT	—OE3SGU	TR8RLA	—NV7J	VP8CIL	—GØEHR
4U1ITU	—I1YRL	9Q5/DL6RDR	DL6RDR	FR5HG/E	—F6FNU	OD5WS	—YO3FRI	TU2VZ	—IK3HAT	VP8CQT	—G7ACD
	(See Note 4)	9Q5FH	—EA1DOD	H44MS	—DL2GAC	OY2H	—IØWDX	TU4EI	—W3HCW	VP8CRN	—GM4CFS
5H1CK/A	—I4LCK	9Q5MRC	—G3MRC	HH2AW	—9A2AJ	P29NB	—K3BYV	TU4EY	—KE4I	VP8GAV	—GMØLVI
	(See Note 5)	9Q5THW	—DF7WZ	HH2LQ	—KM6ON	P4/N4BWS	—WB4CKO	TU5EV	—W3HCW	VP8SGP	—W4FRU
5H3CK/A	—I4LCK	9X5TFA	—LA3T	HI7V	—HI7JM	P4ØMR	—VE3MR	UAØAZ	—W3HNK	VP9DX	—WB2YQH
	(See Note 5)	9Y4SRR	—KD4UDU	HK4/GØSHN	—F6AJA	P4ØR	—K4UEE	UAØFH	—WW7Q	VP9MZ	—WB2YQH
5H3CK	—I4LCK	AHØI	—JF1IRW	HL9AX	—W3HCW	P49V	—AI6V	UAØMF/A	—UWØMF	VQ9CH	—N3CHN
	(See Note 5)	AHØT/KH2	—JA6BSM	HL9OO	—W3HCW	PA56W	—Bureau		(See Note 8)	VQ9LW	—WA2ALY
5H3JA	—AAØOB		(See Note 6)	HP2CWB/P	—HP2CWB	PJØB	—WA2NHA	UAØQJG/Ø	—UA1AGC	VR2/DF8AN	—DF8AN
5H3PW	—AAØOB	BV4AK	—KA6SPQ	HQ6DX	—HR2JPQ	PJ4/K2NG	—K2NG	UA6AUA/MM	—RW6HS	VU3DEN/P	—VU2VP
5NØASW	—W3HCW	BV9/JI6KRV	—EA5KB	HS/WQ5W	—W5BJ	PJ4/K2TW	—WA2NHA	UA9XS	—W3HCW	WHØAAV	—I2YBC
5NØBOF	—OE6LAG	C53HG	—W3HCW	HSØAIT	—W3HCW	PJ8AA	—N4XO	UC1WWO	—IK2QPR	XE2DV	—AA7CM
5NØDEY	—WB7F	C6AHE	—K3TLX	HS1BV	—W3HCW	PJ8CW	—K1BXE	UC1WWO/RC4	—IK2QPR	XE2EBE	—AA6DP
5NØGC	—F2YT	C6AHG	—WB4FLB	HS8EBN	—Bureau	PJ9/AB4JI	—AB4JI	UC2WO	—IK2QPR	XI2Z	—XE2Z
5NØSKO	—W3HCW	CEØ/W0JF	—WØJF	IAØPS	—IKØUSA	PJ9T	—AB4JI	UC7W	—IK2QPR	XT/TU5EV	—W3HCW
5N3/SP3XAR	—SP5CPR	CE3MCC	—W3HCW	IB4M	—I4ABF	PR8FT	—PS8AK	UE9WAB	—W3HCW	XT2BL	—EA5AH
5N7YZC	—WA1ECA	CM6DE	—CT1ESO		(See Note 5)	PS2S	—PY2KP	UE9WAC	—W3HCW	XT2BW	—WB2YQH
5N8NDP	—IK5JAN	CM6LP	—CT1ESO	IE9/IT9JPK	—IT9JPK	PT7WX	—W3HCW	ULØOB	—IK2QPR	XT2JB	—W3HCW
5R8DL	—JH8CLU	CM6RS	—CT1ESO	IE9/IW9CMQ	—IT9JPK	PV4B	—PY4BHB	UL7OB	—IK2QPR	XU7VK	—HAØHW
5R8ED	—LA1SEA	CN2GB	—EA9KB	IE9/IW9CUK	—IT9JPK	PW2N	—PY2EYE	UM8MFO	—IK2QPR	XU95SA	—HAØHW
5R8EH	—DL5UF	CN2SM	—EA4EII	I2R	—IK2QPR	PW7AB	—PS7AB	UN2O	—IK2QPR	XW1	—JH1AJT
5R8EI	—DL2GBT	CN8HR	—CN8NS	II4M	—I4MES	PYØFM	—PY5CC	UN5J	—UL7JR	XX9TR	—KU9C
5R8EJ	—DF5WA	CO2AL	—W3HCW	II4N	—I4MES	PZ5DX	—K3BYV	UQ1GXZ	—IK2QPR	XX9TZ	—KU9C
5TØAS	—IT9AZS	CO2CL	—W3HCW	IL7/IK7JWX	—I7PXV	PZ5JR	—K3BYV	USØHZ	—W3HNK	XX9X	—KU9C
5TØAS/P	—IT9AZS	CO6AI	—CT1ESO	IL7/IK7QHS	—I7PXV	R1FJL	—JA3AFR	UT5URW	—W3HCW	YB2ARW	—W4LCL
5T5SN	—F5RUQ	CO6AP	—W3HCW	IL7/IK7TAL	—I7PXV	R3/WØYR	—AA9DX	UU2JQ	—KZ1L	YJØADJ	—DJ2EH
5V7MD	—AB7BB	CO6DD	—CT1ESO	IL7/IK7VJX	—I7PXV	R9C	—W3HCW	UU4JWA	—LY1DS	YKØA	—W6OAT
5X1C	—WB1DQC	CO8AS	—CT1ESO	IL7/IK7XIV	—I7PXV	R9W	—W3HCW	UXØBB	—W3HCW	YL1XZ	—IK2QPR
5X1F	—WA1ECA	CO8RC/7	—CT1ESO	IRØC	—IKØAZG	R9WB	—W3HCW	UX2HO/UX6H	—I2PJA	YW1A	—YV1AVH
	(See Note 7)	CQ5FIJ	—CT1FIJ	IR1ANA	—I1JQJ	RAØAL	—W3HCW	V26AS	—V21AS	Z32XA	—KM6ON
5Z4FO	—KB4EKY	CQ6DQM	—CT1DQM	IR1ANT	—I1JQJ	RLØO	—IK2QPR	V29AD	—YT1AD	ZA1B	—HB9GBN
6T2MG	—W3HCW	CQ6DQM	—CT1DQM	IR4B	—IK4AUY	RN3QL	—UA3QCR	V29EI	—I5JHW	ZD7WRG	—WA2JUN
6V6U	—K3IPK	CS5AHU	—CT1AHU	IR4R	—IK4ALM	RU1POL/Ø	—UAØKCL	V29NR	—YU1NR	ZD8PC	—N2PC
6W6/K3IPK	—K3IPK	CS8B	—CT1EEB	IR5B	—IK5VLQ	RU9VA	—UW9VA	V29SKY	—YT6AA	ZF1DX	—W8BLA
6W6/N3RUS	—K3IPK	CS8UW	—WA3HUP	ISØZAQ	—K9ECE	RV9W	—W3HCW	V29TU	—HB9TU	ZF2AB	—WA3EOP
7P8CW	—DK7PE	CT1EEB/P	—WA1ECA	IY4W	—I4ALU	RV9WB	—W3HCW	V31VB	—KI6IM	ZF2CF	—N6RPL
7P8EZ	—I4JEE	CT1EPV	—WA3HUP	J2ØSF	—J28FD	RX9TX	—W3HCW	V52UTR	—DL7UUO	ZF2JC/ZF8	—NC8V
7S3OWG	—SM3CVM	CT1ESO/P	—WA1ECA	J2ØUFT	—F5LBM	SØ/KCØPA	—KCØPA	V63BM	—JA6BSM	ZF2ND	—KF6OG
7X5VRK	—W3HCW	CT1FJK	—OH2BZ	J37K	—W8KKF	SØ1M	—EA7EL		(See Note 6)	ZF2NG	—KF6OG
8A4EI	—YBØRX	CT8BWW	—CT1BWW	J55UAB	—F6FNU	S21YO	—JA2NTP	V73C	—N4GAK	ZF2PP	—K9PW
	(See Note 5)	CT8T	—AB4PW	J6/DK1RP	—DK1RP	S21ZW	—KH8AL	V85BG	—V85GA	ZF2RB	—KG6ZQ
8P9CW	—WB8LFO	CU3/CT1FDD	—CU3AV	J69DF	—J6LDF	S79TT	—DL9XAT	VE3MJQ/9X5	—VE2PR	ZF2RF	—K4UVT
8P9DX	—VE3ICR	CU9/CU7AA	—CU7YC	J73JT	—W3HCW	ST2/G4OJW	—W7KCN	VE3OOG/P	—K4MZU	ZF2UO	—N9CJL
8P9EM	—G3VBL	CU9/CU7BC	—CU7YC	J73VG	—AA1IZ	ST2AA	—WB2RAJ	VE3UWC/4U	—KD4DIO	ZF2WH	—AH9B
8P9Z	—K4BAI	D4/AA4HU	—W3HCW	JC2FU	—W3HCW	ST2JM	—KA5ZMK	VE9EB	—VE1ERL	ZK1KH	—ZL2HU
8Q7SS	—K5GO	D68QM	—ON4QM	JWØH	—LA5NM	SU3AM	—DL5ZBV	VK4SID	—AA8JK	ZL7ZB	—DJ4ZB
8S3BG	—SM6URO	DH2JD/LU	—OE7MWL	JW6RHA	—LA6RHA	SVØAO	—Bureau	VK6AJW	—W3HCW	ZL9GD	—ZL4MV
9A2OP	—W3HCW	DP1KGI	—DD6UAB	JW8KT	—LA8KT	T31BA	—DF6FK		VK6VS	ZPØR	—Bureau
9G1BJ	—G4XTA	DUØK	—DU9RG	JW9THA	—LA9THA	T31BB	—DF6FK	VK8AN/6	—VK4CRR	ZS5ACW	—W3HCW
9G1SD	—WAØUOX	EA3BF/P	—EA7GFG	KCØPA/S0	—KCØPA	T32A	—JA5EXW	VK8BY	—HB9HVA	ZS95A	—WA3HUP
9H1TY	—DL7VRO	EA3BT/P	—EA3BFM	KC4USF	—KA1RAP	T5SW	—W3HNK	VK9CR	—DJ5CQ	ZS95WRT	—ZS6AJS
9H1TZ	—DL7VRO										

W5VBX, WA6AHF, KM6ON, Western Washington DX Club (WAØRJY), Western New York DX Association (KB2NMV), Salt City DXAssociation (KB2G), Northern Arizona DX Association (W7YS), The American Radio Relay League (K5FUV), The Ohio/Penn DX PacketCluster (KB8NW), *Amateur Radio Action* (VK9NS), *The Canadian Amateur Radio Magazine* (VE3JLP), *Long Skip* (VA3JS), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4DYO), *QRZ DX* (N4AA), and The *DX Bulletin* (VP2ML).

Last month I said something about spending more time on the radio than in the sack. I applied this philosophy for the SSB portion of the ARRL DX Competition and after one or two contacts of really getting nowhere on 75M I went back to bed. I figured I was better off not waking up the XYL yelling away. On CW there is no problem with this - no matter how hard you pound the key! Hmmm! I wonder if anyone ever broke their key trying to break a pileup? The best of DX to you! 73 es GL de John, N6JM. WR

A reminder from the ARRL

Attention ARRL members making DXCC submissions or using the Outgoing QSL Service. There is no longer any need to remove the mailing label from your *QST* as proof of membership. Make a photocopy of either the label, your membership certificate or wallet card, or simply jot down your membership number on a separate piece of paper and send it in with your order.

WITH THE HANDI-HAMS

Sweet grape juice

Sister Alverna, WAØSGJ, hits the road, and you get an award... If you qualify! Read on for details...

A couple of years ago, Sister Alverna O'Laughlin and I were driving to the Midwest Division Convention to set up the HANDI-HAM booth. "Let's take MY car," Sister insisted, so we did...and I soon found out why: WAØSGJ was going "mobile" for the trip.

Our route from the Twin Cities to South Sioux City took us through several rural, and I mean *really* rural counties in Minnesota and Iowa, and that suited Sister Alverna just fine, because she would be "running counties."

That trip introduced me to county hunting in a big way! As we crossed county lines we would pull off on whatever obscure township road that marked the boundary between Podunk and East Overshoe and get on the air.

What followed was simply amazing to me. Sister would work pile-ups of county hunters eager to get those rare ones, and because she is a "wild card," having worked all counties herself, a contact with WAØSGJ would count for any county hunter's totals! With the car's engine killed to cut ignition noise, 'SGJ' would pull the weak ones out of (it seemed to me) thin air, until everyone had a chance. What a great op!

Now it's time for "Sweet Grape Juice" to hit the road again, and this trip will take her through some truly vacant spaces in North Dakota, western Canada, Yukon territory, and Alaska. Most of the time Sister will be mobile, but she also will be stopping at the homes of HANDI-HAM members. Whether you're a county hunter or just looking for some new wallpaper, get busy and listen for 'SGJ.' Work her and get an official HANDI-HAM HQ QSL card, or work her *five* times and earn a handsome certificate!

Sister Alverna, WAØSGJ, otherwise known as "Sweet Grape Juice."

North to Alaska!

Certificate hunters, get ready! Sister Alverna, WAØSGJ, is hitting the road again. Her travels will take her through Minnesota, North Dakota, Canada, and Alaska, and she will be operating VHF and HF mobile. To receive a special certificate, work WAØSGJ five times on either different days or frequencies beginning June 21 at 2300 UTC.

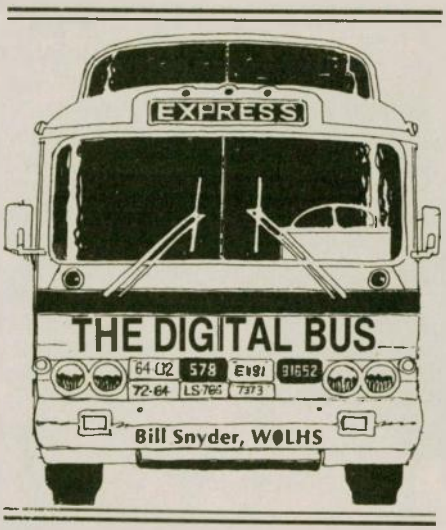
To claim your certificate, send confirmation of contacts and large SASE (2 stamps) to HANDI-HAM HQ.

Suggested frequencies and times (UTC):

DAY	TIME	NET	FREQUENCY
Daily	1300	NOR CARS	7.240
M -Sa	1800	IMRA	14.280
M	1430	HANDIHAM NET	14.265
Tu	0200	WORKING GIRLS	14.288
Th	1800	TANGLE NET	14.298
W	1900	OPEN HOUSE	14.288
Daily	Hourly	COUNTY HUNTERS	14.336
Daily	0200	KADIDDLEHOPPER	7.268
Daily	1630	AK PACIFIC NET	14.292
Daily	0300	AK SNIPERS NET	3.920

For more information about the activities of the Courage HANDI-HAM System, or to affiliate your radio club with HANDI-HAMS, contact:

Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
(612) 520-0515 (voice)
(612) 520-0577 (FAX)
handihams@aol.com (Internet)
HANDIHAMS (America On Line)WR



In the April issue of this magazine I asked for anyone with remembrances of QSOs with the Gatti-Hallicrafters African Expedition during 1947-48 to contact me with their memories. Bob Leo, W7LR, and I are in the process of putting together a book about our experiences as ham operators on the first commercially sponsored DXpedition with the main purpose of putting rare DX countries on the air. Bob and I operated VQ4EHG in Kenya and VQ3HGE in Tanganyika, while Bob soloed from VQ5GHE in Uganda. These were the three countries that formed British East Africa.

My reason for asking for help from the ham world is simple: the logs of our operations in Africa were lost in the closing of Hallicrafters Radio Company many years ago, and we are trying to fill in gaps in the story. So, if you remember those call signs, and have QSL cards from them, I would like to get the dates and any pertinent information that might be included on them.

Bob and I have personal notes, some diary entries, and a lot of published materials to jog our memories, but we need to pinpoint the conflict nuances between ham operators and Attilio Gatti, leader of the expedition.

Worldradio for April had only been out a few days when I received my first letter, a gap-filling bonanza. It came from Max Weinberg, W2YYL, and his wife, Jerry, W2PBI, two old-time DXers ranking high on the DXCC lists of the ARRL. Jerry had been a key New York City contact for the leader of the expedition, Commander Attilio Gatti, a fairly well-known African "explorer." I put the word "explorer" in quotes because Gatti was more promoter than explorer. He traveled and photographed things African, wrote books about his experiences, and in many cases endorsed products ranging from automobiles to whiskey in advertising materials for companies that donated products to his expedition. Gatti had made a good living out of his numerous trips to Africa, and the joint effort with Hallicrafters was his eleventh and biggest one.

We had Schult Trailers, International Harvester trucks, Goodyear Tires, Evinrude Outboard Motors, and Canadian Club Whiskey as prime donors of equipment and supplies. Hallicrafters, of course, was the big shooter on the sponsor list; they contributed money, radio materials, and paid our expenses.

I'm glad I had the chance to go, as much of it was real ham fun. However, Gatti and I had considerably differences of opinion on the use of the ham bands for commercial purposes, and that is where our conflict began, and that will be the main dramatic thrust of the book. So, if you have any remembrances of those days of February and March in 1948, drop me a line.

Mike O'Brien, NØNLQ, of Springfield, Missouri wrote an excellent article for *QST* that was published in December, 1993. Mike's piece told about the inner workings of what was billed as a "scientific" expedition to the Mountains of the Moon in Uganda. I will give Commander Gatti a lot of credit for being able to put "hype" to work in a such a way that it got barrels of publicity for the junket; however, very little, if any, "scientific" results were accomplished when it was all said and done. Nevertheless, we did put Kenya, Tanganyika and Uganda on the ham radio map of the world. I'll bet that nearly every ham in the USA was tuned to our daily 10 Meter transmissions. I know my local ham club members were listening every day.

The sun spot cycle was top grade and the 10 Meter band just boomed with signals from the states. Bob and I worked split with our transmitter frequency located just outside of the US 10 Meter phone band, and we tuned from 30 megahertz down, so literally all the band seemed to be calling us. I've never heard anything like it before or since. The AM signals (no side band in those days) were so clear and loud that I recall hearing the tick of those old fashioned Big Ben alarm clocks in the background of certain QSOs; the 10 Meter band signals were almost broadcast quality!

Bob and I had a recollection of many QSOs with persons named "Jackie" and "Jerry." We have now located "Jerry," so we are looking for the other person mentioned above. Can you help?

More good old days

In 1935-37 I lived in California and in those days if you changed residence call areas you had to change call signs, except it was possible to work portable on five meters without changing calls. At the time I was W9LHS, my callsign had been assigned in North Dakota and to avoid changing to a W6 call sign, I only worked portable on five Meters (later changed to six Meters). I lived in the Hollywood area and had moved to California to go to college. However, I went to work for Techni-color Motion Picture Corporation and put my college attendance on hold till the fall of 1937 when I moved back to North Dakota.

Five Meters was about as high as ham radio went in the frequency spectrum. I had a battery operated two-tube transceiver that was built from a *QST* article. I'm sure it only put out milliwatts of radio frequency, because

those early day tubes were not very efficient at high megahertz. The antenna was fed directly from a tap on the tank coil, there were no meters, only one tuning dial, and phone and mike jacks. The tubes were a '30 and a '33 that operated on batteries. It was a simple rig, but it did get out.

Ray Donald, N6VQX, now of Oceano, California and I have been great friends since those days in Hollywood. Ray and I would take the little portable transceiver, go up in the Hollywood hills and see how far we could communicate in the Los Angeles area. We also made excursions up to the top of Mount Wilson. We worked quite a distance from up there, but we never made it to the San Diego area.

Years later, I was sitting on the tenth-floor porch of a San Diego Harbor Island hotel with my 2 Meter hand held and QSOed a ham in the Hollywood Hills who was driving into his garage. Of course we were using repeaters, but I couldn't help think about Ray and me up on Mount Wilson hoping to contact someone in the San Diego area.

I recall one Saturday afternoon in '37 when Ray and I were perched on a roadside parking area in the Hollywood Hills trying to work 5 Meter DX. Ray had brought a pair of field glasses and was looking off in the distance at various hills and buildings. Although the smog was not very serious in the '30s, it was very clear day and we could see a country mile, as we say in North Dakota. Ray handed the glasses to me and I scanned the countryside. All of a sudden I discovered a car over on an adjacent hill with a guy looking at us with field glasses.

When the guy saw me looking at him, he put the glasses down, got in his car and drove away. Then I got to looking around the area and I really discovered that there was a cult of voyeurs that apparently were spying on couples who were parking in secluded areas during the day.

Author wanted

I have been hoping to retire from writing this column for the past year or so, therefore I would like to ask for any person who would enjoy doing this monthly stint to come forward. I've been at it for nearly 14 years and I have really enjoyed the contacts that I have made through these pages, but my interests have drifted away from ham radio, and so I would like to turn the column over to the younger generation. If you are interested, please contact Editor Lou Ann Keogh, KB6HP, at the masthead address.

EAVESDROPPINGS

RETIRED NOW TO CRABBING, FISHING, SWIMMING AND BOATING — IT'S A WET LIFE. . .I HAD KNEE-DEEP R.F. ALL OVER THE SHACK. . .IF THIS SEEMS CONFUSING, IT'S BECAUSE IT REALLY IS CONFUSING. . .SEVEN BUCKS FOR A MOVIE IS ABSURD — I'LL WAIT TILL I CAN RENT A TAPE FOR A BUCK. . .MY FIRST COMPUTER HAD A 64K PRINT SPOILER. . .HE MARKS HIS QSL CARDS, "FROM THE GREEN STAMP STATE OF TEXAS". . .THE 20 WORD PER MINUTE CODE TEST IS UNREACHABLE FOR A LID LIKE ME — HAD TROUBLE WITH THE NOVICE TEST. . . OUR SNOW MOVING BUSINESS IS PRETTY DULL DURING JUNE. . . I HAVE AN INTERESTING JOB IN THE LOCAL BREWERY. . . LET ME KNOW IF YOU DON'T GET THIS PACKET MESSAGE. . . I DON'T GO TO LAS VEGAS ANYMORE, THE LOCAL INDIAN CASINO GETS ALL MY SPARE CASH. . . I USED TO BELONG TO AN ASTRONOMY CLUB BUT I CAN'T SEE DOING THAT ANYMORE. . .WORKING DX AIN'T LIKE IT USED TO BE EXCEPT FOR THE NEW COUNTRIES POPPING UP LIKE POPCORN POPPING UP. . . I HAVE A THREE AILMENT ANTENNA AT THE MOMENT, AND IT'S LOOSE ON THE SHAFT, TOO. . .LISTEN TO THAT — THE DUMMY LOAD IS ON THE WRONG SIDE OF THE MICROPHONE.

Thanks to KA1RFD, WØML, KIØE, and W7LR, for help in putting this column together.

You can reach me at 1514 South 12th Street, Fargo, ND 58103 by mail, and by packet at WØLHS@WØLHS.# SEND.ND.USA.NA. Just put a message in your local BBS and it will be relayed to me (with a bit of luck). 73 de Bill Snyder, WØLHS. DIT DIT. WR

FM & REPEATERS

BILL PASTERNAK, WA6ITF
(GEnie) B.Pasternak; (Internet)b.pasternak@genie.geis.com
(America Online) BILLWA6ITF

High frequency bulletins revisited

In February, this column was the first to present a rather in-depth discussion of a perceived problem on the high frequency bands that has the potential of affecting VHF, UHF, FM and repeaters. That of one-way Amateur Radio bulletin stations that some hams claim are cluttering up spectrum and causing massive harm to ongoing communications.

At that time we reached a rather simple conclusion. This being for the ham radio community to decide whether or not these stations should be permitted to continue their operation. We also said not to bother the FCC or other legislators with the internal politics of ham radio.

But the obvious question is why should hams who operate on 2 Meters and above care what happens on 10 Meters and below? Why should those of us who live above 50 MHz care what those residing below 30 MHz do? Simply because what happens to the proverbial goose will eventually impact on the proverbial gander! Or in simpler terms, the FCC cannot make selective rules. If it changes a rule it has to affect all hams. To do anything else leaves the FCC open to charges of selective regulation. And that is why we said that this matter is one for ham radio to solve for itself.

But not everyone seems to agree. One of these is Fred Maia, W5YI, who operates the W5YI-VEC and publishes the *W5YI Report* ham radio newsletter. In a March 16th rules change request filing with the FCC, Fred says that he is concerned about one-way communications in the Amateur Service high frequency (HF) bands on two levels. First, as a licensed Amateur Radio operator, he says that he is personally distressed at the level of anger that now exists on these bands. Fred claims that this anger is primarily caused when one-way, broadcast-type transmissions interrupt two-way communications that are already in progress. This anger he says is manifested by deliberate attempts to interfere with or "jam" the one-way transmissions.

Fred goes on to say that he is especially concerned about the impact that this anger and the resulting malicious interference has on relatively new amateurs who are increasingly upgrading their Technician VHF Amateur operator licenses to include long range high frequency operation. Fred claims that the reckless intrusion into on-going conversations and the animosity that these one-way communications engender on the congested HF bands is setting a very bad example to newcomers and is contributing to a general deterioration in the quality of communications in the HF Amateur Service bands.

So Fred, through his Washington D.C. attorney Raymond A. Kowalski, filed the afore mentioned rules change request aimed at ending all high frequency bulletins and Morse code practice sessions. According to Fred's petition, while bulletins and code practice are the exception and not the rule, these bulletin stations regularly broadcast on scheduled frequencies regardless of any on-going two-way communications.

"They are abusing the privilege," says the Maia petition. "The many are suffering at the hands of the few."

Fred's suggested rule changes

The following rules, which authorize one-way information bulletin and Morse code practice transmissions as exceptions to the general requirement for two-way communications, should be amended to state:

Section 97.111

(b) In addition to one-way transmissions specifically authorized elsewhere in the Part, an amateur station may transmit the following types of one-way communications:

(5) Transmissions necessary to assisting persons learning or improving proficiency in, the international Morse code. Such transmissions must be confined to frequencies above 30 MHz.

(6) Transmissions necessary to disseminate information bulletins. Such transmissions must be confined to frequencies above 30 MHz; and

The following rule, which permits control operators of club stations to accept compensation should be amended to state:

Section 97.113

(d) The control operator of a club station may accept compensation for the periods of time when the station is transmitting telegraphy practice or information bulletins, provided, however, that such telegraphy practice and/or information bulletins may only be transmitted in the amateur bands above 30 MHz.

As this column is written, the FCC has not decided if it will assign Fred's petition a rule making number.

Our comments

If Fred Maia's anti-HF bulletin rules change request was supposed to arouse interest by the ham radio community in a perceived problem being caused by bulletin stations operating on the high frequency bands, it has not achieved this goal. Quite the opposite, as monitoring the HF bands will attest. With the exception of one of the bulletin operations, nobody is even talking about the subject and even fewer hams seem to care.

And the reason may simply be that no real problem exists. I recently sat down and made a list of all of the major domestic U.S.A. high frequency ham radio bulletin stations I could think of. There are only three of any consequence that operate on a regular schedule. And, only W1AW and a tiny handful of individuals bother to supply code practice sessions.

As to space shuttle audio retransmission, those take place only when there is an actual shuttle flight carrying a

SAREX mission. These operations occur four to six times a year; they are on for a maximum of 10 to 15 days each and shuttle audio retransmission is very popular within the ham community. It's so popular that the hams generated thousands of letters to have the right of retransmission included in the ham radio rules rewrite a few years back! Obviously there is not a hoard of bulletin stations descending on any band. And with the exception of a personality clash between one bulletin station operation and a part of the ham radio community, there really does not appear to be any harm taking place.

If I may be given the liberty of a brief editorial comment, let me say once again that it should be the ham radio community and not the FCC that decides the issue. If the ham community really does not want a specific bulletin service to operate, all it needs to do is to collectively keep that frequency in use around the clock.

In the highly unstructured world of high frequency ham radio, the rules of survival are simple. He who has the frequency first, has it. He who doesn't have it, has to wait. And he who is QRMd by a legitimate bulletin station operation because he chooses that frequency to operate, has no reason to complain.

Update

Fred Maia's proposed change has been assigned the file number RM-8626. When released in early April it carried a commentary cutoff date of May 4th. This writer has filed for a 90 day extension in the cutoff date to permit an open discussion to take place at the Bulletin Station Forum at the 1995 Dayton Hamvention. It is not known if the FCC will grant this request.

Is this repeater really open?

One of our readers tells a bit of a horror story dealing with a supposedly open repeater that has a very closed attitude. He says that he was listening on a local repeater. There were 2 or 3 guys talking who normally do after work. The topic of conversation usually seems to be of the nature of computers and/or packet.

The control operator of the repeater apparently decided that he did not like the conversation (which from our reader's point of view could have been very interesting) so the control operator decided to speak for his entire membership by piping in to say that nobody liked the conversation. There was a heated discussion on this topic, but it fizzled out very quickly.

The control operator then made a remark that the repeater should be left clear for his members, when they want to use it. The two gentlemen that were on the repeater left breaks for any 'breaking' stations, and were operating legitimately.

But the real kicker is this. Our reader says that when the control operator first came on he did not bother to properly identify. Rather, he made his presence known by saying to one person, "You are not allowed on this frequency."

Obviously, nobody had any idea if he was a legitimate ham. Our reader asks the question: "...do you think the control operator did the right thing, and if not, how do you think he could have changed his speech on the air to make it permissible and polite?"

A repeater down under

Tony Liolio, VK2ZLT, reports via packet that the 6 Meter, VK2RWI repeater, has suffered a couple of major setbacks. Tony writes: "I have found that the exciter output of 53.850MHz has become unstable and it drifts off frequency. The frequency has been drifting around the repeater's output frequency up to plus or minus 100 kHz or so. This explains some of the funny noises some of you users have been hearing. John, VK2XTB, has offered to make a new exciter board using a modified M5 transceiver being Phased Locked Looped controlled. I would like to thank John for this offer. I have found another crystal-locked exciter in my junk box collection being close to 53.850MHz. This other exciter not of the Phillips FM variety is very stable and needs a crystal cut from Hy-Q in Melbourne.

"Secondly the beacon at Dural is too close, being 430 kHz away from the repeater's input of 52.850 MHz. Even though there are three cavity filters this is still not enough filtration for the receiver. If the beacon is turned off then the repeater functions properly. We have sought to have the repeater's receiver relocated elsewhere via a 70cm link to overcome this desense problem by the 6M beacon. For that I would like to thank Dave, VK2KFU, and Peter, VK2XZP, for their help with this."

At the time his bulletin was posted, Tony noted that the repeater may be out of operation for 4 to 6 weeks. He adds that when this 6M repeater returns: "...it will be bigger and better than Ben Hur! You'll see!!"

Free repeater maps

N4JED reports that he draws and has available free 2 Meter repeater maps of VA, WV, MD, NC, SC, KY, TN, and GA. These are available free for an SASE extra postage if you want all. Send requests and envelopes to; David Jones, N4JED, POB 647, Vinton, VA 24179.

Western link

Finally, after many long hours of work, KA2STV and WB2JPQ report that there is now a fairly large coverage linked system on the air in the Western New York area near Buffalo. The duo say that: "...all of the repeaters in the system are not in any way, shape or form sponsored by any sort of club," and that all operators (licensed hams) are welcome.

To keep noise out of certain parts of the system, some of their machines may be tone squelched (CTCSS) using a tone frequency of 88.5 Hz. Even if you do not hear ongoing chatter, be aware that all repeaters in this intertie are linked full time and the only time one is off line is for service.

The system repeaters are: 444.050, WB2JPQ Attica NY, 444.10 WB2JPQ New Oregon, NY, (Hub repeater), 444.175, K2XZ Delevan, NY, 444.950 KA2TSV Tonawanda, NY, 146.835 WB2JPQ Een, NY, 145.490 WB2JPQ Wellsville, KA2STV and WB2JPQ add that there are more links in the works that will require DTMF access to enable.

(Bill Pasternak, WA6ITF, receives mail at 28197 Robin Avenue, Saugus, California 91350. His 24 hour/day voice/fax line is 805/96-7180. America Online: BILLWA6ITF; MCI Electronic Mail 324-1437.) **WR**

YLs on the Air

Kay Eyman, WAØWOF
Route 2, Box 366
Garnett, KS 66032

A lot of the mail I receive from this column requests information on YL groups so it may be time to give a brief rundown again. The two largest YL organizations are the Young Ladies' Radio League (YLRL) and the YL International SSBers (YL-ISSB). YLRL is the oldest, dating from 1939, and the largest all-YL group in the world, with members from approximately 50 countries. Although OMs can't join YLRL, they can subscribe to *YL Harmonics*, YLRL's bi-monthly publication. Dues for members are $8.00 per year, and subscribers also pay $8.00. If you'd like to join, write the Membership Chairman, Phyllis Douglas, K7SEC, 701 N. Camino Del Codorniz, Tucson, AZ 85748, and she'll send you a membership application. YL-ISSB was originally founded as an emergency system, but now most activities center on friendship and working on an extensive awards program. Both OMs and YLs can join, and there are currently over 15,000 members. The Information Officer is Tom Wuelfing, WA1GAG, 210 Morrill St, Gilford, NH 03246. An SASE with 32 cents postage will bring you all the info.

And probably next in size is Quarter Century Wireless Women. QCWW is Chapter #120 of QCWA, so YLs and OMs who have been licensed for 25 years can join if they hold membership in QCWA. QCWW dues are $5.00 yearly and go to the treasurer, Rose Porter, KC4OTI, 3309 Rosewood Lane, Lakeland, FL 33809. Life memberships for life members of QCWA are also available.

There are very active YL groups in Japan, Korea, Australia, New Zealand, Italy, the Netherlands, England, Finland, and Canada, to name just a few, and they all have members from many countries. In addition, there are regional YL nets in every part of this country, with YL nets operating every day of the week and most of these offer certificates for working club members.

Ella Koons, WØAYL/5

You really could wallpaper the walls of your hamshack with all the beautiful certificates that are available for working YLs. YL-ISSB has a vast array of certificates, with new ones being added, which are available to all licensed amateurs. The four certificates that YLRL currently offers to both OMs and YLs are WAS-YL, YLCC, YL-DXCC, and WAC-YL, and the two available to YL operators only are the DX YL and Continuous Member certificates.

Special achievements

Congratulations to Ella Koons, WØAYL/5, of El Campo, Texas, who has just completed working all of the 3,076 counties in the US for the fifth time. And she's very close to earning this prestigious certificate with an all-YL endorsement as she needs only 107 more YL contacts to have 3,076 YL counties. Surely that will be a first!

Ella is one of the founders of the Mobile Amateur Radio Awards Club and was honored with a lifetime membership in the club at the County Hunters' 25th anniversary convention last June.

Congratulations also go to Esther Frost, KA4IFF, of Lakeland, Florida, who turned in the top score in the annual Society of Wireless Pioneers (SOWP) International QSO Round-Up, held 8-10 December 1994.

Flora Rutledge, WAØAAM, of Bloomington, Minnesota, was recently elected President of The 33s, an active YL group in the Twin Cities area, with over 200 members. The 33s meet each month for a breakfast meeting, with speakers talking about their personal activities in Amateur Radio. They also

Flora Rutledge, WAØAAM

meet on the air Thursday evenings at 8:30 p.m. local time, on the 147.39 repeater. Eddy Thorson, NØYL, is the NCS, and there are usually around 20 YLs checking in from Minnesota and Wisconsin.

Another 33, Twila Greenheck, NØJPH, was named Scotch Ham of the Year in 1994 by the St. Paul Amateur Radio Club. This award recognizes an amateur from the upper Midwest for outstanding public service contributions. Twila is on the Board of Directors for this club and is an the Assistant Director for the Dakota Division of ARRL. Congratulations to Flora and Twila.

Esther, Ella, Flora, and Twila are four shining examples of what a good club member should be. They're enthusiastic, responsible, and they actively participate in club events. It's nice to see them recognized for their achievements as they are representative of so many other club members around the world who are helping to make this great hobby even better.

YL updates

Anne Mourant, GJ7HTV, enjoys the "friendly contests" and is actively engaged in getting more Jersey stations on the air. She recently helped six new Novices to qualify and had six more ready to test in March. QSL info is Little Mead, Claremeont Road, St. Saviour, Jersey, C. I., JE2 7RT.

Tanya Manukowskaja, RW3GL, has worked more than 130 countries from her home in Lipetsk, Russia, using a 100-watt homebrew transceiver. She's on SSB on the weekends between 1200 - 1500 UTC.

Aleksandra "Sasha" Kavs, S57FYL, was licensed in 1992 and is active on 10, 15, and 80 Meters, on CW and SSB. Sasha is a member of Radioclub Slovenija. The club call sign is S51SLO, with a special call of S51S, and Sasha enjoys satellite operation, using the club's antenna system. It's one of the rare stations on satellite from Slovenia.

Mady Langdon, KA6ZYF, and her husband Terry, G3MHV, operated from several cities in Russia in 1994, as noted in an earlier column, and they also visited and operated from Albania. This was a return trip for them as they had previously operated from there in 1992. On this trip, they brought along their own HF radio and a G5RV antenna, which they set up on the roof of an apartment building and this station was on CW. They also operated SSB from the station of Geni Mema, ZA1B, using his 3-element tribander, located on the roof of a hospital, which was an hour's walk away from the CW station. They operated ZA/ and Mady is still the only foreign YL who has operated from Albania. WR

Ham radio is a friendly joining of great people, enabling lasting friendships to be cherished.

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Convention

Plans for the 1995 10-10 convention to be held in Tuscaloosca, Alabama, on June 17-18, have been finalized with a full program of events scheduled. Registration begins on Thursday, June 16th at 5:00 p.m. and again at 8:00 a.m. on Friday, June 17th. Friday, June 17th will be devoted to social time all day with chapter tables and eye-ball QSOs taking place in the meeting hall. Hams and non-hams alike will enjoy a shopping tour and lunch. A 10-10 net will be held on Friday evening from 1700-1800 local time. The evening hours will be devoted to social time. Saturday, June 18th has a full schedule of forums lasting from early morning to late afternoon with the last being a 10-10 forum with the officers and board of directors answering questions. Saturday evening will host the banquet followed by entertainment. A special appearance will be made by the famous auctioneer "Colonel Ed" who will not only entertain, but will auction off some very nice items. The highlight will be the awarding of a Kenwood TS-50S, and an ICOM 725. Other surprise gifts and prizes are a definite possibility.

This all takes place at the Capstone Sheraton Inn and Convention Center in Tuscaloosa, Alabama on June 17-18, 1995. The Capstone Sheraton is located on the campus of the University of Alabama and directly next door to the Bear Bryant Museum which will be open to 10-10 members attending the convention.

For more details and a registration package, send an SASE (#10 business size) to Tom Henderson, K4CIH #33233, 4901 15th Place East, Tuscaloosa, AL 35404-4522.

With deep sorrow we report

It is with deep sorrow that we report that Chris Barnes, 24-year-old son of Bill and Linda Barnes, was killed in an auto accident on the morning of 24 March 1995. Chris was in the Navy, and was stationed at Pt. Mugu, California. He was a passenger in a car which was struck by a drunk driver. Chris' mother, Linda, KJ4FM #43299, is one of the 10-10 Directors. We all extend our sympathy to Bill and Linda and their family.

10-10 DX News

Mike Davidson, KC5CP #24949, DX Editor of the *10-10 News*, reports that during the ARRL DX CW and SSB contests he made a total of 142 QSOs with 58 countries. He worked a new 10-10 DX country, V51C Namibia, operated by Ivan #32960. Ivan is ex-ZS9IS and was working the SSB contest from his home in Walvis Bay on 28.470 at 1415Z. You may remember that Wavis Bay was a separate country until recently annexed by Namibia from South Africa. Ivan is a good supporter of 10-10 giving out his number when asked during pileups.

Mike reports that the count of 10-10 Countries is 271 now that activity from V5 Namibia has been established. Mike has updated his 10-10 Country list and will provide a copy for an SASE and 2 first class stamps. Send your request to: Mike Davidson, KC5CP #24949, 3518 Bellefontaine, Houston, TX 77025.

Are you on-line?

Many of the 10-10 officers and net officials are "on-line" with one of the e-mail services, America-on-Line, Prodigy, or have access to the Internet. If you are "on-line" and would like to be included in a 10-10 Membership Roster of on-line members, send a message to: Ed Redwine, K5ERJ #11843 at: k5erj@aol.com. Ed is compiling a listing of all 10-10 members with e-mail capability. The list will be available soon from Ed for an SASE. Watch for details in a forthcoming column.

The future of Amateur Radio

The *10-10 International News* is looking for our young 10-10 members to be featured in articles entitled "The Future of Amateur Radio" to be published in the *News* and ***Worldradio***. If you have a member of your family, or know a young ham who is a 10-10 member, send the information, along with a picture, to: Chuck Imsande, W6YLJ #19636, 18130 Bromley Street, Tarzana, CA 91356-1701. We need articles about our young hams to encourage other young people to become interested in ham radio. Can you help?

W6OI #109 On-the-air

The 10-10 club station, W6OI, 10-10 #109, will be on the air from three different locations in June. **June 1-18**, Dick Russell, KJ5VV #62500, is the designated control operator for W6OI/5 during the Special Events for the tenth annual Aerospace America Airshow at Will Rogers International Airport, OK. **June 10-11**, W6OI/4 will operate during the Special Event at New Braunfels, TX, for the sixth annual 10-10 Hill Country Gathering. Jack Moore, K4NF #50708, will be the control operator for this activity. **June 15-18**, W6OI/4 will be operating from the 10-10 Convention in Tuscaloosa, AL. Chuck Imsande, W6YLJ #19636 is the designated control operator for the convention Special Event station.

Listen for these W6OI special event station operations. If you work any one of these, a special event 10-10 QSL card will be available for an SASE to the control operators.

Information about 10-10?

If you would like information about 10-10 and how you can become a member and receive your very own unique 10-10 number, send $1.00 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ #54625, 9832 Gurdon Court, Boise, ID 83704-4080. No SASE please as the information package requires a 9 x 12 envelope. You will receive a copy of the 10-10 Information Manual which contains everything you want to know about the 10-10 organization and a copy of the latest issue of the *10-10 International News*, the 32-page 10-10 quarterly magazine.

If you have lost, or forgotten your 10-10 number, the same as above to Mike will get you the information package along with your original 10-10 number. WR

There oughta be a law...

...that everyone whose home sports a large antenna should have to park the family car (the one with the ham plates on it) out front, so one's fellow hams may know who lives there....

—Joe Means, NØXAT, *PARC News*

Visit Your Local RADIO CLUB

For information on how to get your club listed in "Visit Your Local Radio Club," plus receive many other benefits, write to: Club Liaison, Worldradio 2120 28th St. Sacramento, CA 95818.

ALASKA

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.97(-) PL 103.5 Hz.

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 15 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879.

Central Arizona DX Assoc., (CADXA). Meets 1st Thurs./monthly, 7 p.m., Salt River Project Pera Club, 1/2 mi. West of 68th & Continental Dr., Scottsdale, AZ. Rptr. K5VT 147.32(+). Packet Cluster nodes (S): 145.09, 144.93, 145.03. Info: (800) 283-4319 or (602) 876-2718.

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Pima Co. Sheriff Bldg., 1750 E. Benson Hwy. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet.

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-).

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64.

Amateur Radio Club of El Cajon, WA6BGS. P.O. Box 50, El Cajon, CA 92022. Meets 2nd Thurs./monthly, 7 p.m., La Mesa Church of Christ, 5150 Jackson Dr., La Mesa, CA. 224.08(-). PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info: (619) 697-2700.

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94803-0661. Meets 2nd Sun./monthly (except May & Dec.), 7 a.m., Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962.

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m.

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 8 p.m.-10 p.m., West Co Times Bldg., 4301 Lakeside Dr., Richmond, CA 94806. Info: Rachel Lewellen KB6LHR, (510) 233-5034.

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-).

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203.

Gabilan Amateur Radio Club, (GARC). P.O. Box 2178, Gilroy, CA 95021-2178. Meets odd months, 2nd Thurs., 7:30 p.m., Wheeler Manor Hosp. Rec. Rm., corner of Sixth & Carmel St., Gilroy and even months for brkfst., 3rd Sat., 8:30 a.m. (408) 623-2462.

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico.

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562.

Lake County Amateur Radio Society, (LCARS). Meets last Thurs./monthly at either Red Cross HQ, Clearlake, or the Nice Community Clubhouse, Nice, CA, 7 p.m. Net Mon., 7 p.m. 146.775(-) for info.

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

Manteca Amateur Radio Club (MARC). P.O. Box 545, Manteca, CA 95336. Meets 1st Thurs./monthly, #1 Firehouse, 7 p.m. Talk-in on club rptr. 146.985(-) PL 100Hz. Info: (209) 823-3611.

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA. (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael.

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Denny's Restaurant, 22611 Oakcrest Cr., Yorba Linda, CA at Weir Canyon, off the 91 Fwy. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036.

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) 100Hz PL. Info: (510) 932-6125.

North Shores ARC. Meets 1st Tues./monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 224-1294.

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Ms. Marti Brutcher, N6XDS, (310) 376-1861 or (310) 377-6342. Rptr. 145.38(-) PL 100.

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293.

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net every noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Gary E. Bryant KB6KZZ, (916) 646-1171.

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830.

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+) PL 107.2.

Santa Clara Valley Rptr. Society, (SCVRS). P.O. Box 2085, Sunnyvale, CA 94087. (408) 247-2877. 146.76(-), 224.26(-), 444.60(+). 2 meter/220 net Mon. 9 p.m. Mtgs./3rd Fri.

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 10m, Wed. 7:30 p.m., 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-).

So. Sierra ARS. Meets 2nd Thurs./monthly, 7 p.m., Veteran's Mem. Hall, 125 East F St., Tehachapi, CA. Contact: C. Parsons, KD6KMN, (805) 822-5995. 147.06/224.42.

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817.

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thurs., 8 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300. Net Sun., 10 a.m. 50.40.

Stanislaus Amateur Radio Assoc., Inc. (SARA). P. O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin. Bldg. 145.39(-) (PL 136.5), 224.14, 440.225 (PL 136.5).

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, CD Hall in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4.

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Dan Bissell (707) 446-7411.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:30 p.m., Victor Valley Museum, 11873 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), info net Sun. 7 p.m. 146.94(-).

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426.

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100.

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5.

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430.

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95991. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City.

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob, KA1BB, (203) 739-8016.

FLORIDA

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL.

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Wes Sammis, W2YRW, (407) 878-4739. Call in 146.955(-).

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly nets 6:30 p.m., 147.06(+), 224.66(-). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: R. Russell, N4ZMQ, (813) 896-2518.

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL.

Suncoast Amateur Radio Club. P.O. Box 1992, New Port Richey, FL 34656-1992. Meets 2nd Mon./monthly, 7:30 p.m., First Lutheran Church, corner of Polk & Delaware, New Port Richey, FL. Sponsor of WC2G/rptr. on 145.35(-), serving west Pasco County.

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64.

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets 2nd Tue./monthly, 7 p.m., Army Reserve Armory, 470 Lanikaula St., Hilo. Talk-in on 146.88(-).

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.96(-), 146.94(-). Info: (808) 595-6245.

IDAHO

Idaho Society Radio Amateurs. Boise Chapter 146.94. Meets 3rd Tues./monthly, Borah H.S., 7 p.m. Rptr. at 8000'. Membership welcome. 146.94(-).

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m.

Chicago Suburban Radio Assn., (CSRA). P.O. Box 88, Lyons, IL 60534. Meets 3rd Tues./monthly, 7 p.m., Mid City Nat'l Bank, 7222 W. Cermak Rd., N. Riverside, IL.

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+) (114.8PL), 224.68(-).

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL.

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, IL 60642. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.07. Info: (312) 974-3291.

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+).

Schaumburg ARC, (SARC). Meets: 3rd Thurs./monthly, 7:30 p.m., Schaum-burg Park Dist. Community Rec. Ctr. at Bode & Springinsguth Rds. Schaumburg, IL. Net 145.23(-), 9 p.m. Thurs. Info: (708) 213-0910.

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+).

York Radio Club. Meets 3rd Fri./monthly, 8 p.m., Elmhurst College (Science Bldg.) Elmhurst, IL. Net Mon., 8 p.m. W9PCS/147.42 simplex. Rptr. 442.875(+).

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-)

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME.

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fr.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098.

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Gerber Hall, Babson College Forest St., Wellesley, MA (Sept.-June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686.

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Blue Flame Rm., Citizens Gas., N. Winter St. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568.

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118.

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Wayne/Monroe Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 9 p.m. on 145.33(-) and 442.80(+) rptrs.

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesse Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077.

Hazel Park Amateur Radio Club. Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. Meets 2nd Wed./monthly, 7:30 p.m. Sept. thru May. 146.64(-) Call-in. W8JXU Club Call. Net Sun., 9 p.m., 146.64(-).

Hiawatha Amateur Radio Club (HARA) Meets 1st Thurs./monthly, 7:30 p.m., at Trinity Lutheran Church in Ishpeming, MI (even no. mos.) and at Jacobetti Veterans Facility in Marquette, MI (odd no. mos.). Sun. net 7:30 p.m. on 146.76. Info: Richard, N8GBA, (906) 249-3837.

Utica Shelby Emergency Communications Assoc., (USECA). P.O. Box 1222, Sterling Hgts., MI 48311-1222. Meets 2nd Tue./monthly, (Sept.-June), Donald Bemis Jr. High Sch., 12500 Nineteen Mile Rd., Sterling Hgts, MI (between Schoennher & Clinton River Rds.) Talk-in on 147.18(+) 100Hz PL. 24-hr. hot line: (313) 268-6730.

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202.

MISSOURI

Central Missouri Radio Assoc. P.O. Box 28954, Kansas City, MO 65202. Meets 2nd Tues./monthly, 7 p.m., Boone Electric Coop, 1413 Rangeline Rd., Columbia, MO. Talk-in 146.76(-).

Lebanon Amateur Radio Klub, Inc. P.O. Box 2034, Lebanon, MO 65536-2034. Meets 1st Mon./monthy, 7 p.m., Bell Restaurant, City Rt. 66 East Lebanon. Call in 146.700(-).

PHD Amateur Radio Assn., Inc. P.O. Box 28954, Kansas City, MO 64188. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Mon./monthly, 7 p.m., Cioppino's Restaurant (between Vegas Valley Dr. & Desert Inn), 3125 S. Nellis Blvd., Las Vegas, NV. Net Mon. 7:30 p.m., 145.39(-) Rptr. on Black Mountain. Club info: Jim Frye, NW70, (702) 456-5396.

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Penny's Kountry Kitchen, 337 E. Plumb Ln., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz.

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm. Talk-in: 147.57.

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+).

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 144.40 9 p.m. Wed.

Cape May County Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Human Resource Bldg., Rts. #9 & #47 in Rio Grande, NJ. Talk-in on 146.61(-). Weekly net, 8 p.m. every Thurs. except 3rd.

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29(-) rptr. Club call K2AA.

NEW MEXICO

Albuquerque Amateur Radio Club. P.O. Box 11853, Albuquerque, NM 87192. Meets 1st Sat./monthly, 7:30 a.m., Golden Corral Restaurant, 8505 Montgomery NE.

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2PVL.

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+) W2RCX.

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Charlie, WA2JUJ, (516) 420-0046.

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL.

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz.

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL!

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911.

Westchester Amateur Radio Assoc., (WARA). Meets 1st Thurs./monthly, 7:30 p.m., Scarsdale Town Hall, Scarsdale, NY 10583. All invited. Info: Dan Grabel, N2FLR, Pres. (914) 723-8625.

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 962-9666 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A.

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-8995. 146.865(-), 440.15(+).

NORTH CAROLINA

Cabarrus Amateur Radio Society, (CARS). Meets 3rd Mon./monthly, 7 p.m., Forest Hills United Methodist Church in Concord, NC. Net on Mon., 9 p.m., 146.65(-).

North Carolina Alligator Group, (NAGs). Meets Mondays, 28.350 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240. "The Alligators" — all mouth, no ears.

Stanly County Amateur Radio Club. P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thurs./monthly, 7 p.m. at Stanly Community College, Albemarle, NC.

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m. County rptr., 146.715(-).

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 146.85(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS.

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Ohio Veterans Home, Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839.

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (513) 563-7373.

Lancaster & Fairfield County ARC. Meets 1st Thurs./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info net Mondays, 8 p.m., K8QIK/R 147.63(-) rptr.

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brian, WD8MXR, 385-5624.

Triple States Radio Amateur Club. Meets Wed./weekly on 28.48 at 8:30 p.m., 7260 at 9 p.m. and Sun. 4 p.m. on 7240. Rptrs. 146.91(-), 146.715(-). P.O. Box 2 40, Rd. #1, Adena, OH 43901. (614) 546-3930.

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 E. Ridge Rd., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-).

OREGON

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736.

Oregon Coast Emergency Rptr., Inc. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-3081.

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 311, Douglas St., Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310.

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly.

Fort Venango Mike & Key Club. Meets 2nd Tues./monthly, 7:30 p.m., Vo-Tech, Oil City, PA. 145.230, 145.190, 147.120, 444.125.

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01.

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE pt.bbs.

Warminster Amateur Radio Club, WA3DFU. P.O. Box 113, Warminster, PA 18974. (215) 672-9985. Meets 1st Thurs./monthly, 7:30 p.m., Neshaminy-Warwick Presbyterian Church, Warminster, PA. Net on 147.69(-), 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m.

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st & 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ.

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462.

WASHINGTON

The Inland Northwest Hamfest Assoc. (Club). Meets 2nd Tues./monthly, 7 p.m., St. Ann Parish Hall, E. 2120 First Ave., Spokane, WA. Info: KJ7BB, (509) 534-8443.

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m.

WEST VIRGINIA

Jackson County Amateur Radio Club. Clark Stewart, W8TN, Pres., 104 Henrietta St. Ravenswood, WV 26164. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R.

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV.

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

It's June! The Army MARS In Progress Review (IPR) conference at Dayton has concluded and the many issues addressed at that conference continue to be worked, refined and disseminated to the members and, where appropriate, to the world at large. The overriding theme of the conference was that Army MARS will meet all of the challenges of 1995 with quality service made possible by volunteer member dedication and skills.

One of the major topics of consideration at the IPR was, of course, the loss as of 1 October, 1995, of the highly important management level for Army MARS — the Area Directors and their records managers and their office assets and availability. The many responsibilities that were inherent in that level have been or will be shifted to other levels and other personnel. Many proposals are being considered and those chosen will guarantee that Army MARS will be able to meet all of its missions and challenges with the same quality of service to which our users have become accustomed.

In a presentation to all Army MARS members who were monitoring the Chief Army MARS Command Net on 3 March 1995, Colonel Arthur Maxwell, USAISC DCSOPS, made the following statement:

"...I want to make it very clear that Army MARS is not, and I repeat, Army MARS is not scheduled to be deactivated. It has a documented and valid mission that will continue." With these words, Col. Maxwell assured all of us that Army MARS will continue to function and that he gives us his full support.

Indeed, the missions of Army MARS will, most likely, expand as other agencies face their own cuts and/or learn what a fine national asset Army MARS offers them for their use.

Indicative of the range of agencies that Army MARS could serve was the attendance roster at the DOMS Conference held in March of this year. Chief Army MARS Robert Sutton attended and had the opportunity of giving Army MARS information and capabilities to the following agencies:

- National Communications Service
- Department of Defense (DOD)
- Director of Military Support (DOMS)
- Federal Emergency Management Agency (FEMA)
- United States Army
- United States Navy
- United States Air Force
- United States Coast Guard Corps of Engineers
- Veterans Health Administration
- Military District of Washington Civil Air Patrol
- National Disaster Medical System
- Public Health Services
- American Red Cross

Several of these agencies have already interacted with Army MARS in emergency communications exercises and in dealing with real emergencies as they have occurred.

The enhancement of the Federal Response Plan was discussed at the DOMS Conference. The assumption must be for all of us that a devastating natural disaster will occur someday in this country. The only open question is when. Many lessons have been learned from the earthquake disaster in Kobe, Japan. In such a disaster, all assets will be required to be trained and active. Army MARS has always had emergency communications development and practice as its primary mission. The new EEI program and the new emphasis on interactivity with other agencies fit the design of the Federal Response plan very well.

Chief Sutton has said, "Putting this into perspective for Army MARS, we obviously have been on the right track and our refocus a few years ago towards disaster planning and exercises fits the Federal Response Plan like a glove."

The agencies also stressed the need for communicators to provide immediate or near-real-time essential elements of information to the decision makers. This very important role is being provided by Army MARS in its EEI program. The EEI program is essential and is continually being exercised and improved. EEI has proved its worth repeatedly throughout the fifteen months that it has been in full operation.

Among the several joint emergency communications exercises which have been held this year was the very highly successful FEMA/ARMY MARS first quarterly drill. This exercise carried two emphases — Army MARS EEI reporting and making FEMA aware of the wide geographic area that the Army MARS communications system covers. No other communications network exists that is as highly skilled and organized and as geographically widespread as is Army MARS. If one considers that Army MARS works very cooperatively with the other service MARS as well, the national asset that all of MARS represents cannot be measured in normal mundane terms.

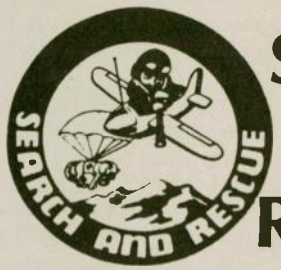
The Army MARS exercise in support of FEMA was held from 28 Feb 95 through 03 Mar 95. With a reported volunteer membership participation of 2900 stations covering 2200 ZIP code areas, Army MARS not only maintained a new record of participation but demonstrated once more to FEMA and other observers the very widespread communications network that Army MARS represents. Army MARS is the only communications network with known outstanding training, skills, and capabilities fully covering the geographic areas of the United States and with availability 24 hours per day 7 days per week. Chief Sutton in his Chief's Net remarks of 24 March, '95, visualized this country with a light for every Army MARS station and a brighter light for every station in operation at any given time. The glow of light would serve as beacons of service, of hope, for those who face any disaster.

Army MARS remains proud, professional, and ready. WR

There oughta be a law...

...that all areas with CC&Rs restricting "unsightly" antennas, apply the same rule to basketball backboards and hoops....

—Joe Means, NØXAT, *PARC News*



Search And Rescue Communications

Jerry Wellman, WB7ULH
P.O. Box 11445
Salt Lake City, UT 84147

If I had to list the most important "things" for an emergency responder the top three would be listening, observing and comprehending. Equipment and talking are not even in the top ten — yet how often have you attended an SAR (CAP or ARES) meeting only to hear people talk about their "stuff" (like airplanes, antennas, radios, direction finding gear). Didn't we come to the meeting to learn something?

We all (myself included) love to talk and brag a little about our stuff — and that's OK depending on the setting. If you're responding to an emergency, it's probably not the time or place for an equipment list dissertation. And, in my opinion, neither is a training meeting.

I think "listening" has begun to have a bad reputation. If you are silent, you are labeled shy or unassertive or uninterested. Some might assume that if you've nothing to say you're not an interesting person.

Listening is quite a skill — it involves paying close attention, making observations, taking notes (mental or written) and then forming observations. These observations don't always need to be voiced, but it is these observations that allow us to comprehend.

Consider an antenna tuner and a random length dipole. We've "listened" to the antenna book and stretched some wire in the back yard. We've hooked up the proper type of coax and connected the tuner and radio. Following the tuner's instruction manual (which is a form of listening) we adjust the knobs and observe an increase in signal strength. The distant station's audio quality improves and the signal-to-noise ratio improves.

When we transmit, our signal is received and we do a test with and without the tuner. The distant station says our signal is better with the tuner. We have now formed a conclusion (we are comprehending) that the tuner is a good way to improve performance with a random length dipole antenna.

Our listening, observing and comprehending have given us experience. Yet there are those among us who will mathematically "prove" to us that a tuner simply fools the radio into thinking the antenna is working. I've always wondered how my tuner fools the distant station into thinking my signal is better.

Strange signals

Several months ago the Civil Air Patrol was alerted to an emergency locator signal (ELT). The satellite monitoring the ELT frequency provided coordinates and direction finding teams were quickly dispatched.

Armed with the DF and scanners tuned to the ELT frequency, the teams reported receiving the signal. It was weak and seemed to follow some overhead telephone lines. A short time later, the teams converged at an airport office. The teams took bearings around the locked office and determined it to be in one corner about table height.

The office occupant was called at home. It was late at night and the occupant was reluctant to drive to the airport and argued that there were no ELTs in the office. He was persuaded to come to the airport, if only to quiet the CAP concerns over the ELT signal.

Sure enough, the office contained no emergency locator transmitters — yet the signal was very strong. The teams used signal attenuators and the strong signals came from the corner, atop a table. There was nothing on the table except a FAX machine. Having nothing to lose, the DF teams unplugged the FAX machine and the signal went away. When they plugged the machine in, the signal returned.

An aircraft ELT generates a siren-type modulated signal. If you have listened to a FAX machine signal, it too warbles. Apparently this FAX machine was the culprit and was somehow generating a harmonic. The signal was being carried over the connected phone line "antenna."

The excited DF teams reported to the CAP coordinator their success and explained, to the coordinator's laughter, how the signal had been located and silenced. The teams were feeling pretty good at having located a FAX machine.

A few moments later, a knowledgeable CAP member came on the radio to explain how a FAX machine could not possibly create an ELT-like signal and that even if it were generating a harmonic signal, the strength would not be sufficient to be heard by the satellite monitor. After this lengthy "explanation" the DF teams were confused and discouraged.

They were discouraged because they respected the expertise of the member who "explained" things, but the team was confused because of what they heard, observed and comprehended. In the following weeks there were smirks when the great FAX caper was discussed and the DF teams were embarrassed.

Several weeks ago a discussion on the Internet by CAP members focused on strange ELT missions. Many of the messages told about errant signals located in hangars, train cars, houses, in shipping cartons and even in garbage cans. Then someone mentioned DFing a FAX machine. Then came another report and finally a third. All were FAX machines that had gener-

ated satellite hits and search missions.

I called one of the CAP members who had participated in one of the FAX "missions" and he related how skeptical others had been when the experience was related — and how comforted he felt knowing his observations were validated by others now reporting similar circumstances.

What is the lesson from all this? Before we begin talking, it is best to listen, observe and seek to comprehend. If we're not where accurate observations can be made, our comprehension level might not be as correct as those who are able to make direct observations! Be careful when you jump into a conversation with an opinion — ask yourself if you have listened and observed before offering your input.

Who's in charge?

Have you ever been placed "in charge" of a response, only to have the "boss" come along and counter your efforts? This has to be top on the list of irritants for emergency coordinators. Whether it is the team president, mayor, police chief or CAP commander, it has a detrimental effect on the search coordinator and quality of the emergency response when the "boss" interferes.

I once worked with a sheriff in Wyoming during a lost aircraft mission. The sheriff simply said: "You are the search coordinator. What do you need and how can I help?" This sheriff respected my expertise and knew that second-guessing would not help search efficiency.

A couple times a day he would either call or stop by the command post and ask for an update. In private he and I would discuss the mission progress and he would ask questions. On the second day, he had some concerns with a couple of search grid priorities and we discussed them. His concerns were valid and search assignments were altered.

He didn't reassign the crews and he didn't change the status board. He didn't personally call the aircraft and he didn't challenge every decision. Being the sheriff, he was the "authority" for the mission. Being a good leader, he delegated the mission coordination and let me handle the search. He allowed me the dignity to make the decisions and respected my ability. He wasn't hanging around the command post countering every action or questioning every detail.

The most difficult thing for the "authority" to do is let the search coordinator do her or his job. Many coordinators would say if the "authority" wants to make the decisions, he or she should not have delegated the coordination to someone else. I agree.

If you're the mayor, team president, commander or "authority" and have asked someone to coordinate the search, let them do the job you asked them to do. It is OK to observe and voice concerns, in private, to the coordinator, but don't undermine actions by publicly countering every decision. If you're not comfortable asking someone to take charge, don't ask them to do it!

Some good deals

Last month I mentioned expanding your view to include other communications services as well as Amateur Radio. I stopped by a pawn shop yesterday and found a brand new CB handy talkie just a little smaller than my 2 Meter portable. The CB was 40 channels, had a digital readout, an earphone jack and a new set of NiCd batteries — and the price was less than $20.

The pawn shop owner said they get a lot of CB gear as well as some low-power commercial gear and the prices are reasonable. Don't ignore other services. Beyond GMRS, aviation, marine and CB, there are business frequencies, public safety and even low-power non-licensed frequencies (49 MHz) that might be of value in your next response.

Expand your vision! Look at equipment as a tool toward better performance and don't pass up something because of personal bias.

Until next month, enjoy summer! Best wishes from Salt Lake City. WR

Computers & BASIC STUFF

C.H. Stewart, KD5DL
P.O. Box 181
Duncan, OK 73435

Basic Antennas, Part I

I've just moved from the city to the country, and I'm slowly getting adjusted to the change. I like it because it's quiet, comfortable, and there's a room at the far end of the house that I can use as a ham shack. There's also plenty of real estate for antenna projects.

I've tried a number of antennas throughout the years. I hate to think of all the wasted time and money I put into some of them, or the credence I put into advice I got from so-called "experts."

Let me tell you about one of my antenna projects and let you decide for yourself. The radiator was a shortened multi-band dipole I put up about 40 feet in my city lot's backyard. Because of its shortened size I figure it had a radiation resistance somewhat below that of a full-length dipole. I guess it was somewhere around 10 or 15 ohms on at least one of the bands. I also figure I was losing another 10 to 15 ohms of total resistance to the loading coils and ground resistance losses due to antenna proximity to nearby metal structures. The antenna's field pattern was also distorted; I could work a number of stations in one or two directions, and totally miss anything else.

The experts told me I had to get the SWR down to 1:1 to get out a decent signal. I could get it below 1.7:1 at certain frequencies, but as I got near band edges I had to use a tuner to keep from going over 3:1. The experts led me to believe that the tuner only "fooled" my transmitter into seeing a good SWR match, but it would do absolutely nothing to get more signal out. After much discussion I decided to keep the antenna tuner, despite its "insertion loss," because I felt my transmitter enjoyed being "fooled" by the low SWR.

I was also concerned about my antenna's efficiency. I remember reading somewhere that a dipole antenna was as efficient as they come, so I naturally assumed that other antennas, like my trapped multiband, quads, Yagis and others did at least as well. Efficiency is related to radiated power divided by total power (E=100*R/T). Likewise, it is also related to radiation resistance divided by total resistance (E=100*Rr/Rt). I was shocked to think that, at best, my antenna's efficiency was only 50 percent. (Remember, 15 ohms of radiation resistance divided by 30 ohms total resistance). This told me that half of the power from my transmitter was getting out of the antenna and the rest was wasted heating the loading coils and ground, and maybe even the coax itself!

So here I am, stuck with a wasteful dinky shortened multiband antenna system when I could have been better off with a real dipole, right? I mean, would you put up with an antenna that could tune no better than a 1.7:1 SWR with an efficiency no better than 50 percent? If you had the space for a real antenna what would you do?

Well, I'd go back to that dinky antenna in a heartbeat, because, despite all it's "problems," it was a great performer with excellent DX potential. If you haven't guessed by now, that old antenna was a Yagi and those "nearby metal structures" were its reflector and directors!

You see, "experts" and their numbers can be misleading. Kurt N. Sterba has been telling you the same thing every month in his "Aerials" column. If you're going to get expert advice, get it from true experts, not the 1:1 SWR crowd.

If you think a low SWR tells you anything about an antenna and its performance, you need to check definitions again. SWR is for "standing wave ratio," or the ratio of the maximum current to minimum current (or maximum voltage to minimum voltage). The currents and voltages have nothing to do with radiation efficiency or antenna performance! Period!

Let's look at several examples. In every copy of the *ARRL Antenna Book* there is a section on mobile antennas and a table labeled "Approximate Values for 8-ft Mobile Whips." The table shows that a 40 Meter base-loaded whip has a radiation resistance of 1.35 ohms and a total feedpoint resistance of 15 ohms (assuming about 3 ohms loss from a high Q loading coil and about 10 ohms from ground losses). If we look at SWR, which can also be said to be derived from characteristic impedance divided by total resistance, and assuming a 50 ohm feedline, the SWR will be slightly worse than 3.33:1. Efficiency, at 100*1.35/15, is 9 percent.

The table goes on to show that the same antenna, with a low Q loading coil, might have a feedpoint resistance approaching 30 ohms. This means the SWR will equal 50/30, or 1.67:1 for a much better match. But look at the efficiency; it's now 100*1.35/30, or only 4.5 percent!

This means, all other things being equal, that the better-matched SWR antenna is, in reality, only radiating half as much power as the antenna with the higher SWR.

Here's another example, from a "true" expert. Walter Maxwell, W2DU, has more than 55 years of professional antenna experience under his belt. Some of his antennas continue to orbit on research and communications satellites or are sitting today on NASA projects on the moon's surface. He gives a great illustration for a wrong reason to prune for a low SWR. In Chapter 1 of his book, *Reflections*, he says that a vertical quarter-wave radiator tuned for resonance has a radiation resistance of approximately 32 ohms. With a good radial system its ground resistance will be negligible, so efficiency will be close to 100 percent. If the antenna is fed with a 50 ohm line, then the SWR will be 50/32, or 1.56:1.

A good radial system might consist of 100 or more radials. Reducing the number of radials tends to increase ground resistance. Maxwell says, "When enough radials have been removed for the ground-loss resistance to reach 18 ohms, the terminating resistance will be 18 + 32 = 50 ohms, for a perfect one-to-one match! But while the SWR went down, so did the radiated power, because now the power is dividing between 32 ohms of radiation resistance and 18 ohms of ground resistance!" Efficiency dropped to 64 percent just by trying for a 1:1 SWR. That means that 36 watts out of every hundred now goes to heat the ground instead of radiating from the antenna!

Before leaving you with the impression that SWR isn't important I must tell you that it is, but only from the standpoint of how it affects losses in the transmission line and transistor finals in transmitting equipment. This is why you need a tuner if you see SWRs over about 3:1, and why "fooling" your rig is okay. I'd rather see you fool your rig to get more power out of your antenna than to have you prune your antenna to anything less than its greatest efficiency.

In future installments of this column I want to show you what to look for in antenna and transmission line performance. I hope to have BASIC programs to back up the things I'll be writing about; to give you mathematical proof to use in your own research. If you want to get a head start, look for Maxwell's book, *Reflections;* his series of articles beginning in the April 1973 *QST*; and/or his contributions to the *ARRL Antenna Book*.

Until then, stay radio active. **WR**

What is a Murgas?

Our club is scheduled to meet August 3 for a picnic with members of the Jonestown Repeater Assn and something called the MURGAS Amateur Radio Club. Many assume MURGAS is an acronym for something like Middle Union Radio Geezers Association of Seniors (we made that up), but that's not the case.

In fact, the club is named in honor of a Catholic priest, the Rev. Joseph Murgas. A club member recently handed us a clipping (source unknown) which reveals why a radio club would be named after a priest.

Murgas, a native of Slovokia, in 1905 developed a telegraph system using musical tones that was faster than the dots and dashes of Morse Code. From a tower in Wilkes-Barre to another in Scranton, he sent the first telegraph signal over land — a feat that eluded Gugliemo Marconi, who'd sent the first telegraph transmission over water four years earlier.

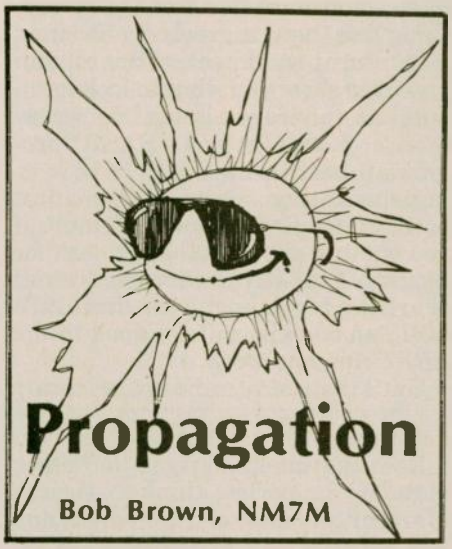
A month later, Murgas rewired his transmitter, attached a microphone, and sent his voice over the air: "Do you hear me?" (Sounds a lot like Field Day at 3 a.m. doesn't it?).

One of Murgas' assistants did hear him, having picked up his voice on a homemade (what else in 1905) receiver.

Does that make Murgas the father of radio? Supporters think so, though Marconi gets most of the credit. Many feel Marconi, when he visited and examined Murgas' equipment and towers, picked up and later used some of Murgas' ideas.

There was a patent infringement suit brought by one of Murgas' former assistants in 1914, and the judge ruled the priest had the first patent.

Fr. Murgas died in 1929, having served as the pastor of the Roman Catholic Slovak Church on North Main Street in Wilkes-Barre. —*The Radio Wave*, Endless Mountain ARC



In case nobody ever told you, "The amateur is never satisfied long; his receiver, transmitter or wavelength is always being changed." I read those words in *Radio News*, written 70 years ago, and understood something of their author, John L. Reinartz, a great man. He was a tireless experimenter and his travels across the landscape of radio touched on my interest, HF propagation. In fact, as an amateur, he made major contributions to the field of propagation. Let me tell you about them.

John L. Reinartz, 1QP-1XAM, was active during the "Golden Age of Radio," 1920-1930. That decade began with crystal sets and ended with radios which could be plugged into wall outlets. And operating wavelengths went from greater than 1,000 Meters to 5 Meters. It was a time of change, expansion and far-ranging progress. And Reinartz was in the middle of it, in more ways than one. Receivers, transmitters, propagation - they all were matters that interested him.

His move into propagation problems began with the famous QSO across the Atlantic in late 1923 when he and two others contacted 8AB in Nice, France on 100 Meters. That contact put Amateur Radio on the international scene. After that, he moved down to 50 Meters to explore propagation at a shorter wavelength and he was soon in contact with Holland. But the Dutch operator got in trouble with his government, so Reinartz's plans were stymied for the moment.

At that point, he broadcast information that 1XAM would be conducting short wave tests and invited the participation of any interested parties. The word "parties" was appropriate in that last sentence, as before long, after a number of amateurs joined him, the U.S. Naval Research Laboratory became involved in those short wave experiments too.

Encouraged by the results, the Naval Laboratory station (NKF) shifted its operations down to 51 Meters in late March of 1924. By that time, however, Reinartz had already shifted down to around the 20 Meter band and conducted further tests where his signals could be heard by other amateurs, say on 20-22 Meters or 40-43 Meters. As he described it in an article in the April '25 issue of *Radio News*, it was like "a game of tag;" sometimes his signals were heard and sometimes not, as he moved around the bands.

In the fall of '24, the Department of Commerce established harmonically-related frequency bands for amateurs and Reinartz's experiments enjoyed a much greater participation, especially

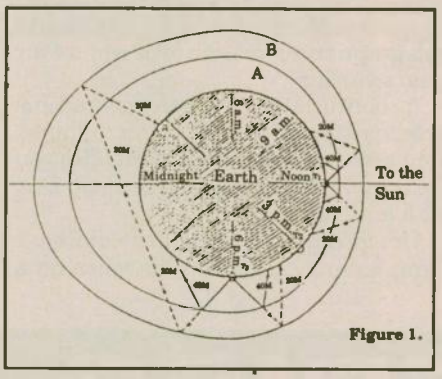


Figure 1.

when conducted on a schedule. Out of those tests came major results, the first that high frequency waves, say on the 20 Meter band, went to greater distances at a given time than lower frequency waves, say 40 Meters. To Reinartz, that meant higher frequency waves rose to greater altitudes than lower frequency waves before being returned by the Heaviside layer. That was discussed here in a previous article but the ray diagram is repeated, as Figure 1, for the sake of completeness.

The other result was that a transmitter is surrounded by a "dead belt," now known as the "skip zone," and is

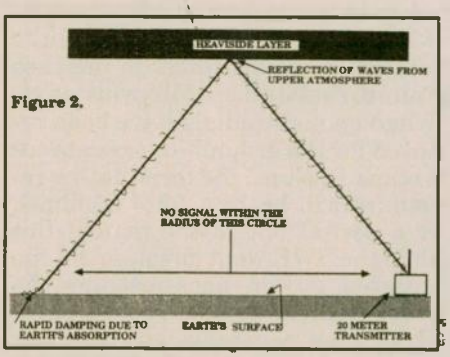


Figure 2.

illustrated in Figure 2 by using a figure from Reinartz's article in April '25. (I must confess there is a "style" to that figure which is simply irresistible.) Another, more global representation of his "dead belt" is shown in Figure 3, taken from the April '25 issue of *QST*. In that figure, the region marked X is where the transmitter can be heard directly, the region Y is the "dead belt" and the region Z is where signals are heard.

Both those results were powerful, remain valid today and demonstrate what can be done with simple observations. But the number of amateurs and their geographical spread was not sufficient to provide greater detail, a second "dead belt" beyond the first one as a result of the ground reflection of signals and their going further along the path.

Nowadays, that sort of result is obtained from HF backscatter radars, a sophisticated system which shows two concentric rings of backscatter echo sources surrounding the transmitter. You can imagine how many amateur operators would have been required to come forth with that sort of result, even if their receivers were sensitive enough. But the notion of the ground reflection of signals was not on the scene in 1924 so nobody really worried about the idea.

So knowledge of propagation or what we term "the ionosphere" was minimal in those days, not much more than the idea of a conducting shell, due to Kennely and Heaviside, that reflected long-wave signals from spark transmitters. In 1912, a decade after Marconi's first work, W. H. Eccles remarked that signals around 1,000 Meters wavelength were considered "short waves." By 1920, Dellinger, Whittemore and Kruse of the National Bureau of Standards were studying fading on the 250 Meter band.

One of their conclusions which was published in 1924 was that "very great transmission distances with short waves occur only at night, because in the daytime the waves do not reach the Heaviside surface." (Nowadays,

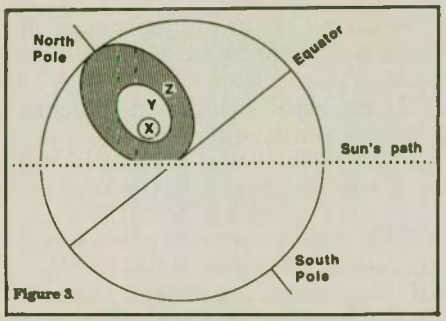


Figure 3.

that's regarded as due to absorption in the D-region, electrons picking up energy from the passing waves and transforming it into heat by collisions with atoms and molecules.)

But after the first success of an amateur QSO across the Atlantic in late '23, Reinartz was busy working stations around the U.S. on the 40 Meter band and higher, even working 6TS on the West Coast at noon EST on 21 Meters. Clearly, absorption was much less on 21 Meters and the experiments at 1XAM from the summer of '24 and onward were in uncharted areas, exploring new ideas.

Those were put in his April '25 *QST* article and drew a prompt reaction from the new Technical Editor, Robert S. Kruse, formerly with the Bureau of Standards: "the thought that high-frequency wave motion will penetrate the Heaviside layer to a greater elevation than longer waves is rather in opposition to our generally accepted beliefs on such matters and may deserve further investigation."

Late in 1924, theory was moving ahead, Sir J.J. Larmor in the U.K. writing about wave *refraction* in an ionized medium instead of wave reflection at the Heaviside surface. But Larmor dealt with signals in the 1,000 meter range, not 20 Meters where Reinartz was operating. And Larmor was concerned with having those long waves refracted by free electrons "within the auroral domain" so as to just conform to the curvature of the earth.

Larmor's ideas proved to be right as far as they went but that was at 1,000 Meters, or 300 kHz, and represented a rather cautious approach to properties of the present-day D-region. And his model included propagation of the "electric rays" along the lines of ducting, with a "sheaf of horizontal electric rays." But Larmor would have it a leaky duct, "the energy in this high stratum is being shed down to sensible degree all along the path, for the signals to be everywhere received." (No "dead belt" there!)

In Larmor's model, the rise in ionization in going toward the "auroral domain" (50 miles or 80 km altitude) was insufficient to refract 20 Meter signals downward. If Larmor were to retain the gradual bending of 1,000 meter waves around the earth and also deal with Reinartz's 20 Meter signals, it would have been necessary for him to extend his model upward with a corresponding rise in the level of ionization, as it is in reality.

Bolder experimental efforts were in progress at the time when Reinartz's *QST* article was published in early 1925, Appleton and Barnett in the U.K. as well as Breit and Tuve in the U.S. trying to *measure* the height of the layer which returned radio signals. In the U.K. the method used changing interference between the ground-wave and sky-wave signals from a 770 kHz broadcast station, when its frequency was changed slowly, and involved a triangulation calculation to find the height from which the sky-waves were returned to earth.

In the USA, the method was more direct, sending 10 kW pulses of 4.2 MHz RF vertically upward, and in July '25, Breit and Tuve were able to record the times when echoes returned to ground level. While both methods were successful, initially showing that signals were returned from about the 100 km level, the pulse method proved superior and ultimately went on to be automated and sweep through sounding frequencies, providing observations of the ionosphere which revealed its structure and time variations.

About the time of Larmor's work, Sir Edward Appleton pointed out to Larmor that the effect of the earth's magnetic field on the electrons should be included. Appleton went on to use that idea to explain why ionosondes show two echoes with each pulse, the result of magneto-ionic wave polarization, and that's where the matter stands now.

Meanwhile, in March of '25, Reinartz signed on as radio operator for WNP on the "Bowdoin," part of the Navy-MacMillan Arctic Expedition going to northern Greenland the following summer. His duties included both participation of the design of the radio equipment aboard the "Bowdoin" and, later, handling dispatches to the expedition's sponsor, the National Geographic Society.

The "Bowdoin" departed for Etah, Greenland in late June and returned in September. Apparently, Reinartz did not continue working on propagation questions but returned to his first

that the sprawling ionosphere, lacking knobs or dials to twist and not lending itself to design or construction projects, lost any appeal it had for him. So, again, he assumed the role of a tireless experimenter, and made an admirable career for himself in radio.

Clinton B. DeSoto, in writing a chapter on "The Development of the Short Waves" in his book, *200 Meters and Down*, remarked that "since 1925 amateur contributions to radio propagation theory on wavelengths above 20 Meters have been slight. Commercial engineers and government physicists have carried on the work of exploration and analysis." Be that as it may, John Reinartz's contributions should not be forgotten; they were significant and advanced the field of radio propagation.

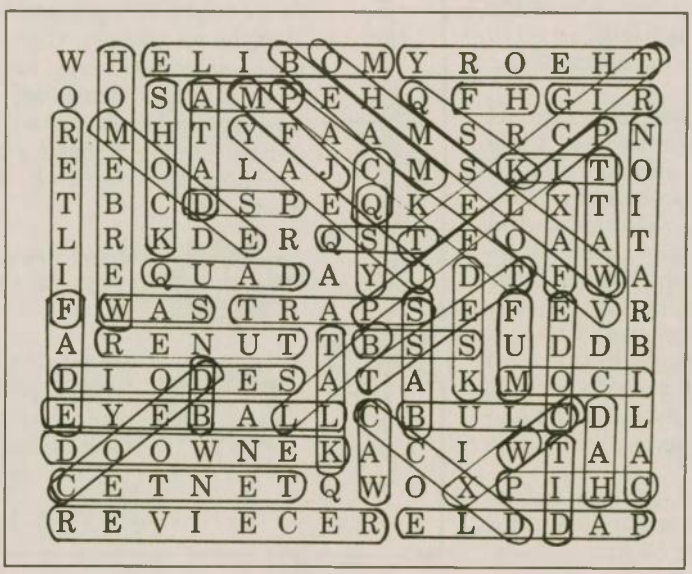
Addendum: This article and the previous one resulted from my receiving a copy of Reinartz's April '25 article in *QST* from Professor John Bryant, a distinguished SWL in Oklahoma. My original inquiry of Professor Bryant was in connection with his extensive knowledge of the Zenith Radio Corporation and its association with the Navy-MacMillan Arctic Expedition to Greenland in 1925. In that regard, he sent me the April '25 *QST* article as background material on the radio operator of MacMillan's vessel, the "Bowdoin" (WNP).

As one interested in radio propagation and the ionosphere, it didn't take much reading to realize that I was reading an historic document and I made every effort to expand on the material as it contained ideas both original and timeless, the penetration of the ionosphere by higher frequency signals and the presence of a skip zone around a transmitter.

The material assembled, placing Reinartz's contributions to the study of propagation in the context of the times, was due largely to the kind assistance of Professor Edward Guilford, AA7HQ, of the University of Washington (dealing with the writings of Dr. W.H. Eccles and Sir Joseph Larmor, F.R.S.) and Professor C. Stewart Gillmor, W1FK, of Wesleyan University (dealing with the contributions of Sir Edward Appleton, Nobel Laureate).

While that material was being assembled, I had occasion to speak with several amateurs who knew or had met John Reinartz: Ward Weiland, W7GEY, John Donahue, AB7M, and Jim Walsh, W7LVN. All those friends praised Reinartz highly but it wasn't until after the two articles were completed that the staff at ***Worldradio***, suggested I contact Don Johnson, W6AAQ. It was only then that I knew that John Reinartz was the first recipient of the Hiram Percy Maxim Award from the ARRL and received a full summary of his distinguished career.

In the two articles I've written, I like to think I've given an independent, contemporary appraisal of the importance of John Reinartz's contributions to radio, at least in the field of radio propagation. While those were truly significant, they were but a small part of what he did in his lifetime and you should seek out a copy of the December 1964 *QST* for a summary of his career, written after his passing on October 5, 1964. From that, you'll see that he was truly a remarkable person — John L. Reinartz, K6BJ. WR

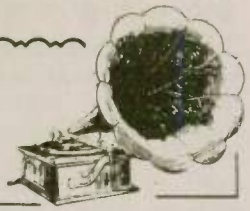


Answers for HAM-IT-UP PUZZLE from page 28

Did you find the 10-letter word?

WORLDRADIO

OLD-TIME RADIO



The back yard radio club

Al Miller, VE7KC/AA7RS

As teenagers little did we think, when the stock market crashed in 1929, that it would have a profound effect on our future. The shock waves that created the great depression meant no work, little money and lots of spare time. This situation did much to create the "Golden Days of Radio."

Being young, many of us had considerable interest in this wonder of the age, much like the kids of today with their fascination with computers. At this stage my interest was mainly in broadcast band DX. My buddies and I would stay up half the night trying to hear KDKA Pittsburg, WLW Cincinnatti WGY Schenectday, and with good conditions JOAK Japan and VK2ME Australia.

Just about this time my father built a shed in the back yard, for what purpose I don't know. Maybe a car, although we didn't own one, or maybe a workshop. In any case it didn't get to be either as it got commandeered for a club house.

Of course it had to be made usable so we found an old wood stove as a start. Next we lined the inside walls with old cardboard boxes and papered them with newspaper comics. This turned out to be a serious mistake as some of the members and visitors were distracted and spent too much time reading the walls and ceiling. We eventually improved the walls and got rid of the comics in favour of real wallpaper. One memorable occasion occurred when a member doing the ladder work stepped down and put his foot in the paste bucket. For some reason he didn't appreciate the humor of the situation.

Even up to this stage we were still not aware of Amateur Radio. The big break came by accident. Every fall the Vancouver dealers put on radio shows promoting the latest sets: Stromberg Carlsons, Atwater Kents, Marconi, Philco and a host of others. As an attraction one of these shows included an operating ham station and fortunately I just happened to attend.

One of the two operators was a young outgoing type who set out to explain what Amateur Radio was all about. Seeing he had a potential convert, I was invited to see his home station. The receiver had two tubes and the transmitter had one, both ran off the same B eliminator power supply. The antenna ran straight out of the upstairs window,through a condenser and clipped directly on to the tank coil. My new found friend also told me about the big radio club and suggested I should attend.

...we were preparing ourselves for a career in radio.

This information was relayed back to our radio club membership and immediately we had a new interest. The big radio club turned out to be a bonanza. We found a friendly licensed ham who agreed to attend our meeting and teach us the requirements for becoming a radio amateur. Learning how vacuum tubes worked, how circuits oscillated and how an antenna resonated was pretty heady stuff for us budding hams.

Beside learning the technicalities we enjoyed the social life of getting together. After a meeting we would take a collection for coffee makings and buy some day-old doughnuts. Thanksgiving, Christmas and Easter were special and somehow we found money for turkeys. The mothers did the cooking and supplied the trimmings. Probably to add a little class to these events one member started bringing his sister. It would appear that all members were not just interested in Amateur Radio. Our instructor proved this by marrying the sister.

Eventually all members wrote their exams, obtained their call signs and got a rig on the air. At this time most of us didn't realize we were preparing ourselves for a career in radio. Some became commercial operators, some radio service technicians, avonics specialists, plus other vocations in electronics and communications. One even credited Amateur Radio as being the route to his Ph.D.

The club disbanded long ago, the club house has disappeared and most of the members are now silent keys. Of course more than 60 years have passed, but for myself there are many happy memories of the old back yard radio club. WR

Richard Fisher, KI6SN

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e-mail: KI6SN@aol.com

More Field Day audio

An all-too-common complaint about QRP transceivers is their lack of audio "machismo."

Most low-power rigs are just fine when used in a quiet radio shack with a pair of good headphones. Move the operation to a noisy Field Day site, however, and you could be in for real trouble. That's no place to learn the hard way that "if you can't hear 'em, you can't work 'em."

Fortunately, there's a quick, easy and relatively inexpensive solution to the problem that can nicely double as a homebrew project for Field Day '95. The linchpin is Radio Shack's new Power Amplifier Module Kit (Catalog No. 28-4031, priced $9.99).

Used either as a bare bones, no frills in-line audio amp, or incorporated into a deluxe self-customized package with a variety of gain and power options, this one-watt amplifier will provide enough punch to override even the most boisterous Field Day clatter.

Everything for either option is available at Radio Shack, and the heart of this useful station accessory — the Power Amplifier Module — can be built by even the rank beginner in practically no time.

The module is formed around the NJM386BS differential audio amplifier IC, a nine-pin in-line chip that is soldered directly to the module's PC board.

Just two fixed resistors, a potentiometer, and five capacitors complete the circuitry, all on a board only 1½" wide and 7/8" deep. The module requires between 4 and 18 volts DC. You also provide the phono and power jacks, switches, and enclosure.

Connect the headphone jack of your QRP transceiver to the input of the amplifier module. Then plug your speaker or headphones into the module's output, and presto: ear-splitting audio.

Taking advantage of the module's two major assets — small size and broad audio flexibility — I built the amplifier into two distinctly different packages.

No frills audio

Given the amplifier's economical size, the module's PC board was fitted into a metal box just 2¼" wide, 1¼" high and 1½" inches deep. And at that, there was room inside to spare. Input, output and power jacks were added, along with an on-off switch.

The amplifier cooks along at a fixed gain of either 26 dB or 46 dB — depending upon which option you chose when building the module. A PC board-mounted potentiometer is pre-set for comfortable listening. The operator then merely adjusts the audio output level of the transceiver to vary the audio level coming from the Power Amplifier Module — no frills, just a lot of volume. And the whole thing's small enough to fit into your pocket.

The audio ratchet

A deluxe version — designed here at KI6SN, and dubbed the Audio Ratchet — takes advantage of the module's relatively wide range of options and is packaged as a snazzy station accessory.

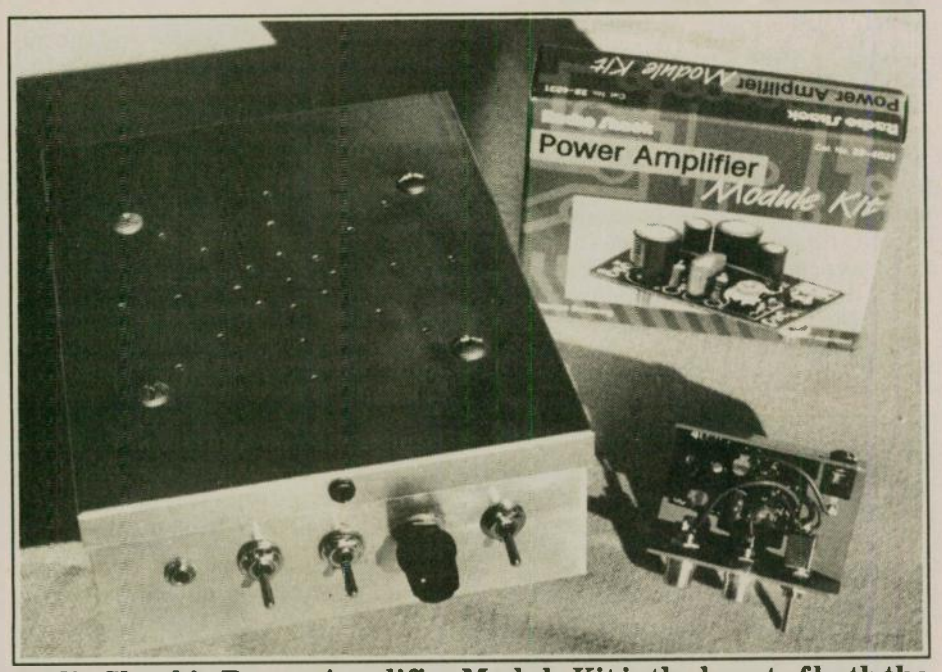
Options include:

- Switchable gain of either 26 dB or 46 dB from the front panel.
- Adjustable amplifier output using a panel-mounted potentiometer, replacing the board-mounted pot.
- Amplifier bypass with the flip of a switch — useful when the module's additional audio is not necessary or when batteries need to be conserved.
- Inboard 5" speaker (Catalog No. 40-1240) that can be switched in and out of line from the front panel.

Looking at the Ratchet's front panel, at the left is the unit's headphone jack (Catalog No. 274-249). It is "audio charged" at all times.

To the right of the jack is a double-pole/double-throw (DPDT) toggle switch which in one position simultaneously applies the audio input jack to the module, and power jack to the amplifier circuit — both mounted on the back panel. In its opposite position, the switch removes power from the module and connects the input jack directly to the speaker/headphone jack, thus bypassing the amplifier.

Next is a single pole/single throw



Radio Shack's Power Amplifier Module Kit is the heart of both the Audio Ratchet, left, and the tiny No Frills Audio unit, right.

(SPST) toggle which switches a 47 microfarad electrolytic capacitor in and out of the circuit, thereby providing the option of "ratcheting" the module's gain up or down: one position for 26 dB; the other for 46 dB.

The front panel-mounted 50K ohm potentiometer (Catalog No. 271-1716) allows the operator to smoothly, and linearly, adjust the amplifier's output through either of these gain ranges.

At the far right, a SPST toggle allows the operator to switch in (or out) the inboard 5-inch speaker.

Under an 8 ohm load, the module typically produces 1.1 watts of audio, drawing 180 milliamperes at 12 volts DC. The amplifier's idling current is just 5 milliamperes.

Radio Shack specifications show that in the 26 dB range, the amplifier produces .63 microvolts of residual noise. Switched to 46 dB, it generates 1.8 microvolts of residual noise. I've found neither to be objectionable, especially given the abundant volume you get at the flip of a few switches.

There's no reason, of course, that the Power Amplifier Module Kit can't be built directly into any audio-deficient transceiver as a permanent fixture. But for flexibility around the shack and in the field, an "outboard," general-use accessory may be the better way to go.

Designing your own version of the "Audio Ratchet" can be fun and instructive. But if you'd like to copy the KI6SN version, send a self-addressed-stamped-envelope to the address at the head of this column, and I'll be happy to send you a sketch of the layout — complete with every component's Radio Shack part number — in the next day's mail.

If you're in the market for some clean, cheap audio, and a simple and practical "Show and Tell" project for Field Day, the Radio Shack Power Amplifier Module Kit tolls for thee — loud and clear.

Italian QRP Club formed

Michele Del Pup, I3MDU, has written from Venice to announce the formation of the I QRP Club, currently sporting a roster of some 130 operators from Italy and foreign nations.

There is no fee to join the organization, but an SAE is appreciated when corresponding. For information, write to Franz Falanga, I7FFE, P.O. Box 243, 70059 Trani, Italy.

QRP hits the trail

Once again, Bil Paul, KD6JUI, is leading a contingent of QRPers by bicycle along the Pacific Crest Bicycle Trail between May 27 and June 3.

The trip from Hamburg, California, to Lake Tahoe finds 10 amateurs pedaling 50 to 60 miles a day along the route which will take them by Mount Shasta and Mount Lassen National Parks. The group will be operating on both VHF and HF frequencies QRP.

PM-3A mods, anyone?

Jim Zimmerman, KG6VI, of Lancaster, California, recently traded for a Ten-Tec Model PM-3A QRP transceiver (circa 1960s), "and would like to obtain any mods/upgrade articles for it." If you know of any, please drop him a line at: 2316 W. Dallin St., Lancaster, CA 93536-5702. WR

QUARTER CENTURY WIRELESS ASSOCIATION INC

John G. Troster, W6ISQ

Midwinter mini-meeting

What've we got here? Cover of March *CQ*, good looking guy, some super kind of shack with beaucoup rigs and beaucoup computers to match. Of course! Don Doughty, W6EEN. A timely touch, just in time to advertise his annual mid-winter QCWA bash in the sun. Don and Leo Meyerson, WØGFQ, have organized and hosted this sunny QCWA get-together at Bermuda Dunes, (Palm Springs extension) California for the past six years, much to the enthusiasm of the attendees.

This year it began Friday night with a pool-side soiree where eating, mixing and talking blended in about equal amounts. Saturday morning, QCWA President, The "New Lite" Lew McCoy, W1ICP, a real 70 pounds less after a quintuple by-pass and outstanding re-

The "new lite" Lew McCoy, W1ICP. *—photo by W6ISQ*

covery, took over the rostrum and delivered an oration on the announced topic, "Antenna efficiency." He covered the entire subject matter in the first five minutes, and then proceeded to speak about the important stuff of life, (not in any particular order) colorful ARRL Old Timers, transmatches, DXCC including HZ1AB, transmatches, the Hatfield and McCoy feud, Chicago in the Old Days, QCWA Old Timers, intricacies of by-pass surgery, his new antennas book, Granddad Arapahoe and Little Big Horn, transmatches, etc., etc. A great McCoy speech, thoroughly enjoyed. Incidentally, you can find out what Lew said about antenna efficiency in April *CQ* magazine.

Up next was Morgan McMahon, N6VY, who lectured on his hobby

Frank Lester, W4AMJ. *—photo by W5JNK*

within a hobby of collecting antique radio equipment.

One hundred seventy five QCWAers and guests were seated at the Banquet luncheon, including President Emeritus Leland (tench hut) Smith, W5KL, QCWA Genial GM BJ Walsh, W7LVN, QCWA Board Member Gary Harrison, WAØRWS, Southwestern Division Director Fried Heyn, WA6WZO, and Vice

WØGFQ, receives log book from W6ISQ. W6EEN looks on. *—photo by W7LVN*

Director Art Goddard, W6XD. Each of the foregoing were complete with spouses. Art Goddard's outstanding travelog of the Contest DXpedition to Lord Howe Island was thoroughly enjoyed, especially by this Contester/DXer scribe.

Awards followed including a Big "Thank You" citation for host, W6EEN. I had the honor of presenting Leo, WØGFQ, with a copy of the 1938 ARRL log book autographed by Tracy, WB6TMY, (we wrote about him in last month's column). The log book was accompanied by an enlarged photo of Tracy sitting in his shack with Leo's WRL Globe Chief transmitter clearly featured, ready, at the operating position. Leo was amazed and pleased. Tracy told me later that he got a phone call from Leo, a few days later. Thanks to Don and Leo, and the members of QCWA Chapter 154 for another warm and welcome QCWA midwinter, mini-convention, in the sun. See you all there next year.

Frank Lester, W4AMJ

The January issue of *Spark Gap Times*, published by the OOTC, Bert Wells, W5JNK, Editor, carried a photo and short story about Frank Lester, W4AMJ. That call rang my bell and took me back to the early 1930s when I used to spend my Saturdays traveling to Radio Row on Cortland Street in New York City. First I walked a couple of miles, then rode a streetcar four miles, then rode the West Side subway from 262nd Street for about an hour and a half to reach the radio heaven area. Most of the time I headed for Lafayette Radio and there, sitting on a low podium in the center of the floor was Frank Lester, W2AMJ, who dispensed details of what circuits to use for this or that, what to do when something didn't work, or in my case, maybe

what value grid leak to get. Frank would write down the part number from the catalog and away I would go to the counter for my resistor. Well, sometimes a condenser.

I wrote Frank asking if indeed he were that knowledgeable fellow who used to sit at the podium, and he replied that he was. Later I phoned Frank and he filled in some of the details since last I saw him more than 60 years ago. Frank is a native mid-Manhattan New Yorker. As a young fellow, he learned code with some New York Central Railroad telegraphers (not amateurs) and on his own, picked up the theory. In high school he absorbed radio theory by construction of crystal detectors and loose coupling circuits and other radios of that time. Then at age 15, he went down to the formidable, Bastille-like Custom House in lower Manhattan and took the amateur exam, receiving the call 2AMJ, later N2AMJ and finally W2AMJ.

One of his first radios was a battery operated FADA vacuum tube panel. Frank recalls it had a rheostat filament control which didn't seem to function very well until he learned he had to crank up that filament voltage. When he did, voilà! The first thing he heard was Fritz Kreisler playing a concert over KDKA. It's interesting how details of those first memories of radio success stick with us.

Frank went to work for Manhattan Electric Supply Co. as salesman for a few years. He worked Saturday afternoons for a distributor for RCA and Westinghouse. Later he worked at different Cortland Street stores before settling in at Lafayette Radio where he remained 20 years. During his tenure, he did everything: counter sales, Chief Engineer, Technical Correspondent, Sales Engineer. He lived on Broadway up near 168th Street where he managed to string a 40 Meter, Hertz antenna between two apartment houses to work DX. He reports that he "stopped traffic on Broadway due to a "blinking bulb" that he hung from a voltage fed Hertz. Frank was one of the first to operate on 20 Meters with what is now called a sloper antenna angling down to the alley behind his apartment. He also had the second crystal controlled rig in W2-land (Stanley P. McMinn was first) and worked lots of DX with it, including the Major Dyott Expedition in Brazil. He passed traffic for the DXpedition to the *New York Times* by telephone, not code, so that the *Times* could not report they had received the messages themselves over the air without giving Frank credit for the delivery.

During WWII, Frank worked for Engineering Electronic Corporation of America fulfilling government radio contracts. After the war he went with Hammarlund and later became a manufacturer's representative for that company. Frank became QCWA member #13 and was active many years in the New York area. When he retired and moved to Florida, he got the call W4AMJ, making 71 years with the same suffix. He is active on the air now, with an FT-990 which he runs barefoot most of the time, feeding a TR3 antenna; but he also has a Henry 2K-3 for the tougher pile-ups. He's also active on 2 Meters using a 7 element circular quad of his own design. Frank really ran back the clock for me and I hope this nostalgic visit with him will reset your clocks also, to think back to the pioneers of Amateur Radio and QCWA who made our hobby the great service that it is. P.S. I also saw a photo of Ole Buddy Merle Parten, K6DC, ("Dolly's Cousin") in that same OOTC *Spark Gap Times*. He's the only fella I know personally who made the front cover of *QST* twice. Maybe that's a story for later.

73 + 25 Jack, W6ISQ **WR**

To build or not to build?

Jim Kornacki, KS4DU

Amateur Radio has a lot to offer but there are many facets of the hobby that, although they appeal to me, I have yet to try. Lack of sufficient funds has always been my main reason for not trying something new but when it comes to kit building the "I'll probably just ruin it," "It will never work," and "Lets leave that to the experts" attitudes have always prevailed. Every month I find articles about building various kits which catch my attention. I'm presented with photos of neatly constructed transceivers about the size of a deck of playing cards and the author's proclamation of how "easy" the instructions were to follow, how "easily" it went together, and how "easy" it was to align. Hey, that sounds great! But wait...what does this review really mean to me? Let's face it folks, this guy's an expert at this stuff! He's been doing this for years and could probably do it in his sleep. What's "easy" for him may be like scaling Mt. Everest to me. Should I trust him and go out and purchase that bag of parts and instruction manual? What if I ruin it?

Well, I finally managed to get up the nerve to try my hand at construction, and as a consequence, to also take a stab at writing this review. I wanted to relate the experience of tackling a project from the view of the first time builder. Let me tell you what it was really like!

I decided to build the SW-30 transceiver designed by Dave Benson, NN1G, because the kit met all of my strict requirements. I wanted a 30 Meter transceiver because my main rig doesn't cover the WARC bands, it's also small (small is cool), very affordable, and had received a lot of favorable attention by several magazines. Although I had planned to purchase the kit, I went ahead and put it on my Christmas list in hopes that I'd get lucky. I found it under the tree on Christmas morning. It came in a padded envelope and when I was unwrapping it I thought it was socks. I was really surprised when I discovered what it really was. It's not every day you find a transceiver in an envelope!

I was like a kid on Christmas morning. I couldn't wait to dive in and start soldering. I politely hung around and looked interested in everybody else's gifts for a while and then, as soon as I got my chance, sneaked out to the kitchen to set up my "workbench." I gathered up a soldering pencil, solder, and a couple of tools and then spread everything out to see what I had.

The kit consists of a 16 page instruction manual, printed circuit board, and a baggie full of parts. Lots of parts. I was firmly convinced that there was no way I was going to fit all those parts on one 2.8" x 4" circuit board. Then the inner voice said "build it and the DX will come." At this point I really had to fight back the urge to start melting metal (builder's terminology) so I could spend some time looking over the manual first. I figured this would be a good idea since I didn't know where or how to start.

I don't believe Dave could have done a better job with the manual. It was very clearly written and contained enough information for me to complete the project without getting a headache. I especially liked how the parts list contained a descriptive identification of each part that may not be readily identifiable by its markings, such as indicating the color bands for each resistor and what color and how many leads a certain trimmer capacitor has. The manual also offers many helpful hints and a section on "theory of operation" as well as containing the schematic, parts layout, building, wiring, and alignment instructions, and (gulp) a troubleshooting section.

The building instructions themselves are not complicated. Step number one is to install the four IC sockets. No problem here. I did, however, learn a trick. When soldering, one has to be always on the lookout for the dreaded "solder bridge." A solder bridge is when the solder runs off the circuit you are soldering and jumps over to another circuit, thus forming an unwanted "bridge." This can easily happen when working on small crowded circuit boards such as this one. Sometimes it's hard to tell if the solder has bridged or not, and believe me, now is the time you want to start looking. Solder bridges are much easier to spot after each point is soldered rather than after all the components are installed. Anyway, the trick is to hold the board up to a strong light and look through the board. This makes them easy to spot and you should do this often. I ended up with one bridge which I quickly spotted and removed.

Step number two is to wind and install the toroidal inductors. I really wasn't looking forward to this step but it turned out to be a lot of fun. Toroids are not difficult to wind once you get in the rhythm. The manual provides detailed instructions for winding each inductor. I really had to pay attention to what I was doing though and checked each detail three times before I did anything. You have to make sure you have the correct core (easy to mix them up), the correct size wire, and the proper number of turns. This step took a while but I was really surprised at how nice they turned out. There was one thing that caused me to wind the first toroid a second time. The manual specifies a certain length of wire to be used for the winding. I cut the wire to the specified length and started to wind. I soon found out however that this is the *exact* length of wire needed and I had too much sticking off one end and not enough sticking off the other. I had to remove the wire and rewind the core in order to even out the ends. I decided not to cut the wire to length for the others. I wound the remaining cores using the whole length of wire supplied and trimmed it when I was finished. This worked well.

The rest of the instructions basically tell you to install all of the remaining parts. I spread the mountain of little

parts out in front of me and then separated them into groups of similar items which I placed in an egg carton to keep them separate. I followed the suggestion in the manual of working from one corner of the board to the other, adding one part at a time. My method was to look at the placement diagram and choose the part to be installed, find it on the parts list so I could identify it, dig through the egg carton until I found it, re-verify it against the parts list, and finally solder it in. This method was repeated 118 times before I ran out of parts to add. There were a couple of occasions when I had to go to the schematic to clear up some confusion. It's always best to double check before you start soldering. As an example, the placement diagram shows C1 (capacitor #1 from the parts list) as a trimmer capacitor in a certain location, but the capacitor in the same location on the circuit board is labeled C2. A check of the parts list indicates C2 is a ceramic disc capacitor. Not to worry. If you find the suspect part on the schematic you see that it is indeed C1. The parts list and placement diagrams are correct and the circuit board is incorrectly labeled. This was the only labeling error I found.

It took me about eight hours to complete work on the circuit board. Eight hours is twice as long as the "average building time" stated by the designer. I think I just ruined his average.

The kit doesn't contain an enclosure and the required connectors, knobs, and potentiometers, but a quick trip to Radio Shack solved that problem. All that was left was to wire it up and align it. Once again I followed the suggestion in the manual and made up some temporary jumpers out of alligator clips and short pieces of wire. The rig can be wired up using these jumpers for checkout before permanently installing everything in the enclosure. This makes troubleshooting easier in case there's a problem. There was absolutely no problem with my rig and Mike, KS4DN, and I aligned it using his HF rig, a dipole, and a manual antenna tuner. The whole alignment process, which boils down to just tweaking a few variable capacitors while transmitting and receiving, took about 30 minutes. I'll never forget the feeling of hearing my transmitted signal on Mike's receiver for the first time. I built it and it works!

On-the-air checkout was even more exciting. My first contact with a station in New York gave me a 559 and said the rig sounded "fine business." The next two contacts with stations in Maryland and Michigan also yielded 559 reports. I consider this a very respectable showing for a 1 watt transmitter under poor band conditions. No, I haven't worked any rare DX yet but I have a great feeling of pride when I tell the other station that I built this rig myself.

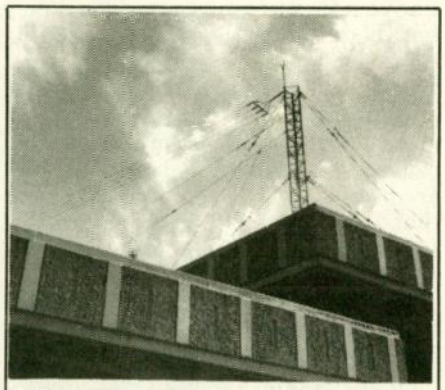
I had a lot of fun building the SW-30 and I'm having a lot of fun using it. I even learned a little more about how radios work and a lot about how they are put together in the process. I hope that my first building experience inspires others to take up the challenge and try their hands at kit building.

Information on NN1G QRP transceiver kits is available by writing:

Dave Benson, NN1G
80 E. Robbins Avenue
Newington, CT 06111 **WR**

Some thoughts...

1. There is absolutely no substitute for genuine lack of preparation.
2. Happiness is merely the remission of pain.
3. Nostalgia isn't what it used to be.
4. Everything should be made as simple as possible, but no simpler.
5. I have seen the truth and it makes no sense.—WD1V, North Coast ARC *Communicator*



AERIALS

Kurt N. Sterba

In turning the pages of *23 Skidoo* (admittedly embarking on a perilous journey) I came across some writing by, oh, let's just call him "Mr. Waterlogged."

I do quote, "We were able to obtain a minimum of one-quarter wavelength in height above ground on the 160-meter band to give us the best possible chance of a low angle of radiation."

It is when reading such statements that I'm reminded that termite flatulence is responsible for one-fifth of the world's methane, one of the gases causing global warming.

Now, just for fun's sake let's turn to that great old standby "The ARRL Antenna Book." What does it (and every other decent book) say about the radiation pattern of a horizontal dipole a quarter-wavelength above ground? Mmmmmm, uh, like, straight up.

Straight up is, for sure, a long way from "lowest possible angle."

You know, I can't shovel as fast as people are sending out, as President Harry Truman called it, the goombah.

While an antenna 123 feet high may sound impressive, on 160 Meters it would have the same angle of radiation as a dipole 16 feet above ground on 20 Meters.

A letter writer said he would rather see construction articles here than a feud with antenna manufacturers. OK, if you want them to just Pinocchio you and have no one point out the vividness of their imagination to you, you are their fair game.

There is one antenna company in particular that makes the wildest claims — and amateurs believe them. Does no one ask, "Just exactly how do they accomplish this great magic? How have they so far surpassed other manufacturers of many years standing who have highly qualified and experienced engineers?"

Before, (buoyed up by the extravagant claims) shelling out big bucks, does no one wonder if the new manufacturer has discovered element lengths that have escaped the attention of all the other engineers in amateur, industrial and military fields?

Oh, it must be their secret element spacing (that no other engineer can figure out), of course, that gives the quadruple power gain of this new antenna. Yes, all the other engineers working on the antenna ranges in buildings that don't even have nails in them just missed (over all these many years) that extra bit of tweak in element spacing that just catapulted this new antenna head and shoulders over all the others.

But yet, otherwise reasonable people dig deep into their pockets and buy the whiz-bang without ever seriously asking, "What parameter of this antenna is responsible for its decreed excellence over all others?" They don't ask it of the manufacturer. They don't ask it of themselves. Neither could give a satisfactory answer, and deep down, both know it.

This is reminiscent of the furor that once surrounded the so-called "ZL Special." Some even claimed that this two-element device would give 7 dB over a dipole. Alas, some spoil sport asked how this two-element antenna would have any more gain than any other two-element Yagi-type antenna. The silence was deafening. No one could answer for there was no answer to give. Just another case of some being caught up in the lemming-like rush to believe the impossible.

Someone whose first name is the same as the last name of a great Scottish scientist responsible for a great deal of this wireless stuff, sent in the Owner's Manual for Radio Shack's Field Strength and Standing Wave Ratio Meter.

I quote, "For example, an SWR reading of 1.5 also means that 4% of your signal power is lost. However, 96% of the transmitter power is more than enough for almost all applications." See, you don't have to go to the movies for comedy, just read this column for the laughs. The manual (which talks about Channel 15 and Channel 19 being halfway between Channel 1 and 40, etc.) tells us, regarding the length of the antenna, "A change of 1/8 inch can make a measurable difference." Oh, well.

The brilliant Jerry Wellman, WB7ULH, in discussing the controversy about tuners writes, "I've always wondered how my tuner fools the distant station into thinking my signal is better."

I've been informed that I was the subject of debate on one of those computer services. One amateur who had taken my remarks and twisted them to his satisfaction lit into me and to give his remarks the imprint of deep knowledge added OOTC to his signature. I can also add OOTC. My question is can you also add IEEE?

Said amateur opined that I owed an antenna company an apology. A rather bright sort replied saying the company owed us all an apology for promising that their antenna broke the laws of physics, to which Mr. OOTC said, "It was meant to imply that it is so good it will 'seem as if' it is breaking a few laws of physics."

Hmmm. Yep, 'seem as if'— that's really a scientific term. Opens up a whole new measurement system. "OK, Bob, your signal went up 2-1/3 'seem as ifs' on that last transmission." Possibly we could shorten it to SAI—a nice tribute to one of the better sorts. "Ralph when you turned your Yagi away from me you dropped 4-1/8 SAIs."

As a rule I do not print the names and calls of the "attaboy" letters that come in. That's to protect the writers, when they go to their club meetings, from my knuckles-on-the-ground critics. This chap is so far away that I can do it. Dan Owen, W5AHC, wrote, "Just a short note to express my appreciation to you for your entertaining and informative articles in ***Worldradio***. No, you haven't worked me (at least while I have been in Kenya) with an aluminum ladder or wheelbarrow, because the Kenyan government will not allow U.S. citizens to obtain a new amateur license."

Dan is with the Voice of America in Nairobi. Yes, when I get the friendly letters it is most always from someone engaged professionally in the field. He is with the group that has the really big bottles, big tuners and huge antennas.

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Next month we'll look at antenna modeling and an easy way for you to finally find out if your idea for a "Yaguad" makes any sense.

(Kurt has received an apology from the person who made the twisted and grave accusations. However, at this writing "Mr. Screwdriver Antenna" has not received his deserved apology. So thus the matter is not closed. BEWARE!) **WR**

hamfests June

Arizona

The NORTHWEST ARIZONA COUNCIL OF RADIO CLUBS and Amateur Radio Council of Arizona will hold hamfest 8-9 June, 8 a.m. to 5 p.m. at the Bullhead City Chamber of Commerce Grounds in Bullhead City. Features include air-conditioned exhibits, flea market, and demonstrations; food and refreshments available. Free parking and overnight RV parking (no hook-ups). For information, contact Jerry France, KDOKZ, P.O. Box 1166, Lake Havasu City, AZ 86405; 800/893-3401. Wide area talk-in on 146.76(-), local talk-in 145.17(+).

California

THE LIVERMORE ARK is sponsoring an Amateur Radio/Electronic/Computer swapmeet 4 June, 7 a.m. to 12 noon at Las Positas College. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. Talk-in on 147.045(+) PL 94.8 from the west and 145.350(-) PL 100 from the east. Contact Noel Anklam, KC6QAK, at 510/447-3857 eves. or leave message days at 510/783-2803.

Colorado

The NORTHERN COLORADO ARC will hold a superfest swapmeet 3 June, 8 a.m. to 3 p.m. at the Larimer County Fairgrounds in Loveland. Features include commercial exhibits, VE session, forums, and refreshment.s Admission is $3 and tables rent for $8 each (contact Jeanene Gage, NØYHY, 303/351-7327). For general information, contact Randy Long, WB6AVV, 303/226-1529 or Musser Moore, AAØPB, 303/221-3698. Talk-in on 144.515(-).

Connecticut

The NEWINGTON AMATEUR RADIO LEAGUE, INC., will hold a flea market, 4 June, 9 a.m. to 1 p.m. (vendors 8 a.m.) at Newington High School. Features include ARRL-W1AW open house from 10 a.m. to 3 p.m.; FCC exams, new and used equipment dealers. Admission $4 at the door. Tables $15, $20 at the door. For information, contact Fred Jarvis, N1KWJ, c/o NARL, 34 Meadow Street, Newington, CT 06111. Talk-in on 145.45(-), 146.52(s), 224.84(-), 443.05(+).

Georgia

The ALBANY ARC will hold a hamfest 16 June, 5 p.m. to 9 p.m. and 17 June, 9 a.m. to 4 p.m. at the James H. Grey Civic Center in Albany. VE session prompty at 6 p.m. on 16 June. Features include exhibits, seminars, digital conference, refreshments and free parking. Admission is $5. Swap tables $15 for both days; $25 with electricity. For information, call William A. Shipley, W4MM, at 912/439-2351, ext. 15 or fax 912/438-8224. Talk-in on 146.82(-).

Illinois

The SIX METER CLUB of Chicago will hold a hamfest, 11 June, from 6 a.m. at Santa Fe Park in Willow Springs. Features include free parking (no overnight), picnic grounds, ARRL and dealer displays, refreshments and snacks. Admission is $4 in advance, $5 at the gate. For information, contact Joseph Gutwein, WA9RIJ, 7109 Blackburn Ave., Downers Grove, IL 60516; 708/963-4922. Talk-in on 146.52(s) or K9ONA 146.97(-) , PL 107.2 Hz.

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The STARVED ROCK ARC will hold a hamfest, 4 June, from 6 a.m. at the Bureau County Fairgrounds in Princeton. Camping and outdoor flea market area is free. Advance tickets $5 with double stub before 20 May and $5 with single stub at the gate. Tables indoors are $10 for 8' .Contact Bruce Burton, KU9A, or Debbie Burton, N9DRU, 1153 Union St., Marseilles, IL 61341; 815/795-2201. Talk-in on 146.955(-).

Indiana

The TRI-STATE AMATEUR RADIO SOCIETY will hold a hamfest 4 June, from 8 a.m. (commercial vendor setup 6 a.m.; flea market setup 7 a.m.) at the Vanderburgh County 4-H Fairgrounds, Hwy 41 and Boonville-New Harmony Road, 3 miles north of Evansville, IN. Admission is $4 at the door (no advance sales); tables free, first come first served basis; VE testing. For information, contact Brian Esche, 2741 Shady Hollow Trail, Evansville, IN 47715; 812/473-5602 evenings. Talk-in on 147.15(+).

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The LAKE COUNTY ARC will hold a hamfest 18 June, from 8 a.m. (vendors 6 a.m.) at the Lake County Fairgrounds in Crown Point. Features include VE testing at 9 a.m. and refreshments. Admission is $4 and tables are $6. For information, contact John Gianotti, KF9GW, 1513 Camellia Dr., Munster, IN 46321; 219/922-1065. Talk-in on 147.00(+).

Kansas

The CENTRAL KANSAS ARC, INC. will hold a hamfest 4 June, 9 a.m. to 3 p.m. at the Bicentennial Center Heritage Hall in Salina. Features include air conditioning, vendors, flea market, door prizes, YL and non-ham activities, food and refreshments. Admission is $6 at the door. Commercial tables $10 and flea market tables $5. For information, contact Dan Cook, AAØTT, in c/o CKARC, P.O. Box 2493, Salina, KS 67401; 913/263-8540. Talk-in on 147.03(+).

Kentucky

The NORTHERN KENTUCKY ARC will hold a "Ham-O-Rama '95" 11 June, from 8 a.m. (vendors 6 a.m.) at the Erlanger Lions' Park. Features include indoor vendors and exhibit area, prizes, forums, extensive outside flea market, food and refreshments. Admission is $4 in advance, $5 at the door. Children under 13 are free. Flea market spaces $2 (tables not furnished); indoor space $15 per table (provided). For information, contact KC4FET, c/o NKARC, P.O. Box 1062, Covington, KY 41012; 606/341-1213; Fax 606/384-4002. Talk-in on 147.255(+) or 147.375(+) repeaters.

Maine

The PINE STATE ARC will hold a hamfest 17 June, 8 a.m. to 1 p.m. at the Hermon Elementary School. Features include: Food, free parking, flea market, dealers, VE exams for all classes, technical demonstrations. Admission $3 (under 12 free). For information, contact Roger W. Dole, RR #2, Box 730, Bangor, ME 04401; 207/848-3846.Talk-in on 146.94(-) or 146.52(s).

Maryland

The FREDERICK ARC will hold a hamfest on 18 June, 8 a.m. to 3 p.m. at the Volunteer Fire Company Carnival Grounds in Walkersville. For information, contact Eric Gammeter, N8AAY, 10494 Balmoral Place, New Market, MD 21774; 301/865-0865. Talk-in on 147.06(+), 448.425(-) repeaters and 146.52(s).

Michigan

The INDEPENDENT REPEATER ASSOCIATION will hold a hamfest 3 June, 8 a.m. to 3 p.m. (vendors 6 a.m.) at the

Hudsonville Fairgrounds, near Grand Rapids. Features include dealers, sellers, eyeball QSOs and VE exams. Admission is $4 in advance (before 28 May), $5 at the door, children under 12 are free; tables $8, spaces $5. Contact Tom, KA8YSM or Kathy, KB8KZH at 562 92nd Street S.E., Byron Center, MI 49315; 616/698-6627. Talk-in on 147.16(+) link repeater.

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The CHELSEA AMATEUR RADIO CLUB, INC., will hold a swap 'n shop 4 June from 8 a.m. (vendors 6 a.m.) at the Chelsea Fairgrounds. Features include flea market, special handicap parking, food. Admission $3, YLs, XYLs and kids under 12 free. Table space $10 per 8'; trunk sale $3 per space. For information, send an SASE to P.O. Box 325, Manchester, MI 48158 or call Gary Widmayer at 313/428-9398. Talk-in on 146.98 repeater.

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The MIDLAND ARC will hold a hamfest 17 June, 8 a.m. to 1 p.m. at the Midland National Guard Armory in Midland. Features include amateur electronics and equipment, VE exams and door prizes. Admission is $4, tables $10 each. For information, contact MARC Hamfest, P.O. Box 1049, Midland, MI 48641; 517/832-3053 evenings and weekends. Talk-in on 147.00(+).

New Jersey

The BERGENARA will hold a hamfest on 3 June at Fairleigh Dickinson University. Features include VE testing, technical seminars, ARRL forums, food and lots of parking. Admission is $3 with XYLs and harmonics free. Vendor spaces $10 each, $20 with power included (reservations required for power). For information, contact Jim Joyce at 201/664-6727 before 10 p.m. For VE testing, call Bob Neukomm at 201/427-3568.

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The RARITAN VALLEY RADIO CLUB, INC., will hold a hamfest 17 June, 7 a.m. to 2 p.m. at Columbia Park, near intersection of Route 529/28. Admission $5 (vendors $5 additional per space). For information, contact John Manna, WA2F 908/722-9045 or Bob Pearson, WB2CVL, 908/846-2056 before 8 p.m. Talk-in on 146.62(-) repeater or 146.52(s).

New York

The HALL OF SCIENCE ARC will hold a hamfest 11 June from 9 a.m. (vendors 7:30 a.m.) at the New York Hall of Science parking lot in Queens. Free parking, prizes, food and refreshments. Admission $5 (vendors $10 per space). For information, contact during evening only: Charles Becker, WA2JUJ at 516/694-3955 or Arnie Schiffman, WB2YXB at 718/343-0172. Talk-in on 444.20 repeater or 146.52(s).

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The LANCASTER ARC will hold a hamfest 11 June, 6 a.m. to 3 p.m. at the Darien Center Firehall. Features include exhibits, flea market and room for campers. Admission is $4 in advance, $5 at the door. Inside tables are $10, space furnished on arrival. For information, contact Luke, N2GDU, 1105 Ransom Rd., Lancaster, NY 14086; 716/683-8880. Talk-in on 147.255(+) and 443.850 (+).

North Carolina

The FORSYTH ARC will hold a hamfest and computer fair, 10 June, 8 a.m. to 3 p.m. at the Dixie Classic Fairgrounds in Winston-Salem. Indoor air conditioned dealer exhibits and flea market. Free parking, seminars, exams (must preregister). Admission $6 in advance, $7 at the door; tailgating $3. For information, send SASE to Bill Patterson, KD4RGB, Winston-Salem Hamfest, P.O. Box 11361, Winston-Salem, NC 27116, 910/723-7388 (24 hrs). Talk-in on 146.64(s).

Oregon

The SEAPAC NORTHWEST DIVISION HAM CONVENTION will be held 3 and 4 June at the Seaside Convention Center, Seaside. Features include ladies' activities, RV parking, VE testing (prereg. only), seminars and forums, ARRL guests. For general information, contact Randy Stimson, KZ7T at 503/297-1175; exhibitor information, Al Berg, WB7SIC at 503/640-5456; flea market information, Lynn Hurd, WB7UNU at 503/624-1999 or SeaPac Ham Convention, P.O. Box 219142, Portland, Oregon 97225. You may call the Seaside Chamber of Commerce and Visitors Bureau for information on accommodations at 800/444-6740. Talk-in on 147.36(-).

Pennsylvania

The BREEZESHOOTERS will hold a hamfest 4 June, 8 a.m to 4 p.m. on the Butler Farm Showgrounds just north of Butler. Parking is free; facilities are handicapped accessible; food vendors. Admission is $1 per person, under 12 free. Tailgating spaces $1 for the first space, additional spaces are extra. Vendor tables $15 per table, rented in advance. Send check for $15 per table and an SASE to Rey Whanger, W3BIS, 5530 Cove Run Road, Cheswick, PA 15024-9451. For information, contact the Breezeshooters' hotline at 412/828-3694. Talk-in on 147.36(+).

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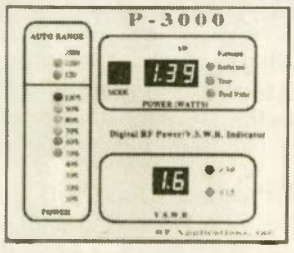
The SUSQUEHANNA VALLEY ARC and MILTON ARC will hold a hamfest 11 June, from 8 a.m. at Union Township Fire Co. Carnival Grounds in Winfield. Features include good food and tailgating. Limited covered sales area. Admission is $4 at the gate only. For information, call Dave Welker, AA3BO at 717/286-0787or write SVARC, P.O. Box 73, Hummels Wharf, PA 17831. Talk-in on 146.97(-), 147.18(+) or 146.52(s).

Wisconsin

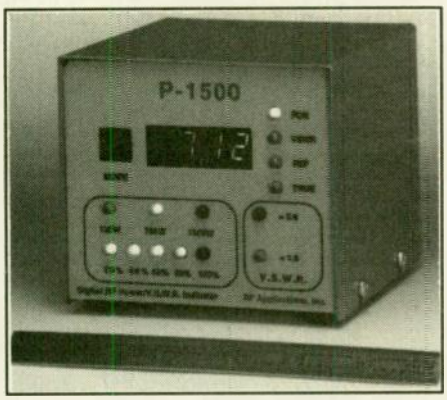
The CENTRAL WISCONSIN RADIO AMATEURS, LTD., will hold a swapfest, 11 June from 8 a.m. to 1:30 p.m. in the University Center on the University of Wisconsin-Stevens Point campus in Stevens Point. Features include well-lit, air-conditioned space with food and public facilities on-site. Parking is free and handicapped accessible. VE testing will be offered. Tables and electrical power (limited!) will be available. Groups and clubs dedicated to Amateur Radio are invited to request space for meetings, reunions, educational seminars, demonstrations. To register or receive additional information, contact: Art Wysocki, N9BCA, CWRA Swapfest Chairman, 3356 April Lane, Stevens Point, WI 54481; 715/344-2984. **WR**



Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

P-1500 Digital RF Power/ V.S.W.R. Indicator

RF Applications, Inc., announces the availability of their P-1500 Digital RF Power/V.S.W.R. Indicator, the newest addition to the company's family of digital RF power measurement equipment. The P-1500 features a four digit numeric and a bar graph style display. Forward power, V.S.W.R., reflected power, and true power



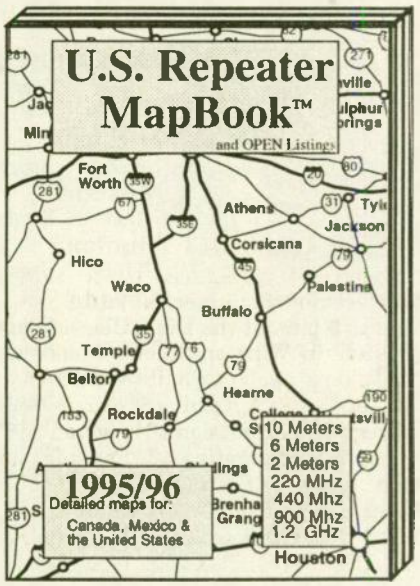
can be displayed. Using a built-in sensor, the P-1500 automatically selects from three ranges (0-120 W, 0-750 W, and 0-1500 W), so there are no range switches. Frequency coverage is 1.8 to 30 MHz. The P-1500 continuously monitors V.S.W.R., and there are indicators to signal V.S.W.R. over 3.0 and less than 1.5 (even when V.S.W.R. is not selected on the display).

The P-1500 operates on 12V DC and measures 4" wide by 3.5" high by 4" deep. The P-1500 lists for $219.95 and is available from stock (or up to four weeks if not in stock).

Our products are also now available from Henry Radio, Amateur Electric Supply and ARW. RF Applications, Inc., 9310 Little Mountain Road, Kirtland Hills, Ohio 44060. Telephone: 216/974-1961 or 800/423-7252; Fax 216-974-9506.

U.S. Repeater MapBook™

ARTSCI's "U.S. Repeater MapBook" is the perfect traveling companion for the radio enthusiast. This 5th edition has been totally redesigned to better serve the traveling amateur. New highly detailed maps enhance the presentation of the popular amateur repeaters. In an effort to show every open repeater, a detailed city by city listing accompanies every state map.



The full page state road maps show all major highways and cities in each state. The popular amateur repeaters are easily seen and used. Hundreds upon hundreds of open repeaters throughout the U.S., Canada, and Mexico are presented. New radio contacts are easy to find while on the highway, even the local roads.

New in this years edition are table listings of all the open repeaters in each state. The tables are organized alphabetically by city. The maps have been enhanced to provide greater highway detail. No other road maps will be required for trips across the state or the entire country.

The listed repeaters include 10 Meter, 2 Meter, 220 MHz, 440 MHz, 900 MHz, and 1.2 GHz coverage.

For additional information, please write: Artsci, P.O. Box 1428, Burbank, California, 91507 or call 818/843-4080.

CODEMASTER

Marshall Emm, Operations Manager for the Denver based software publisher, says "CODEMASTER V incorporates a number of new features to make learning Morse code easier and more enjoyable." Among the more significant enhancements in CODEMASTER V are the ability to modify the Morse alphabet to include foreign characters or procedural symbols, an emulated "hand key," and an arcade-style character recognition game.

More than just fun, Marshall says the game gives direct feedback on Morse recognition speed, and identifies troublesome characters.

Another interesting feature of the program is the ability to calibrate it precisely for speed accuracy on any DOS computer.

CODEMASTER allows you to learn at your own pace, and go as far as you want without any "plateau" effects. "We have a nearly perfect record, based on years of Morse training experience," adds Marshall. "To the best of my knowledge we are the only publisher of Morse software prepared to guarantee actual RESULTS. You can make practice tapes with CODEMASTER, but you do need a computer!

CODEMASTER V is priced at $24.95, with an upgrade price of $12.50 for existing users. Anyone who purchased CODEMASTER V4.5 after March 30th should contact Milestone Technologies to arrange for a free upgrade.

Credit card and COD orders can be placed by calling Milestone Technologies toll free on 800/238-8205. For further information about CODEMASTER V, Milestone LOGMASTER, or Milestone's other products, contact Marshall on 303/ 752-3382 or write to him at Milestone Technologies, 3140 S. Peoria St. Unit K-156, Aurora, CO 80014-3155. WR

VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing those VE exams, times and locations which are sent to us.

Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

p/r = pre-register

Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams."

List the location, any information examinees should have (advance registration, etc.) and the name and telephone number (include area code) of a person to contact for further information.

w/i = walk-in

Date	City	Contact	Notes
Alabama			
7/8/95	Gadsden	Gene, KC4TFF 205/492-8194	w/i OK
Arizona			
7/8/95	Tucson	Joe, K7OPX 602/886-7217	w/i only
7/15/95	Tucson	Micki, AA7RR 602/883-8305	p/r req
Arkansas			
7/15/95	Mt. Home	Gerald, WM5W 501/430-5123	p/r req
7/15/95	Siloam Sprgs	Ward, WA5NRT 918/326-4631	w/i OK
California			
7/23/95	Berkeley	Gary, N6YBD 408/255-9000	p/r req.
7/8/95	Carlsbad	Rusty, AA6OM 619/747-5872	p/r pref
7/22/95	Chula Vista	Jim, KK6KZ 619/428-8418	p/r pref
7/27/95	Colton	Harold, AB6RN 909/825-7136 days 909/685-6073 eves	w/i OK
7/29/95	Culver City	Scott, K6PYP 310/459-0337 or Dave, N3BKV 818/559-2572	w/i pref
7/22/95	Escondido	Tom, N6CLO 619/745-7850	p/r only
7/29/95	Fairfield	Dick, AB6EY 916/791-0268	w/i pref
7/8/95	Fontana	Ken, KE6GRY 909/685-7694	
7/20/95	Fountain Vlly	Cam, KI6WK 714/846-6984	p/r only
7/9/95	Hanford	Carleton, AA6GZ 209/924-4221	w/i only
7/27/95	Long Beach	W6LRF, 714/847-6370 or N6LUH, 310/596-1023	w/i OK
7/8/95	Orange	Rick, AA6NA 310/598-0086	p/r pref.
7/29/95	Pomona	Don, WA6HNC 909/949-0059	p/r pref
7/15/95	Redwood City	Joe, KB6OWG 145.23(-) PL=100Hz	w/i OK
7/5/95	Sacramento	Jim, AB6OP 916/393-8839 or Earl, AB6CN 916/331-1115	p/r pref; w/i OK
7/15/95	San Diego	Jeff, AB6NE 619/295-5852	
7/8/95	San Pedro	N6DYZ 310/325-2965	p/r pref; w/i OK
7/8/95	Santa Rosa	Claude, 707/627-8593	p/r
7/1/95	Santee	Knick, K6SK 619/466-8219	p/r pref
7/15/95	Stockton	Mark, W6DKI 209/465-7496	w/i
7/8/95	Sunnyvale	408/255-9000 24-hr.	w/i only
Colorado			
	All Colorado exams 24-hr recording 303/360-7293		
7/8/95	Denver	Glenn, WØ1JR 303/366-9689	w/i OK
7/8/95	Ft. Collins	Trent, 303/484-8315	w/i OK
7/1/95	Littleton	David Avery 303/795-5718	w/i OK
7/22/95	Longmont	Randy Abbott 303/651-1075	w/i OK
Connecticut			
7/26/95	Shelton	Lee, WA1TSW 203/735-9476	w/i OK
Florida			
7/15/95	Melbourne	WB9IVR 407/724-6183	w/i OK
7/20/95	Vero Beach	Roger, KC4NHB 407/567-3979	w/i OK
Georgia			
7/8/95	Agusta	Ed, KM4QQ 706/798-1918	w/i OK
Idaho			
7/8/95	Boise	Lem, W7JMH 208/343-9153	w/i OK
7/26/95	Grangeville	Steve, KD7EV 208/628-3452	w/i OK
Illinois			
7/15/95	Bolingbrook	Bob, WR9M 708/739-6015	w/i OK
7/8/95	Oak Forest	David, NF9N 708/448-0580	w/i OK
7/15/95	Loves Park	Dennis, W9SS 815/877-6768	p/r; w/i
7/30/95	Westmont	Don, N9IZU 708/964-6712	w/i OK
Indiana			
7/19/95	Indianapolis	Pete, AA9HK 317/259-7610	p/r only
Iowa			
7/22/95	Mt. Pleasant	Dave, WDØENR 319/986-6164	w/i OK
Kansas			
7/6/95	Newton	KAØRCK 316/283-6042	p/r pref; w/i OK
Kentucky			
7/16/95	Lexington	Joe, K3YJL 606/225-7166	
Maine			
7/5/95	Brunswick	Steve WZ1J, 207/ 725-5155	w/i OK
Maryland			
7/25/95	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref; w/i OK
Massachusetts			
7/9/95	Gloucester	Rick, WZ1B 508/283-2278	w/i OK
7/15/95	Melrose	Scot, WB1F 617/665-7654	w/i OK
Michigan			
7/8/95	Dearborn	313/676-6248	p/r pref; w/i OK
Missouri			
7/1/95	Kimberling	NQØG 417/739-2888	w/i OK
Montana			
7/11/95	Great Falls	George, AA7GS 406/453-2360	w/i OK
Nevada			
7/15/95	Minden	George, WW7E 702/265-4278	w/i
7/8/95	Reno	Don, WS2Z 702/851-1176	w/i OK
New Jersey			
7/8/95	Cranford	24-hr hotline: 201/377-4790	w/i OK
7/12/95	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	w/i OK
7/15/95	Pennington	Don, AA2F 609/737-1723	p/r pref; w/i OK
7/15/95	Ramsey	10-70 Repeater Assn. Hotline 201/445-5172	w/i OK
7/3/95	Sayreville	Larry, N2ELW 908/754-5800 day; 908/613-8967 nite	w/i OK
New York			
7/11/95	Hicksville	Bob, W2ILP 516/499-2214	w/i
7/15/95	Long Island	Les, AA2FJ 516/364-0030	
7/2/95	Yonkers	Emily, AC2V 914/237-5589	w/i OK
North Carolina			
7/22/95	Asheville	Don, KD3KGC 704/628-2681	w/i OK
7/1/95	Vinita	Jimmie, KA5DVT 918/256-2716	w/i OK
Ohio			
7/6/95	Cincinnati	Herb, WA8PBW 513/891-7556	w/i OK
7/16/95	Van Wert	Robert, KA8IAF 419/795-5763	p/r
7/20/95	Youngstown	James, N8IRL 216/534-1394	p/r only
Oklahoma			
7/8/95	Tulsa	Wayne, AB5PQ 918/743-2517	w/i OK
Oregon			
7/8/95	Eugene	Bary, AA7LE 503/343-8811 day; 503/343-8811 eves	p/r
7/19/95	Florence	Hal, N7NNA 503/2323 or Bob, KG7VA 503/997-1222	p/r pref
7/12/95	Roseburg	Dick, AA7GC 503/672-7564	w/i OK
Pennsylvania			
7/1/95	Erie	Norma, W3CG 814/665-9124	w/i OK
7/7/95	Nazareth	Robin, WA3T 610/820-9110	w/i
7/15/95	Stockdale	Lou, KA3FLU 412/938-8125	p/r only
Rhode Island			
7/13/95	Providence	Judy, KC1RI 401/231-9156 or Al, NN1W 401/454-6848	w/i OK
7/17/95	E. Providence	Bob, AA1CT 401/438-0935	w/i OK
Texas			
7/22/95	Austin	Jim, AB5EK 512/327-6184	w/i OK
7/8/95	Dallas	Larry, WR3J 214/350-5803	w/i OK
7/27/95	Garland	Bill, K8DNE 214/272-4499	w/i OK
7/11/95	Houston	Harold, ND5F 713/464-9044	p/r pref; w/i OK
7/15/95	Lubbock	Gerry, WB5R 806/765-5526 or Doug, W5JUV 806/745-1504	
7/8/95	San Benito	Fred, WA2VJL 210/399-0806	w/i OK
Virginia			
7/29/95	Gloucester	Fran, KS4FO 804/693-2117	w/i OK

THE MART

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The MART (cont.)

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Worldradio runs help wanted or jobs wanted ads free of charge for two months. Positions must relate to Amateur Radio technology.

Call the doctor!

Jim Maxwell, W6CF

Call the doctor? But the nearest is 10,000 miles away!

This is a true story, published in several places, including the classic book Calling *CQ*, by W1CBD, Clinton B. DeSoto.

During the 1920-30s, Clyde De Vinna, K7UT, was a well known and respected cinematographer. Among the classics he filmed: *The Good Earth*, *20-Mule Team*, and *White Shadows of the South Seas*. Some are still shown on late-night TV.

For many years De Vinna carried ham gear with him where ever he went. In those days, third party regulations were much looser, and his rig not only provided him with off-duty pleasure, but also furnished the film crew with much-needed communications when they were filming in remote areas.

In the mid-1930s, De Vinna was in Alaska, filming *Eskimo*. He began working a New Zealand ham named McLaughlin, a lighthouse keeper who hammed to get through his boredom. They worked each other daily, perhaps feeling a kinship because of the extreme isolation they each were experiencing.

Disaster

One fateful evening De Vinna entered his shack, an 8 x 10' shed sealed airtight to hold at bay the bitter cold of the Alaskan nights. He turned the gas stove full on and sat down at the operating position for his schedule with McLaughlin. Signals were good, and they began their nightly CW rag chew.

Suddenly McLaughlin detected changes in De Vinna's sending. Dots and dashes became muddled, missed, out of rhythm. They stopped and then started again, fitfully, then became one continuous dash. It was obvious De Vinna was in trouble.

What to do? What could a person in New Zealand, 10,000 miles from Alaska, possibly do to help?

McLaughlin tuned frantically for another Alaskan station. None. Suddenly he ran across a Hawaiian station, K6EWQ, Atlas Adams, who'd also worked De Vinna. Could K6EWQ relay?

Assistance

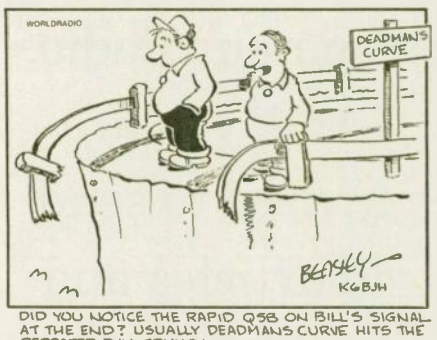
Sure! K6EWQ called "CQ Alaska," and got an answer! The ham in Alaska instantly telephoned a telegram to the police at Teler, the town nearest De Vinna's shack. Ten minutes later the Teller police were knocking at De Vinna's door, with a doctor in tow.

De Vinna was slumped over his operating table, unconscious. Carbon monoxide poisoning. The doctor took over, worked on De Vinna for a few minutes, finally announced he'd make it. Another ten minutes, though, and it would have been all over.

Total time from De Vinna's problem 'til the doctor arrived? Thirty minutes. Total distance the message for help traveled? About 20,000 miles.

Ain't radio wunnerful?!

—*Downlink*, San Lorengo Valley R.C.



DID YOU NOTICE THE RAPID QSB ON BILL'S SIGNAL AT THE END? USUALLY DEADMANS CURVE HITS THE REPEATER FULL CRUNCH

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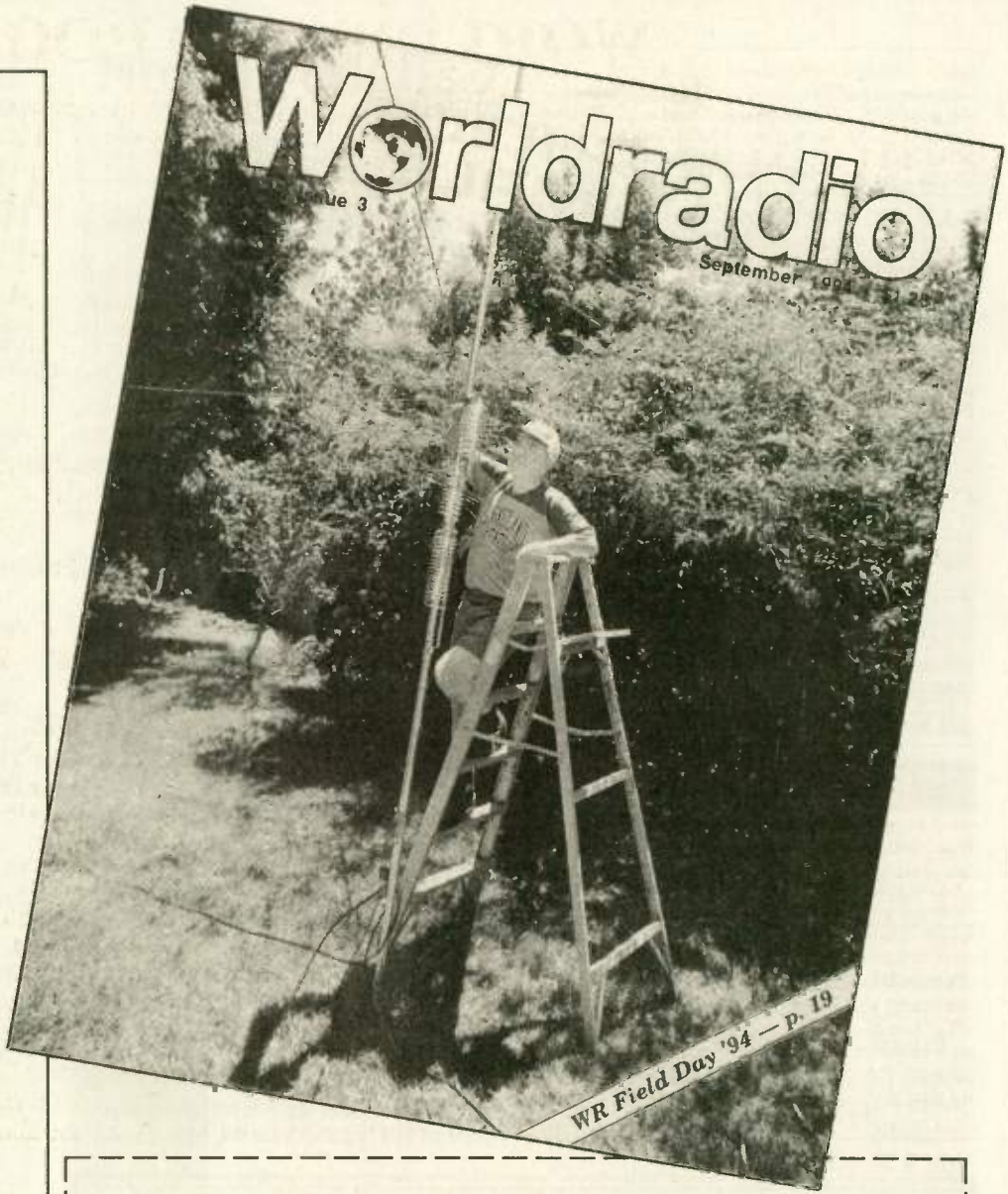

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Hall of Fame inductees

CQ Magazine has announced its 1995 inductees into its Contest and DX Halls of Fame.

The sole new member of the CQ DX Hall of Fame is Carl Henson, WB4ZNH. New members of the CQ Contest Hall of Fame will include Ken Wolff, K1EA; Dick Norton, N6AA; Jim Neiger, N6TJ; and Tine Brajnik, S52AA.

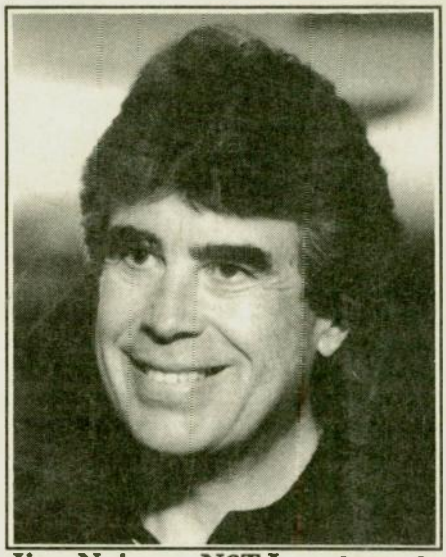
Dick Norton, N6AA

Carl Henson 52, of Fairburn, Georgia, conducted a number of DX-peditions to rare countries in the 1980s, mostly in Africa. His wife Martha, WN4FVU, accompanied him on most of these operations. He was nominated by the Southeastern DX Club, based in Atlanta.

Ken Wolff is 46 and wrote the "CT" contest operating software. He continues to update and distribute it to amateurs around the world. He lives in Harvard, Massachusetts and was nominated by the Yankee Clipper Contest Club.

Dick Norton, N6AA, is 53 and lives in Topanga, California. He was recognized for his long-time contest activity from 9Y4VT, as well as his participation on the CQ Contest committee. He was nominated by the Southern California Contest Club.

Jim Neiger, N6TJ, is well known for his contest operations for many years from Ascension Island, as ZD8Z. He is 56 and lives in Orange, California. He was nominated by the Northern California Contest Club.



Jim Neiger, N6TJ —***photos by N6WR***

Tine Brajnik, 46, lives in Slovenia and is well-known for his contest operations earlier as YU3EY and YT3AA. He also is an organizer of the S50A contest station. He was nominated by the Slovenia Contest Club.

Remember, Field Day '95 is June 24-25 — Be there!

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