Worldradio

Year 22, Issue 4 October 1992 • $1.25

FEATURES


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Dick Rutan, on Voyager
Scout Jamboree-on-the-air

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•Aerials •Amateur Hi •Amsat-Oscar schedule •Amateur Radio Callsigns •Awards •Computers & Basic Stuff •Construction •Contests •Continuous Wave •Digital Bus •DX Prediction •DX World •FCC Highlights •Hamfests •Mobile •New Products •Off the Air •Old Time Radio •Product review •Propagation •Public Service •Publisher's Microphone •QCWA •QRP •Search & Rescue •Special Events •Station Appearance •VE Exams •Visit Your Local Radio Club •Visit Your Local Radio Store •With the Handi-Hams •YLs on the Air

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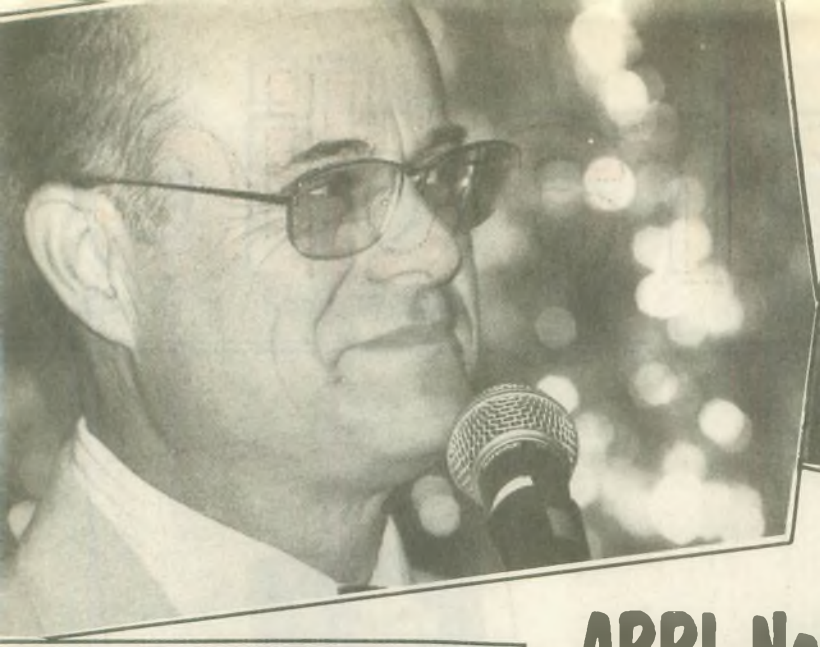

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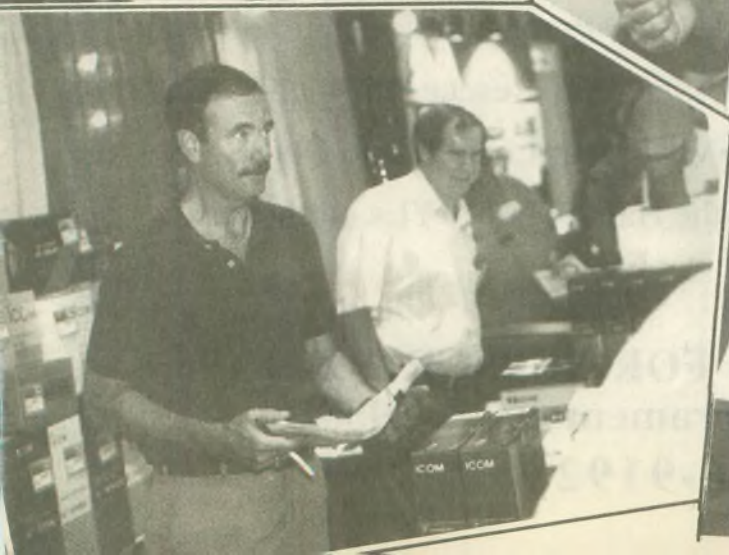

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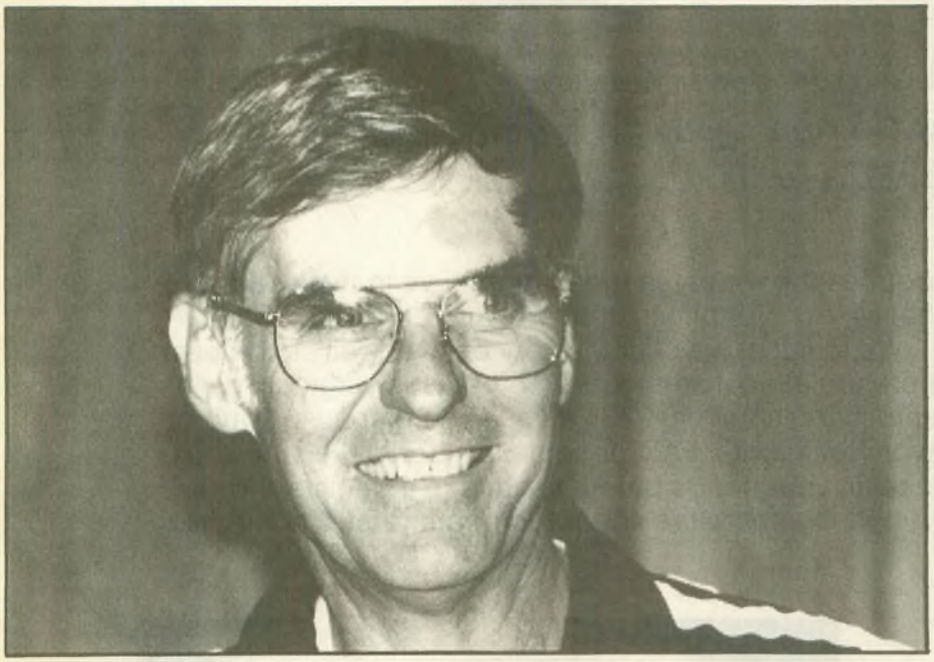

Dick Rutan, on *Voyager*

LOU ANN KEOGH, KB6HP

Dick Rutan, KB6LQS, was the banquet speaker at the ARRL's National Convention which was held in Los Angeles August 21 through 23, 1992. A highly decorated retired Air Force pilot, Rutan, along with partner Jeana Yeager, KB6LQR, made aviation history in 1986. The flight of *Voyager*, an airplane designed by the speaker's brother, Burt Rutan, was the world's first non-stop, unrefueled flight to circle the earth.

Rutan recounted the five years of planning and testing which led up to the flight itself. Materials which were light enough yet could hold the huge quantity of fuel needed for such a flight had to be obtained. A high-tensile carbon fiber bonded to corregated paper was used for the skin of the craft, and a complicated system for feeding the fuel while maintaining stability in flight was designed.

Edwards Air Force Base in the southern California desert was the site for the take-off on the morning of December 14, 1986. *Voyager* was constructed to be flexible in flight, with the wings literally flapping after becoming airborne.

The route of the flight was determined by two factors: maximum circumference possible, and what the weather would permit. While Amateur Radio equipment was on board in the event of an emergency, communications were primarily on HF coordinated via Vandenburg, Cape Canaveral, and even the commercial airlines over some portions of the world.

Many harrowing events occurred—thunderstorms over Africa, Typhoon Marge over the Pacific, and nearing the end of the record-breaking journey, a fuel pump failed and the engine quit. As the aircraft nosed over, gravity fed enough fuel to reprime the engine, allowing them to restart the engine, change fuel pumps, and, as Rutan said, "not get wet."

Of the many records that were made on this flight, maximum distance at 24,987 statute miles (more than double that in 1962 by a Strategic Air Command) will probably be the last of the "firsts" to be accomplished in atmospheric flight, according to Rutan.

After nine days, three minutes and 44 seconds, *Voyager* landed back at Edwards Air Force Base. Jeana Yeager and Dick Rutan had no idea that their flight had been the object of world attention—more than two hundred thousand people had gathered to see them land and welcome them home. At a special ceremony four days after their return, President Ronald Reagan awarded the *Voyager* team the Presidential Citizen's Medal of Honor. □

Scout Jamboree-on-the-air

Sponsored by the World Organization of the Scout Movement, Jamboree-on-the-Air (JOTA) is an annual scouting/Amateur Radio event. Always held during the third full weekend of October, this year's JOTA will take place October 17 and 18.

Thousands of stations around the globe participate. If propagation is right, it is common to contact 100 scouting countries during the weekend. In past JOTAs, scouts in some remote areas like Antarctica, Ascension Island, Christmas Island, Falkland Islands, and Seychelles were heard.

Many Boy Scouts of America councils and districts hold camporees to coincide with JOTA, where amateurs set up Field Day-type operations, giving campers a chance to exchange greetings with scouts everywhere.

Generally, the exchanges include typical information: name, *QTH*, scout rank, hobbies, etc. Some exchanges lead to long-lasting pen pal friendships and the exchange of photos, badges, pins, and patches. Specialized communications such as

(please turn to page 12)

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Bicycle Mobile QRP

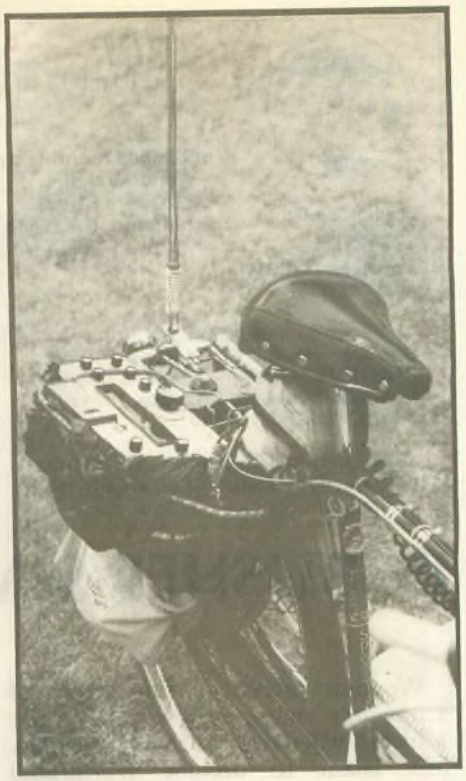
RALPH MYRA, JR., N1FJL

I recently worked WB9GIE, Elroy Shelley, Jr., bicycle mobile QRP. The contact was on June 5 from 1815 to 1830 UTC, and I found him pedaling on the 10M Maritime Mobile Net, which I have opened up to all amateurs who might be trying to work all states or counties.

The net meets weekdays on 28.380 at 1200 until 1830 UTC, providing we have good propagation. We do have short openings so I am there each day, unless I am chasing DX on other bands. June 5 was one of those days, and it's the fourth contact I have made with a bicycle mobile on this 10M net.

This goes to show our newer amateurs that you do not need a lot of power to make contacts, especially on 10M. And WB9GIE, a 38-year-old electronics technician and bicycle mobile amateur since 1974, has contacted other amateurs around the world with his VHF/FM transceiver operating on a couple D flashlight batteries. Along with 50 of the United States, Shelley has talked to hams in Europe, Asia, North and South America, Australia, Oceania and Africa. His farthest contact was about 10,000 miles to another amateur in Melbourne, Australia last summer. He makes up to eight contacts a day around the world.

A resident of Milwaukee, Shelley is an active speaker for radio club meetings throughout southeastern Wisconsin. He is also, naturally, a member of the Bicycle Mobile Hams of America. Others wishing to find out more about bicycle mobile Amateur Radio may contact the BMHA at P.O. Box 4009, Boulder, CO 80306. □



Elroy Shelly, Jr., WB9GIE, has his VHF/FM transceiver mounted on his old three-speed Huffy which he got for his twelfth birthday in 1964.

QRP from Molokai

I am an avid QRPer, call sign W6SKQ, and I will be operating from Molokai Island (Maui County) in the Hawaiian Islands from October 18 through November 1. Operating frequencies will be 80 through 10M CW and SSB, (mainly CW). I will monitor the standard QRP calling frequencies each on the hour, plus five minutes. I will not be operating WARC bands. QSL direct (45020 N. Camolin Ave., Lancaster, CA 93534) or through the bureau.

I will be using a Ten-Tec Argonaut 515 transceiver, 5W input, and a small tuner to a 135 ft. center-fed Zepp as high as possible in a coconut grove.

While I am doing my thing with Amateur Radio my wife will be doing her thing, drawing and painting, and when we are both not doing much of anything we plan on snorkeling and swimming.

Hope to hear you on the bands! —*Bob Spidell, W6SKQ* □

CONTENTS

FEATURES

COLUMNS

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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 fine group of amateurs who, unlike Olympic athletes, will never see their fame fade. The latest to become *Worldradio* Super-Boosters (lifetime subscribers) are:

James H. Grace, KA2AQV, Troy, NY
Robert L. Oakley, WK3C, Rockville, MD
John T.V. Weiss, KD3YU, Ellicott City, MD
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Wilfred F. Berg, KK9A, Elmhurst, IL
Robert C. Wardel, Jr., W9WQB, Niles, IL
Pete Towne (awaiting call), Winnemucca, NV
June L. Coha, N6GUM, Santa Cruz, CA
George W. Smith, N7TGF, Seattle, WA

Here's your invitation. RSVP. We need volunteers. You, you and you.

Wax eloquently. Articles and photographs featuring the great, interesting, amusing, useful, etc., aspects of Amateur Radio are requested for publication here. Why, one article we recently printed here earned for the author enough for dinner for four (at McDonalds).

•

The other night, while listening to a QSO, I heard one amateur ask the other for a comparison between two microphones. Mike #1 was the one that came with the rig, mike #2 was the Heil mocrophone. The difference was stunning. The improvement in clarity was truly amazing. Heil is located in Marissa, IL.

•

An editorial in another publication said that only 20 percent of Amateur Radio operators are "active." Being "active" was defined as tuning a receiver at least once every two weeks.

Logic would dictate that, if true Amateur Radio activity was so sparse, there would not be the great number of companies serving the market, the vast number of people employed at the manufacturing and retail level. People are not filling the aisles of Dayton, Atlanta, Miami, Boxboro, etc., so they can tune a receiver once every two weeks.

•

Last month, in my comparisons about prices for equipment, past and present, I used a four-percent inflation rate over the past 20 years. Material has been received here which shows that, in the past 22 years, prices have gone up 2.92 times, which would make it closer to five percent.

Other data states that from 1967 to 1990 the average rate of inflation was 6.3 percent, which would have had purchasing power of $3,000 dwindle to about $750.

Find an Amateur Radio magazine of just 10 years ago. See what the equipment cost then (with external VFO, external digital readout). Add it all up, factor in inflation, and be happy that we are getting such a good deal today.

There is also this. You can enjoy this hobby at any time of the day or night, for a long or short period of time; there are no green, court, lane, etc., fees, and no lift charges. You don't have to haul it a hundred miles to use it. I'd say that hour-for-hour, dollar-for-dollar of, call it entertainment, leisure or whatever, it's pretty hard to beat Amateur Radio.

It doesn't even cost as much as we think. For example: in 1950 you bought a Collins 75A-2 receiver (after mortgaging the house) for $440.

Six years later, the average market resale price of the 75A-2 was $350. Not factoring in the inflation, the cost was three cents a day! The companion transmitter was $575. Six years later the resale price was $425, for a cost per day of five cents.

Six years of good, high-quality equipment for eight cents a day!

•

I'll bet that we have a *Worldradio* subscriber in just about every radio club in the country. So, when discussion of your upcoming hamfest comes up at the club, stand up and say, "Send a notice to *Worldradio*." Also, remind the hamfest chairman to write to us so we may send some gifts.

•

And now a special game. The prize is a one-year extension to your subscription if you are the first amateur in your call area (USA), first VE, first of each continent, to correctly identify the three pieces of Amateur Radio equipment seen together in one shot in the film, *Patriot Games*. (No purchase necessary, contest ends in six months, sponsor (*WR*) may modify or change anything about this little game at any time.) Send your entry to Tom Clancy Dept., *Worldradio*, 2120 28th St., Sacramento, CA 95818 USA.

—*Armond, N6WR*

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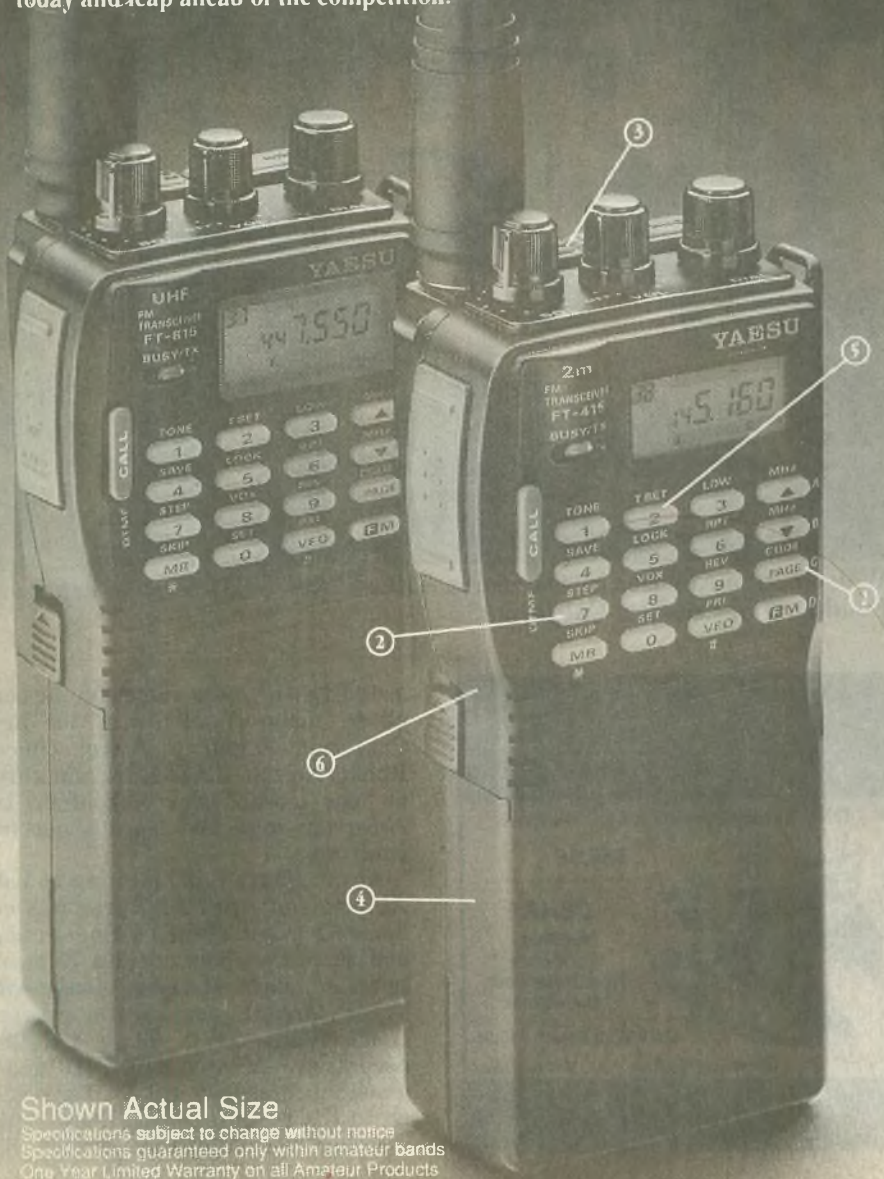
The competition is still working on a radio that's as powerful and easy to use as the FT-415/815 handhelds. But why wait? Visit your Yaesu dealer today and leap ahead of the competition.



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⑥ Rugged Case Construction

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DTMF 10 Memory Autodialer, Built-In

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Optional Accessories:

NC-42 1-Hour SMART Desk Charger

E-DC-5 DC Adapt r With Noise Filter

MMB-49 Mobile Mounting Bracket

YH-2 Headset for VOX Operation

FBA-12 AA 6-Cell Holder

Some accessories and options are standard in certain areas. Check with your Yaesu Dealer for details.

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AL SARGENT, AA6FE

High in the northern Sierra Nevadas where eagles soar, antennas are high and snow runoff splashes through the Feather River County, our Sierra Amateur Radio Club has a member who, over the years, has made scores of CW friends in Russia from the Ukraine to Siberia, especially when they could say so little. Photos, cards, maps and little gifts flow to him from these amateur operators halfway around the world. Now they can speak out and they do—by good old Morse code!

Of them all, Donald Taylor, KF7AM, of Greenville, California, selected one young operator who seemed most deserving of a helping hand to invite to America, all expenses paid. Starting two years ago, before the fall of the Soviet Union, Don worked with both the Soviet and US governments and got documental clearance. The next hurdle was the Russian Aeroflot airline and the money battle with demands going up. He finally paid.

On March 22, 1992, Don met Taras Zima, UB5LSL, at the San Francisco airport and, with the help of Eugene Williams, KG6KGP, an ex-US Moscow Embassy staffer, welcomed Taras to the hospitality of the USA and our Sierra ARC. Taras, from the city of Komsomolsky, near Kharkov, the Ukraine, is a tall, reserved, fine looking young man of 25 years, having served two of them in the Soviet army near Murmansk.

His Amateur Radio CW activity with foreign operators brought fluency with reading and writing English but, sadly, no speaking experience. But Gene Williams' interpreting has made Taras feel at ease in groups. In the few weeks he has been Don's house guest, he has made astounding speech progress.

Taras learned in Russia to become licensed to operate and to build his rig by attending a local youth club. He said that getting a license in Russia took a long time, was difficult and expensive. His rig took three years to finance, scrounge parts and assemble. It has a solid-state front end plus two final tubes. Fed by rectified 50 Hz, 220V AC, it will deliver 100W, enough to reach out to the world.

Since arriving, Taras has learned to drive a car, operate Don's Amateur Radio gear and computer, operate a chain saw, drive a garden tractor, consistently win chess games on the computer, make friends with the local California Highway Patrol Officer, Robert Nelson, KAZ6NSN, win a little at the Reno slot machine, try American food and learn about free enterprise.

At our Sierra ARC meeting at Lake Almanor on April 20, Taras was our honored guest. With a fine turnout and some members coming 70 mountainous miles, all talked freely with Taras through our able interpreter, Gene Williams. A huge UB5LSL decorated cake (by KB6EVD) and a generous monetary gift for Taras added to the evening spirit. Luckily, the meeting was enjoyably shared with

Welcomed to America by the Sierra ARC, Taras, UB5LSL, participated in Field Day in Chester, California.

another guest, Jetty Hill, W6RFF, ARRL Sacramento Valley section manager, who was quite pleased with our Ukrainian visitor project.

Don's future plans for Taras include teaching him to fly, drive a speed boat, go fishing, learn to bowl, waterski, see more of California and help him to know all the Americans and American ways he can.

Sierra ARC members know we will always have a fine friend in the Ukraine to look for on CW. And Ukrainians will learn something about America from Taras.

As Lou Ann Keogh, KB6HP, ended her Lithuanian visitor article (September, '91 issue), we do likewise: "One of our primary goals in Amateur Radio is the promotion of international good will. A better example would be hard to find." □

Taras visits Don's, KF7AM, station.

Pacificon '92

On the third anniversary of the Loma Prieta earthquake and the first anniversary of the Oakland fire storm, emergency organizations nationwide have scheduled a Simulated Emergency Test (SET) in Concord, California. Emergency personnel and Amateur Radio operators will meet at Pacificon '92, held from October 16 through 18 at the Concord Hilton Hotel. The meeting, sponsored by the Mount Diablo Amateur Radio Club, will feature over 30 technical sessions, many related to emergency preparedness and many others related to ham radio. Major distributors of amateur and emergency preparedness equipment will show their wares in the exhibit areas of the hotel.

Exhibitors will include organizations which specialize in emergency preparedness. Mobile police communication vans from Martinez, Orinda and other surrounding communities will be available for inspection. The Chevron Oil Company will establish a special event radio station at its facility across Diamond Boulevard from the hotel. A portion of the parking lot at adjacent Willows Shopping Center has been dedicated for use by those wishing to buy or sell equipment or just exchange ideas. While the parking lot will not be a flea market in the usual sense, it is sure that there will be something there for everyone.

Officials of the ARRL will attend. In the group will be the organization's president, George Wilson, W4OYI, as well as the group's legal counsel, Chris Imley and its educational chairperson, Rosalie White. Ms. White will lead a youth forum at the convention, featuring young people from all over northern California.

On Saturday night, a banquet will be held with featured speaker Gordon West, WB6NOA, a well-known educator and innovator. His presentations are both stimulating and humorous. During his talk he will demonstrate the "blazing pickle," where a common pickle is used as a source of power to operate a microwatt communication system.

Information about the convention may be obtained by calling 510/932-6125 or by calling Richard Shappee at 510/682-1644 or Pete Tormey at 820-0920. □

Novice testing added to VEC System

On July 13 the FCC adopted a Notice of Proposed Rulemaking which looks toward consolidating two existing Amateur Radio operator license testing programs.

The existence of the codeless Technician Class has had a major impact on the Novice Class. Seventy-five percent of all first-time licensees now are Technician Class. In 1990, 88 percent of all newcomers entered via the Novice level.

It is clear that ham beginners are learning and passing the code after they achieve the Technician level. Although they do not get another license, Techs who pass a telegraphy exam become "Tech Plus" for Technician plus Morse code. This allows them to operate on the Novice HF bands below 30 MHz.

In separate petitions filed with the FCC in February of this year, the ARRL and W5YI VEC both recommended to the FCC that all Novice examinations be included in the VEC system in the interest of greater efficiency. The VEC system screens all Amateur Radio Form 610 applications before submission to the FCC. The FCC keeps track of all defective applications received. The error rate in the VEC system was less than one percent. Applications submitted under the Novice program have an errorrate of 9.4 percent.

The better performance of the VEC system is primarily due to improved communications between the FCC, VEC and volunteer examiners. No such channel of communication exists in the Novice testing program. The VEC system is also perceived as a more credible testing system because all volunteer examiners must be approved by the VEC, and examination records are centrally maintained for FCC inspection if warranted. In the VEC system pass and fail records are closely monitored; there are no statistics available on Novice examination failures. (*W5YI Report*, 8/1/92)

Amateur requests tests of his HDTV system

On July 17 amateur TV experimenter Leo Zucker, K2LZ, of White Plains, New York, filed comments with the FCC asking that they order testing of his patented high definition television system. He also formed a company, Future Images Today (FIT).

While the chairman of the FCC's Advisory Committee on Advanced Television Systems acknowledged in December 1989 that Zucker's HDTV proposal was "...unique and intriguing," he added that "...no testing slots are available" and "because of the unique approach taken...the Advisory Committee...was not capable of evaluating the system even if a testing slot later became available. "

K2LZ's technology uses two separate 6 MHz NTSC standard 525-line signals transmitted *on the same frequency* to arrive at 1050-line non-compressed HDTV, while at the same time remaining compatible with existing home (NTSC) TV receivers. (*W5YI Report* 8/1/92)

VHF HT recall

ICOM America has recalled all P2AT 144 MHz and 440 MHz handy-talkie transceivers due to a problem with leaking internal lithium batteries. They will replace the battery at no charge and extend the warranty on modified radios an additional year. Call 206/454-7619 for recall instructions. (*W5YI Report* 8/1/92)

No-theory license??

A packet message is circulating concerning a petition filed proposing a no-theory amateur license. John Johnston, FCC Personal Radio Branch chief, confirmed the existence of this proposal during the VEC Conference. His view was "no code, no theory; no privileges." You can anticipate that this petition will be dismissed without a comment period. (*W5YI Report*, 8/1/92)

220-222 MHz and business radio

Whatever happened to the 220-222 MHz band that was reallocated from the Amateur Radio Service to narrowband business radio? Actually, nothing. More than a year later no licenses have been issued and no equipment has been authorizing for marketing. This does not mean that there is no interest. More than 60,000 applicants for licenses

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 August 1, 1992.

For more information about the call sign 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
0	AA0JP	KG0AB	N0TRP	KB0KPN
1	AA1DH	KD1JX	N1NGN	KB1AIU
2	AA2KN	KF2JW	N2SBN	KB2PIA
3	AA3BN	KE3EI	N3NCS	KB3AHH
4	AC4TL	KQ4DG		KD4ROY
5	AB5HJ	KJ5DJ		KB5UJV
6	AB6NC	KM6YP		KD6MJH
7	AA7QP	KI7FO		KB7PJZ
8	AA8IH	KF8WK	N8VFG	KB8OFS
9	AA9ER	KF9KU	N9QLL	KB9ICN
North Mariana Is.	AH0O	AH0AJ	KH0AW	WH0AAT
Guam	NH2B	AH2CP	KH2GJ	WH2ANA
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6MA	WH6IM	WH6CPW
Kure Is.			KH7AA	
American Samoa	AH8E	AH8AE	KH8AI	WH8ABA
Wake Wilkes Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska		AL7CK	WL7FR	WL7CGC
Virgin Is.	NP2U	KP2CA	NP2FT	WP2AHS
Puerto Rico		KP4UC		WP4LIX

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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.

are waiting for the FCC lottery that will decide who will get a license.

The Commission will award licenses based on a computerized random selection procedure, rather than choosing capsules from a raffle drum or by blown ping pong balls. The FCC has taken steps designed to prevent spectrum speculators from participating. Narrow-band business licensees must demonstrate ties to the communities in which they are to be licensed, are prohibited from selling their systems for 10 years, and must construct systems within five years.

Amateur helps identify jammer

San Francisco area amateurs instrumental in identifying one of their own as a jammer have come forward following the issuance of a $15,000 fine by the FCC. According to the FCC, from October 1990 to July 1991 their San Francisco office was contacted by at least 15 public service agencies and others, including amateurs, complaining of harmful interference. The jammer was using cross-band techniques to re-transmit amateur and commercial channels.

Although the jammer was identified (as James Winsted Jr., KK6SM, of Redwood City) and confronted in July 1991, the FCC did not reveal his identity until issuing the Notice of Apparent Liability in May 1992.

"Part of the success in finding this individual," said Phil Kane, supervisory engineer in the FCC's San Francisco office, "was the cooperation of the local amateur community, whose channels also were being jammed."

Shortly after the alleged jammer was identified S. Marti-Volkoff, engineer-in-charge at the FCC's San Francisco office, wrote the following to Chuck Vaughn, AA6G: "We would like to take this opportunity to extend our sincere appreciation for your recent assistance in locating and identifying the source of harmful interference to various police agencies in the San Francisco Bay Area. This was a difficult case because of the subject's sporadic behavior pattern and operation on numerous frequencies. The Amateur Radio community has always demonstrated a willingness to assist the Commission in achieving compliance with the extant rules and regulations. Your actions in the instant case are an excellent example of this cooperative attitude." (*ARRL letter* 7/27/92)

Spectrum requirements for the Amateur Radio Service

In last month's FCC Highlights column brief mention was made, under "HR-73" of an NTIA (National Telecommunications and Information Administration) Notice of Inquiry which includes questions on requirements of the Amateur Radio Service. We now have the complete text, which indicates that the inquiry is far-reaching and, contrary to what some may infer from the source of the inquiry, is not limited to requirements for future government use of the spectrum. In fact, we understand that the ARRL will submit comments pertaining to the Amateur Radio Service.

The NTIA NOI requests "broadly-based technical and marketplace information on spectrum requirements for different radio services and classes of users over the next 10 years." Section 6 of the NOI addresses the Amateur Radio Service and says: "Amateur Radio operators provide many non-commercial public services via radio communications, including emergency communications during natural disasters. Many of the technological advances in radio communications can be traced back to initial experimentation carried out in the Amateur Service. Currently, the Amateur Service performs an important and useful function as an adaptor of complicated and expensive technologies, often producing versions of communications systems more suitable for practical use."

"NTIA seeks comments on the future spectrum requirements for the Amateur Radio service. What factors could either increase or reduce the spectrum requirements of the service? Is the current spectrum used by amateurs adequate? What new technologies may increase the ability of the Amateur Service to share with other radio services in certain frequency bands?"

It is hoped that amateurs and amateur organizations will comment on this NOI. Criticism of the Amateur Service is increasing due in part to misconceptions, even in our own ranks, about what we are, what we do and how we do it. (See, for example, "The Fox is at our Door," by Richard Hall, W1QF, in *Westlink Report* for July 15, 1992, which compares packet radio to worldwide information networks such as INTERNET, and concludes, "Why deal with amateur (dinosaur technology) when you could be racing between geostationary satellites with 100 kilobaud or better?"

In summary, we feel that this Inquiry is important. The deadline for comments is October 1, 1992, and for reply comments, December 1.

Propagation predictions

The following article which appears in *Westlink Report* for July 31 is of general interest to those of us who operate HF.

Sunspot Cycle vs. Geomagnetic Cycle, by David Rosenthal, N6TST.

The 11-year sunspot cycle might be on its way down, but amateurs interested in the sun's effects on radio propagation can still look forward to some excitement. This is what scientists and solar forecasters predicted at a recent conference in Ottawa about the sun and its effects on the earth.

It was called the Solar-Terrestrial Predictions Workshop and it brought together representatives of not only the solar physics community but also people from the network of 11 solar-terrestrial warning centers around the world that keep constant watch on the sun's effects on the earth. One object of the conference was to compare notes and come to a consensus about what we can expect from the sun over the next several years.

One of the more interesting pieces of information that came out of the meeting was a general agreement that, although the number of sunspots is on the decline, the geomagnetic activity cycle still has some surprises in store.

Like the 11-year sunspot cycle, there's another 11-year cycle. This one is the sun's effects on the earth's magnetic field-the geomagnetic field. But this cycle lags the sunspot cycle by about a year and, in nine of the last 10 sunspot cycles, the geomagnetic activity cycle has shown a double peak.

The first geomagnetic peak comes about a year after the sunspot number peaks; it's already happened for this cycle though the jury is still out on exactly when. But the second peak comes sometime during the declining years of the sunspot cycle, and this is what the solar experts say we should expect.

What it means to DXers is more geomagnetic storms that can make already fair-to-poor propagation even worse by wiping out polar paths. But other conditions could get better, at least temporarily, like enhancements along transequatorial paths as storms begin, and 2 and 6M auroral skip openings as the storms progress.

The solar forecasters say geomagnetic activity should continue to rise for the next few years with the 1994-1995 timeframe most likely for the biggest events. But for now and the foreseeable future, any time is a good time to expect a geomagnetic storm. □

Magnetic field danger

JACK ALTHOUSE, K6NY

When I was a boy, long ago, a broadcasting station was built with transmitting towers in a Nebraska cornfield. It ran 1000W. Farmers for miles around blamed its radiation for ruining their crops.

Two years ago a family near San Diego got national publicity when they claimed that underwear hung on their clothesline, which was under 800kV power lines, developed rips and tears while drying.

One reads reports like this frequently these days. Are these reports and conjectures to be taken seriously? Is anyone looking into the possible dangers?

According to a report in *Electronic Engineering Times:*

Electromagnetic fields are not a danger to health, according to a report released by Britain's Institute of Electrical Engineers (IEE). Fears over possible health risks from exposure to EM fields have been greatly exaggerated, it said, and have little basis in fact.

The IEE spent a year studying reports of laboratory tests and medical investigations from around the world. Its report concludes that there is no evidence to demonstrate a firm link between exposure to low-frequency EM fields and damage to health.

But the report claimed that public concern has been fueled by media sensationalism and has led to unnecessary alarm and widespread "electrophobia."

The Institute of Electrical and Electronic Engineers in the United States has reached similar conclusions. In a recent report, the IEEE Committee on Man and Radiation descibed a recent book, *Currents of Death*, as sensationalistic and called for careful study into the effects of EMF exposure.

Recent claims have attempted to link cancer, suicide, miscarriage and personality change to EM fields, which are generated by overhead power cables, house wiring, electrical appliances and video display terminals.

Another view was expressed by Professional Engineer Henry A. Burger in a letter to *EET*:

I have been following the controversy about the hazards of magnetic fields. It seems that people are missing one of the biggest magnetic field sources on the planet, one that ought to be considered a hazard: the earth's magnetic field. Not only is it huge, but it also is in motion, which means that any conductor immersed in it has a current due to it.

The human body is a conductor and, therefore, if it is in motion with respect to the field, there is a current and therefore a hazard.

How much is the hazard? How much is acceptable? I have been hearing that no level of hazard is acceptable. All right, then it's imperative that we institute a worldwide speed limit of 10 mph.

Speed kills. Speed causes electric currents in the body due to the earth's magnetic field. I would not be surprised if a suitable study would show that fast people have more problems than slow people, and that the effect could be traced to the earth's magnetic field. Of course, people going east and west would be at more risk than those going north and south, and people flying on airplanes at more risk than those staying at home. I suggest the 10 mph speed limit because it is close to the natural speed of a running man, and it is illogical to attempt to reduce hazards below the natural level.

Does all this sound fantastically stupid? Well?

I have only so much time for worrying. Since I live in California, I'm going to use it worrying about smog, earthquakes, drive-by shootings, and automobile accidents. Magnetic fields will have to come later. □

Scout Jamboree

(continued from page 1)

SSTV and ATV can give some the opportunity to see the other person. This year, many will have an opportunity to talk to others via OSCAR. With the successful launching of six additional satellites in January 1990, at least one of the satellites should be in sight at all times. Other contacts will be made by way of packet, RTTY and earth-moon-earth (EME) contacts.

Look for K2BSA operating from Camp Wisdom in the Dallas, Texas, area and the other stations operating as K2BSA/0, K2BSA/1, K2BSA/2, etc., from other parts of the US. See how many you can contact. Also operating will be HB9S, the World Scout Bureau headquarters in Switzerland; TI2CIE, the World Bureau Inter-American Region headquarters in Costa Rica; and GB2GP, Gilwell, Park, England. Listen for other special call signs from many countries.

Cub Scouts, Boy Scouts, Explorers, Girl Scouts, Scouters, former Scouts and Scouters, Amatur Radio operators; in fact, anyone interested in doing a good turn for scouting and Amateur Radio can be involved in Jamboree-on-the-Air.

Operation will be from Saturday, Oct. 17 at 0510Z (DST) to Oct. 18 at 0459Z (some activity flops over from Friday to Monday to take advantage of DX time differences). Calling frequencies are: *CW*—3.590, 7.030, 14.070, 21.140, 28.190; *phone*—3.940, 7.290, 14.290, 21.360, 28.990. Please move off these calling frequencies to avoid QRM. In the US only, we will use phone on 28.350 to talk to Novices. Packet, RTTY, SSTV, and ATV will use usual frequencies. K2BSA will be operating via the OSCARS as well as the normal HF frequencies.

No reports in the form of logs are necessary. This is not a contest. Exchanges should be relaxed and relate to scouting and Amateur Radio as much as possible. Brief reports, however, are appreciated, giving scouting unit number, council, amateur calls used and heard/worked, numbers of participants, interesting incidents and exchanges, etc. Photos with captions are especially welcome for the BSA report to the World Bureau. Send them to: JOTA Coordinator, International Division, S221, Boy Scouts of America, 1325 West Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-2079, as soon as possible after the event.

Scouts, if you need help, contact an Amateur Radio operator or club. If you need assistance to find one, contact: Club Services Department, ARRL, 225 Main Street, Newington, CT 06111.

Radio amateurs, invite scouts to your shack. If you do not know any, contact your local BSA council service center for the name of a scouting unit leader in your area. Or, you or your radio club may volunteer to participate in a district or council camporee that weekend. Call "CQ JAMBOREE" or respond to such calls.

Also featured in the JOTA event will be participation of the World Federation of Great Towers, where contacts may be made with landmark towers around the world; towers confirming their participation to date include the Eiffel Tower in Paris; Euromast in Rotterdam, Netherlands; British Telecom in London; Ostankino Tower in Moscow; Centrepoint Tower in Sydney; Donauturm in Vienna, Austria; Tour Olympique, Montreal; and the Empire State Building in New York City.

The JOTA letter game, made slightly easier for this year, will also be part of the event. Five letters are distributed to different countries all over the world, in such a way that each region has the complete combination which together forms the last name of a person who is famous in the radio world. Scouts then determine the individual's first name to reach the solution.

All questions on these and other activities should be directed to the P.O. Box 152079 address noted above.

Certificate QSLs are free and are available to anyone participating in any way. They may be ordered beforehand for presentation during JOTA, or they may be awarded at scouting or Amateur Radio club meetings later. Send requests to the P.O. Box 152079 address above with a self-addressed *stamped* envelope large enough *(and with sufficient postage)* to hold the cards ordered. All orders must be received by December 31. □

I HAD TO DO THIS--- I KEPT KNOCKING THE CAMERA TRIPOD OVER

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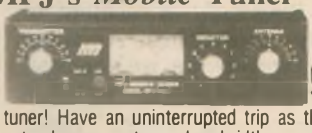

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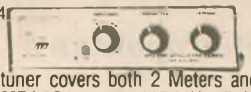

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PUBLIC SERVICE

Civil War soldiers honored

Warminster ARC president Al Folsom, KY3T, and special event chairman Doc Murein, KA3RAU, take a turn at operating from the 130-year-old Union League Building in Philadelphia.

Members of the Warminster Amateur Radio Club operated a special event station from the Union League Building in Philadelphia from 5 p.m. on Friday, March 27 through 6 p.m. March 28, making over 350 contacts with Amateur Radio operators in the United States and Canada.

"The League was created in 1862 by members of both the Republican and Democratic parties to support the policies of President Abraham Lincoln when the Civil War was not going well for the Union side. Over 10,000 soldiers were enlisted by the League and more than one million dollars was raised for the war," relates organizer Doc Morein, KA3RAU, a resident of Dresher. "By contacting Amateur Radio stations worldwide, we honor all the soldiers who fought in the Civil War, both North and South," notes Morein, who is a member of both the Union League and the Warminster Amateur Radio Club.

The Warminster Amateur Radio Club has prepared a special 8½×11 certificate commemorating the occasion for stations that contacted the special event station, operating under the club's call sign, WA3DFU. Please send an SASE to the club at P.O. Box 113, Warminster, PA 18974.

The Warminster Amateur Radio Club, which is an ARRL special service club, has over 200 members who are involved in all aspects of Amateur Radio. Members make a special effort to participate in community oriented projects by providing communications support for events that recently included the March of Dimes WalkAmerica walkathons; the Special Olympics; Clean Air Challenge Bike Trek sponsored by the American Lung Association; community road rallies, 10K and fun-runs; and weather exercise and disaster drills testing the emergency warning and notification systems for local agencies. □

Youth takes over for the early morning shift with Megan Clayton, KA3YFP, age 13, operating and 16-year-old Jason Gorodetzer N3FYS, logging the contacts.

Planning of a special event station

DICK HEADRICK, WA7QCC

It started out innocently enough, just a comment from Don Duncan, KG7JO at the September, 1990, meeting of the Academy Amateur Radio Club in Auburn, Washington. "Auburn is celebrating its Centennial next year," he said. "Maybe we should have a special event station to celebrate."

What a great idea, I thought, as I volunteered to check with the city on dates. Little did I know what I had just gotten myself into. Forty-six letters, dozens of phone calls, and nine months later, our operation was closed. Kilowatt Seven Auburn Centennial was history.

After checking the *Callbook* to see who held various "appropriate" sounding call signs, and finding that K7AC, Ken Tomita, lived in the area, he was contacted and was gracious enough to allow us the use of his call for the special event.

The next order of business was to call the city Parks and Recreation Department to find out if they would be interested in having us participate in the planned activities. After explaining a little about Amateur Radio and that we could communicate via radio all around the world, they said they would be very interested. They also asked if we could perhaps make contact with some of the other Auburns in the United States.

Of course I assured them that would be possible, and that it would also be exciting for us to have several Auburns on the air at the same time. (How could I have known that there were at least 23 Auburns in the US?) After getting a list of Auburns from the Centennial Commission, I decided to try to find radio clubs in each of them. For those cities that I couldn't find clubs, I sent letters to the section managers in the areas to help in my search. I was able to find addresses for clubs in eight of the cities and individual hams in another five.

Since we were organizing a network of Auburns, it would be a simple matter to sponsor an award for working five or more of them, so rules and announcements for the US Auburns Award were prepared and a certificate was designed.

Of course we would need displays for our station. Packet, ATV, HF, etc. were all possibilities, as well as some old magazines and equipment. (This was, after all, a centennial we were celebrating!)

More letters, phone calls and personal visits got our displays lined up with lots of help from Josie Emmons-Vine and De Nae Ryan of the city Parks and Recreation Dept., AEA, the Radio Club of Tacoma, Rent-A-Center and others.

A world map display was built with QSL cards from around the world connected to lights on the map. Videotape programs of *The New World of Amateur Radio, Amateur Radio's Newest Frontier, More Than Radios* and *Passport to Friendship*, the story of the Goodwill Games Radiosport Competition were acquired to show throughout the day.

Handouts, brochures and free message forms were ordered and prepared. At last, all the preparation was completed. Schedules were made with other Auburns, operating schedules filled out, announcements published and packet messages sent. The only thing that could slow us down was a lot of rain and major solar activity and geomagnetic storms. Of course the club mascot, Dr. Murphy, was more than happy to oblige on both counts.

Nevertheless, we were able to contact a couple of Auburns and received packet messages from others, as well as to make contact with about 100 amateurs in 26 states. Though a lot of work is involved, planning such a special event station is a lot of fun. The Academy ARC will look forward to celebrating its bi-centennial. □

Work at home

Positions: Writers/liaisons
Company: ***Worldradio, Inc.***
Description: Write detailed feature articles of Amateur Radio import; submit news articles, with photos whenever possible, on big events and amateurs' public service and disaster relief efforts; network with area amateurs and club members to compose and submit such articles individually or as group projects.
Compensation: Enough cash to cover postal costs, and a terrific feeling of participation, public service and accomplishment.
Qualifications: Not necessary to be a "writer" (we have magical editors) — just a desire to share Amateur Radio news!
Contact: Inquiries for our Writer's Guidelines should be directed to 2120 28th St., Sacramento, CA 95818.

Smooth Olympics

FRANK FUNK, N7EBT

At the request of the Northern Arizona Special Olympics committee, the Verde Valley Amateur Radio Association furnished communications for the Summer Games at Mingus Union High School in Cottonwood, Arizona, where 216 athletes and 150 coaches came from five communities: Flagstaff, Rimrock, Cottonwood, Camp Verde and Williams. Communicators from the VVARA assisting were: George Hopping, NZ7I, team leader; Glen Beeson, N7PNB; Dick Gillson, WX6E; Carl Osborn, W6RXP; and Frank Funk, N7EBT.

The operators were able to communicate via simplex, and placed their 2M radios at strategic spots around the field. In this type of racing, there must be a timer for each contestant. The operator at the starting line would notify the one at the finish line how many runners were participating and that the timers were in place. When the starting line radio was keyed, the people at the finish line were able to hear the starting gun and could begin the timing.

Some of the runners were slow in arriving or missing from the starting line, so communications between the starters and the announcer became critical. The amateurs were able to provide the necessary communications to keep things moving on schedule.

All the hand-helds worked well, and there were no battery problems, in spite of the fact that operations continued from 8:30 a.m. to 3:30 p.m. One portable rig was used which was mounted in a metal file case with power supplied by a motorcycle battery. This unit was used at the official's table to monitor the reports from the field.

These Amateur Radio operators saved the officials a lot of steps in 90-degree weather and thus kept things going, at times even ahead of schedule. Jeff Freeman, area coordinator for the Special Olympics, was impressed with the professional way the communications were handled and he assured us they will be counting on the VVARA again next year. □

Why? (public view of ham radio)

DON WISEMAN, K5CA

We read of the difficulties that some hams are having in their local areas regarding public acceptance of their hobby. Most times these items appear in terms of either housing restrictions which impinge on the hobby or lack of positive public information regarding ham radio. Some of us may have had some negative experiences with neighbors relative to our hobby; others may have at least run into general public apathy for the hobby. Most likely, however, our thoughts are fleeting and remote, and we don't come to grips with the issue. (I'm that way—I suspect you are also!)

Recently, I had an eye-opening experience that occurred in a real estate class I was attending. Although we were not into the general topic of deed restrictions, the instructor wandered into the area of property values. Would you believe her first example of items which reduce neighborhood values was Amateur Radio? From her comments, the unsightliness of a tower or beam and the "certainty" of TV and radio interference are sure to have a negative influence on the neighborhood property values. We (of course) had a discussion of this viewpoint.

Frankly, I'm afraid she represents the general public opinion, and with some basis. No matter what we say regarding the public usefulness of Amateur Radio, when it comes to the pocketbook, the public isn't im-

(please turn to page 20)

AZIMUTH ANNOUNCES

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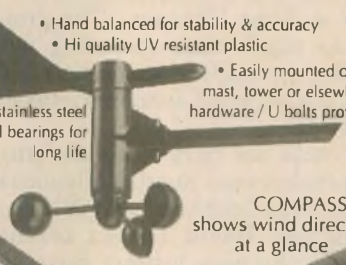

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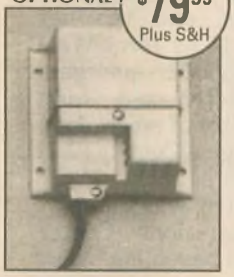

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Building good will

The Foundation for Amateur International Radio Service (FAIRS) group recently gave ARRL VEC exams in the Ukraine and Russia during the May 1992 visit of American FAIRS members. The ARRL VEs were David Larsen, KK4WW, John Douglas, N0ISL, and Victor Goncharsky, KC1VF. Victor's home call is UB5WE, Lviv, Ukraine, and he received his US call during a visit to the Dayton Hamvention in 1990.

The exams were given to eight amateurs in the Ukraine and four in Russia, and a total of six passed the exams. From Lviv, Ukraine, the following amateurs have acquired US calls: Helen Goncharsky, RB5WA/KB0KNC (first YL of the former USSR to have a US call); Igor Shevtchuk, UB5SDB/KD4QAW; Peter Choporov, UB5DH/KD4QAV; and Alex Kosolapov, U05ODC/KB0KNB (first Moldavian to have a US call). From Ulyanovsk, Russia, Valentine Kudryavtev, UA4LM/KB0KNA; and Serge Tarasov, UA4LQQ/KD4QAU.

During the visit David, KK4WW, and Ron, N4AJT, taught workshops on instrument automation and local area networking. David also worked on university exchange agreements for Virginia Polytechnic Institute and State University and several institutes in Russia and the Ukraine. The group spent as much time operating with their Ukraine and Russian licenses from Lviv, Ukraine, and Ulyanovsk, Russia, as possible.

The visits are part of an exchange agreement between Russia's Ulyanovsk Polytechnical Institute and Virginia Tech, where David Larsen teaches chemistry. Foreign visitors have the opportunity to make contacts which could lead to future exchanges and perhaps even joint research projects. Larsen, director of the FAIRS network, is working with former Soviet amateurs to expand the network within the former Soviet republics. Computers facilitate the use of RTTY, which is less affected by atmospheric conditions.

As open communication exchanges are more readily permitted, FAIRS is working to make communications means more available. Recent FAIRS visits have brought donations of computer equipment and amateur gear. Larsen considers Amateur Radio one way to provide a temporary link for reliable, informal communication while the former Soviet Union's main communication structure remains inadequate.

Both Larsen and his wife have been granted Russian and Ukranian amateur operating licenses. In an effort to continue building good will, FAIRS is also working to acquire a reciprocal licensing agreement which would give equivalent radio operating privileges to amateurs who visit each other's countries. For further information on FAIRS, contact David or Gaynell Larsen at P.O. Box 341, Floyd, VA 24091; 703/745-4023. □

Toxic Tuesday

On June 30, 1992, at about 2:30 a.m., 14 cars on the Burlington Northern Railway derailed on a bridge across the Nemadji River, 13 km south of Superior, Wisconsin. Of the three cars that fell off the bridge, plunging 20 meters to the river valley below, one fell into the river and ruptured, releasing a mixture of benzene and other chemicals into the river and the air. The other two fallen cars, containing liquid petroleum gas and butadiene gas respectively, were intact but represented a hazard. Evacuation of the immediate area began early that morning, and by 8:30 a.m. the benzene hazard caused the evacuation of Park Point (part of Duluth, Minnesota) and of downtown Duluth itself. By noon, it was estimated that nearly 50,000 area residents had been evacuated to various shelters, including several high schools, churches, and Air and National Guard Armories. By 3 p.m. the toxic threat had dissipated, and Duluth residents were allowed to return to their homes; the evacuation order for Superior was lifted by 6 p.m. for all but about 30 families in the immediate vicinity of the derailment.

Amateur Radio operators' participation in the incident began at 6:15 a.m. when Carl Zukowksi, K9ASC, emergency coordinator (EC) for Douglas County RACES was informed of the derailment. A net was called together on the Arrowhead Radio Amateur Club (ARAC) 146.34/94 repeater (W0GKP) at 6:20 a.m. to log check-ins on a standby basis, and the net became official at 10:15 as Jerry Watczak, St. Louis County (MN) emergency government director and John Reichensperger, director of emergency management for Douglas County (WI) activated the RACES net.

Emergency net control was set up at the Emergency Operations Center (EOC) in Superior and began log-ins at 10:27. Eighty-five stations from Duluth, Superior, and the surrounding area were ultimately to check in to this net, including 29 relief operators who volunteered to help if needed. Radio operators were established at EOC Duluth, evacuation centers in Duluth and Superior, and various other important locations. Mobile operators were able to visit various sites and relay traffic.

The commercial phone lines were completely tied up for most of the morning, so the Amateur Radio link was about the only way available for some of the non-official traffic to be passed. Several mobile amateur stations were able to reassure parents separated from their children of the latters' welfare. Since several facilities for the elderly had to be evacuated, medication and other health concerns for clients of these facilities needed to be coordinated. Amateur operators assisted in coordinating food deliveries, procuring of medication, locating missing family members, and providing weather information and inter-EOC communications.

There were in excess of 80 amateurs who participated in the emergency net on "toxic Tuesday" in one way or another. Here is a partial list of those who were at some of the designated sites, or who were dispatched to various areas.

In Douglas County, at the EOC: K9ASC, N9HNW, and N9JIX. At Douglas County Emergency Government Center: N9PXX. Roving the town, from Homecroft Trailer Court to Superior Senior High, Cooper School, Rothwell Student Center, and various daycare centers and private homes: N9EMQ, N9LUF, KB0BK, N9BDM, and W9IBM. Several hundred evacuees were positioned at the senior high from mid-morning until the okay-to-return call came at about 6 p.m. Food was provided by various local businesses. Other Douglas County amateurs checked in to the emergency net to volunteer services, if needed.

In St. Louis County, at the EOC: KA0BUM, KA0LAH. UHF Liaison:

WA0AFO, N9DGP. At Minnesota Power and Light: N0BNG. At Hermantown High School: W0HKD. At Duluth Air National Guard: WJ0M, WA0ZAH, WB0NMR. At the Duluth Air Terminal: AA0AW. Roving help: KD0QP. Army National Guard Armory: AA0FY, KA0BRO. Central High School: N0PSA, N0QDD. Weather station: N0DFP.

The experience of WJ0M at the Air National Guard base may have typified what amateurs at the evacuation sites did. With the help of WB0NMR and WB0ZAH, WJ0M aided in situating about 300 evacuees in one of the hangars at the base. Evacuees came from Lakeshore Lutheran Home and several facilities for the developmentally disabled and minimum care facilities. Chairs were provided; food available on the base consisted mainly of soda water and granola bars until the cooked food (from outside) arrived. Coffee and water were available as well.

Two meters provided a means of communicating messages relating to medication for the clients of the healthcare facilities, locating missing family members, and coordinating food deliveries and bus arrivals. Getting the elderly residents into their busses when the emergency was over was a major operation; the emergency ended in Duluth at 3:30 p.m., but it was not until 5:30 that the last bus left the Air National Guard to return residents to their facilities.

WJ0M expressed his opinion that perhaps the local authorities will have a better idea of the help that the amateur community can provide in an emergency situation. For a large part of the day, 2M provided the only way for certain non-critical information to be passed between various locations. The community's response to the incident is being extensively critiqued, and it seems clear that the radio amateurs, with their VHF and UHF repeaters, hand-held radios, experience, expertise and, most important, willingness to help, will be an important factor in formulating and revising emergency plans for the Duluth/Superior area.

K9ASC described the participation of the Amateur Radio community as "beyond my wildest dreams." The Duluth/Superior hams were able to be as effective in the incident as they were for several reasons. First, they had the equipment. Many area hams have 2M equipment in their cars as well as hand-held transceivers. Second, they had the practice. ARAC has been running a 2M emergency services net every Sunday evening on the W0GKP repeater for at least five

years now. Check-ins have been averaging about 50 per session lately, so most 2*M* operators in the area are familiar with net procedures. Thirdly and most importantly, amateurs have the discipline and operating skills needed to make an emergency net effective. Only a few admonitions about monologuing and addressing net control were required.

The incident caught everyone by surprise, of course. The amateur community responded well to the challenge and surprised even their ECs with their response. It would appear that hams made believers out of the emergency service professionals as well; John Reichensperger was profuse in his gratitude to the ham community. Not everything went smoothly, or as planned; but there is no doubt that, if an emergency situation should arise again, the Duluth/Superior area will be even better prepared to deal with it. The radio amateurs of the community played no small part in the response to the incident and will be a significant factor in helping deal with any future such emergency — *Information submitted by T.J. Reibold, W9IBM.* □

Lost and found—KE7KO

KEN ROUSH, N7SQU

In the May issue of ***Worldradio*** a call went out worldwide, "Where is KE7KO?" For the few who missed the May issue, this now famous call belongs to the illustrious Paul Reed of Lakeside, Arizona, the permanent net controller of the Greens Peak Repeater Net Group in eastern Arizona.

Eastern Arizona is a mountainous area and the Greens Peak Repeater, N7ENS, towers above the region on a peak rising above 10,000 feet. Many small rural communities are served by this repeater and net. This is an extremely important line of communication, especially during the cold, harsh winter months. For over a decade KE7KO (assisted by WB7ENC, Virginia, and KD5SY, Rusty) established and maintained this net and its communication services to this vast wilderness area.

Amateur Radio has a reputation of striving for professional excellence in every area of communication. This is an honorable tradition which includes the guiding and training of new operators as they bring their stations on line. KE7KO has led the way in upholding the spirit of our tradition. When a series of physical mishaps prevented Paul from continuing on the air, his procedures and patient guidance produced a group of associate net controllers. In a spirit of cooperation, these associate controllers have managed to maintain the highest traditions of this net.

Paul Reed, KE7KO, continues on the road to recovery and was able to be present at the net's annual picnic on July 18, 1992, in Show Slow, Arizona. His associates, recognizing his decade of outstanding leadership and service, presented him with a plaque that reads as follows:

This plaque is given for your years of meritorious service to the Amateur Radio Community as
THE PERMANENT NET CONTROL
of the Green Peak VHF Repeater Group which operates through the facilities of N7ENS, Show Slow, Arizona, by your Associates:
WB7ENC, KD5SY, N7CMC, W7DFW, N7WQQ, N7RDZ, K6BRD, KG6JCM, N7SQU, N7TUX
July 18, 1992
May God Grant You Many Years.

Paul Reed, KE7KO, receives plaque from John High, W7DFW. (Photo by Judy Roush, N7TUX)

Public view

(continued from page 16)

pressed! To most, amateur antennas really aren't aesthetically pleasing, and having one next door is not a positive experience for the non-ham.

Of course, just knowing there is a ham down the street invites blame for every electronic problem observed anywhere in the neighborhood. (Have you tried to explain that the interference in a neighbor's TV is coming from his water heater thermostat?) Ham radio is guilty, and proving innocence is nigh impossible. People don't want to hear the truth—their minds are already made up! Because of this general public view, Amateur Radio has a big problem. Deed restrictions and local legislation is just a piece of the issue.

While we discussed this issue in a private session during class break, the instructor's solution to the problem was that hams should remove themselves from suburban neighborhoods and find some remote spot in the country to practice their hobby, out of public view and without impact to property values! This (in the instructor's view) is the obvious solution, and why should any other be considered?

Unfortunately, most of us can't take such a drastic step and will have to continue to put up with the problems, issues, and threats from a more and more urban society. Doing what we can to keep the public aware of the positive aspects of Amateur Radio can help. Not doing irritating things like raising 150 ft. microwave towers in a residential neighborhood will surely help. Dealing with concerned neighbors in a friendly, helpful way will help.

At any rate, don't expect the problem to go away. It's here with us, and with the help of real estate professionals' opinions like my instructor's, the tendency will be in the worsening direction. —*Tidelands ARS, TX* □

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Special Events...

SETI event

The NASA Ames Research Center ARC will operate K6MF Oct. 11-12 from Moffett Field, California, to celebrate the inauguration of the NASA Search for Extraterrestrial Intelligence (SETI).

Operation will be on 7.280, 14.280, 21.380, 28.480 and 145.585 simplex from 1700Z-2400Z.

For QSL, send #10 SASE to AARC, P.O. Box 73, Moffett Field, CA 94035.

America's discovery

The Western Illinois ARC will operate W9AWE from 1400Z Oct. 10 to 2400Z Oct. 11 from Columbus, Illinois, to celebrate the quincentennary of the European discovery of America.

Operation will be in the General SSB and CW subbands, packet and 147.03 W9AWE repeater.

For certificate, send QSL and SASE to WIARC, P.O. Box 3132, Quincy, IL 62305.

Salt Festival

The Northern Kentucky ARC will operate K4CO Oct. 23-25 from Big Bone Lick State Park in Union in conjunction with the annual Salt Festival and the Commonwealth of Kentucky's Bicentennial Celebration.

Operation will be on 40, 20, 10M phone and 147.375+ repeater from 1400Z to 2100Z.

For certificate, send 4 X 9 SASE and contact number to NKARC, P.O. Box 1062, Covington, KY 41012-1062.

New World landing

Special Event station NU3D will operate Oct. 10-12 from the McGivney Point Knights of Columbus in Glen Burnie, Maryland, to commemorate the 500th anniversary of Christopher Columbus landing in the "New World."

Operation will be on 7.240, 14.240 and 21.340 MHz (even hours) and 7.040, 14.040 and 21.040 MHz (odd hours) from 1200Z-2000Z.

For certificate, send SASE to Gerald R. Gavin, NU3D, 7801 Overhill Rd., Glen Burnie, MD 21060.

Hamfest Minnesota

The SMARTS Radio Club will operate W0AA on Oct. 31 from the St. Paul Civic Center during the Hamfest Minnesota and Computer Expo.

Operation will be on the lower 25 kHz of the 20M and 40M band and in the Novice and Tech portion of the 10M bands from 7:30 a.m. to 3 p.m.

For QSL, send SASE to W0AA Hamfest Minnesota and Computer Expo, P.O. Box 5598, Hopkins, MN 55343.

Knights of Columbus

A Special Event station will be operated by the Knights of Columbus (State of Missouri) Oct. 10-11 to commemorate the quincentennial of Columbus' discovery of America.

Operation will be in the General band and 10M Novice.

For 8 1/2 X 11 certificate, send SASE (large envelope and 45 cents postage) to Henry G. Schaper Sr., 241 Tapestry Dr., St. Louis, MO 63129.

EDUCOM

The Radio Club of Junior High School 22 will operate WB2JKJ Oct. 21-23 from the school in New York City to celebrate the 12th anniversary of the club and EDUCOM, Education Thru Communication.

Operation will be on 7.238 MHz from 1200 UTC to 1330 UTC and on 21.395 until 2000 UTC.

For QSL, write to RC of JHS 22, P.O. Box 1052, New York, NY 10002; or FAX 516/674-9600.

New York Knights

The Knights of Columbus, Council 794 in Lindenhurst, New York, will operate N2MBM, N2MIG and N2FIF on Oct. 10 to commemorate the 500th anniversary of Columbus' discovery of the New World.

Operation will be on phone at 28.400, 21.400, 18.140, 142.40 and 7.240; CW at 28.040, 21.040, 18.080, 14.040 and 7.040.

For QSL, send #10 SASE to Robert E. Dobres, N2MBM, 46 Linden St., Lindenhurst, NY 11757.

Fire Prevention Week

The Suffolk County RC and Suffolk County ARES/RACES will operate W2DQ on Oct. 19 from the Farmingville, NY, Fire Department to celebrate Fire Prevention Week.

Operation will be in the General 80, 40, 20, and 15M bands and Novice 10M band.

For certificate, send QSL to Bob Ciappa, WB2NFL, 431 Blue Point Rd., Farmingville, NY 11738.

Tall Stacks Celebration

The Greater Cincinnati ARA and the OH-KY-IN ARS will sponsor the 1992 Tall Stacks Celebration of America's river steamboating era throughout the month of October.

QSL cards will feature the 17 historic steam paddle riverboats that will assemble on the Ohio River at the Port of Cincinnati from Oct. 15-18. Participating stations will identify using the call sign suffixes "Tall Stacks" or "T/S." OH-KY-IN station K8SCH will be particularly active from Oct. 15-18. Tall Stacks recalls the historic and continuing importance of river commerce to the Greater Cincinnati area and "middle America."

For further information on the times and frequencies, contact James E. Weaver, K8JE 11652 Hollingsworth Way, Forest Park, OH 45240; 513/825-8234 (home), or 513/626-243 (office).

Columbus Family Chapel

The Nittany ARC will operate W3YA Oct. 10-11 from the Columbus Family Chapel historic museum in Boalsburg, PA, in commemoration of the quincentennial of Christopher Columbus discovery.

Operation will be SSB: lower 25 kHz of the General 15, 20, 40, 80M phone bands and Novice portion of 10M; CW: lower 25 kHz of General 15, 20, 40M code bands and Novice portions of 10M and 80M. Visitors talk-in on 146.76- and 146.85- from 1500-0100 UTC Oct. 10 and 1400-2200 UTC Oct. 11.

Send QSL and SASE for QSL card, or QSL and $1 for card and flat, unfolded certificate to CC500 Committee, Nittany ARC, P.O. Box 614, State College, PA 16804-0614.

Christmas Card Parade

The M.D. Anderson Hospital Amateur Radio volunteers will operate KK5W on Oct. 1 to commemorate the ninth annual Children's Christmas Card Parade through the Texas Medical Center.

Operation will be on 7.292.9, 18.129.9, 21.392.9 and 28.392.9 from 1500Z to 2100Z.

For certificate, send QSL and 9 X 12 SASE to KK5W, M.D. Anderson Hospital, Amateur Radio Volunteers, 1515 Holcombe Blvd., Houston, TX 77030-4095.

Border Air Fiesta II

The South Texas ARS will operate N5CAF Oct. 24-25 from Brownsville, TX, to commemorate the Border Air Fiesta II.

Voice operation on HF will be on 21.330 MHz or 28.425 MHz from 1500Z to 2200Z. Contacts via a UHF remote link will be attempted with CAF pilots in flying aircraft. Listen for the CAF B-17, B-25, P-51, C-47, etc.

For a photo QSL, send SASE and QSL to Dr. David Woolweaver, K5RAV, 2210 S. 77 Sunshine Strip, Harlingen, TX 78550.

JOTA '92

Jamboree-on-the-Air, sponsored by the World Organization of the Scout Movement, will sponsor a special event station Oct. 17-18. Look for K2BSA operations from the Dallas-Fort Worth, Texas, area and the other station operating as K2BSA/0, K2BSA/1, K2BSA/2, etc., from other parts of the United States. Also operating will be HB9S, the World Scout Bureau headquarters in Switzerland; T12CIE, the World Bureau Inter-American Region headquarters in Costa Rica, and GB2GP, Gilwell Park, England.

Operations will be: CW 3.590, 7.030, 14.070, 21.140 and 28.190; phone 3.940, 7.290, 14.290, 21.360 and 28.990. Please move off these calling frequencies to avoid QRM.

For QSL and additional info, write to JOTA Coordinator, International Division, S221, Boy Scouts of America, P.O. Box 152079, Irving, TX 75015-2079.

QSL Chernobyl

Pipe dreams and cruel customs

ALERY PRISTAVKO, UC2AAA

I have been on the air since 1947 as an perator of many different club sta- ons, such as UC2KAA, UA1KAI, K5UBZ, UK2AAA and others. In all y operating I have had but one pas- ionate desire — to get a lot of QSLs! I ften imagine opening my post office ox and seeing a Niagara Falls of QSLs umble to the floor. But, alas, being an WL and club station operator, I hadn't ny chance to see this.

My dream finally became real when n 1985 I became the head of the yelorussian QSL Bureau. At that me it was still strictly forbidden to SL direct, so all our foreign mail was eceived through Central Radio Club in Moscow (the notorious Box 88) about very four to six weeks. Usually it came n several big paper bags, each contain- ng 10,000 to 15,000 QSLs. I and a few olunteers worked hard to sort all the ards and mail them to Gomel, Brest, Grodno, Mogilev, Vitebsk and to Min- sk's oblast (Minsk City and Minsk Oblast have separate local QSL bu- reaus). I enjoyed this job; I considered it my hour of triumph, as all my time was devoted to QSL handling.

Our lives were abruptly changed with the Chernobyl disaster on April 26, 1986 (see "Mission from Minsk," April '92 ***Worldradio***). As Chernobyl is lo- cated in the Ukraine, the problem was primarily a Ukrainian one. However, as the plant is only six miles from the frontier of Byelorussia and the wind directed 75 percent of the radioactive fallout onto Byelorussian land, it was very much a Byelorussian problem too.

Being a scientist in agricultural radi- ology, I felt it was my duty to be in- volved in the cleanup, so I no longer had as much time for QSLing. My place at the bureau was maintained by some- one who handled the QSLs most cau- tiously and accurately, and I managed to organize a small independent QSL Chernobyl bureau, the main goal of which was to keep some young SWLs busy and to help some of our US friends obtain QSLs from rare USSR stations. At our peak we received 120 to 150 QSLs per month and distributed them quickly across the USSR.

This situation drastically changed last year. Many letters got lost, and others were received opened, damaged, with IRCs and other compensation re- moved. We were told that the postmen had realized that the mail into the USSR very frequently contained "green stamps," and since then direct QSLing (or, for that matter, direct mailing of any letters or gift parcels) has been risky. As a result, our quantity of QSLs dropped to 12 to 15 a month.

I have, however, invented a safe way to QSL. My QSL manager is Serge, F6AML (Post Box 40, F-77120 Coulommiers, France). Serge is in contact with some people from the now Commonwealth of Independent States (CIS), who visit him from time to time. The railway from Paris to Moscow lies through Minsk, and the first package of QSLs, addressed to UC2AAA, was received here okay. Willing amateurs may use this route to reach QSL Chernobyl. Received QSLs will be mailed to any corner of the CIS immediately upon receipt. □

Madame Butterfly

If you read "A Tale of Radio Rescues—Talaria" in the April 1991 issue, you are already familiar with KA4LEG's 53 ft. salvage tug, Final Victory, *which was involved in several marine rescues during the five years KA4LEG lived on board at West Caicos. Amateur Radio communications proved vital to these successful efforts in saving lives and vessels. Here is another story of one such rescue.*

(part one of two)

SONNY IRONS, KA4LEG

Leo was a Canadian who loved to sail. He became a delivery captain so as to support himself while indulging in his most favorite hobby—boating. Somewhere along the line, Leo also became an Amateur Radio operator. Sailing and ham radio are twins.

It took many years of hard work and saving money to reach the point where Leo could have his very own sailboat constructed. He chose a 32 ft. Cheoy Lee sloop built of fiberglass in Hong Kong for his dream boat. Leo joined his boat in Hong Kong and, at launching, christened her *Madame Butterfly*. During the outfitting of his new vessel, Leo ran short of money so that when it came to purchasing radios, a ham radio was all the budget would allow. No VHF marine radio, certainly not an over-priced marine single sideband, not even a CB radio found its way aboard *Madame Butterfly*.

The plan was to sail around the world from Hong Kong back to Fort Lauderdale, Florida, where Leo was always able to find work delivering various vessels for their owners. I have no idea what kind of a voyage Leo and his sailboat experienced between Hong Kong and Haiti because he never told me. What I do know about *Madame Butterfly*'s voyage on her final leg, I saw with my own eyes.

It was during one of our monthly trips to Cap Haitien, Haiti, with my family onboard our rescue tug, *Final Victory*, that my eyes first fell on her. My, she was a salty looking little sailboat. Pretty, in a sturdy kind of way. Her hull was that beautiful deep, dark green color I have always loved.

Some people are easy to meet and talk with. Leo was just that kind of person. Before I thought about it, Leo and his sailing companion (he had joined Leo in Puerto Rico) were aboard our boat getting acquainted with our family. Leo told us that, being now so close to home base, he planned to make a more leisurely voyage the rest of the way.

My wife, Judy, and I told Leo and his friend about our home on West Caicos. Our deserted island was only 124 nautical miles north of Cap Haitien. Leo was unfamiliar with this area, known as the Turks and Caicos Islands. After we told them about the harbor we were constructing, the star-shaped house we had built and some of the natural features on the island, Leo indicated that he would visit us there someday. We thoroughly enjoyed our visit with Leo and his friend. The next few days in Cap Haitien left no time for visiting fellow voyagers as we loaded our boat with a cargo of mangoes, avocados, plantains, eddoes and a deck-load of purple sugar cane. Fresh fruit was a delicacy back on the inhabited islands that comprised the Turks and Caicos and was our main source of funds to support our development on West Caicos.

Heavily laden, we eased out of Cap Haitien Harbor one afternoon and waved goodbye to Leo and the *Madame Butterfly*. Arriving in the Turks and Caicos the next morning, we began selling our cargo of fruit, first at Grand Turk and then westward to South Caicos, and finally Providenciales, where we emptied *Final Victory*'s hold.

It was early on the morning after completing our fruit trip that I noticed the Providenciales police Land Rover down at the Sapodilla Bay beach. They were waving at us, trying to get our attention. Jumping into our dory, I made the half-mile row to shore against a stiff tradewind. Sgt. Alco Williams informed me of a shipwreck in progress somewhere near West Caicos. West Caicos was 12 miles from our present anchorage and just over the horizon. The sergeant explained that a ham radio operator, VP5EE, in Grand Turk had picked up a weak distress message. The best that he could make out was that a sailing vessel had hit a reef, and 25 people were drowning.

Now, at this time our tug was very well equipped for communications. We had two marine single sideband radios, three marine VHF radios, one CB radio (with linear), one aircraft radio, and even one old 2mc 150W AM marine radio. With the exception of the old Carib 150-B AM radio, all of our radios were of the latest synthesized and most powerful type. Since moving to the Turks and Caicos Islands, we maintained a 24-hour watch on all distress frequencies and became the communications station on the west side of the country. Apparently, we were still short a radio, because we had no ham radio onboard; I had heard absolutely nothing on our radios concerning a shipwreck during the morning or the previous night. That was what I told the sergeant. Sgt. Williams was insistent that his information was correct. He seemed appeased when I told him that we were headed back home to West Caicos anyway and would check it out.

Returning to *Final Victory*'s wheelhouse, I started our main generator and switched on the search radar. The 10 ft. scanner gave excellent resolution, even to the point of showing breaking reefs. It had proven to be a most valuable piece of navigation gear. Once the three-minute delay clicked and the transmitter turned on, I buried my face into the viewing hood. There was West Caicos. I could see the harbor entrance we had recently carved out of the rock with our D-9 bulldozer. Even the reef sections between the north end of West Caicos and the west end of Providenciales showed clearly on the screen. As my attention turned to the southeast of West Caicos, I made out the familiar shape of Molasses Reef. That particular reef had installed an unnatural fear in my mind. There was a certain foreboding about it that I could feel but not explain. In the center of the reef, I noticed a bright return on the radar screen. Every swing of the scanner repeated the new addition to that reef.

Alerting my wife, two sons and Scott, our engineer, we made hasty preparations to get underway. A slight shudder told me that the main engine had been started from the engineroom,

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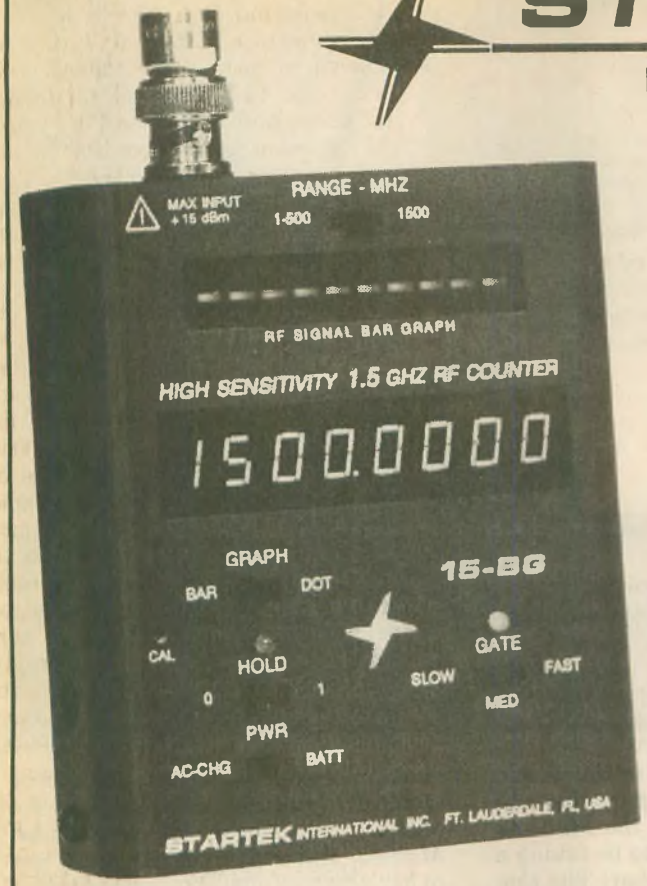

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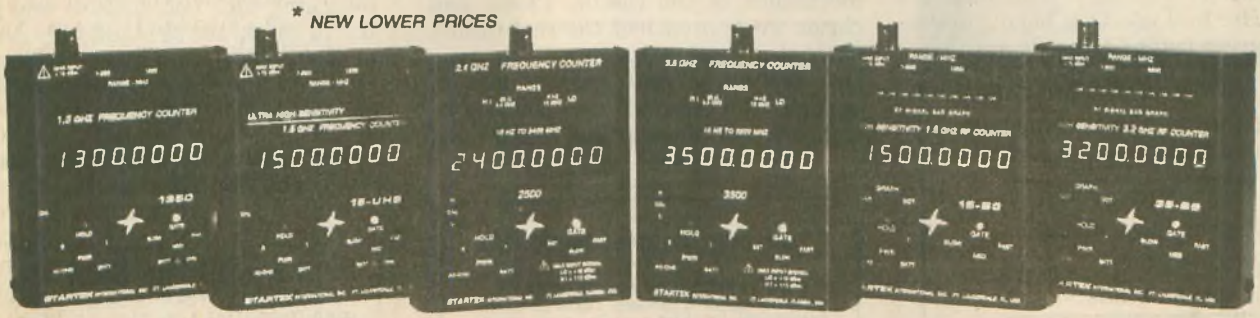

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and Judy was already well on the way to hauling in our 400-pound kedge anchor. (The windlass was groaning.) Picking our way through the coral heads in the shallow water between Sapodilla Bay and South Dock, we swung our bow toward Clear Sand Road, a deep natural channel separating West Caicos from Molasses Reef. As the water deepened, I increased our speed to near our maximum. With the wind from just north of east and our southwesterly heading, we began surfing a little on the larger waves, increasing our speed to nearly 11 knots.

We all gathered in the wheelhouse and took turns looking into the face of the radar screen, making guesses as to the size of the vessel, now clearly seen in the middle of the reef. We all agreed that it was less than 40 feet long, and if it was really carrying 25 people, could only be a Haitian sailboat. (I had seen more than a hundred people stuffed onto a 40 ft. Haitian sloop before.)

After a little more than a half an hour we could see the white line of breaking surf on Molasses Reef. Then we saw the wreck. She was rocking from side to side in the surf. Her mast was much too tall to be a Haitien sloop. She definitely appeared to be less than 40 feet long. All of our radios remained ominously silent. I approached the west side of the reef so that we could decide how to make the best approach to the wreck. That was when I saw her profile and dark green hull. It was the *Madame Butterfly*. She appeared to be taking a terrible beating on the reef. The tide was falling, and as it did, the line of breaking surf would retreat seaward leaving the *Madame Butterfly* in relatively calm water. She had been driven by the surf more than 200 feet up onto the reef. The staghorn and elkhorn corals were beginning to stick their tops out of the water. I noticed a trail of broken coral along the path the wreck had been driven. No survivors were yet visible to us. I eased our speed down and brought *Final Victory* much closer to the reef than I felt comfortable in doing.

Why did this particular reef feel so threatening to me? I had no answer to ease my mind, so I concentrated on the mechanics of the rescue. Closer and closer we approached the reef until I noticed a narrow opening in the continuous coral reef with a lagoon beyond. We entered over the reef in eighteen feet of water and found room enough for 10 *Final Victorys* to anchor inside in 12 to 15 feet of water. We were able to come opposite of the stranded *Madame Butterfly* and within 600 feet of her. She was now gently grinding up against a large coral head. We anchored and then spotted two men in the cockpit. Using our binoculars, I saw Leo's friend standing at the top of the companionway with a suitcase in his hand. He was dressed for traveling and looked, for all the world, to be standing on a street corner hailing a cab. No cabs on Molasses Reef. I contacted Coast Guard Rescue San Juan on 8 MHz, and they were sending a helicopter with emergency pumps. It would be several hours before their arrival.

I then sent Judy and Scott over to the wreck with our surf dory with instructions to bring Leo back to our boat. They did just that and, upon returning with Leo, told me that Leo's friend continued to stand fully dressed at the top of the companionway with a far off look in his eyes and a death grip on the handle of his suitcase.

Join us next month as the rest of this rescue story unfolds.

The *Madame Butterfly* was crushed up onto Molasses Reef.

Silent Keys

William Halligan, W9AC

The founder of the Hallicrafters Company passed away on July 14, 1992, in Miami Beach, Florida. He was 93, and he outlived his company by 17 years.

"Hallicrafters—The Radio Man's Radio," said the display sign in local radio stores around the world, and it was true. Hallicrafters receivers especially (and transmitters to a lesser extent) set the industry standard for decades; with their big, readable dials and people-sized knobs, these radios were not for the faint of heart, they were for operators.

Bill Halligan, born in 1898, founded his company in 1933 and ran it until he retired in 1975; born the year Marconi first sent a signal across the English Channel, his life spanned the history of radio.

He began as a spark experimenter and ended a computer user. Bill Halligan *was* Hallicrafters, just as Art Collins was Collins Radio, Larry LeKashman and Al Kahn were ElectroVoice, and so on.

Bill Halligan was born in Boston and, according to Max de Henseler, HB9RS, in his 1991 book, *The Hallicrafters Story* was licensed as 1AEH in 1914. He served as a ship-board radio operator as a teenager. In an interview with Ted Cohen, N4XX, in the August 1984 issue of *CQ*, Halligan remembered when he first got on the air in 1914. "The first operators were younger men who developed a strong feeling of comaraderie. I spent most of my time just talking with local operators."

Asked about the modern (1984-era) Amateur Service, Halligan said, "As in the past, there still exists a close bond among operators, and I find that in general, they still hold each other in high regard."

Halligan joined the US Navy in 1917 and worked as an operator at station NAE on Cape Cod during WWI, After that, he enrolled at Tufts University but, unable to afford the tuition, after a year he accepted an appointment to the US Military Academy at West Point. After completing two years he left West Point to get married, then went to work as a writer for the *Boston Telegraph*.

In the 1920s Halligan opened a radio supply house in Boston called The Radio Shack. While that paid the bills, Halligan was spending his spare time designing transmitters—using the newfangled vacuum tubes—and one of those designs later became the Hallicrafters HT-4, a military mainstay of WWII.

In 1928 Halligan moved to Chicago to form a partnership, Chamber-Halligan, to sell retail radio parts. When this partnership ran aground, Halligan formed his own company, Hallicrafters, on New Year's Eve, 1933, according to Henseler.

Halligan said in his 1984 interview that his company in the 1930s and 40s concentrated on supplying the military first, and he was especially proud of its role in WWII. Asked if it was profitable to sell to amateurs in those days, Halligan said, "No, not particularly. You had to 'push,' and eventually it paid off in sales."

De Henseler lists many technical firsts attributed to Hallicrafters, including these cited in 1964 by the International Amateur Radio Club (4U1ITU) in Geneva: calibrated S-meter; dual diversity receiver; automatic noise limiter; temperature compensated HF oscillator; first battery powered SW receiver; dual AGC; bridge T-notch filter; first commercially made electronic keyer.

In 1979 Bill Orr, W6SAI, added two more Hallicrafters firsts in an article in *Ham Radio*: the use of silk screened panels and the use of smooth, instead of black-crackle, paint.

And de Henseler also notes that Hallicrafters pioneered the research and application of receiver incremental tuning (RIT), exclusive sideband selection, amplified automatic level control, and was the first to use a fully transistorized receiving section, in the 1962 FPM-200.

Bill Halligan and his company will

live on for decades in the hearts of thousands of radio amateurs and military operators who have used his radios, as well as in modern communications equipment, of which many of his innovations are an integral part.

Among many affiliations and industry groups, Halligan belonged to the Veteran Wireless Operators Association and the QCWA. He leaves two sons, William Jr. and Jack, 10 grandchildren and 12 great-grandchildren. —*ARRL*

Ralph Rickett, W8BTW

Ralph Rickett, W8BTW, of New Albany, Ohio, became a Silent Key on June 19 at the age of 66.

His death came suddenly on that Friday afternoon while working at Universal Radio; he suffered a massive heart attack while helping a customer. Ralph had recently retired as the store's manager (a position he held for 13 years) and was continuing to work part time. On that day they were making preparations for a grand opening the next day at a new location. Upon his collapse the customer's daughter administered CPR and did what she could until the medics arrived, but Ralph died 45 minutes after the attack.

An Extra Class licensee, Ralph knew Amateur Radio gear inside and out and could easily troubleshoot technical problems and figure out solutions. He was very active in the Amateur Radio community and was a member of several amateur associations including the QCWA, 10-10 Club, ARRL, Central Ohio Radio Club, ARES, CCRA and DELARA.

He is survived by his wife, Ruth, W8LGY, also an active amateur. She says she plans to remain active in the amateur community. Ralph will be missed by many, as he was very well known and loved.—*Information submitted by Ruth Rickett, W8LGY*

Nels Lecklikner, N6AQY

Retired Army officer and Marin ARC member Nels Lecklikner, N6AQY, died on June 14 in Novato, California. He was 72.

Nels was born in Philadelphia and raised in Atlantic City, New Jersey. He served briefly with the National Guard, then joined the Army. He served during WWII in the South Pacific, and later served in Viet-Nam.

He acquired a degree in Southeast Asian history as well as a language degree in Mandarin Chinese. He went on after his military career to teach elementary school for 10 years.

After helping to establish the Marin ARC station he taught Amateur Radio classes to new operators and served as club president several times. Nels also served as editor of a club newsletter, *The Echo*, and was active with the ARRL, the Amateur Communications Society and the Marin County Office of Emergency Services, to which he devoted 17 years.

Nels is survived by his wife of nearly 50 years and three daughters.

Have we made it look too hard?

WILLIAM G. PIERPONT, N0HFF

Old timers, now Silent Keys, told us that in 1921 the essential requirement for joining our local Amateur Radio club was to demonstrate before the members the ability to send and receive Morse code at 10 wpm, at least. That achievement plus an intense interest fully qualified the prospect. It was considered necessary because it was "hard," and a skill highly prized.

Most older methods of teaching and learning did make things harder than they needed to be. But more recent research has shown that learning the Morse code and gaining skill doesn't have to be tough and fraught with discouragement. By beginning in the right way and practicing intelligently, the investment of 20 to 30 hours can give a good working knowledge of speeds of 13 to 20 wpm or more. The very elimination of the idea that learning it is "hard" helps tremendously, for psychological factors greatly affect skill learning. A "can do it" attitude accelerates learning.

To compare learning Morse code with learning a new language is a false comparison. We don't have to master a whole new dictionary full of words or labor over strange grammatical rules. It is more like learning to read and write a language we already know. All we have to do is to learn to "hear" the letters instead of seeing them. We read by ear instead of by eye, with patterns of sound instead of visual patterns.

The flaw with the older methods was trying to mix them. The teacher would give the student a printed chart with dots and dashes for the letters and have the student memorize them. It was fairly easy to learn to send them, but receiving them was something else! He would hear the dits and dahs forming each letter, translate them into mental pictures of dots and dashes, and finally try to match them up to his mental table. No wonder progress was slow and he got discouraged. Recognition — when he could make it — took so much time that he often missed the next letter or two. And he would tend to get stuck at around 7 to 10 wpm.

Effective modern methods bypass all this translation completely. From the first the student hears the sound pattern as a whole, as one unit of sound—a rhythm—and identifies this with the printed letter. He hears it at a formation speed fast enough to keep it unanalyzed. (Many old-time learners always counted the number of dits and dahs to analyze the longer characters.) He learns in a one-step conversion, forward or backward. Nothing "hard" about it, just sensible, systematic learning.

From this foundation it is but a matter of exposure and practice until we can hear words without having to consciously spell them out. It begins with recognition of the most common words. Communicating with Morse code is fun! Let's not make it hard. □

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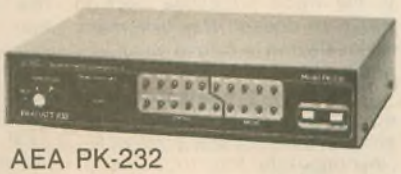
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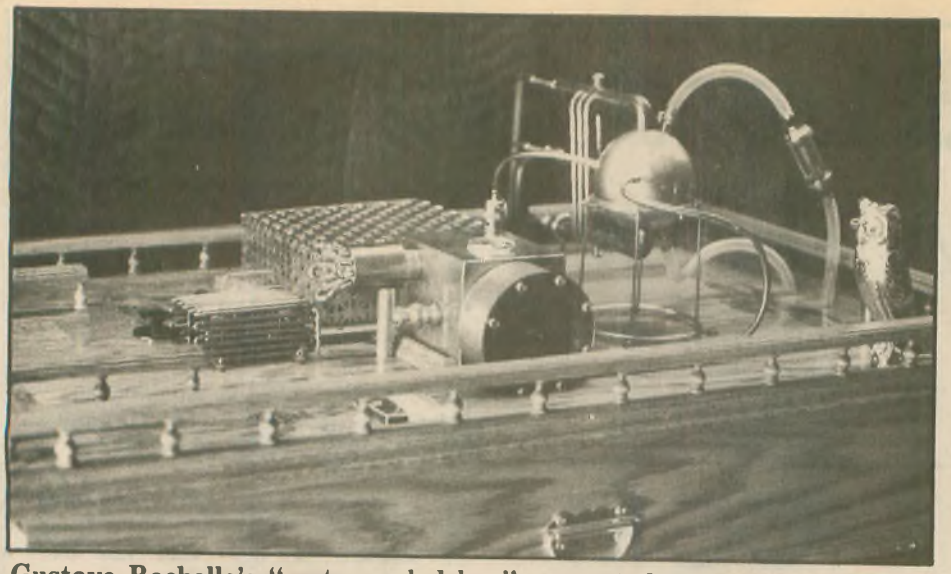


Gustave Rochello's "water-cooled key" converted water into hydrogen and oxygen, providing greater cooling properties for greater speed.

Water cooled key

GREG SEAGRAVES, KK4AA

The original plans for this marvelous invention were drawn by Gustave Rochello shortly after the invention of the straight key. Gustave spent a lot of time perfecting it and took it to several countries for exhibition where it received numerous awards and commendations.

Just as he was about to market his invention, the "bug" came along and was more readily accepted by the amateur population. (The one drawback to his invention was its size. The base alone was 24×39×8 inches. Gustave suspended all further research and development and was never heard from again. This was unfortunate because his invention had some truly spectacular qualities.

Some time ago, I happened upon a portion of Guastave's original plans and notes. I was visiting some friends in Rhode Island and, because of my involvement in the music industry, we were invited to hear the great Wilson Fenway in concert on the piano. During intermission, the talk turned to rare and exotic pianos that I had come across in my travels and business. A young woman there approached me and said that she couldn't help overhearing our conversation and wondered if I would be able to appraise a piano she owned that once belonged to her great grandfather. I agreed and a time to do this was arranged.

I arrived at her home and began disassembling the piano in order to gain access to the interior. When I removed the bottom of the piano, I discovered that it was full of some kind of paperwork. (Most people do not know that the bottom can be easily removed from a piano and the area it covers makes an excellent hiding place.) I began removing the papers, paying no particular attention to them, until the woman mentioned the fact that her great grandfather had once been involved with "some kind of radio project" and must have hidden his notes in the piano.

Being a ham, my curiosity was quite naturally arroused and when I had finished with the piano, I asked her what she intended to do with the papers.

"Those papers were of no use to anyone but my great grandfather and I surely have no need for them, so I guess I'll throw them away."

I told her that I was an Amateur Radio operator and would be interested in studying his papers. She was glad that someone wanted them and graciously turned them over to me.

When I arrived back home in Georgia, my first priority was to have the papers translated into English; they were all written in German. Once this was accomplished I began studying the papers to see just what was it that I had. Upon carefully studying them I began thinking what a shame it was that this invention should have fallen into obscurity. With what little of the records I had, I decided to take upon myself the task of recreating the water cooled key.

After much research I began building prototypes of various components listed in the papers. However, there was one area in the papers that I just couldn't grasp and I knew that if this project was to continue, I was going to need the help of someone else.

I contacted the Kennedy Space Center and finally got through to someone at NASA who would hear me out. That someone was Nicholas Polfone. After talking on the phone at length with him, he said that he was having trouble communicating with me on this without seeing the paper-

work I had, and he asked if I could send him a copy of it. I explained that there was too much to copy and asked if he would be willing to meet with me if I would come there with the papers. He agreed and off I went.

When I got there, with three boxes of papers, he asked if he could look at what I had without interruption. I sat in a chair patiently for nine hours while he reviewed the papers. The only time he spoke was when he called someone else into his office to ask a question about some aspect of the invention.

Finally, as I was about to fall asleep, he said, "Greg, this will work, but I think you're going to have trouble in a couple areas. Due to the unusualness of this project, plus the fact that there are several hams here, I think I can convince my superiors to let me help you." I thanked him and headed back to Georgia.

Five weeks later he called and said everything was go. Two months later, the hydro conversion unit arrived.

The more I had worked on this project, the more I realized what a genius Gustave was. The unit in the photograph behind and to the right of the key is capable of converting the water into its basic components, hydrogen and oxygen, which will provide even greater cooling properties among other things. The term "water-cooled key" is really misleading because the water does not really cool anything. It is a term that was used once and stuck.

Water is pumped into the sphere where it is pressurized. The water is then forced into the hydro conversion unit, and here is where the fun begins. The water is converted into hydrogen and oxygen, and this mixture is circulated through the coils surrounding the key. Because of the way it's designed, the water remains in its basic components for only a few seconds. After leaving the coils, the hydrogen and oxygen enter the stabilization unit and are recombined into water. The water then travels back to the sphere where it is depressurized and then back to the pump where it started.

The effect all this has is this: When the hydrogen and oxygen enter the coils about the key, there is a capacitive field set up around the key in which virtually all friction is eliminated. Less friction equals greater operating speeds!

Gustave was truly ahead of his time. Who knows what other inventions he could have come up with which would have benefited mankind, had he not become so disheartened over the lack of acceptance of this invention?

After many nights of "burning the midnight oil," I have painstakingly recreated an exact duplicate of his machine (or exact as possible—as I said, portions of his notes had been lost). I am most proud of this accomplishment, not so much for my having built it, but because the man who invented it can now be given the credit he so justly deserves.

We are awaiting Mr. Seagraves' discovery of Nikola Tesla's perpetual motion machine. □

QRPer busted

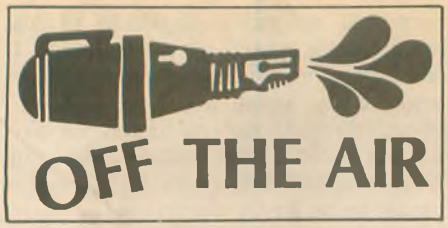
The following item originally appeared in Chirps & Clicks & Spurious Emissions, *newsletter of the US Kalamazoo (MI) Radio Club.*

A local ham, well known for (what he said were) his QRP activities and homebrew rigs, was the subject of a pre-dawn raid by the enforcement arm of the FCC. Ric Campbell, of Carpenter Street, was charged with running a 500W station. "I should have realized that something was wrong when the bamboo spreaders on my vertical quad caught fire," said Campbell ruefully.

A Radio Shack milliammeter, mislabeled as being a microammeter, seems to have been the culprit. "I couldn't get the proper power output," said the amateur, "so I just kept on adding to the final amp. I had just achieved what I thought was 5W out when my SWR went haywire. I looked out to check my antenna just as the fire department rolled up."

All equipment was impounded. "I never seized an amplifier before that consisted of nine thousand 2N2222s running in parallel," said Rufus Bluthund, the special FCC investigator assigned to the case. "We're using it to heat our office at Allegan now."

No information was available on Campbell's application for the first 10M HF CW ARRL DXCC EME award . . . —*Amateur Radio Action*



Don't fix it

The media has been reporting that the FCC is considering, or has been petitioned to, "loosen" the Amateur Radio regulations (Part 97) to permit "limited" commercial use of amateur frequencies. One article mentioned it would be okay to call your family via ham radio and ask them to order a pizza . . . or to have the home QTH call the mobile and ask that amateur to go by "Joe's TV" and buy that model xyz that is on sale, or see how much the remote control costs and come back on the air to decide, etc., etc.

If that is true I most sincerely and heartily put my voice against this change that the record will eventually show as a grave mistake. This is the same old story of the camel getting his head in the tent at first. It will be bad for Amateur Radio operations. It will be another new headache for the FCC. It will create new name-calling and a bad international image, such as the recent 14 MHz shame (where, the media reports, one of the ring-leaders has been in court about alledged theft of telephone services).

Life is complex enough now without opening a new can of worms:

a) What is "limited"?

b) How much air time is allowed for such limited and clearly commercial use of supposedly "Amateur Radio" frequencies?

c) Can't you expect complaints from the *commercial radio* people who would say that they are now subject to unfair competition by commercial use of amateur frequencies?

d) Who has priority to use a frequency—a few amateurs conducting technical tests on the air, or a request for hubby to stop by the department store to pick up this list of purchases?

e) Will this okay the use of commercial purchases via repeaters to call a 900-number to order the newest music cassette or home video? When does this start and where does it stop?

The most recent reading of Part 97.1 includes the statement that I suggest cannot really be improved upon: ". . . value of the Amateur Service to the public as a *voluntary NONCOMMERCIAL communication service, particularly with respect to providing emergency communications.*"

Any exceptions should be on a case-by-case basis only.

For example, you see a motorist having car trouble; he has no cellular phone so you volunteer to call another ham and ask him to call AAA. This does not involve discussion of prices. It is my understanding that the amateur is voluntarily rendering emergency service to the stranded motorist. Similarly, you come upon an accident; they excitedly ask you to send for an ambulance, and/or fire truck and add "Get a wrecker." Most reasonable people would view that as our basic "Emergency Service or a Public Service." *Let's keep our communications within the present realm of emergency public service!*

Hams with commercial or "gray area" commercial problems often obtain the "general radio service" units and are assigned multi-use of such frequencies in the 151 MHz bands. As prices have come down, the cellular phones are becoming increasingly popular and the service is continually being expanded. Would the FCC want to be accused of by-passing a commercial service by opening up ham radio as a *direct competitor* for many local uses? Also, Citizens Band has good local coverage and was always designed for personal, including personal business, use. FCC enforcement could restore that band to its proper use.

"If it (ham radio) ain't broke, don't fix it!"

FRANK E. BROOKS, W4UMC
Fredericksburg, VA □

Scoring first

Just read WB6NOA's Mobile column on how to tune an HF whip in August's issue. It all sounded fine until I got to the part, "Cut the tip with a hack saw."

A good and safe way, the way I was taught, is to score the tip all the way around with a file, put it in a vise at the score mark, then using a pair of pliers the tip will break right off. You would have a difficult time or find it nearly impossible to cut through steel with an ordinary hack saw.

MARILYN BAGSHAW, N6VAW
Mill Valley, CA □

Technical challenges

I receive ***Worldradio*** on tape from Tom Carten, K1PZU in Wilkes-Barre PA. I enjoy it very much. I occasionally buy other ham magazines but never really read them. With my vision, it is quite difficult. Because of Tom, I am able to say that at least there is one that I get to read every month.

I would like to see more articles in ***Worldradio*** on what people are doing technically. There are all sorts of neat projects going on out there with packet, computerized repeater controllers and repeater networks. It would be great if people would share

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The AL-811 gives you 600 watts PEP output — that's nearly 2 full S-units over your barefoot rig.

That could mean the difference between hearing, "You're Q-5 armchair copy" and, "Sorry can't copy you, too much QRM."

Now you won't have to stand aside while the "big guns" steal your DX. You'll be able to log some of those stations first.

Going from 600 watts to the full legal limit gives you less than one S-unit increase. But is that fraction of an S-unit worth the 3 to 4 times more money it'll cost you?

The AL-811 gives you a powerful punch at a price that's easy on your wallet.

All band, all mode coverage

The AL-811 covers all HF bands (10/12 meters with easy user mod). There's no compromise on WARC and most MARS bands — you get a 100% rated output.

You can operate the AL-811 on all modes. You get 600 watts output PEP SSB and 500 watts output CW. You even get 400 watts on demanding continuous carrier modes like RTTY, SSTV, FM and AM.

How the low cost 811A tube resists premature failure - even when your amplifier is mistuned

811A tubes resist premature failure in two ways.

First, they're constructed with widely spaced elements that minimize the chance of elements touching and causing a short — even if the plate gets hot enough to melt.

Second, they use a directly heated thoriated tungsten filament cathode that prevents the electron emitting layer from instantly stripping off — even if mistuning causes a sudden, severe current overload.

Indirectly heated oxide cathode tubes (like the $400 3CX800A7) can be rendered instantly useless if their electron emitting layer is stripped off because of a severe current overload due to mistuning.

The Ameritron AL-811 is excellent for the newcomer because it's tough enough to withstand momentary mistuning. And the tubes are so inexpensive that you can replace one for mere pocket change.

The Ameritron advantage: extra heavy duty power supply that gives you peak performance year after year

The heart of the AL-811 power supply is its heavy duty power transformer with a high silicon steel core weighing a hefty 17 pounds.

A full wave bridge using 52.5 ufd of total capacitance (four 210 ufd, 470 volt capacitors) produces 1500 volts under full load and 1700 volts no load. That's excellent high voltage regulation!

Full height computer grade filter capacitors with screw terminals are used — not short stubby, light duty soldered-in "high technology" capacitors that can't dissipate the heat generated by high current.

The rectifier diodes are rated for a massive surge current of 200 amps. They won't blow even if you accidentally short the high voltage supply.

Wire wound, 7 watt, 50 K ohm equalizing resistors safely protect each filter capacitor — not 2 watt, 100 K ohm carbon composition resistors that can open and cause your filter capacitors to explode or fail.

The Ameritron AL-811 power supply is built tough so you get peak performance year after year.

Tuned input provides excellent load for any rig

A Pi-Network *tuned input* provides a 50 ohm load for your rig. Even fussy solid state rigs can deliver their full drive to AL-811.

Low loss slug tuned coils — tunable from the rear panel — let you optimize performance. High quality low drift silver mica capacitors maintain proper tuning.

800 WATTS OUT . . . $795

from *FOUR* fully neutralized 811A tubes

Only the Ameritron AL-811H gives you *four fully neutralized* 811A transmitting tubes. You get absolute stability and surperb performance on higher bands that *can't* be matched by un-neutralized tubes.

NEW

Ameritron mounts the 811A tubes *vertically* — not horizontally — to prevent hot tube elements from sagging and shorting out. Others, using *potentially damaging horizontal mounting*, require special 811A tubes to retard sagging and shorting.

A powerful 20 CFM computer grade blower — not an open frame phonograph motor — draws in cool air to pressurized the cabinet and efficiently cool your 811A tubes for extra long life.

You also get efficient full size heavy duty tank coils, full height computer grade capacitors, heavy duty high silicon core power transformer, slug tuned input coils, operate/standby switch, transmit LED, ALC, dual meters, QSK compatibility with QSK-5 plus much more.

Output tank: optimum Q on each band

The low loss pi-network output tank of the AL-811 has been carefully designed for optimum Q on each band and built with quality RF components.

The result is peak performance over each band, wide impedance matching range and exceptionally smooth tuning with efficiencies close to 70%. Even a 3:1 SWR load won't damage the tubes or tank components.

A ball bearing vernier reduction drive makes plate tuning precise and easy.

Quiet pressurized ventilation keeps your tubes safely cooled

A quiet fan pressurizes the cabinet with over 20 cubic feet per minute of cool air.

This large volume of air flow keeps the 811A tube temperature safely below the tube manufacturer's rating — even with a key down carrier at 500 watts output.

Two illuminated meters

Two illuminated meters give you a clear picture of your AL-811 operating conditions so you can tell right away if something is wrong.

The Grid Current meter continuously checks for improper loading. The other meter switches between high voltage and plate current to warn of abnormal conditions.

Ameritron exclusive Adapt-A-Volt™ power transformer

Too high line voltage stresses components and causes them to wear out and fail. Too low line voltage causes a "soft-tube" effect — low output and signal distortion.

Ameritron's exclusive Adapt-A-Volt™ power transformer has a special buck-boost winding that lets you compensate for stressful high line voltage and performance robbing low line voltage.

This makes your components last longer and gives you peak performance — regardless of your line voltage.

Plus more . . .

An Operate/Standby switch lets you run barefoot, but you can instantly switch to full power if you need it.

A transmit LED tells you when your rig is keying your AL-811.

A 12 VDC keying relay makes it compatible with all solid state and tube rigs. A built-in back-pulse cancelling diode protects your rig's keying circuit.

Shielded RF compartment. One year limited warranty. Compact 16" D x 13¾" W X 8" H. 30 pounds. UPS shippable. Shipped with transformer installed and wired for 120 VAC. Draws 8 amps at 120 VAC. Export model Al-811X wired for 240 VAC and includes 10 and 12 meters.

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more with their fellow amateurs and *Worldradio* readers what they are doing in these and other areas.

I enjoy the communication aspect of Amateur Radio (they don't call me "Seldom Ever Quiet" for nothing), but I think that the technology impresses me even more. In these days when so many people are being accused of being appliance operators, I would like to see a revival of the technical aspect of the hobby. While it is no longer necessary to build our own radios there are still technical challenges to be met.

BLAIR ALPER, KA9SEQ
Oak Park, IL □

RF interference

My troubles started in August 1991 when we purchased a new 1991 Cutlass Ciera. Naturally I installed a 2M in this vehicle as soon as I could. Everything was fine until I started it and went on 146.82. I started having RFI so bad that it could not be squelched out. Much to my surprise, when I dialed in other frequencies the RFI disappeared.

This was really hard to believe, but returning to 146.82, the RFI resumed. I contacted the dealer, but I found out they don't know much about RFI, and one employee more or less told me that this radio didn't belong in this vehicle. Can you imagine how frustrated an Amateur Radio operator can get when he is told this? I immediately asked this person, "What if you sold this vehicle to a police department?" The reply was, "That's a good question."

Next, Jack, N7OME, and I went to the Alinco dealer in Tacoma, Electro-Com, and talked to Mr. Joe Jinks who is also an amateur. We ran tests with hand-held radios (different name brands) and the same thing would happen. When monitoring 146.82 and walking by the vehicle while it was running, the RFI was high and couldn't be squelched out. But when you would turn the hand-held sideways so the antenna was horizontally polarized, the RFI would vanish (most man-made noise travels vertically). The closer you would get to the ignition module the louder it would get. Other models were tried without any success. I was using an Alinco 110. We came back home and I installed a Kenwood TR 7950, hoping it was a radio problem, but it wasn't.

I was invited to the residence of WZ7H, Earl, to troubleshoot this problem. We changed antennas, antenna locations, etc. but nothing helped. I went back to the dealer and again they couldn't help. I asked them to change the ignition module, but I didn't get anywhere on this idea. They directed me to a service company in Kent who specialized in repairing Delco instruments, but these people only take care of dashboard instrument panels, nothing else.

I contacted the FCC in Bellevue and cried on their shoulder. I was told to document all this information and to send it to them. Supposedly it would be sent back East to another division who would contact General Motors. This I did, but so far I haven't heard anything further.

In the meantime I've asked for help from the Wednesday night net check-ins. One person came back and told me he had a non-ham friend with a car like ours, and he found this same problem accidentally when his friend had visited him. He found this out by having a hand-held close-by when his friend was leaving. While this was taking place, another friend, Dan, KB7HIN, purchased a 1990 Chevy S-10 truck and was having this same problem. Dan got rid of his truck.

I also contacted General Motors customer service and didn't get much help, even though they did assure me they would check this matter out. By the way, this problem only exists after the vehicle is warmed up. I'm hoping that this will reach someone, somewhere who might have experienced this problem and can help me eliminate my problem.

One idea for those shopping for a car: take a hand-held radio along and run a few tests on your own. Don't make the mistake I made.—*Reprinted from the Mike and Key ARC*

LEE BERTRAND, KG7OW
Enumclaw, WA □

Power paranoia

In response to Marilyn Hartley's, KJ4GV/AFA2ZH, letter, I would like to submit the following:

1. My heart really goes out to anyone who is subjected to the treatment she received from her nut-cake neighbor. No one, right or wrong, deserves this.

2. That 600W output power seems excessive to me. I hope she's not infected with the disease known as "power paranoia." This disease has reached epidemic proportions on the ham bands. So many times I've heard extremely loud signals and found out that they were working someone two or three states away and running all the watts that money will buy.

3. I don't know who Marilyn is passing MARS traffic to, but I think that some positive move on her part (such as lowering transmitting power if possible) might be helpful.

ED MURTA, K5LIL
Oklahoma City, OK □

Product Review

RICH ARLAND, KY7HA

I call this product review "The 20M Solution." Have you ever noticed that there aren't too many kits offered for the Amateur Radio market? I have. Well, take heart! Ramsey Electronics, Inc. offers an outstanding selection of simple and some not-so-simple kits for the adventurous radio amateur.

Ramsey sent me their VXO 20M CW transmitter, 20M CW-SSB receiver, and their E-Z CMOS CW keyer kits for review. All three kits arrived and were assembled in due course. Since 20M is one of my favorite QRP bands, I was anxious to put together a small, highly portable 20M QRP transceiver that I could take with me on business trips and family camping outings. The aforementioned kits provided the basis for that transceiver.

The first kit to be assembled was the E-Z CMOS CW keyer (model CW-7). The kit is a straight-forward CW keyer design based on three CMOS chips featuring an on-board sidetone oscillator, self-completing dots and dashes, speed range adjustable from 1 to 60 wpm, front panel controls for speed and sidetone volume, keying output for low-level DC keying and relatively low power consumption. The circuit uses three CMOS ICs (4093, 4001 and a 4027) for the basic keyer circuitry. These ICs provide self completing dots and dashes, proper CW timing, clock timing and more. Q1 is the output transistor and allows keying of low-level DC transmitter circuits (this fits most transmitters marketed during the last 10 years). If higher keying voltages are present (like grid block and cathode keying) then it is best to have Q1 key an external reed relay which would then key the transmitter, avoiding damage to the CMOS keyer.

The keyer uses a 9V alkaline battery for power, making it very portable. There is an on/off switch for the keyer, but no visual indication that the keyer is on. This has resulted in several dead batteries when the keyer has been accidentally left on for a week at a time. The CMOS circuitry is very low power, but it still will deplete the battery pack if not turned off when not in use. All controls and switches mount directly to the circuit board, if desired. However, you can remote all these controls by using ribbon cable in order to place these controls in a more useful arrangement when not using the optional Ramsey case to house the kit. The keyer has an accessory jack on the back that can be wired in any way you need to satisfy a particular installation. Likewise, the on/off switch has extra contacts which can be used to switch other accessories in the shack.

Using the keyer was very simple. This is not an iambic keyer but a standard keyer that will perform very well on most modern transmitters and transceivers. I have used it successfully with my HW-7, HW-8 and HW-9 transceivers as well as two homebrew transmitters. While it does lack memory, the keyer kit is still a good value for the money for anyone needing a bare-bones CW keyer for fixed or portable use.

The next kit to be assembled was the VXO transmitter (Ramsey model QRP-20). This kit went together in just a couple hours and worked fine from initial power-up. The design of the VXO transmitter is pretty straight-forward; Q1 is the crystal oscillator, and Q2 is the buffer amp driving Q3, which is the RF power amp. Q4 is the solid-state keying switch that supplies +12VDC to the oscillator and the T/R diodes D1 and D2. A DPDT push-button switch selects between two 20M crystals in the oscillator. This allows for some flexibility on the VXO transmitter. Varactor diodes D3 and D4 establish a

reference capacitance for whichever crystal is selected. By varying the voltage *(via R1)* to these two diodes the series capacitance is changed and the crystal frequency is pulled above and below the normal operating frequency. This allows for a small amount of frequency shift in the transmitter without the need to construct a VFO. Approximately 8 kHz of shift was obtained using the 14.060 MHz crystal supplied with the kit. As with most VXO transmitters, more frequency shift occurs below the crystal frequency than above it. Low end shift was 14.055 MHz and high end shift was 14.063 MHz using the 14.060 MHz crystal supplied. This is fine, as the coverage is more than adequate for the QRP operating frequencies around 14.060 MHz.

The transmitter worked well with the CW-7 keyer kit. Initially there seemed to be some harmonic energy detectable on the second and third harmonic of the transmitter. This was traced to a single section pi-type LC low-pass filter in the transmitter output stage. Two additional low-pass filters are presented in DeMaw's *QRP Notebook*, available from the ARRL publications department, should the user desire to reconfigure the output circuitry. In all, the transmitter performed as advertised and several countries were worked on 20M using the small two-element beam at K7YHA.

Finally, the 20M CW-SSB receiver kit (Ramsey model HR-20) was assembled and tested. As with the previous two kits, assembly was quickly accomplished and the receiver was on line in several hours. This direct conversion (DC) receiver uses the popular NE-602 mixer/oscillator IC which has become the defacto standard for QRP receiver circuitry over the last several years. There is a tuned RF input which features a rudimentary RF gain control. This section then feeds the RF into the input port of the NE-602 mixer. Local oscillator frequency is controlled by varactor-tuning the LO, and this is injected to the other port on the NE-602 mixer. The output of the mixer is audio which is coupled to an LM-386 audio amp via a simple volume control. There is enough audio to make comfortable listening via earphones; if it is desired to use a speaker, an additional audio stage will have to be added.

Tuning is accomplished by varying the voltage to a 1N4002 diode across the LO tank circuit. Since all diodes offer a change in capacitance with a change in bias voltage, the capacitance change offered by the 1N4002 is sufficient to swing the LO a total of 250 kHz. This is a *lot* of frequency to cover for a simple CW receiver. I found that the tuning was not linear, nor was it very precise. Twisting the tuning control (R2) covered slightly more than 250 kHz of the low end of 20M. Some jockeying of components in the LO circuit should produce about 100 kHz of frequency swing and greatly improve receiver tuning.

Sensitivity was not tremendous, as might be expected of a simple receiver using the NE-602 chip without an RF amp at the mixer input. Noticeably absent was the microphonics associated with other simple DC receivers like the Ten-Tec PM series and the Heath HW-7 and HW-8 QRP transceivers. Also gone was the tendency of the receiver to overload in the presence of large AM signals (like WBAX just across the river from K7YHA). A simple active audio filter is needed for good CW reception.

All three kits were assembled into a cabinet that had been kicking around in my junque box for several years. Radio Shack has a selection of cabinets that could be used to house these kits, as does Ten-Tec. Ramsey offers a separate cabinet for each kit which makes for an attractive (but clumsy) portable transmitter/receiver/keyer combination.

Bottom line on the Ramsey "20M solution": good value for the money, great fun to build and use, makes for a nice portable 20M station for camping and business trips. Prices: QRP-20 VXO TX kit, $29.95; HR-20 DC RX kit, $27.95; and CW-7 CMOS keyer kit, $24.95. Optional cases for all of these kits are $12.95 each. Transmitter and receiver kits are also available for the following bands: 80, 40 and 30M. Contact Ramsey Electronics at 793 Canning Parkway, Victor, NY 14564; 716/924-4560 and don't forget to tell them you saw it in ***Worldradio***. □

Ronnie S. Vician, K9OCE

STATION APPEARANCE

Send **Worldradio** *a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.*

Winners will also receive a top quality, Laserjet-printed copy of the DXCC and WAS BeamHeadings list (a $15.95 value) compliments of Jack Hurray, W8JBU.

This is my original and operational 1958 Novice station located in the house attic.

The receiver is a Hallicrafters SX-100 with a Hallicrafters R-46B speaker. The transmitter is an Allied Radio Knight-Kit, model S255, rated at 50W, CW with crystal control. I still have the original Texas and PR crystals for use in the 7.150-7.200 and 21.100-21.250 Novice bands in FT-243 holders.

The key is a US Army surplus, purchased new in 1958 for 25¢, model J-47.

On the right side of the photograph is a Heathkit model FM-4 tuner which is used with the SX-100 receiver for FM broadcast reception.

The antenna is a 40M dipole located at the peak of the attic roof. The antenna is used on 40 and 15M.

The QSL card on the transmitter is from World Radio Laboratories. Miscellaneous booklets include: 1958 ARRL study guide for the General Class license, 1958 Newark Radio catalogue and 1958 Heathkit catalogue. Not shown in the photograph is a pair of Trimm headphones. No longer in my possession is an instructograph with the paper tapes for building my code speed to 13 wpm for the General Class exam.

When I sit at the desk I remember taking the General Class exam and how scared I was at the 13 wpm code test. (I got my General Class license in July, 1959, at age 15.) Back in 1958 you had one year to make General or Technician if you wanted to save your Novice call sign! (The "N" was dropped when you passed the General or Technician exam.) □

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!**

Gary Valley, currently N6NXO remembers announcing his first call sign to club members.

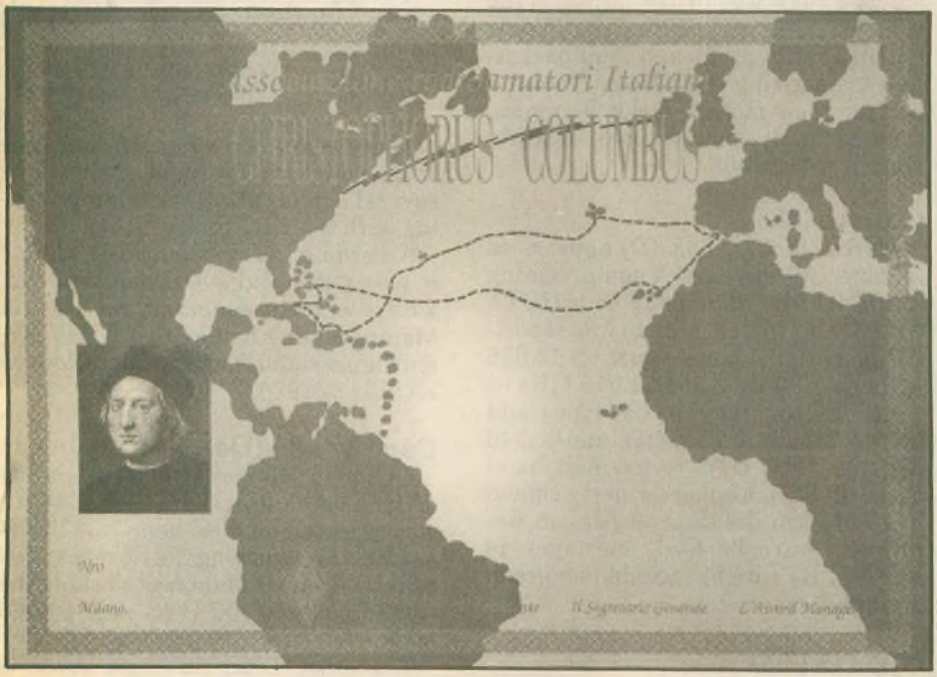
Hmmm, what clever words could I use to introduce my new call WB7FAH, at the local club meeting? It was to be a proud moment in my life—no longer was I just "Gary Valley, no call."

The new call, my first, arrived in the mail shortly before my 40th birthday following about a quarter century of procrastination. I mulled over FAH word combinations a couple days without much success but didn't strike pay dirt until minutes before that momentous moment of introductions at the meeting.

"WB7 Finally A Ham" brought down the house! □

AWARDS

Christophorus Columbus Award



Radio amateurs of Genova, the birthplace of Cristoforo Colombo, have organized this award to commemorate the celebration of the 500th anniversary of the discovery of America.

The period for this award is from September 1 to December 31, 1992. All amateurs and SWLs throughout the world are invited to participate, and all bands and modes qualify.

Logs must be sent before June 1993. Log information must include the date in GMT, band, mode, call sign worked and reports exchanged. The cost of the award is 10 IRCs (or 7000 Italian lire, $6 US, 10 DM, 35 FF, 10 Swiss francs or 3.5 English pounds).

Two special stations will be on the air during some of the weekends of the period of the award: IQ1CC from the Genova ARI branch and IQ2CC from the ARI headquarters.

Points needed to obtain the award are as follows: Italy, 50 points; Europe, 30 points; all others, 15 points. Count three points for Italian stations located in Genova, one point for all other Italian stations. Count five points for IQ1CC and IQ2CC stations. A contact with at least one station in Genova and one with one of the special IQ stations is mandatory.

Send completed logs to ARI Award Manager, Via Scarlatti, 31, 20124 Milano, Italy. □

How many hardware engineers does it take to change a light bulb?

None: "We'll fix it in software."

How many software engineers does it take to change a light bulb?

None: "We'll document it in the manual."

How many tech writers does it take to change a light bulb?

None: "The user can work it out."

— The Microvolt

DX WORLD

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

Activities Calendar

Oct. 3-4 California QSO Party
Oct. 10-11 DXPO 92 Washington, DC
Oct. 17-18 DARC Worked All Germany Contest
Oct. 28-29 *CQ* Worldwide DX Contest (SSB)
Nov. 14-15 DARC European DX Contest (RTTY)

The California QSO Party is a good one to warmup for the upcoming Worldwide and Sweepstakes contests. If you are a county hunter you will probably find all 58 counties active. And, as usual, N6JM will be back in Sierra County, operating from a log cabin on Packer Lake, surrounded by trees and mountain air. What more can one ask?

W100N

The following DXers were awarded ***Worldradio's*** Worked 100 Nations Award during this past period:

433) Jean V. Giesler, Jr, W4TYU; 7/17/92
434) Mitchell H. Greenberg, N4VLH; 8/6/92

It is interesting to note that Mitch, N4VLH, worked his nations with a combination of CW and RTTY.

When preparing for your list of contacts for submission, please read the rules. One applicant sent his cards via registered mail with additional funds for their return. We no longer require that the QSL cards be sent. Another sent a list of 127 contacts with 30 of them dating prior to January 1, 1978. He had some of them dating back to 1966. His US contact was 1967. Surely he has worked the United States since then!

Our Nations List is not the same as it was when the award was created almost 15 years ago. East Germany no longer exists. Those who wish to claim credit for this one must have a confirmed contact on or before October 2, 1990. We have set the break-up of the Soviet Union for contacts made after the first of this year. Any contacts prior to that count only as the USSR. For Estonia, Latvia and Lithuania there is no date restriction as the 1940 annexation was really never recognized in the first place.

Now we get to the breakup of Yugoslavia. I guess we can use the first of the year for these also. With Croatia now with a new 9A prefix and their basketball team giving the "Dream Team" a run for their money in the Olympics, they certainly should have separate Nation recognition.

Guinea (3X)

Marcel Richer, F6EKD, appears to have become more active again, signing 3X0HNU from the Los Islands (IOTA AF-051) in Guinea. Marcel was reported the early part of August on 14.015 MHz at 0230 UTC and 21.015 MHz at 1800 UTC to satisfy the CW types, and on 14.256 MHz at 2230 UTC and 21.340 MHz at 1900 UTC to the delight of those on SSB. Marcel formerly signed TL8RM from the Central African Republic. Marcel's QSL manager is F6FNU. Be sure to include two green stamps.

Nigeria (5N)

A few calls have been reported active from Nigeria during the summer months. These calls included the following:

5N4SBG	14.227 MHz	2115 UTC
5N8AA	14.023 MHz	0145 UTC
5N8HKC	14.194 MHz	2300 UTC
5N0CEP	21.290 MHz	1815 UTC
5N0HBK	24.947 MHz	1330 UTC
5N0SKO	21.027 MHz	2230 UTC
5N0ZKJ	18.086 MHz	2115 UTC

Mozambique (C9)

Long absent activity from this one has been represented by several different calls recently. Most active appears to be C9RDM who favors 15M. Look for this one between 21.242 and 21.375 MHz from 1400 to 1730 UTC.

Other calls reported on 15M included:

C9NAA	21.008 MHz	1700 UTC
C9RJJ	21.335 MHz	1745 UTC
C9ROM	21.342 MHz	1645 UTC
C9TDM	21.247 MHz	1345 UTC

Twenty meters CW has also been active with the deserving working the following:

C9NAA	14.009 MHz	1245 UTC
C9RKL	14.020 MHz	1345 UTC

Many years ago when Mozambique still belonged to Portugal, there where several active calls from this one signing with the CR7 prefix.

According to *DX News Sheet*, C9RJJ is newly licensed with operator John, who is with the American Embassy in Maputo. John's home call is WA4WKY, and he operated from the Canal Zone as KZ5RQ in 1976.

Cape Verde (D4)

Only two DXers represent the nation of Cape Verde. Julio Vera Cruz, D44BC, was reported on 40M near 7.062 MHz at 0300 UTC working the Europeans on SSB while on 15M he was working the Canadians at 1700 UTC near 21.260 MHz.

The other DXer on Cape Verde is Angelo Mendes, D44BS, who has been busy on the new bands, reported on 30M near 10.103 MHz at 2000 UTC and on 17M SSB reported between 18.103 and 18.143 MHz. Look for this one around 2230 UTC.

Clipperton Island (FO0CI)

The DXCC desk will now accept QSL cards from the recent FO0CI Clipperton Island DXpedition for DXCC credit. If you haven't received your Clipperton cards by now we suggest that you reapply.

Panama (HP)

HP1XPN, operated by George, KB2VO, has been very active recently handing out Panama to the deserving. He has been reported on at least three different bands. Try near 7.001 MHz around 1200 UTC, 14.002 MHz at 1330 UTC or 28.497 MHz at 1800 UTC.

Also active from Panama the following calls were reported:

HP1AC	21.022 MHz	1900 UTC
HP1EBG	14.020 MHz	0400 UTC
HP1RZM	7.050 MHz	0500 UTC
HP1XUT	18.134 MHz	1730 UTC
HP1ZQN	7.003 MHz	1100 UTC
HP2CWB	10.104 MHz	1030 UTC
HP2DFA	10.102 MHz	1100 UTC

To further your interest in Panama there is the Panama International

Award for working Panamanian stations. Sponsored by the Panamanian Amateur Radio League this award requires confirmations with at least one station in each of the nine call areas. However, confirmation with any official club station, (HP1LR to HP9LR) may be substituted for up to three call areas. All contacts from January 1, 1978, count. There are no band or mode restrictions. Send a list of contacts, certified by an officer of your local radio club with a fee of $3 to LPRA-HP Bureau, P.O. Box 175, Panama 9a, PANAMA.

Sardinia (IS0)

The DX newsletters consider Sardinia to be garden variety DX and not much is reported. However, we gleaned at least two calls from the pages of *Long Skip*, edited by John Sklepkowycz, VE3IPR, of the Canadian DX Association. These include IS0LKX on 7.011 MHz at 0215 UTC and IS0MKU on 14.002 MHz at 0145 UTC.

Papua New Guinea (P29)

Several calls are available from this one for those who like DXing the wee hours of the morning. Twenty meters seems to be a popular band to find Papua New Guinea as seen in the following reports:

P29DK	14.017 MHz	1245 UTC
P29DX	14.213 MHz	0615 UTC
P29KH	14.035 MHz	1200 UTC
P29NB	14.226 MHz	1400 UTC
P29RB	14.047 MHz	1045 UTC
P29UV	14.246 MHz	1130 UTC

And, if you can cope with the static crashes of the summer storms, check out these 75M reports:

P29BT	3.795 MHz	1100 UTC
P29DX	3.800 MHz	0830 UTC
P29WK	3.799 MHz	1145 UTC

Incidently, these 75M reports were not from the West Coast, but rather the Midwest.

Other calls reported include P29EG on 18.156 MHz at 2230 UTC and P29JR on 21.302 MHz at 0300 UTC the latter part of July.

Micronesia (V63)

A few calls have been reported from Micronesia recently, with most of them being worked by the deserving DXer in Europe. Twenty meter activity for this one includes the following:

V63AO	14.226 MHz	1200 UTC
V63DB	14.215 MHz	1315 UTC
V63JC	14.165 MHz	1200 UTC
V63JP	14.232 MHz	1145 UTC
V63OM	14.256 MHz	2100 UTC

Reported on 15M we have V63AO near 21.277 MHz at 1400 UTC, V63OB on 21.349 MHz at 1500 UTC and V63OM on 21.256 MHz around 0900 UTC. Look for V63JC near 21.325 MHz at 1200 UTC Saturdays.

One sole entry for the new bands was V63AO on 18.141 MHz at 0600 UTC around mid-July working the West Coast.

South Georgia Islands (VP8)

Long Skip reports that VP8CGK and VP8CKB have both been active, mostly in the various DX nets. For VP8CKB check near 21.335 MHz at 1500 UTC for SSB contacts, or for CW check 21.050 or 28.050 MHz between 1300 and 1500 on Sundays.

VP8CKB operator Keith has been very active, according to *The Long Island DX Bulletin*. He has been particularly busy working the deserving RTTY types near 21.085 MHz at 1630 UTC.

Paraguay (ZP)

Rotate your beams towards the south to find this one. ZP6CW has been the most active and has been reported on several bands. Check out 10.102 MHz at 0245 UTC, 14.028 MHz at 1115 UTC, 18.073 MHz around 1545 UTC, 21.029 MHz at 1815 UTC or 28.027 MHz at 1845. Obviously, by his call, this one prefers CW.

On 15M SSB the following other calls were reported:

ZP4AA	21.294 MHz	2100 UTC
ZP5JCY	21.295 MHz	2215 UTC

For the RTTY enthusiasts look for ZP6XD who is often found on 15M near 21.081 MHz after 1600 UTC.

Other calls not listed above include:

ZP5CAR	14.010 MHz	0100 UTC
ZP5CSM	3.799 MHz	2300 UTC
ZP5XFB	14.008 MHz	0130 UTC
ZP7AA	28.495 MHz	1730 UTC

IOTA

Larry McKay, K5MK, was to have operated from Plover Islands in August and was a new one for IOTA credit. Signing K5MK/KL7 this was Larry's 10th IOTA DXpedition.

Several island groups have been active so far this summer, including the following:

AS-027	Wrangel Island	UA0KG
	14.258 MHz	0530
AF-045	Goree Island	6V1A
	14.260 MHz	0600
AS-080	Anmyon Island	HL0X/3
	21.274 MHz	1230
AS-083	Belyy Island	UA9K/RA9LI
	14.264 MHz	1800
EU-009	Orkney Islands	GM/FE1DBT
	14.260 MHz	1530
EU-032	Re Island	FD1PHW/P
	14.260 MHz	2230
EU-057	Ruegen Island	DL4KUM

		14.258 MHz	0530
EU-071	Westman Island		TF7/FD1NZO
		14.260 MHz	2130
EU-080	Tambo Island		ED1IDT
		14.259 MHz	1130
EU-089	Corvo Island		CU95C
		14.260 MHz	0300
EU-093	La Nao Island		ED5BYP
		14.264 MHz	1315
EU-126	Kuusiluoto Island		OG9AR/P
		14.259 MHz	0600
EU-132	Chrzaszczewska Island		SP6TPM/1
		14.257 MHz	1700
EU-140	Mussalo Island		OG5A
		14.260 MHz	2130
EU-145	Barreta Island		CR4NH/P
		14.254 MHz	1045
EU-159	Cordoun Island		F6HKA/P
		14.017 MHz	0515
EU-160	Kambal'nitskiye Koshki		4K3/RA3YG
		14.260 MHz	0530
NA-014	Campobello Island		VE1ST
		14.260 MHz	0315
NA-019	Kodiak Island		KL7HKX
		14.271 MHz	0200
NA-045	Cancun Island		XF3RGS
		14.166 MHz	0800
NA-051	Queen Charlotte Islands		VE7EDZ/P
		14.260 MHz	0530
NA-128	Coudres Island		CJ2WIL
		14.260 MHz	1830
NA-173	Charlton Island		VE8CWI
		14.260 MHz	1545
OC-006	Tasmania		VK7TS
		14.262 MHz	0545
OC-083	Mauke Island		ZK1AR
		21.256 MHz	0330
OC-123			A35KB
		14.222 MHz	0645
OC-145	Halmahera group		YC8DYZ
		21.260 MHz	1600
OC-166	Tarakan Island		YC7VZN
		21.261 MHz	1645
SA-034	Puna Island		HD2/HC2HVE
		14.262 MHz	0545
SA-038	Atol das Rocas		ZY0RW
		14.022 MHz	0215

In the July 29th issue of *DX News Sheet*, 9A4AA was reported active from Pag Island (EU-136) "last weekend." This station was also active the weekend of July 18-19, but we don't know if he was on Pag Island or not. The manager was given as 4N2AA, who has been known to visit the island while on holiday.

The Charlton Island DXpedition by the West Island Amateur Radio Club in Montreal was a new one for many despite the lousy propagation. However, we only heard them the first day. As it was a multi-band affair we checked the other bands but didn't hear anything. This should have been an easy one for North Americans in the east. The DXpedition included several operators whose calls were VE2JBF, VE2HN, VE2DAV, VE2WHO, VE2SEI, VE2PTT and VE3NVP. We understand transportation to this one from Montreal was via train (VIA), van and airplane. Charlton Island is located off the Quebec coast in James Bay. It is part of the Northwest Territories and is in Zone 2. QSL requests for this one should be sent via VE2SEI.

Miniprop Plus

W6EL Software has released *Miniprop Plus* which is a follow-on to version 3 of *Miniprop* program that has been in use for the past five years. On any path specified by the user, *Miniprop Plus* predicts the received signal levels for every half-hour of the day on each of seven user-specified frequencies between 3 and 30 MHz. In addition, MUF (maximum usable frequency), radiation angle, beam heading, path length, sunrise/sunset times and other useful information is reported to the user.

A new feature in the program is a world map showing the great circle path between any two stations and the location of the solar terminator (gray line) at any time of day. The map and the program menus, dialog boxes, and data displays are in full color on suitably equipped computers. An on-disk atlas is also provided with latitudes and longitudes of more than 360 locations, including all DXCC countries, and can be edited by the user.

Miniprop Plus is for all IBM and compatible computers with at least 512K of RAM, DOS 2.11 or greater, and CGA/EGA/VGA or Hercules graphics. A math coprocessor is recommended but not required.

Miniprop Plus was developed and written for DXers by DXer Sheldon Shallon, W6EL, of the Southern California DX Club. Shel has been working on these various programs since 1966.

We decided to play with ours. After adding the pertinent data for our location, we chose to check the path for Germany. The prefix DL wouldn't work, but DA did. We added the Solar flux for August 1 (taken from *The DX Bulletin*) and came up with a table that listed the bearings and both short and long path distances to Germany in both kilometers and miles. At the bottom of the screen there was a changing message that took forever: "Searching for strongest short-path mode at 0000 UTC on 3.6 MHz." The message changed rather slowly for each band, then back to 3.6 MHz for 0030 UTC, and so on. We got tired of waiting so we hit the escape button. Maybe we are doing something wrong.

Miniprop Plus is priced at $60 postpaid in the United States and Canada, and $65 elsewhere. A 52-page instruction manual is included with the disk. Further information is available from W6EL Software, 11058 Queensland Street, Los Angeles, CA 90034-3029.

Operating for Profit

Paul Essery, GW3KFE, editor of the HF portion of "Back Scatter" in the August 1992 issue of ***Practical Wireless*** expresses an interesting point of view. Paul writes: "I've come to the firm conclusion that there are an increasing number of stations who operate from or activate DX spots purely in hopes of profit. My own view is that any station or expedition which refuses to QSL via the bureau, should **not** be accepted as valid for DXCC.

"There are many aspirants to a DXCC who just cannot afford the repeated demands for dollar bills, not to mention demands for donations to mount the expeditions. And of course, we all know of several so-called QSL managers who never reply until the third or fourth try; so even if a QSL and its postage actually cost a dollar, they'd be a couple of dollars or more a card in profit. While there are still lots of good QSLers and managers, there is an increasing minority who are no more than racketeers."

Antique QSLs

Max de Henseler, HB9RS, wrote in concerning the VQ3HGE QSL card in the July issue. The base camp at Tanganyika (VQ3HGE) was not Kenya-Uganda. There were base camps in Kenya (VQ4EHG) and Uganda (VQ5HEG) for a total of three. Max had covered details of this Mountains of the Moon DXpedition in his book, ***The Hallicrafters Story***, published by the Antique Radio Club of America. We have quoted some of the text beginning on page 133:

DX Prediction -- October 1992

Maximum Useable Frequency from West Coast, Central U.S. and East Coast *(courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).*

The numbers listed in each section are the average Maximum Useable 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.

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(12)*	*13	*19	*(10)*	17
12	*(12)*	*13	*17	*(10)*	16
14	*(24)*	*12	*16	20	29
16	*(27)*	*13	*20	20	*35
18	29	*(12)*	*(17)*	*(16)*	*36
20	29	21	26	*(12)*	*36
22	24	*28	32	*(11)*	*35
24	21	*29	35	*(10)*	*33
2	16	26	34	10	*27
4	*14	17	29	10	*23
6	*(13)*	15	24	*11	*20
8	*(13)*	*14	*21	*(10)*	*16

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(15)*	10	*18	*(10)*	*16
10	*(15)*	10	*16	*(10)*	16
12	30	10	*16	20	*28
14	35	*13	*23	22	*32
16	37	*(13)*	20	20	*34
18	35	*(12)*	*(18)*	*(16)*	*36
20	29	21	27	*(12)*	*36
22	24	23	32	*(11)*	*34
24	*20	*(20)*	33	11	*29
2	*18	*(13)*	26	10	*25
4	*17	*(12)*	22	10	*21
6	*(16)*	*(11*	20	*10	*19

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	15	*(10)*	*(17)*	*10	*17
9	15	10	16	*(10)*	*16
11	30	10	15	*20	26
13	*35	11	*25	*23	*30
15	*37	*(10)*	22	*22	*33
17	*37	*(10)*	*(19)*	19	*35
19	*32	*(10)*	*(23)*	13	*36
21	*26	*(20)*	30	*(12)*	*35
23	*21	*(20)*	33	11	*31
1	*19	*(13)*	25	10	*26
3	*17	*(12)*	22	10	*22
5	*16	*(11)*	*(19)*	10	*19

"Hallicrafters announced in March 1947 and finally launched in November 1947 the forerunner of the DXpedition of today, the Gatti-Hallicrafters expedition to the Mountains of the Moon, in the then-British East Africa. The expedition was named for Commander Attilio Gatti (ex OQ5ZZ) the world-renowned explorer and writer. It was the eleventh adventure by this team into the interior of Africa but it was the first radio-monitored expedition carrying powerful transmitting equipment. A whole book could be devoted to this 5,000-mile, nine-months safari alone, but only a few highlights will be mentioned here. Following a two-page advertisement appearing in the May and June 1947 issue of ***QST***, two highly qualified Amateur Radio operators were selected from thousands of applicants to accompany the expedition. These were William Synder, W0LHS, and Robert Leo, W6PBV. The expedition was composed of eight trucks provided by the International Harvester Company of Chicago and sailed from New York in November 1947, arriving in Mombasa, Kenya, some 46 days later. The "shack-on-wheels" was equipped with two Hallicrafters HT-4E transmitters, Hallicrafters models SX-42, SX-43 and S-38 receivers and a Hallicrafter HT-18 VFO unit. The HT-4 was the heart of the SCR-299, the famed old "radio battle wagon" of World War II. The antennas were prefabricated rhombic for 40, 20 and 10M operation.

"The home-base station in Chicago, some 13,000 kms away, was the station at the Fifth Avenue Ham Club, W9CGC, operated by Cletus Wiot, W9TDF. The radio operation started on January 25, 1948, from the base camp in Kenya, using the call sign VQ4EHG and later from the base camp in Uganda, VQ5HEG and VQ5GHG, and from the base camp in Tanganyika, VQ3HGE; the apogee came when operations were made from "The Top of Africa — Kilomanjaro" in May 1948. The whole expedition was of course a fantastic success, and this all took place at the peak of the first post-war 18th solar cycle and gave a few new countries to a lot of ham radio operators. It was a first for Hallicrafters to be followed in 1954 by an expedition to Clipperton Island, followed also in 1959 by an operation worldwide and with a trip to Vatican City in 1960."

We appreciate the above information provided by HB9RS. Max holds a Ph.D. in Sciences and is retired from the United Nations after 30 years of Cartography. Dr. de Henseler is a Fellow of The Radio Club of America for his contribution to the promotion of international Amateur Radio.

We featured QSL cards from this DXpedition in past issues (in addition to this past July issue) including that of VQ5GHE in our March 1990 issue for a June 26, 1948, contact with the late Roy Weisbach, W9UX, and VQ3HGE in our

Special event station VI150SYD will be on the air through 1992 in celebration of the city of Sydney's, Australia, 150 years. QSL via VK2WI.

January 1982 issue for a March 26, 1948, contact with Al Miller, VE7KC.

QSL Cards

Dick Tesar, WA4WIP, QSL manager for several stations, also says his biggest gripe is the way the date is given. We would think by now all deserving DXers would write out the date as *day-month-year*. Dick suggests that the month be abbreviated or written out entirely (don't use Roman numerals or digits). And, we assume that you allways use UTC for time.

Dick also says some of those exotic cards have their call letters in some sort of scroll or computer printout and sometimes it is difficult to interpret the calls.

We all like to come up with an interesting and appealing QSL card. However, the simple one-color, one-sided card often is enough, considering that many of the stations we work today are overloaded with QSL cards.

QSL Information

Dan Pugh, WA6HYB, is looking for a QSL route for FP1AW, whom he worked twice near 14.032 MHz at around 1330 UTC. We checked our various sources and found nothing for this one. However, *Long Skip* reports that any FP1 call worked on HF is illegitimate. And Henry O'Meara, WB2NRX, is in the same boat as he to has worked this FP1AW. But don't feel so bad, you are not alone. It seems that N6JM had worked St. Pierre more than once before one of the contacts was for real.

Bill Mollenhauer, N2FZ, reports that he has had satisfactory service from one of the Russian QSL services, particularly UA6HSN. In the beginning Bill included a fee of two IRCs for each 12 cards. Bill feels that IRCs are of no value to anyone over there except to DXers as an exchange medium.

QSL Routes

3D2BX	— VK2BEX	CO2MA	— JH1GIC
3D2IG	— JA3OIN	CQ3B	— CT3EE
3D2IL	— JA3OIN	CQ8M	— CT1AHU
3D2IM	— JA3OIN	CR4NH/P	— CT1DIZ
3D2KT	— JA3OIN	CR5ATO	— CT1ATO
3D2TX	— JA3OIN	CR6END/P	— CT1CUM
3D2XV	— VK2BCH	CR7EEN/P	— CT1CUM
3X0HNU	— F6FNU	CU30C	— CU3AN
4J4GAT	— DL1VJ	D2/EA7EL	— EA7EL
4K1T	— UA3AES	D2CW	— DK7PE
4K4BWL	— UA9QCQ	D2FGC	— OK1AJN
4K4QQ/UN0	— RA1QQ	DA0HEL	— DK5HP
4N5PK	— YU5XVD	EA1FDE/P	— EA4KK
5H3CC	— I1HAG	ED1IDT	— EA1EZQ
5K0C	— HK1HHX	ED1IPA	— EA1AUI
5N0ASW	— W3HCW	ED2ILF	— EA2BQ
5N6MRE	— K4ZKJ	ED2IZO	— EA2LZ
5V7DP	— N6MMF	ED5BYP	— EA5BYP
5W1AU	— W6KNH	ED8AS	— EA8BJU
6V1A	— 6W6JX	EH0JOB	— EA3MM
7Q7CE	— IN3VZE	EH92C	— EA3RCL
8Q7CN	— JH1ACS	EH92JOB	— EA3MM
8Q7HO	— JE1BQT	EH92K	— EA3RCL
8Q7PW	— JH1PWA	EH92L	— EA3GHL
8Q7WP	— JA1WPX	EH92S	— EA3RCS
9A2OM	— YU2OM	EH92T	— EA3MT
9A2PM	— KA9WON	EH92U	— EA3CZR
9A3SM	— YU3PB	EJ6O	— EI2CA
9A4AA	— 4N2AA	EK0JA	— JA1BK
9J2ZU	— I2ZZU	ES0SM	— ES5MC
9K2GB	— G8FMD	ET3JR	— FD1OYK
9K2MU	— 9K2AR	EU0P	— UC2WDX
9M2ER	— AB4MD	EU9WO	— UC2WO
9U5BZP	— G4BZP	F6BLQ/D2	— F6ELE
A22FN	— W1LQQ	FF0XX	— FF1NZH
AM1EK/P	— EA1EK	FO0FR	— WA6SLO
AM25BOXG	— EA3BOX	FO5IV	— F6BUM
AM25DIHB	— EA3DIH	FP/VO1MP	— G3TKN
AM25ENRB	— EA3ENR	FP/G3TKN	— G3TKN
AM25FNIB	— EA3FNI	FY5FX	— F1MGZ
AM25GDET/P	— EA4KK	FY5YE	— W6JLU
AN9A	— EA4KK	GB2PC	— G3MRC
AO25CVAB	— EC3CVA	GU/PA0ERA	— PA0ERA
AO2AQR	— EC2AQR	GX2IC/P	— G2IC
AO5BMQ	— EA5DXD	H44GC	— K2PF
BT90SEU	— BY4WNG	H92A	— HP2CWB
BV4CT	— NO0C	HD2/HC2FU	— DL8NU
C9NAA	— SP2ADY	HD2/HC2GZA	— DL8NU
C9RJJ	— W8GIO	HD2/HC2HVE	— DL8NU
C9RTC	— IK4QIZ	HD2/HC2GE	— DL8NU
CI2M	— VE2CUA	HG92HQ	— HA6KNB
CJ1UK	— VE1PMD	HK7QMF	— HK7DPE
CJ1YX	— VE1YX	HL0BDU/4	— HL0BDU
CJ2WIL	— VE2WIL	HR5/F2JD	— F6AJA
CJ3AT	— VE3AT	HW6AUS	— F6AUS
CJ3NXB	— VE3NXB	HZ1ZS	— ON6BY
CJ8PW	— VE8PW	IG9/IK7RWE	— IK7IJP
CM6LE	— N4THW	II8ARI	— I8IYW

II92A	— N4YWY	TN1AT	— F6FNU	VE8MN	— P.O. Box 494, Hay River, NWT X0E 0R0, CANADA
IL7/IK7PSG	— IK6IMQ	TP1CE	— F6FQK	VI4FOW	— Hervey Bay ARC, P.O. Box 829, HerveyBay, Queensland 4655, AUSTRALIA
IZ6ARI	— IK6MIK	TR8SS	— DJ5IO	YB7HWI	— P.O. Box 171, Banjarmasin, INDONESIA
J47MAC	— SV7QI	TU2QW	— F6EXQ	YB9AWR	— Willi Riedel, Ledalerc, Maumere 86152, Flores Island, INDONESIA
J69AI	— WA4WIP	TV9CEE	— F1MXH	YL1GP	— P.O. Box 188, Riga 67, LATVIA
J73EH	— WA4WIP	TY1IJ	— DJ5IO	ZA1BM	— P.O. Box 5, Elbasan, ALBANIA
J73WW	— KD6WW	U5WF	— DJ0XC	ZB2DF	— T. Mortimer, 59 1st Avenue, Farlington, Portsmouth PO6 1JL, ENGLAND
J8/N2HNG	— JH4IFF	UA2FP	— DL4LH	ZD7VC	— Bruce, P.O. Box 58, Jamestown, ST HELENA
J86I	— WA4WIP	UF6FAL	— YU1XA	ZK1AR	— Richard S. Darling, 6807 Can Cun Lane, El Paso, TX 79912
J88AR	— WA4WIP	UF6FJ	— OZ1HPS		
J88BD	— WA4WIP	UL9C/R9MWS	— UA9MA		
J88BN	— WA4WIP	UR0UCH	— UB5UCH		
J88BS	— WA4WIP	UY0U	— UB5UT		
JD1BFI	— JA5FFJ	V31AB	— WA4WIP		
JW5NM	— LA5NM	V44KT	— WA4WIP		
KH2T	— AA4UJ	V47GW	— JL3UIX		
KJ4VH/VS6	— KJ4VH	V47YD	— JL3UIX		
KL7HKX	— KL7AF	V47YO	— JL3UIX		
KP2N	— WA4WIP	V63CW	— JA7HMZ		
KP4CD	— WA4WIP	V63DX	— JA7HMZ		
LA/DL2SCQ	— DL6DK	V63JP	— KH6UH		
LA/DL1SCQ	— DL6DK	V63MS	— JK1GXU		
LG5LG	— SM0HUK	VE1ST	— VE1ANJ		
LW2DFM	— LU2DLP	VE8CWI	— VE2SEI		
M5AJW/JW	— KA5W	VI4SZF	— VK4CHB		
OD5/SP1MHV	— SP1MHV	VK9CB	— VK6LA		
OD5RH	— N3IWM	VP2MAO	— W5NO		
OG0BT	— DL4DBR	VP2MR	— N5DXD		
OH0BDA	— OH2BDA	VP8CKB	— K1IED		
OK8AUC	— DL4RDV	VP8CKC	— GM4KLO		
OM5KHL	— OK1KHL	VQ9QM	— W4QM		
OY1HJ	— OY6FRA	VQ9WM	— K7IOO		
P29JA	— JG7AMD	W2IMO/KH2	— WB2OQY		
P29KH	— WD0DZV	WR1Z/KH9	— VK9NS		
P29WK	— N3ART	XE2/NR7O	— NR7O		
P30ADA	— 9A2AJ	XL1TK	— VO1TK		
P40WF	— WA0IWF	XT0A	— N7VAY		
PA/ES5IB	— DJ0IB	XT2DK	— OE3DKS		
PY0TUP	— PT7BI	XU8CW	— FD1GTR		
PZ5EL	— FY5CL	YB6AVE	— DJ5CQ		
R300RF	— RA3MI	YL750K	— YL2GA		
RU5HA	— UA4SVV	YT2ER	— YU2LLL		
RX6B	— UZ4HWS	YZ7UN	— YU7GMN		
RY9DI	— RB5HT	Z21CA	— NM7G		
S2/G3NOM	— G0CMM	ZA/KC6KOU	— OH2BE		
S21A	— W4FRU	ZA1A	*(see note 1)*		
S21U	— JA1UT	ZC4FOC	— GM3YTS		
S79HP	— JA1OEM	ZC4TXF	— G3TXF		
S79SGA	— OE3SGA	ZC4XSW	— G3SXW		
T30IG	— JA3OIN	ZD8Z	— VE3HO		
T30IL	— JA3OIN	ZF2SO/ZF8	— WA0JTB		
T30IM	— JA3OIN	ZF2SP/ZF8	— KB0JBX		
T30KT	— JA3OIN	ZK1AL	— I4ALU		
T30RT	— JQ1QET	ZK1RS	— ZL4DO		
T30TX	— JA3OIN	ZK1XR	— N7NKG		
TF7/FD1NZO	— FD1NZO	ZP2AA	— ZP5YV		
TI74A	— TI4WAM	ZP5AA	— ZP5YV		
TJ1BG	— IK1LBL	ZP6CW	— ZP6XDW		
TL8GR	— F5XX	ZP7RR	— ZP7FR		
TM5CHA	— F6BFH	ZP8AA	— ZP5AA		
TM5FP	— FD1MRE	ZY0FZI	— JH1ROJ		
TM5TNB	— F6BFH	ZY0RW	— PT7AA		

Notes:

1) All HF contacts with ZA1A should be sent via OH2BBF. Contacts made with this station on 6M should be routed via OH2BC. This applies for the recent ZA1A operation only.

Many thanks to the following contributers: HB9RS, N2FZ, WB2NRX, K5MK, W6EL, WA4WIP, WA6HYB, WA6OHB, N7NZ, KA8RAM, WF9K, American Radio Relay League (K8CH), Salt City DX Association (KB2G), Northern Arizona DX Association (W7YS), *Long Skip* (VE3IPR), *The W6GO/K6HHD List*, *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *QRZ DX* (W5KNE), and *The DX Bulletin* (VP2ML).

The bands sure took a turn for the worse a few weeks ago. The poor propagation, static crashes, Sacramento heat and having to paint the house was not my idea of fun. Maybe things will pick up in time for the big Worldwide Contest the end of October. 73 de John, N6JM. □

4L4IR	— P.O. Box 73, St Petersburg 196070, RUSSIA
5H0ROA	— ROARS, P.O. Box 981, Muscat, OMAN
8R1JV	— Jacinto, P.O. Box 10867, Georgetown, GUYANA
9A2NA	— P.O. Box 19, Novigrad 51466, CROATIA
9A2RA	— P.O. Box 653, Zagreb, CROATIA
9L1MR	— Bassam Tarabey, P.O. Box 966, Freetown, SIERRA LEONE
9M8ST	— Siong, 171-D Cookes Drive, 93150 Kuching, Sarawak, MALAYSIA
A41LD	— Waleed Qassim Al-Zidjali, P.O. Box 51013, Mina al Fahal, OMAN
A71BV	— Khalid, P.O. Box 2260, Doha, QATAR
BV7CM	— Robert Yo, P.O. Box 1729, Kaohsiung, TAIWAN
BY3AE	— P.O. Box 61, Tanjin, PEOPLE'S REPUBLIC OF CHINA
BY4BB	— P.O. Box 020/057, Shanghai, PEOPLE'S REPUBLIC OF CHINA
C9RKL	— P.O. Box 2524, Maputo, MOZAMBIQUE
C9TDM	— OGE, c/o Box 25, Maputo, MOZAMBIQUE
EJ0SI	— Declan P. Craig, 167 St James Road, Greenhills, Dublin-12, IRELAND
FO5NL	— P.O. Box 701, Raiatea, FRENCH POLYNESIA
HK0ER	— Juan, P.O. Box 934, San Andres Island, COLOMBIA
KH3AE	— P.O. Box 764, APO AP 965558
KJ6BZ	— P.O. Box 73, APO AP 96558
R1O	— P.O. Box 32, Severodvinsk 164500, RUSSIA
R40Z	— P.O. Box 62, SF-82501 Kitee, FINLAND
SU2MT	— P.O. Box 1610, Alexandria, EGYPT
TL8UB	— Urs, P.O. Box 7, Alindao, CENTRAL AFRICAN REPUBLIC
TM5TRS	— Mighel, P.O. Box 727, F-45207 Montargis, FRANCE
UA0KG	— Andy Polikarpov, P.O. Box 225, Magadan 30, Magadan 68530, RUSSIA
UU6U	— P.O. Box 62, SSF-82501 Kitee, FINLAND

Grounding for boats

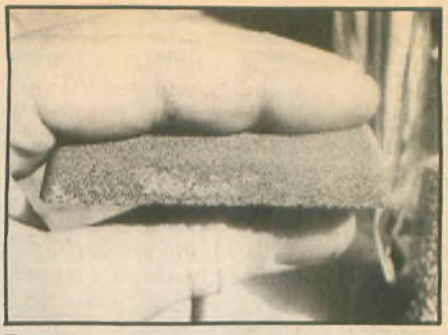
If you plan to operate your Amateur Radio aboard a boat, grounding considerations may be an important part of your overall installation. I say "may" because a ship's grounding system will have little effect on VHF or UHF transmissions. For VHF 2M, you could very well use your existing marine VHF antenna with only a slight elevation of SWR. There are also many dualband white fiberglass whips from Comet, Diamond, and Valor that contain their own ground system and closely match the looks of your white fiberglass marine antennas.

But a worldwide rig, including marine single sideband, requires a close look of your ship's grounding potentials. Aboard most boats, there are two potentials for a ground: a stainless steel groundplane above the water line; and a sea water or fresh water ground directly to the water that your vessel is floating on.

Mobile whips like Hustler, Valor, Ham Sticks, and the Outbacker may only require a good stainless-steel groundplane on which to be mounted. If the whip is mounted directly over a good horizontal groundplane, you should have good performance from 10 MHz up. For operation on 40M, 80M, and 160M, your ship's groundplane should also be coupled to a good lake or ocean ground connection. The link-up between the metal above the water to the metal touching the water is always with copper foil to minimize the reactive effect of round ground wires. Copper foil is recommended because it has large surface area, is easy to work with below decks, and glasses quite nicely onto the side of your hull on its way down to a good water connection. Three-inch-wide, 3mm copper foil is available through leading ham radio stores, including all Ham Radio Outlet branches, and both Henry Radio and Jun's in the Los Angeles area.

When considering a longwire antenna system, employing a remote-mounted automatic antenna tuner, you must have a good ground system, making contact with the water the boat is floating on. Copper foil is used exclusively for the connection between the tuner and ground, and the transceiver and ground. You are always striving to reduce the effect of ground path loss to increase efficiency, because the radiation resistance is increased and is in series with the ground resistance.

Are your underwater bronze through-hulls interconnected by a common green bonding wire? The green bonding wire is for corrosion control purposes and is a signal to you that you might already have miniature underwater "ground plates" available for your ham radio and automatic antenna tuner hookup. If you parallel the green wire run with copper foil, interconnecting all metallic underwater through-hulls, you won't change your corrosion control system—and you'll also achieve some ready-made ground points. But stay off any underwater metals not connected by a green wire; you don't want to change your galvanic balance in sea water.



Recent tests indicate no advantage of a porous ground plate over a solid plate.

Aboard sailboats, you might also ground to your pored lead keel. This offers much potential in surface area close to the water. Since the keel is painted and may be coated with fiberglass, it will serve as a capacitive ground but may not necessarily serve as your only ground for a good, clean signal on high frequency bands.

The ultimate ground for bigger boats could be achieved through a one-square-foot ground plate, which is the minimum recommended area by the American Boat and Yacht Council (ABYC) for lightning protection. Many mariners have also purchased and installed porous ground plates to achieve a good RF ground for high frequency

Amateur Radio and marine SSB communications. The smaller porous ground plates are interconnected to the transceiver and automatic antenna tuner using 3 in. wide, 3mm copper foil. Results are always predictably good.

But don't think for a second that the tiny porous ground plate is going to give you the *equivalent* ground surface area equal to an eight-times larger "homebrew" metal plate. Exhaustive grounding tests with square plates

The advantage of porous ground plates is their ease of attachment to the hull.

ranging from 1/8 ft. through the recommended one-square-foot size, conducted by Norbert Schmitz, WA9DGQ, leads to the following conclusions:

1. Porosities add nothing to the effectiveness of ground electrodes.
2. Small area electrodes, such as the 1/8-square-foot Dynaplate, should not be depended upon to provide either reliable communication or lightning protection over either (a) the wide range of frequencies in the HF spectrum; or (b) the wide range of conductivity of the water in which boats float.
3. Any porous electrode can be replaced by its solid counterpart with no deterioration in grounding characteristics.

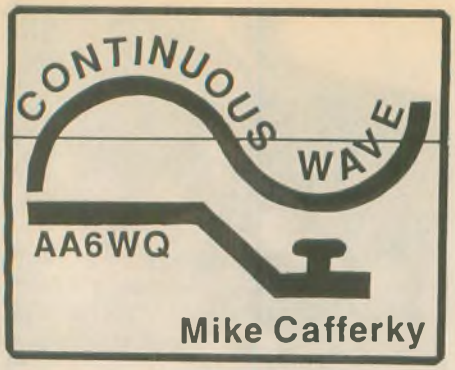
Schmitz is presently investigating methods of attaching several 2 or 3 sq. ft. sheets of copper to the bottom of a vessel to improve communications and lightning safety. We will all be interested in his developments of a large surface area ground system that may be easily installed by you or your local shipyard when your boat is out of the water.

How do you know you have enough ground on your present marine HF setup? My simple test is to hook up with a skywave station on 40 or 20M, start up a QSO and watch signal levels, then throw out a roll of aluminum foil into the drink, momentarily attached, then unattached, and then re-attached to the automatic antenna tuner. With all this surface area hanging out in the water, an on-and-off test of the additional ground will clearly illustrate whether or not an additional surface area ground is necessary. If there's no change in transmission or reception when you add and take off the temporary aluminum foil hanging down in the water, chances are an additional ground plate won't change your communications picture at all.

However, as a minimum of lightning protection, go with the recommended one-square-foot or larger ground plate to play it safe. All this grounding will surely improve your HF communications, too.

A mobile whip on a boat may only need the rail for a ground plane.

Finally, I commend Norb Schmitz, a fellow Amateur Radio operator, for calling to the attention of the marine electronics industry the true facts (and fiction) of the "usefulness" of a porous ground plate versus solid ground plates. Their grounding equivalency is exactly the same for similar sized plates! □



Phonics for CW (part II)

In the last Continuous Wave column (August issue), I asserted that learning letter sounds and using the power of phonics will greatly enhance your ability to copy code using just your mind. In review, the most important principle in using the power of phonics is using the *phonetic value* of each letter instead of the *name* of the letter. Using this method of copying in your head emphasizes the sound the letters make. Connecting the sounds together makes complete recognizable words used in everyday speech. I recommend learning the phonetic values of the consonants first since they are the building blocks of most words; they provide the structure upon which the vowels hang.

The discovery of phonics

I came upon the discovery of phonics in copying code one day as I was on the air during my usual drive to work. I noticed that as I received transmissions from the other CW operators, I was mentally sounding out the words as I heard them. Don't misunderstand. I was not audibly sounding out the words as I heard the dit-space-dahs. I've tried that a few times and it is not easy to do. I doubt if my lips were moving, but my mind was "sounding out" (using the phonetic values of letters) whole words silently. Here is what I mean.

If you hear the word "dah di-dah dah-di-di-dit di-dah-di-dit dit," the first letter of the word (dah) gives only a small clue to what the whole word is unless the word comes late in the sentence and you have been talking about someone's table already. But its sound gets you started and the phonetic value of each additional letter assists your mind in recognizing this commonly spoken word. "Dah" is not "tee." It is simply the quick sound made by the tongue and the upper palate. When this sound is connected with the sounds the other letters make (except for the silent "e" on the end of the word), the word becomes intelligible as a whole because the sound combination is recognized as a word used in everyday speech.

Phonetic memory

Although I may not sound out loud every word I copy, my brain remembers what the code letters sound like in common use. It is this phonetic memory which is accessed when the dit-space-dahs are decoded into meaningful words. For most common words I don't need the visual representation of the letter in front of me to help make sense of what is being sent. Copying code in the mind is an ear-to-ear-memory decoding process rather than ear-to-eye-to-ear-memory.

Once you have mastered the phonetic values of the consonants, it is time to learn the vowels. Vowels make both long and short sounds. Here the rule is simple: Learn the short sound of the vowels *first* since these sounds are the predominant sounds used in words and are the most consistent. Learn them by the sounds they make as in the following words:
di-dah = a as in c*a*t
dit = e as in p*e*t
di-dit = i as in p*i*n
dah-dah-dah = o as in t*o*p
di-di-dah = u as in p*u*p

I am aware these assertions about phonics break the rules established by many of the code learning tapes which would have you learn the *names* of the letters associated with the dit-space-dahs instead of the *sounds* the letters make. But if you want to learn to copy code in your head, you will reach your objective much faster if you use the phonics approach and learn the sounds the letters make.

When vowels have a *long* sound, the name of the letter becomes the sound which is produced when speaking. Here are the long vowels:
di-dah = a as in t*a*ble
dit = e as in d*e*pend
di-dit = i as in r*i*de
dah-dah-dah = o as in r*o*de
di-di-dah = u as in tr*u*e

The phonics rules for long sounding vowels are straight forward: First, when one vowel is immediately followed by another vowel, the first has a long sound and the second may sometimes be silent. Second, when the letter "e" comes at the end of a word the vowel preceding it is long. If you go by these rules, you will usually be right.

Other phonics sounds

Besides the individual consonants and vowels there are combinations of letters which have phonetic values, too. These sounds must be learned on their own because the letter combinations sometimes cannot be sounded out easily. Here are some examples of consonant combinations we hear commonly: bl, cr, dr, fl, pl, sk, st, tr. Vowel combinations may be learned as well, such as the following: ay, oo, oy, oi, ou. Last, there are vowel-consonant combinations; here are a few: ew, er, al, aw, tion.

New or uncommon words may be difficult to sound out, but fortunately there are only a few hundred words we use all the time which help us make sense of the uncommon words. If you miss a new word or an uncommon word during a CW conversation, just relax and say afterwards, "No wonder I missed that word. That's not a word I say very often."

Where has all this taken us?

1. Language is almost entirely phonetic, i.e., it is essentially clusters of sounds. Use the power of these sounds you know so well to copy code in your mind.

2. Your speech skills are probably more developed than your reading skills. Use the power of speech to your advantage in copying code.

3. To use the power of phonics, learn the phonetic value (the sounds) of the letters and letter combinations.

4. At first, practice the phonic sounds orally to get the sounds firmly associated with the Morse code dit-space-dahs.

5. Learn the consonants first followed by the short-sounding vowels, the long-sounding vowels and then the letter combinations.

6. When you copy code in your mind, put down your pencil and just listen. Listen to the code and listen to the word sounds in your mind.© □

Federal rules preempt local laws

An amateur in the Chicago area won a case against his county for the right to erect an antenna which exceeded the local height limit.

The case of Evans vs. Board of County Commissioners, 752 Fed. Supp. 973 came about after Evans' application to erect a 125 ft. ground-mounted antenna, and even his applications for variances and special use permits to put up an antenna between 60 and 100 feet, were rejected because of the local 35 ft. limit.

Evan was encouraged by his attorney to sue the county on the basis that FCC rules allowing Amateur Radio antennas preempt local law. (The US Constitution provides that federal rules and regulations prevail when local laws conflict.)

In his ruling in Evan's favor the judge explained that the FCC was created in 1934 by Congress to regulate interstate and foreign communication; 50 years later the FCC issued a ruling that federal laws allowing Amateur Radio antennas exceeding local height limits shall be permitted where local laws conflict, since local height limit laws cannot be allowed to interfere with the federal government's policy of promoting Amateur Radio communication.—*Information* (Chicago Tribune 4/7/91) *submitted by H. Hansen, K9JIQ.* □

Propagation

Bob Brown, NM7M

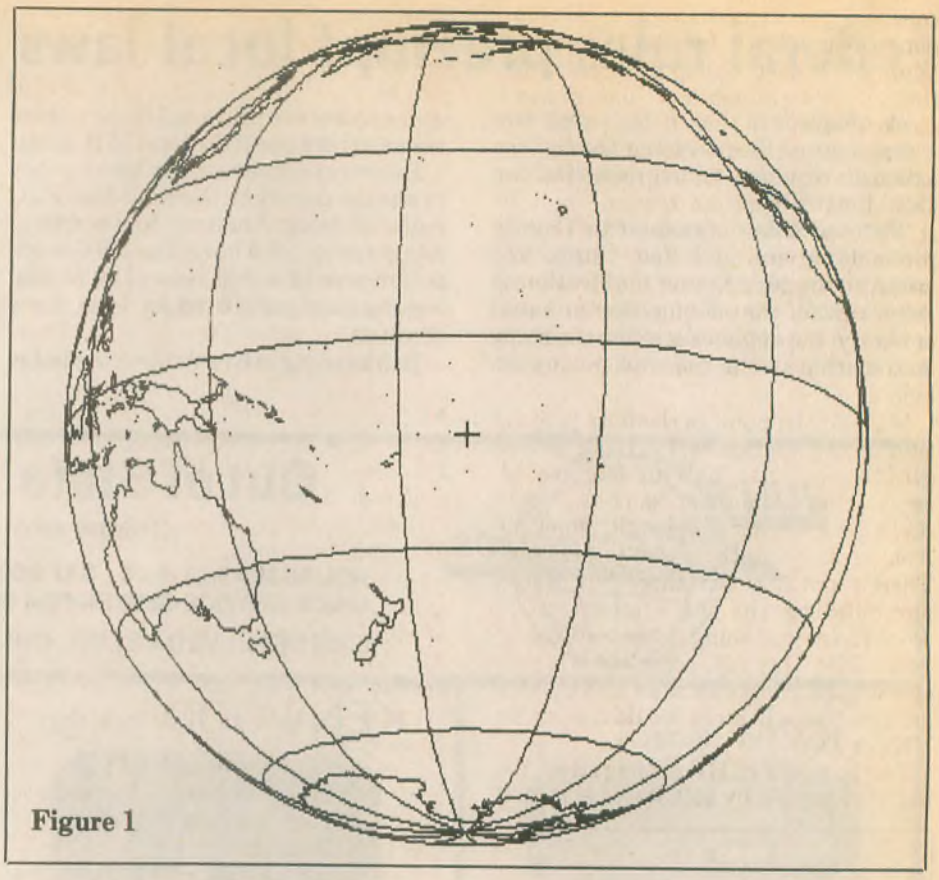


Figure 1

There you are, sitting on the edge of the bed, stirring for the start of another day. You know there's "frost on the pumpkin," you'll have to build a fire to suit the XYL and the forecast is for light snow. Another winter is about to begin. But there are yearnings within you for something new and exciting, not just more of the same.

Then, when you turn on the radio, the voice comes out at you, first softly but then building to a crescendo: "Hi there, old buddy; want something new and different? How about a DXpedition to the South Pacific? Palm trees! Ocean breezes! Pileups you wouldn't believe! Just call your local DXpedition agent and get all the details: license tips, airline schedules, hotels, motels, you name it and he'll surely have it!"

But you're of the modern generation, you want it all *now*, none of that waiting around endlessly for nickel-and-dime details. May I suggest a DXpedition to American Samoa? No special license is required—just get there, sign your call and add the suffix, /KH8. So grab your transceiver, some coax and a trapped vertical and you'll be in business when you arrive.

But what about that DXpedition agent? He got you all stirred up. Do you really need him? Just what can he provide that you can't do for yourself? In that regard, the term "full-service" comes to mind, especially after listening to a million banking commercials. So just what would a full-service DXpedition agent offer you that you couldn't provide yourself? Well, it all depends on how resourceful he is compared to you or vice-versa.

For starters, you could go to your National Geographic Atlas of the World and check out American Samoa in a jiffy. That would tell you the island's name is Tutuila, it's about 20 miles long, oriented WSW-ENE and has four peaks on it ranging from 1,070 feet to 2,140 feet in altitude. And there's a harbor too, Pago Pago, where the cruise ships used to call, and even an international airport from the days when PanAm flew out in the Pacific. There are roads and probably good spots from which to operate.

And speaking of operating, if you have the *ARRL Operating Manual*, you could look at the azimuthal equidistant map for the South Pacific on page 17 through 182 and get a feeling for where the DX will be from that location. Now all that information, being in the public domain, could be dug out on your own, so there's no need to pay someone else.

But I have to say that a full-service DXpedition agent would earn some of his money by taking care of all the things that an ordinary travel agent provides, such as airline reservations as well as motel and hotel information. And if you're really in a hurry, wanting to get away before the blizzard hits, for him to do all that on a moment's notice would be a plus on his side of the ledger as well.

And he might even be able to give you that information that the usual travel agent for tourists can't provide: the names of places at the far end where amateurs are welcome, TVI and all, or, better yet, locations where that problem would never come up in the first place. That's the sort of information that would establish a reputation for offering "full-service" to the amateur community, and I'd have to think it would be worth paying for—not too much, mind you, but more than a pittance.

With travel and accommodations taken care of, by your efforts and those of the travel agent, what's left? Lots! How about a lay of the land from the basic DX standpoint as well as tourism? Where's the DX? How far? At what beam heading? And then there's the questions about the location, its origin and history, and all the amenities that are available when propagation is at a minimum.

Most of those DX details you could have worked out yourself if you're a real DXer with time and computer programs to match your ambitions. But if you're in a hurry, ready to move out on a moment's notice, you could still do a lot of that on your laptop computer while flying high above the Pacific on the way to Samoa. Of course, the laptop will be needed for the logging program that will keep track of all those

contacts you'll be making in humungous pileups. But for the lay of the land, you'll need a map program with the various projections just a keystroke away.

First, you could look again at the azimuthal equidistant map centered on 15S, 170W, just like the one in the *ARRL Operating Manual*. But that'll probably give you a false sense of security, suggesting that the DX is out there, ripe for the picking. For the sake of reality, the distance scale on the map is something that you really should look at.

More to the point is the map projection shown in Figure 1, giving you a glimpse of just half of the world centered on American Samoa. If you don't get a feeling of splendid isolation from looking at that, you're strange. There's nothing out there but water surrounding the KH8 location. It would be a good thing if you took along your Field Day kit, complete with all those coax connectors, as the closest amateur supply store would be run by VKs or ZLs.

In the world of HF propagation, being surrounded by salt water is not all

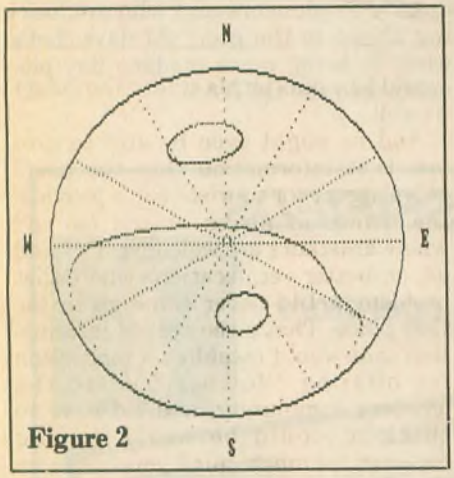


Figure 2

that bad. But there's more to operating from American Samoa than that aspect of the immediate environment. For example, there's the fact that a good fraction of the paths from KH8-land are in what we'd call "the banana belt" in ionospheric physics.

The magnetic latitude of American Samoa is about 16S, not far from the geomagnetic equator. If you set up your dipole running N-S, its radiation pattern would run E-W and most of the DX contacts you'd make would also be at low magnetic latitudes, say to the Near East or South America. If you wanted to work into Europe, then your antenna would run E-W. But that would put your RF in harm's way.

To see what I mean, look at Figure 2, something of a geomagnetic overlay to go on the azimuthal equidistant map. The small ovals are the two polar caps, north and south, something like spawning grounds for ionospheric disturbances. The larger, oval-like curve is the geomagnetic equator. It runs nearby but then completes its circuit on the other half of the globe, in the outer half of the azimuthal equidistant map.

During the day, most of the geomagnetic field lines that pass through the polar caps go way out in space, with some toward the sun, and when blasts or puffs of the solar wind come by, they take the brunt of the collision. That means that HF paths going across the polar ionosphere will be disturbed. And, of course, the harder the collision, as it were, the deeper parts of the ionosphere at lower latitudes will be affected.

If you want to do some long-haul DXing, you'll need to know more than what has been suggested so far. For example, you'll need to know something of solar and geomagnetic conditions. Not to worry; WWVH in Hawaii is nearby and you can listen to their broadcasts at 45 minutes after the hour. And if you were a conscientious DXer, you'd bring along your log of the daily flux and A-indices and would not miss a day on your log in making the trip to KH8-land.

The other things you'll need are related to the sun's position in the sky—a computer program that shows the regions in sunlight and darkness. I have the *Geoclock Ham* package, which gives an azimuthal equidistant map centered on my location. And the terminator is an oval also. To see what I mean about that projection, look at Figure 3; this has the solar terminator added to the geomagnetic features in Figure 2 and is for 1800 UTC on December 21, 1991.

The sunlit region is inside the terminator's oval, showing that the southern polar cap is in sunlight while the northern polar cap is in darkness.

By that token, the center of the figure where Samoa is located would be in sunlight but there'd be darkness off to the west, great for DXing toward the VUs and 4S7s.

That last figure was not from *Geoclock* but a program of my own creation. I doubt that even a full-service DXpedition agent would have a library of *Geoclock* disks centered on all the likely sites of DXpeditions. The

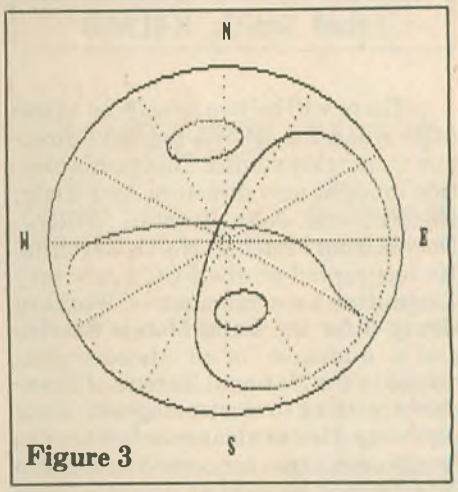


Figure 3

way to get that information and much more is with a propagation program such as the new *Miniprop Plus*. It produces maps showing the terminator for each prediction but not in the azimuthal equidistant projection.

So you can while away the long hours of the flight to Samoa using your laptop, but considering the length of the flight, don't forget to bring a spare battery with you. And when you're tired of looking at the computer screen, you can see the in-flight movie on the latest DXpeditions by Martti Lane, OH2BH, even have a meal or two from the "one calorie per mile" menu and then put yourself to sleep by reading some of the tourist handouts. They'd tell you that KH8-land involves an area of 76 square miles, has a population of 26,000 folks (including about 25 to 30 amateurs) and a famous harbor, Pago Pago, that the tour ships used to visit.

If all that is too small for your taste in tourism, you can find a way to the bright lights of Western Samoa, about 100 miles to the WNW; there you'd find some 200,000 folks (including about 150 amateurs) in an area of 1,100 square miles. But it's not a US possession so any idea of using a 5W call would take some advance preparation. For that, the best place to start is with the DX desk of the ARRL in Newington. If the paperwork for getting a 5W call is like others in the Pacific, plan to spend about six months jumping through various administrative hoops.

Whatever you decide to do, send me a postcard from Tutuila or the family farm in South Dakota. And good DX, with or without pileups! □

Ethel Smith, K4LMB

There will be two new faces at the table when the QCWA board of directors meets this month. This year's election brought new directors Arch Doty, K8CFU, and John Troster, W6ISQ. Doty is from Fletcher, North Carolina. He has served on the FCC's Advisory Committee as a member of Working Group 3 for the Land Mobile Service and as a member of an advisory committee to the National Bureau of Standards relating to electromagnetic compatibility. He has also served on a number of committees concerned with radio interference. He says he is particularly interested in "harnessing the energy and enthusiasm of younger amateurs who are potential QCWA members" of the future.

Troster is from Atherton, California. He is very active in contesting, DXing and some of the interesting new technologies. He was recently appointed IARU Beacon Project International Coordinator and also holds the post of IARU Region II Beacon Coordinator. He has been a *QST* contributing editor for about 25 years.

He says he welcomes the opportunity to "help spread the word to amateurs everywhere about the fine existing QCWA programs and others to come." It's clear that we have two great new additions to the board.

Other directors who were re-elected to serve for another two years are El Charlton, W5MD; Milt Chaffee, W1EFW; and Bob Rickey, NF6P. At press time there were disturbing reports that "El" Charlton, W5MD, is finding it necessary to give up his duties on the board. El has served on the board for six years and was just re-elected by an overwhelming vote. He has been one of the hardest workers on the board and will be missed very much. The vacancy is being filled by action of the board.

You will have an opportunity to meet and get to know all of the board members when you attend the convention in Scottsdale on October 9 through 11. We hope you have made your reservations. There will be the usual open board meeting on Saturday, where members will have an opportunity to discuss their views and concerns. The board will then go back into final session to give immediate consideration to appropriate actions.

This is *your* board and the members are anxious to hear anything you have to say. And remember, you can contact *any* member of the board at any time throughout the year. Do let them hear from you. Addresses and phone numbers appear in each issue of the *Journal*. The headquarters office is located at 159 E. 16th Avenue, Eugene, OR 97401-4017; 503/ 683-0987.

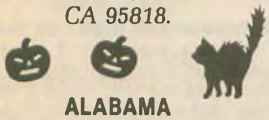
QCWA President Harry Dannals, W2HD, said recently that he is "looking ahead to the good old days." Pick up any recent magazine and you will realize how right he is. Just when you think everything possible has already been invented, somebody comes up with something new that opens whole new avenues for development. The point I want to make is that there is as much "pioneering" being done today as there was 50 or 75 years ago, and QCWA wants these modern day pioneers to be part of our association.

There are many people now eligible for QCWA at the age of around 35. If QCWA is to remain a viable organization, we must bring in these "modern day pioneers" who will carry the organization into the future. We will always recognize and honor our early pioneers, but we also want to emphasize that QCWA members aren't running spark gap transmitters anymore. Most of them are right on the cutting edge of modern technology.

The Quarter Century Wireless Association is dedicated to people who have accumulated enough experience to qualify as pioneers-and who are looking ahead to the good old days. Let's work to bring more modern day pioneers into the QCWA. □

Visit Your Local
RADIO CLUB

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



ALABAMA

Montgomery Amateur Radio Club (W4AP). P.O. Box 3141, Montgomery, AL 36109. Meets 3rd Mon./monthly, 7 p.m., State Trooper Dist. Office, Coliseum Blvd. & Federal Dr. Nets Sun. 8:30 p.m. 146.84- and Thurs. 8:15 p.m. 147.18+. Info: Fred, K8AJX, (205) 270-0909.

ALASKA

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

ARIZONA

Cochise Amateur Radio Assn. (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.16/76 rptr.

Scottsdale Amateur Club. Meets 1st Wed./monthly, 7:30 p.m., Scottsdale Sr. Cntr., 7375 E. 2nd St., Scottsdale, AZ. Net Tues., 7 p.m., 147.18 rptr. Info: Barney Fagan, KB7KOE, (602) 861-2817.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. 2nd Sat./monthly, 7:15 p.m., Pima Co. Sheriff Bldg., 1750 E. Benson Hwy. Net Thurs. 7:30 p.m. 146.22/82 (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 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. Rptrs. 147.675(-), 224.080(-). PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info (619) 697-2700.

Associated Radio Amateurs of Long Beach, W6RO. P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Fri./monthly, 7:00 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

Conejo Valley Amateur Radio Club (CVARC). P.O. Box 2093, Thousand Oaks, CA 91358-0917. Meets 1st Thur./monthly at King of Glory Lutheran Church, 2500 Borchard Rd. Newbury Park, CA, 7:30 p.m. Info on 147.885/285 and 445.925/0.925 (PL 123) or call N6LQ Ernest (805) 499-5398.

Corona Norco ARC, (CNARC). Meets 1st Mon./monthly, 7:30 p.m., The Pizza Palace, 1197 Magnolia Ave., Corona, CA 91719. Talk-in 146.535 S.

Downey Amateur Radio Club. Meets 1st Thur./monthly, 7:30 p.m., So. Middle Sch., 12500 S. Birchdale, Downey, CA. Wkly nets—Thur., 7:30 p.m. 146.595 (S). For info: P.O. Box 207, Downey, CA 90241-0207.

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 8 p.m.-10 p.m., Northbrae Community Church, 941 The Alameda, Berkeley, CA. Info: Gordon Firestein, (415) 527-9382.

Fullerton Radio Club, Inc. W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Center, 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975 (-600). Info, Bob Hastings, K6PHE (714) 990-9203.

Gabilan Amateur Radio Club GARC. P.O. Box 2178, Gilroy, CA 95020-2178. Meets: First Interstate Bank, 751 First St., Gilroy, CA, 2nd Thur./monthly, 7:30 p.m. Talk-in 145.47/144.87.

Golden Empire Amateur Radio Society (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, Repeater 146.25/85. Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Room 110B, Chico.

Hercules Amateur Radio Club. P.O. Box 5043 Hercules, CA 94547. Meets 3rd Sun./monthly, 6 p.m. at Ohlone Community Center, 190 Turquoise Dr., Hercules, CA. Info: Noel, AB6AC, (510) 799-4458.

Hilltop Amateur Mastertie System (HAMS). Informal mtgs. weekly/Mon. 5 p.m. at Shakey's Pizza, 12924 Washington Blvd., Mar Vista, CA, except 3rd Mon. Call for location. Info, N6FD 213/823-0767.

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: Rosalie Powers, KC6RKU, c/o LARK, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

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.

Monterey Park Amateur Radio Club (MPARC), K6GIP. P.O. Box 403, Monterey Park, CA 91754-0403. Meets 2nd Thurs./monthly, 7:30 p.m., Community Rm.—City Hall, 320 W. Newmark, Monterey Park. Nets: Tues. 7 p.m. 147.48 Simplex — 7:30 p.m. 28.385 MHz. Info: John Duce, N6EDX (818) 280-7052.

Moreno Valley Amateur Radio Assoc. P.O. Box 7642 Moreno Valley, CA 92303. Meets 4th Mon./monthly, 7 p.m., City Council Chambers—City Hall, corner of Cottonwood & Frederick Sts. Net Tues. 8 p.m. 146.655- (PL 1A). Info, Larry Marcum, KA6GND, (714) 656-1643.

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(+). Info, George KI6YK, (510) 837-9316.

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Elks Lodge, on Cypress at Hackberry in Carmichael, CA. (P.L. 162.2) Net K6IS Thurs., 8:00 p.m. 145.190. 220 Net, Tue. 8:00 p.m. 224.40(-).

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m. at 907 E. Vermont, Anaheim, CA. (Between Anaheim Blvd. & State College) Call in on 146.550 simplex. Contact Ken Koehechy W6HHC at (714) 541-6249.

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 "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 CQWA (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.

San Fernando Valley ARC. Meets 3rd Fri./monthly, 7:30 p.m., Red Cross, 14717 Sherman Wy., Van Nuys, CA. Net every Thur., 8:00 p.m. KB6C/R 147.735(-).

San Gabriel Valley ARC. P.O. Box 88, Monrovia, CA 91017-0033. Meets 1st Tues./monthly, 7:30 p.m. (except Dec.) at Bowling Green Clubhouse, 405 S. Santa Anita Ave., Arcadia, CA 91006. W6QFK, Rptr. 147.165/765.

Santa Clara County Amateur Radio Assoc. (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets: 2nd Monday/monthly, 7:30 p.m. at 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 (– 600 kHz), 224.26 (– 1.6 MHz), 444.60 (+5 MHz). 2 meter/220 net Mon. 9 p.m. Mtgs.-3rd Fri.

Santa Cruz County Amateur Radio Club, Inc. Meets last Friday/monthly at Dominican Hosp. Ed. Bldg., Soquel Dr., Santa Cruz, 7:30 p.m. Net K6BJ 146.79 Mondays at 7:30 p.m.

Santa Monica—Westside Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Santa Monica Red Cross, 1450 11th St., Santa Monica, CA. Info Net every Tues., 8 p.m., 146.670, -600.

Shasta Cascade Amateur Radio Society (SCARS) P.O. Box 664, Anderson, CA 96007. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm., Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m.

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thur., 8 p.m., 51.80/51.30 tx. FM Smplx, call freq. 50.300.

Stanislaus Amateur Radio Assoc. (SARA). P.O. Box 4601, Modesto, CA 95352. Stanislaus Co. Administration Bldg., 12th & H Streets, 3rd Tues./monthly, 7:30 p.m. 145.39 MHz WD6EJF, 224.14 MHz.

Tehama County ARC. Meets 1st Fri./monthly, 7 p.m., Sept.-June, CA Div. Forestry Training Rm., Antelope Blvd., Red Bluff, CA. For info: 144.850/145.450 W6SYY/R.

The Trinity County ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, at the CD Hall in Weaverville, 7:30 p.m. WA6BXN Rptr. 146.13/73.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., 703 N. College Way, "The Faculty House," (lower level). Claremont, CA.

United Radio Amateur Club K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly except Dec., 7:30 p.m. Monitors 145.52 Simplex 10 a.m.-5 p.m.

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn. on Vine St. in Vacaville, CA. Repeater: K6HIH 147.475 (-1 Meg) PL 127.3. Ph: (707) 448-4633.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92393. Meets 2nd Tues./monthly, 7:30 p.m., Yucca Loma Elementary School, Yucca Loma Rd., Apple Valley, CA. Talk-in 146-940/340, info net Sun. 7 p.m. 146.940/340.

West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. (except Dec.) W6PIY/R. Net Tue., 8:30 p.m. 147.39+, 223.96-.

COLORADO

Denver Radio Club. Meets 3rd Wed./monthly, 7:30 p.m., Denver Red Cross, 444 Sherman at Speer. Club net: Sundays, 8:30 p.m. 147.33 MHz.

CONNECTICUT

Middlesex Amateur Radio Society, (MARS). 5 North Rd., Cromwell, CT 06416. Meets Tues./weekly 7 p.m., Portland Methodist Church, Main St., Portland, CT. Novice classes, VE sessions monthly. Contact Jack, WA1K, (203) 347-8745. Rptr. 147.090+.

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340. Meets 2nd Tue./monthly, 7:30 p.m. St. Lukes Lutheran Church at Rt. 12. Novice classes. Info, contact Bob, KA1BB, (203) 739-8016.

FLORIDA

Gulf Coast ARC, Inc. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN Rptr. 146.67/.07.

Indian River ARC, Inc. (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931. Martin Andersen Senior Center, 1025 S. Florida Ave., Rockledge, FL. Meets: 1st Thur./monthly, 7:30 p.m.

Platinum Coast Amateur Radio Society, PCARS). Meets 2nd Mon./monthly, 7:30 p.m., Red Cross Bldg., 1150 S. Hickory St., Melbourne, FL 32901.

Sarasota Amateur Radio Assn. (SARA). P.O. Box 3182, Sarasota, FL 34230. Meets 3rd Thurs./monthly, 7:30 p.m., Sarasota Memorial Hosp. Auditorium.

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

Suncoast Amateur Radio Club. P.O. Box 7373, Hudson, FL 34676. 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.

GEORGIA

Dalton Amateur Radio Club, Inc. (DARC). Meets 4th Mon./monthly, 7:30 p.m., Old City Park Sch. Bldg., corner of Waugh St. and Thornton Ave., Dalton, GA. Info, Bill Jourdain, N4XOG, (404) 226-3793.

Metro Atlanta Telephone Pioneer Amateur Radio Club. Meets 1st Tues./monthly alternately between 12 p.m. at 675 W. Peachtree St. and 6:30 p.m. at Morrisons on Jimmy Carter Blvd., Atlanta, GA.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tue./monthly, 7:00 p.m., HELCO Auditorium, 1200 Kilauea Ave., Hilo. Talk-in on 146.760(-), 146.880(-), 147.020(+) and 147.040(+).

ILLINOIS

Amateur Cross Link Repeater Club. 29.680, 52.825, 147.225, 224.480, 921.225, 1292.10 and ATV on 916.25. Meets 1st Fri./monthly, 7:30 p.m. For info call (312) 594-1628. KD9FA Repeater/Chicago.

DuPage Amateur Radio Club, (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Catholic Church, 110 Cass Ave., Westmont, IL. Sun. net on 145.25 MHz PL 107.2 at 2100 hrs. local time. Rptrs. 145.25 MHz PL 107.2, 224.68 MHz, 442.55 PL 114.8. Info. (708) 985-9256.

Fox River Radio League. Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. Meets 2nd Tue./monthly, 7:30 p.m. VEC Xams 3rd Tue./monthly, 7:30 p.m.

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: (708) 535-3496.

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. For info: (309) 685-6698. Rptrs: 146.25/85 & 147.675/075.

Schaumburg ARC (SARC). Meets: 3rd Thurs./monthly, 7:30 p.m., Schaumburg Park Dist. Community Rec. Cntr. at Bode & Springinsguth Rds., Schaumburg, IL. Net 145.23, 8 p.m. Thurs. Info (708) 213-0910.

Tri-Town Radio Amateur Club. P.O. Box 302, Hazel Crest, IL 60429. Meets 1st & 3rd Fri. (Sept.-June), Hazel Crest Village Hall, 3000 W. 170th Pl. Net Wed. 146.49, 8 p.m. Info: (708) 335-9572.

Wheaton Community Radio Amateurs, (WCRA), P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Ellyn, IL. Nets Sun. & Tue. 8:00 p.m., 145.39 MHz.

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

Central Iowa Radio Amateur Society (CIRAS). Marshalltown, IA. Meets 3rd Sun./monthly, 6:30 p.m., Community College, Rm. 612, (except July & Aug.) Sun. Net 8 p.m. local 146.88. For more info: WBØZKG, (515) 484-4837.

LOUISIANA

Baton Rouge Amateur Radio Club. P.O. Box 4004, Baton Rouge, LA 70821. Meets last Tues./monthly, 7 p.m., Catholic H.S. cafeteria, 855 Hearthstone Dr. Rptr. 146.19/79 & 28/88. Net Sun., 8:30 p.m., 146.19/79.

Southwest LA Amateur Rptr. Club, Inc. (SWLARC). Meets 4th Tues./monthly, 7 p.m. in the Parish EOC Rm. W5BII/R 146.073/146.013. Net MWF, 7:30.

MICHIGAN

Hazel Park Amateur Radio Club. Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. 2nd Wed./ monthly, 7:30 p.m. Sept. thru May. 147.51 Simplex Call-In. W8JXU Club Call.

Oak Park Amateur Radio Club. Oak Park Community Center. 14300 Oak Park Blvd. (same as 9½ Mile Rd., west of Coolidge). Oak Park, MI 48237. 2nd Mon./monthly, 7:45 p.m. Talk-in on our 224.36 MHz or 146.64 MHz.

MINNESOTA

Minneapolis Radio Club. P.O. Box 583281, Minneapolis, MN 55458-3281. Meets 3rd Fri. (exc. June, July, Aug.), Mpls. Red Cross, 11 Dell Place, Mpls, 7:30 p.m. Making waves since 1916. Net 147.03(+), 7 p.m. Mon.

MISSISSIPPI

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

MISSOURI

Gateway To Ham Radio Club, NØDN. Young hams of all ages. Meets 1st & 3rd Sat./monthly, 1-3 p.m., Sacred Heart Sch., 10 Ann Ave., Valley Park, MO 63088 (St. Louis) Net Sun., 8:30 p.m. 146.94 rptr. Beginners classes, VE exams, Club station & mtgs. Info: Rev. Dave Novak—Fax (314) 225-1952.

PHD Amateur Radio Assn. Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m. Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEBRASKA

The Ak-Sar-Ben ARC of Omaha, NE. Meets 2nd Fri., 7:30 p.m. at Omaha Red Cross near 38th and Dewey Streets. Main 2M Net Sunday night 0200Z on 146.94R-.

Pioneer Amateur Radio Club, (PARC). Meets 4th Fri./monthly, 7:30 p.m., Fremont Fire Station, Fremont, NE. ARES net 146.67 19:30 CDT/19:00 CST. Info: Dick Klebe, KBØHEC (402) 721-1326.

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 3rd Mon./monthly, 7 p.m. Denny's Restaurant across from Nevada Palace, 5318 Boulder Hwy, Las Vegas, NV. Net Mon. 7:30 p.m., 145.39 Rptr. on Black Mountain. Club info, Jim Frye, NW70, 456-5396.

Sierra Intermountain Emergency Radio Assoc. (SIERA). P.O. Box 2348, Minden, NV 89423. (702) 882-0451. Meets: 2nd Tue./monthly, 7:30 p.m., Douglas County Lib., Minden, NV. Talk-in: 147.330.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover NH 03820. (603) 332-9137/ 332-7343. Meets 2nd Sun./monthly, 7 p.m., Rochester Court House/City Hall. Talk-in 147.57.

NEW JERSEY

Bergen Amateur Radio Assoc. (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, VFW Post #6699, E6 Winslow Pl., Paramus, NJ. Nets 28.350 Mon. 9 p.m., 144.400 9 p.m. Wed.

Delaware Valley Radio Assoc. (DVRA). Meets monthly, alternating 2nd Tues./Wed., 8 p.m., Our Lady of Good Counsel Church, West Upper Ferry Rd. at Wilburtha Rd. in W. Trenton, NJ. W2ZQ/R 146.07/67. DVRA Ham Hotline (609) 882-2240.

South Jersey Radio Assoc. (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Jan.-Oct. 4th Wed./monthly, 7:30 p.m. Nov.-Dec. 3rd Wed. due to Thanksgiving and Christmas. Talk-in 145.290 rptr. Club call K2AA.

NEW YORK

Genesee Radio Amateurs (GRAM). N.Y.S. Civil Defense Center, 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 at 7:30 p.m. For info call Arnie, WB2YXB, (718) 343-0172.

Orleans County Amateur Radio Club (WA2DQL). Meets: Office of Disaster Preparedness (CD), West County House Rd., Albion, NY 14411, 4th Wed./monthly, 7:30 p.m., 145.270 – WA2DQL.

PROS, Pioneer Radio Operators Society. Meets: 1st Wed./monthly (except July/Aug.) 7 p.m., Masonic Temple, Rt. 78, Java Village, NY. Other Wed., 8 p.m. 145.170/ 144.57- Repeater KC2JY.

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. 3rd Tue./ monthly, 7:30 p.m. Bohemia Rec. Ctr., Ruzicka Wy. W2DQ/R 144.610/145.210, 223.080/224.680, 441.625/446.625 rptrs. Info call Jim Heacock (516) 473-7529.

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

NORTH CAROLINA

North Carolina Chapter TSRAC. Meets: Mondays, 28.350 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240 and Wed. 9 p.m. on 7259. "The Alligators" — all mouth, no ears.

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

OHIO

Amateur Radio Fellowship, (ARF). Peggie Hough, Sec., 3888 Stow Rd., Stow, OH 44224. Meets 1st Sat./monthly, 10 a.m., Country Manor Restaurant, 1225 W. Main St., Kent. KA8YKT rptr., 147.075.

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

Clyde Amateur Radio Society (C.A.R.S.) Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 44811. NF8E Rptr. 447.625/442.625. 444.60 (+5 MHz). Net Sun. 9 p.m.

Firelands Area Repeater Assoc. Inc. Meets 4th Tue./monthly, 7 p.m., First Federal Savings of Lorain, Huron, OH. Freq. of Rptr. 146.805/205. Info: Eugene Hutchins, AA8DL, 45 Welton Ave., Norwalk, OH 44857.

Lancaster & Fairfield County A.R.C. Meets 1st Thur./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info Net every Mon., 8 p.m. K8QIK/R 147.63/03 Rptr.

North Coast A.R.C. P.O. Box 30529, Cleveland, OH 44130. Meets 2nd Thurs./monthly, 7:30 p.m. at North Olmsted Middle Sch. cafeteria, 27351 Butternut Ridge Rd., North Olmsted, OH.

Northern Ohio Amateur Radio Society (NOARS). Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: Rptr. K8KRG 146.70, DX Alert Rptr. 145.15. "Ohio's Largest General Interest Club"

Springfield Independent Radio Assoc., (SIRA). Call-in 145.45—224.26. Meets 2nd Tues./monthly, 7:30 p.m., Mercy Hosp. and 4th Tues/monthly, 7:30 p.m., Am. Red Cross. Info: Rodney Myers, KB8WV, (513) 399-1022.

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. W8HHF 147.87/27 Rptr. Rptr. info/swap & shop, Sundays, wkly — 8:30 p.m.

Triple States Radio Amateur Club. Meets Wed./weekly on 28.480 at 8:30 p.m.; 7260 at 9 p.m. Rptrs. 146.31/91 and 146.115/715. P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thur./monthly, 7 p.m., Bend Senior Cntr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06+ MHz. Info call: (503) 382-1685.

Keno Amateur Radio Club. P.O. Box 678, Keno, OR 97627. Meets 3rd Thur./monthly, 7 p.m., Keno Fire Station. Rptr. 147.32+ W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736.

Umpqua Valley Amateur Radio Club, Inc. 450 S.E. Leland St., Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 311, Douglas St., Roseburg, OR. Info: W5PII/R 146.90/30.

PENNSYLVANIA

Mercer County Amateur Radio Club W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly at 7:30 p.m., Shenango Valley Med. Center, Farrell, PA. Net, Thur. 9 p.m. on 147.75/15 W3LIF, Digi. 145.010.

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 147.690/147.090 Wed. 8:30 p.m. and 28.450 Sun. 9 p.m.

TENNESSEE

Nashville Amateur Radio Club. Meets 3rd Thurs./monthly at Lock 2 Metro Park, located off Pennington Bend Rd. Grilled hamburgers at 6 p.m., mtg. at 7. Info: Jim Lynn, 1621 Jackson Valley Pl., Hermitage, TN 37076.

TEXAS

Brazos Valley Amateur Radio Club (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thur./monthly, 7:30 p.m., Sugar Land Community Cntr., 226 Matlage Wy., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in 145.47, 442.5 rptrs.

Sun City Amateur Radio Club. Meets 1st and 3rd Fri./monthly, 7:30 p.m., 3709 Wickham Ave., El Paso, TX. K5WPH 147.240, 443.4 with remote operation on 6M and 10M.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK). Meets: 1st and 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Rptrs: 146.13/73 & 449.55/(-5) T. VE Exam Info: (804) 898-8031, WARTZ.

Virginia Beach Amateur Radio Club, Inc. (VBARC). Open Door Chapel, 3177 Virginia Beach Blvd., Va. Beach, VA. Meets First Thur./monthly, 7:30 p.m. Info on WA4KXV rptr, 146.97/37.

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m. United Good Neighbors Cntr., 305 S. 43rd, Renton, WA. Talk-in on 146.82 rptr.

North Seattle Amateur Radio Club, (NSARC). Meets 3rd Tues./monthly (except July, Aug., Dec.) at First Interstate Bank, 2825 N.E. 125th St.

WEST VIRGINIA

Jackson County Amateur Radio Club. Clark Stewart, W8TN, Pres., 104 Henrietta St., Ravenswood, WV 26164. Meets 1st Thur./monthly, 7:30 p.m., United National Bank of Ripley. Net Mon. 9 p.m. on 146.67/.07 WD8JNU/R.

Tri-state Amateur Radio Assn. Meets: 3rd Tue./monthly, 7 p.m., Green Valley Vol. Fire Dept., Norwood Rd. & 16th Street Rd., Huntington, WV. ARES net Thur. 9 p.m. on 146.76(–) W8VA/R. Info Bud Cyr, KB8KMH (304) 522-1294.

WYOMING

Sheridan Radio Amateur League, 146.82. 926 La Clede, Sheridan, WY 82801. Meets 4th Thur./mohthly, 7 p.m., Sheridan College Tech. Cntr.; Saturdays, 8 a.m. at J.B.'s Info: (307) 674-6666, WA7B.

PUERTO RICO

Puerto Rico Amateur Radio Club. P.O. Box 360693, San Juan, Puerto Rico, 00936-0693. Meets every Thurs., 7 p.m., Civil Defence, Rio Piedras (next to AMA & San Francisco Shopping Cntr.). Nets Sun. 9 a.m. on 147.090, 28.450 & 7.250 MHz. Info: Raul Escobar, KP4QL, (809) 765-2745 (daytime).

OLD-TIME RADIO

Pioneer test equipment

I.L. McNALLY, K6WX

Three months after I graduated from the University of Minnesota in 1931, I enlisted in the Navy in order to weather the Depression and gain some practical experience in radio. Somehow this four-year hitch lasted 25 years with no regrets. I was fortunate to be assigned to the flag complement on the battleship USS *Pennsylvania* (BB38). Being the flagship of the fleet, the ship had an extensive radio installation consisting of over two dozen transmitters and receivers all the way from 150 kHz to 50 MHz. This included one 5 kW water-cooled HF transmitter and a 5 kW rotary spark transmitter in emergency radio. Being a dyed-in-the-wool ham, I was in my glory.

There was not one piece of radio test equipment on board ship so I promptly built myself an AC-DC VOM, VT voltmeter, RF signal generator, tube tester and audio oscillator. All of this came out of $60 per month sailor's pay. In 1935 RCA brought out their model 155 3 in. oscilloscope. I purchased it using a whole month's pay. It was the first scope in the fleet and I put it to good use in signal tracing, automatic key adjustment, key click filters, modulation checks, RTTY adjustments and so on.

In 1938 when I went to the Asiatic Station, I took my trusty scope with me. I used it when I instructed the first radar class in the summer of 1941 and then took it to Pearl Harbor. Again, all of the test equipment at the Pacific Fleet Radar School was mine. When I was head of the Search Radar Design Branch in 1943, I drew up plans for a technician's tool box. This tool box was soon issued throughout the fleet and one was even issued to me.

Back in 1935 the Navy issued a trio of superb test equipment to each ship. This consisted of a general radio RF signal generator, all-purpose tube tester and a pair of test meters for AC, DC and VOM measurements. I guarded these treasures in my shop under lock and key. One night a chief radioman stopped by my shop with a chit signed by the fleet radio officer authorizing him to take this test set ashore to fix his home radio. Since his technical skill level was about 2 on a scale of 10, I said no! When he threatened to call the radio officer I capitulated, for who was I as a lowly sailor to contest the order of a commander?

After getting a witnessed signature for its custody, I reluctantly surrendered the test set. Tragedy was not long in coming, for on the way home the chief stopped for a beer and someone stole the test set from his car. I was back to maintaining the radio equipment on the flagship of the US fleet with my own personal test equipment. A replacement was obtained in about six months and was paid for by the errant chief.

I kept my RCA scope for 37 years and during that time only minor replacements were required. When I retired and came to Sun City, California, I donated it to a technical school, so it is probably still in service. □

It wasn't always so simple

In the original version of telegraph code introduced by Morse and Vail in 1838, 11 letters were different from those we now use. Morse's "T," "L" and numeral zero were all represented by single dashes having different lengths. Naturally, the lengths, the time between the down click and the up click of the sounder, varied with the keying speed. The letters "J" and "Q" were both *dididahdit*, which we now know as "F," and "F" itself was *ditdahdit*.

Six letters had internal spaces to further confuse the beginning operator who had to distinguish between them and the spaces between characters. We still use one without realizing its origin. Ever wonder where "es," taken to mean "and" in CW came from? The ampersand (&) was then commonly used, even in formal writing, and was defined as *ditdididit*! The letter "C" was *didit dit*, "O" was *dit dit*, "Y" was *didit didit*, and "R" was *dit didit*.

American telegraphers always used this, the original dialect, and refer to it nostalgically as "the mother tongue."

European Morse telegraphy began in 1848, when a line was installed in Germany. A line official, Gerke, looked askance at the unsystematic features in Morse's code and substituted more rational symbols. he also made the dot the basic time unit, defined a single dash to be three dot times, constructed separate symbols for numbers, and assigned more regular symbols to punctuation marks.

In 1851 this code was formally adopted for standard German communications as the "Astro-Germanic Morse alphabet." Slowly this dialect spread over Europe and was eventually referred to as "Continental Morse."

In 1937 some minor changes were made to punctuation symbols at an ITU convention, changes that still confuse some old-time brass-pounders, and that's the code we use today. *—Committee for Amateur Radio, Cincinnati, OH* □

Phacts about phonetics

Consider the changes which have taken place in phonetics over the past few years.

Take, for example, the phonetics used during World War II (and these were the ones on which we vets cut our teeth): *Able, Baker, Charlie, Dog, Easy, Fox, George, How, Item, Jig, King, Love, Mike, Nan, Oboe, Peter, Queen, Roger, Sugar, Tare, Uncle, Victor, William, X-Ray, Yoke, Zebra.*

Then came the phonetics with which hams are familiar (and some of which still throw me through a loop). In looking them over, the question comes as to why they kept *Charlie, Mike, Victor* and *X-Ray*, and dumped *Roger* in favor of *Romeo, Fox* for *Foxtrot, Love* for *Lima*, and *Queen* for *Quebec* (to name a few).

Maybe we should all dream up our own phonetics. For example, one reader suggested that the "boomer generation" could come up with a great bunch of phonetics like, for example, *Aerobics, Beemers, Cuisinart, Daycare, Evian, Futon, Galleria, Hairstylist, Investment, Jacuzzi, Kickback, Lawyer, Money, Network, Oatbran, Phone, Quarterly, Remodel, Self, Tofu, Urban, Video, Winecooler, ex* (as in ex-husband, ex-wife, ex-family), *Yogurt, Zen. — Western Public Service System* □

YLs on the Air

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

Activities

Sept. 26-27	JLRS Party Contest (phone)
Oct. 3-4	JLRS Party Contest (CW)
Oct. 14-15	YLAP (CW)
Oct. 28-29	YLAP (phone)
Nov. 14	ALARA Contest (phone and CW)

The sixth of each month is YL Activity Day. Call "CQ YL" on the hour on any frequency ending in 88.

Certificates

Congratulations to Nellie de Lazard, XE1CI, who has just completed her five-band WAS the hard way—all YL! She was told by the 5BWAS award manager that she was the first operator to submit all YL cards for this certificate. Nellie is already looking for YLs on the new bands, so get on and give her a contact from your state. And she's always looking for DX YLs!

The ARRL doesn't provide any endorsements for the 5BWAS award, but it may be time for some group to offer a special certificate to mark this achievement. When Howy Bradley, W2QHH, worked a YL operator on every continent in January, 1949, the Young Ladies Radio League designed a special certificate for him, the WAC/YL. This is still available to all licensed amateurs, so if you're a certificate-hunter and have worked a YL on every continent (or plan to), you can write the current WAC/YL certificate custodian, Lee Shaberly, KB8RT, 2635 W. Sunrise Dr., Phoenix, AZ 85041, for details on how to apply.

YLRL offers four other beautiful certificates: 1) the YLCC requires contacts with 100 different YL operators, and the certificate custodian is Natalie Vincent, WA2RPQ, 5391 Keeney Rd., Warsaw, NY 14569; 2) the DX YL requires contacts with 25 different licensed YLs outside your own country, and the certificate custodian is Phyllis Davis, KA1JC, 5282 Boyle Terrace, Pt. Charlotte, FL 33981; 3) the YL-DXCC requires contacts with YLs from 100 countries from the current ARRL list of countries, and the certificate custodian is Marty Silver, NY4H, 3118 Eton Rd., Raleigh, NC 27608; and 4) the WAS-YL is earned by working a licensed YL in each of the 50 states, and the certificate custodian is Richea Brigance, KU5L, Route 2, Box 197, Booneville, AR 72927.

These awards are available to all licensed amatuers. Please enclose an SASE when you request information from any of the custodians.

Almost every YL group around the world offers at least one certificate, available to both OMs and YLs, for working YL operators. Most of these are only publicized in YL newsletters and magazines and are not too well known, so I'll include some of them in future columns.

Barbara Neiman, KE5ZI, attended the YL ISSB convention in June.

Meetings and conventions

Faye Herren, KBØQI, hosted the YL ISSB Convention in Colorado Springs on June 18 through 21, and I had a great report on it from Barbara Neiman, KE5ZI, a past president. She wrote that many of the SSBers were decked out in cowboy outfits, complete with hats and boots, while they enjoyed a chuckwagon supper and country western music on Thursday night.

Friday they took in the Garden of the Gods, a laser show, the Air Force Academy, Falcon AFB, and the NORAD facility. The business meeting was held on Saturday morning, and after lunch a DX forum was held, with videos of New Zealand and Australia. The banquet and awards presentation was held Saturday night, and V. Mayree Tallman, K4ICA, presented some beautiful plaques, including the newest one, the Tradewinds.

DX attendees were Nellie de Lazard, XE1CI; Masako Kato, JAØCYL, and her son Kotaro, JEØCYU; Dave, ZL1AMN, and Aola Johnson, ZL1ALE; Rolf Liedberg, GMØBCI; Alf Chandler, VK3LC; and Lorenzo Morales, AB4DZ.

Kurt Bindschedler, HB9MX, attended the big Amateur Radio meeting in Friedrichshafen, Germany, on June 26 through 28, and said there were over 300 YLs at the YL meeting, which was sponsored by the DL YL club. Neomi, 4X6DW, who runs the European DX YL Net on Thursdays at 1700 UTC, on 14.243 MHz, was there, and there were YLs from many countries, including Japan, Finland, Russia, Poland and Czechoslovakia. Plans for the next two international YL meetings, one in Osaka, Japan, In April, and the other in Wichita, Kansas, next July, are being completed.

Kyoko Miyoshi, JR3MVF, is the main organizer for the Asian YL Meeting '93, and there will be several European and North American YLs attending. In this country, Lia Zwack, WA2NFY; Carol Noack, KK5L; Jeanie Parker, WA6UVF, and Flo Reitzel, KU7F, are making arrangements now. From Europe, Christa Elksnat, DJ1TE; Gerda Jacobs, DL5OBK; Sheila Gabriel, G3HCQ; Helene Wyss, HB9ACO; Greta Hubacher, HB9ARC; Ruth Geering, IT9ESZ; Ruth Tollefsen, LA6LH; Tuulikki Hartikainen, OH7XX; and Raija Ulin, SMØHNV, and her friend Kate Gustafsson, whom we all enjoyed meeting in Stockholm last year, will be attending.

A little closer to home, Dana Tramba, NØFYQ, president of YLRL, is looking for volunteers, so if you can help with the YLRL convention in any

Dana Tramba, N0FYQ, is seeking volunteers for the July '93 YLRL convention.

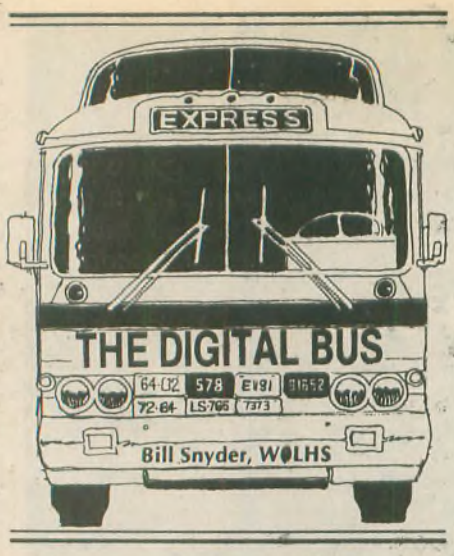
way, please get in touch with her. Diane Van Kirk, KF0LV, is the prize chairman for the convention, to be held July 9 through 11, 1993, and she would like to hear from you if you or your club have prizes to donate.

YLRL and YL ISSBers

The Young Ladies' Radio League, Inc., was founded in 1939 by Ethel Smith, K4LMB, and is the largest all-YL organization, with members in about 50 countries. Only licensed YLs may join, but subscriptions to the publication are available to all. Dues and subscriptions are $8 a year, plus $8 air mail postage for DX members. For membership applications, write to Phyllis Douglas, K7SEC, 701 N. Camino Del Codorniz, Tucson, AZ 85748.

The YL International SSBers, Inc., was founded by V. Mayree Tallman, K4ICA, and is celebrating its 28th anniversary this year. Open to both OMs and YLs, YL ISSB operates systems on 10, 15, 20, 40, and 75M. Dues are $10 per year and can be sent to Pablo Neiman, N5JRE, 209 Pine Trail, Higden, AR 72067. A brochure is available from Tom Wuelfing, WA1GAG, if you'll send an SASE. □

YL enthusiasm is spreading with a new, bimonthly newsletter, published by Maureen McClain, N5FFB. Direct subscription inquiries to **YL World**, *P.O. Box 254, Sanger, TX 76266; 817/565-9633.*



I was saddened to read in a packet bulletin that Bill Halligan, W9AC,the founder and boss of the Hallicrafters Company, died July 14 at the age of 93. For you newcomers to Amateur Radio, let it be said that Hallicrafters ham gear was a mighty big part of the 1930s ham radio scene. Bill started his company in 1934, about the time that commercial radio equipment was being introduced to thousands of ham shacks around the world. Before that time, most radio fans had to build their own receivers and transmitters. Breadboarded self-excited transmitters were the norm in most shacks, although crystal control was becoming popular-if you could grind crystals.

I built two "shortwave" receivers before I purchased a commercial job. My first commercial unit was a three-tube AC National SW-3, AC meaning that the filaments were powered by alternating current and the plate voltage was either B batteries or an AC B battery eliminator. The SW-3 retailed for $13.30 with tubes and one set of 40M coils (two).

In 1932 the source of my radio parts was the S.S. Kresge Dollar store. The pretty young lady who ran the radio parts department was not very knowledgeable about the stock of tubes, tube sockets, coil forms, transformers, resistors, capacitors (or condensers as they were known in the good old days) and dials. She did, however, know the prices of each item. When asked for technical details, her stock answer was "I don't use 'em, I just sell 'em." And, like Chicken Little, she did just that.

Most hams built their own transmitters until well after World War II. I did likewise. Drilling holes in a panel and/or a chassis, mounting the parts, winding coils, and soldering wires were both fun and frustrating. Almost every ham was in the process of "rebuilding" most of the time. New transmitting "bottles" were being introduced each month and *QST* was full of construction articles using the new ones.

Like the community barn-raising gathering of the early days, transmitter christenings were sometimes a group event. I recall one Saturday afternoon when Jim Wayman, now N0BCW, Bill Ogden, W0KHG, and I "helped" Kenny Christensen, now KC0UI, smoke-test his newly constructed push-pull final amplifier. It was a beauty to behold, but when we put the plate supply high voltage to it, a parasitic oscillation appeared and the amplifier took off at some unknown frequency. Before we could cut the power, the plates of the brand new tubes lit up red, then white and bingo, for a grand finale, a hole burned in the middle of each plate. No, the short-lived amplifier didn't smoke, but Kenny did!

It was into this world of Amateur Radio that Bill Halligan brought his Hallicrafters Company. Just prior to America's entry into the World War, Hallicrafters had introduced a big powerful ham transmitter later known in Signal Corps jargon as the BC-610. It was readily adaptable to military use, so the Chicago company started cranking them out by the hundreds.

In my South Pacific days with the 58th Signal Battalion, we used several BC-610s in our radio section. The designers had fitted the bulky transmitter into a portable operating shack that would slip on the back of a two-and-half-ton army truck and work into a mobile-style whip antenna. The unit was powered by a 10 kW generator mounted in a one-ton trailer which was towed behind the truck. The transmitter input power was about 600W and it could work most anywhere in the HF section of the radio spectrum.

Because our unit supported First Army Corps headquarters with heavy traffic CW circuits, we routinely took the transmitters out of their truck shacks and remoted them a mile or s from the message center where ou receiving positions were located. Dur ing the months in New Guinea and th Philippines that I was the radio office we used the BC-610s for long-haul cir cuits back to Sixth Army and Genera MacArthur's Southwest Pacific Head quarters.

At each location we'd put up eithe dipoles or rhombic antennas. They wer held up by hastily-cut "green" tree that were stripped of their bark. The were slippery to climb even with tele phone lineman's hooks, but they got th big antennas high up in the air.

I met Bill Halligan for the first tim when Bob Leo, W7LR, and I were cho sen to go with the Gatti-Hallicrafter African Expedition in 1947. Bill was cordial guy and I enjoyed knowing him We talked to him via ham radio mos everyday we were in Africa. The han station was located in a house traile which also housed the photographer' darkroom. Weldon King and Erro Prince, the two full-time photographer with the expedition, routinely deve oped Ektachrome and Ansco color filn as the expedition progressed. When w camped up about 9,000 feet on Moun Kilamanjaro, a creek that ran throug our campsite furnished water at ex actly 68 degrees for the processing op eration.

Hallicrafter's engineers had provide the expedition with a portable rhombi antenna which we normally aimed a Chicago. It was built using surplu Signal Corps portable masts that coul be erected in minutes. With a big heavy duty terminating resistor in place, th antenna gave us a gain of about 12dB i the direction of the US. On receive i was great. We worked 10M US mobil stations running 5W with no problems And if you don't think we had ever station in the country calling us, gues again. It was bedlam, but fun.

I lost personal contact with Halliga a few years after we returned fron Africa. When I saw the message of hi passing, I looked in Buckmaster's CD ROM to see if I could find his call, but i apparently had been dropped. Never theless, I owe Bill Halligan a salute fo his contributions to our hobby, and als my thanks for a great trip to Africa!

CD-ROM

A CD-ROM is a great invention. now have my "writing" computer CD ROM system fitted with multimedi sound, etc., although I am not terribl impressed with it. It is great for demon strations, but a sorry mess to use fo writing support. The *Windows* program which I have never liked, makes usin the dictionary, thesaurus, and othe

reference disks a tediously slow process.

I now have three upgrade versions of Microsoft's *Bookshelf* program for writers. As I type this column I'm using the very first edition of *Bookshelf* running in the TSR background. It is instantly accessible. The latest multimedia version, although it is nice to be able to hear a voice pronounce a word in the dictionary, takes too long to find a definition. The upgrade authors ruined the utility of *Bookshelf* by trying to make it a demonstration of how clever they are at software manipulation.

I have been using the Buckmaster *HamCall* CD-ROM for about three years. I have had three upgrades of the disk and each one gets better. The last one has the US, Canada and some DX countries at instant recall. For US stations the CD-ROM gives you the name, address, date of license expiration, class of license, and year of birth. For many foreign stations it gives you the address, although they don't have all the countries in the world as yet. I gather from what Buckmaster said at Dayton that they will be adding DX addresses as they become available. I wrote to the *Callbook* a long time ago and suggested they put out their books on CD-ROM, but I never heard from them.

The nicest part of the compact disk version is that you can search by name, town or call sign. I've found call signs by inputting a name when I had forgotten the person's call. And Buckmaster has put about 5,000 shareware and public domain programs on the disk as a bonus. Among the extras are Part 97 of the FCC rules, The Holy Bible, and all kinds of antenna and electrical programs; yes, it's loaded. There are over 820,000 ham calls on the disk, plus all those other goodies. It's the way to go if you are into computers.

Eavesdroppings

"I JUST SLOBBERED CORN FLAKES ALL OVER MY KEYBOARD-I GOTTA GET A PLASTIC COVER OR A DRIP-LESS SPOON . . . WHEN TIME GOES FAST, WHERE DOES IT GO? . . . I'M A LITTLE BIT OLDER THAN YOU BY 52 YEARS . . . WHEN A PERSON WITH A BIG HEAD FALLS, IT'S LIKE DROPPING A WATERMELON: SPLAT . . . GETTING OLD IS EASY TO DO IF YOU LIVE A LONG TIME . . . THERE'S A RUMOR THAT THE HIGH SPEED PACKET NET IS COMPOSED OF RICH REPUBLICANS . . . I WORKED YOU THREE YEARS AGO AND I'M STILL ON THE SAME PAGE OF THE LOGBOOK . . . PUT A FRESH STACK OF PAPER IN YOUR PRINTER AND I'LL SEND YOU MY EQUIPMENT LIST . . . HE CAN'T SPELL MY CALL SIGN RIGHT, BUT I THINK HE HAS IT OKAY . . . NICE DRAG TAPE AT YOUR END . . . I'M RUNNING 70 WATTS TO THE ANTENNA TUNER, WHO KNOWS WHAT TO THE ANTENNA . . . HERE WE'RE USING A CUSSCRAFT ANTENNA UP ONLY A LITTLE BIT . . . MY DUMB TERMINAL IS CERTAINLY WELL NAMED . . . I'M HAVING RIG TROUBLE SO I THINK A GRIDLEAK HAS SPRUNG . . . I'VE BEEN IN HAM RADIO SINCE 1993 . . . I'M WRITING A COMPUTER PROGRAM FOR DX HOUNDS, IT'S GOING TO BE CALLED THE BOASTMASTER . . . I JUST HEARD SOME THUNDER SO I'M GONNA HAVE TO PULL THE SWITCH AND TOSS THE COAXES OUT THE WINDOW, IT'S MY ONLY LIGHTNING PROTECTION . . . HERE I TYPE SO ALL ALONE, USING THE CQ KNUCKLEBONE . . . I CAN'T PRINT AT THIS POINT, MY CAT IS SLEEPING ON THE PRINTER . . . NOW I'D LIKE TO TRADE 73'S WITH YOU AND GET OUT OF THIS HOT SHACK FOR A BEER."

Interior of the Gatti-Hallicrafter's African Expedition ham shack trailer. Three Hallicrafters ham receivers are visible. Bob Leo, W7LR, now of Bozeman, Montana, has his hand on the Panadapter which scanned the band tuned by the receiver which Bill Snyder, W0LHS, is tuning. The picture was taken in New York prior to sailing for Africa, and the hats were the idea of an advertising agency genius.

In the July 1992 issue I quoted Bill Pierpont, N0HFF's, explanation of the difference between the American Morse and the International code. Now I would like give credit to Tony Smith, G3FAI, for supplying Bill with the original German text of the story. It was Tony's curiosity that started the whole thing. Thanks, Tony and Bill.

Thanks to WA6YOO, KB5QAI, KD3YU, W0HAH, N0HFF, AA7AJ for their help with this column. Write me: Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 58103. My packet address is W0LHS@W0LHS.ND.USA.NA. 73 and DIT DIT. □

Computers & BASIC STUFF

C.H. Stewart, KD5DL
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Duncan, OK 73435

Didah looks like "A"

Which came first? The computer or the computerized code program? It seems that every computer ever made has at least a dozen Morse code programs written specifically for it. Most accomplish what they set out to do, and several, in fact, make computer QSOing almost as much fun as the real thing!

This month we'll explore some theories about learning the code, and we'll look at a very simple routine that just might help you test them.

Why learn code? As predicted, most newcomers to Amateur Radio enter the hobby as codeless Technicians. In January 1991, one month before codeless testing began, only 89 "first-time" licensees were Technicians, compared to 1,713 first-time Novices. Exactly one year later, after implementation of the codeless Tech program, 3,318 people entered Amateur Radio as Technicians, compared to only 655 Novices. First-time Technicians currently outnumber first-time Novices about three to one.

And, not so surprisingly, many of the Techs get hooked and want to upgrade. Going after the new privileges requires a knowledgeable use of Morse code. Consequently, a lot of codeless Techs are going for Tech Plus, or for General, Advanced or even Extra privileges.

Learning code

There is no quick way to get code savvy. It takes time. But, if you understand what your mind does to learn code, you might be able to master it a little faster and with a little less frustration.

Some experts tell us that we really have two minds at work in our heads. One side of our brain is the logical half and the other half is the abstract half. The logical brain predominates during most of the day. It's the brain that gets us through the working hours of the day. Basically, the logical brain tries to make order and sense out of the things we do, or want to do, and it does so through a slow, analytical thought process.

When the logical brain gets tired, usually around mid-afternoon or early evening, it relinquishes control to the abstract brain. Abstract doesn't care as much for sense and order, so it doesn't try to analyze the data it processes. Abstract lets you enjoy things like art and creativity without trying to understand why you enjoy them.

So what do most of us do when we try to master the code? We try to make our minds believe that there is some kind of logic to what we're doing, which means it's a job for the logical brain. Then we set aside some time in the evening for practice, time when the logical brain has already shut down for the day (or sorefully wants to)!

It should seem logical then (if you're reading this with your logical brain) to avoid using the slow, methodical, logical brain for mastering the code, especially if you plan your practice sessions for late in the day. If we could take the work out of learning the code, it might make it that much more enjoyable to use and to master.

Enter *Flashcode*

If we're not going to learn code by counting dots and dashes, then how do we learn it? Well, one way is by osmosis—just let it soak in.

Our BASIC program this month might help a little. The idea behind the program is to give visual reinforcement to the Morse character sounds. The program selects a random character, produces the Morse sound for the character, then, very briefly, flashes the visual representation of the same character onto your monitor screen. The theory is this: if given enough time, your mind will begin to hear each code character as a distinctive sound with a rhythm all its own and will automatically know what each of the sounds mean.

```
0  REM "FLASHCODE," BY KD5DL
10 DATA A,SL,B,LSSS,C,LSLS,···

50 DATA .,SLSLSL,@,LLSSLL,?,
   SSLLSS,/,LSSLS,AR,SLSLS,BT,LSSSL-
   ,SK,SSSLSL
60 KEY OFF: CLS: PRINT "PRESS ANY
   KEY TO STOP"
70 PRINT:INPUT "      WPM ",W:
   D=20/W: S=D
80 SCREEN 2: RANDOMIZE TIMER
90 A=INT(RND*45)
100 FOR B=1 TO A-1
110 READ A$,B$
120 NEXT B
130 FOR I=1 TO
   LEN(B$):C$=MID$(B$,I,1)
140 L=D: IF C$="L" THEN L=D*3
150 SOUND 800,L: SOUND 0,D
160 NEXT I
170 SOUND 0,3*S
180 IF A$="@" THEN A$=","
190 LOCATE 12:PRINT TAB(30),A$
200 FOR T=1 TO 10
210  NEXT T
220 RESTORE
230 LOCATE 12: PRINT TAB(30)," "
240 D$=INKEY$: IF D$="" THEN
   RESTORE: GOTO 90
250 SCREEN 0: STOP
```

The program, written in GW-BASIC, stores characters and their sounds in data statements. The sounds, obviously, are the SL codes, where "S" is for the short sounds, or dits, and "L" represents the long ones. For brevity I've omitted lines 20 through 40, but you will need them when you key in the program. Just continue where I left off. In addition to the alphabet and numerals you will want to include a period, comma, question mark, slant bar, "AR," "BT," and "SK" (see line 50).

One caution: listing a comma in a data statement won't work, since commas can only be used as data separators. We can get around the problem by using something other than a comma, so I chose "@" as a substitute character. The @ is converted back to a comma in program line 180.

The random number routine in lines 80 through 120 locates two adjacent pieces of data and stores them as A$ and B$. Lines 130 through 170 convert the "SL" codes in B$ into sounds and lines 190 through 230 flash the character, A$, onto the screen. The last two lines of the program are a "press any key to stop" routine.

The wpm routine works with my computer, but you may have to adjust it to fit yours. You can experiment with the D and S variables in line 70 to set the code speeds you want to achieve, but there is little reason for going much slower than 13 wpm character speeds; larger values for the S variable increases spacing between characters.

If you have enhanced graphics capabilities you can also experiment with the pitch of the sound (line 150), screen modes (line 80), and colors.

Flashcode is not designed to be a substitute code practice program, so you still need to continue with your other practice aids, whether they be computer-generated, cassette tapes or over-the-air sessions. Just use *Flashcode* to help with the visual reinforcement aspect of learning the code. And remember that no code program is magical. They all take practice, practice, and even more practice.

One for the books

Notebooks, that is. Some time ago I labored hard to derive the formula I use to convert AWG wire sizes to diameters. My formula was in a program listed in the April 1991 issue of *Worldradio*, and again last month. A letter from George Singleback, K4HXM, includes the "official" formula, which George says came from an obsure electrical engineering book. Reduced to a one-liner:

D=.46/(92^(1/39))(G+3)

where D is diameter, in inches, and G is the AWG number. □

Search And Rescue Communications

Jerry Wellman, WB7ULH
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Net control stations?

Following an exercise last week with the ARES and the state medical examiner, my thoughts concerning NCS have changed. Here's the scenario: Large aircraft accident, many casualties. Many examiner teams are recording casualty information. Supplies are needed. Police are needed because of looting. Injuries are discovered. An event of this scale has not happened in Utah. I've read accounts and talked with emergency responders who have been in mass casualty events, but these discussions have never focused on the NCS function.

Role of the NCS

What's the role of an Amateur Radio NCS? As I grappled with this dilemma, my thoughts turned to the Incident Command System (ICS). You may remember earlier columns where ICS was outlined. There are five major functions: command, operations, logistics, planning and finance. Communications is not a major "function" of ICS. Under ICS the focus is directed at accomplishing a "function," such as planning or operations, and not on the mechanics of how it is done.

Communications falls under the logistics area. Why? This is contrary to Amateur Radio concepts of being NCS for a whole operation. Consider what being classified under "logistics" means. Logistics is the support part of ICS. If we need more trucks or more firefighters or more hoses, we call logistics. If we need food to feed our people, we call logistics.

When operations needs communications at a staging area, it calls logistics. How communications takes place is not important to the staging area manager, as long as communications support the staging area needs.

Logistics role

If the incident commander needs an "administrative" net for the major functions, it's not important whether on VHF, UHF or waxed strings and paper cups, as long as the IC can talk to operations, logistics, planning and finance.

In Amateur Radio circles we're most familiar with training, traffic, DX or swap nets where an NCS calls roll and progresses sequentially to take care of the business at hand. Apply this to ICS by thinking "function." The purpose of a traffic net is to simply handle traffic; during a training net we do training. On any given night there may be several nets in progress on many bands, all with different functions.

During our mass casualty exercise, the NCS function had a pretty cloudy definition. We initially had three nets: the resource net, the operations net and the medical examiner assignment net. As our participants received an assignment and moved into the operations net, there was less and less happening on our resource net. This can be expected.

But who was on the operations net? We had the command post, the medical examiner teams, transportation teams, supply requests, etc. You can see there were several "functions" sharing th operations net.

Applying ICS to our communications we should have assigned at least fou frequencies for the functions. After re ceiving an assignment, the team woul request supplies and index numbers o a supply net. If police were needed, tha would be on a command net (wher inter-agency communication would oc cur with the IC). When the team fin ished logging and photographing, a re quest would be given on the transporta tion net.

NCS bottleneck

As it happened we had check-in stacked up like planes over Denve Stapleton and the Amateur Radio NC became a bottleneck to the operation. A transportation net was later estab lished and worked well to offload tha functional traffic, showing that learn ing took place during the exercise.

What if you have several nets – shouldn't you have a net control statio for each? Look at the function. On command net, the command post woul be the net control. On the assignmen net (in our case) the medical examine office would be net control. On the sup ply net, the station where the stuff i located (or procured) would be NCS Transportation could be different; th transportation teams could self-con trol the frequency. A field team woul come up on the frequency, listen to se if it was clear and make a request for a available transportation team. If it be came pretty complex, the transporta tion supervisor could establish a mor formal net and perhaps track assign ments.

So what of the Amateur Radio NCS Where does this fit in? I'd love to hea your experiences if you've been in multi-agency, large scale, multi-func tion emergency. Lacking that experi ence, here are my thoughts. The Ama teur Radio NCS would fill a resourc function to non-assigned Amateur Ra dio volunteers. This NCS would kee track of who has responded, who i available, who has to go home, or othe needs relating to Amateur Radio.

Say for example the command pos needs another operator. Maybe th medical folks need communications fo a triage area. These requests woul come to the Amateur Radio "resource" net. When a resource is assigned function they move to the appropriat frequencies to accomplish their as signed tasks.

Police network

The exercise served to jolt me int thinking about what I listen to on the Salt Lake City Police frequencies. Of ficers working in various areas of the

city operate on assigned operational frequencies (central, east, west, etc.). Yet they can move to a car-to-car frequency or a services frequency as the needs arise. There is a narcotics frequency and a state-wide frequency (shared by all law enforcement agencies). There is no single NCS for the SLCPD and no NCS on the car-to-car or narcotics frequencies.

During special events the car-to-car frequency becomes the operational channel and may have a dispatcher (or NCS) depending on the size of the event. What I have observed in day-to-day SLCPD communications is a grouping by function, allowing traffic to move quickly.

My SAR or public service experience has always been as a single function. At the CAP mission headquarters, the function has been the search at hand and being the "command" NCS. As a dispatcher the function was "operations" NCS coordinating with field officers and incoming telephone requests.

I learned during the exercise that a single-frequency NCS cannot operate efficiently in a multi-function environment. It would be similar to running a swap net and a DX net on the same frequency at the same time-only one function could be done at a time, which would place either the DX or the swap folk on hold while the "other" used the frequency.

It's confusing, inefficient and it wastes a lot of time while similar functions are on hold. Don't get me wrong and think I'm pointing fingers at poor Amateur Radio operators. That's not the case. We're moving into areas we've never been before and learning how we fit into ICS is a tough transition. On the amateur bands, doing our thing, we're number one. When we serve as communicators under ICS, we will most likely fill a support role to a single function such as staging area, air operations, ground operations, logistics, medical triage, etc.

Learn about ICS

As we become professional communicators it is critical that we are familiar with how ICS works. If we don't understand ICS, we're not going to get the communications assignment. It's that simple.

Look for local ICS training opportunities! Fire departments, SAR units, federal response agencies or police departments may be conducting ICS training. Get some of your people involved, possibly as course observers. You don't need to be ICS experts, but your group's communicators should know what ICS is all about.

If all else fails, at least order the ICS handbook from Fire Protection Publications, Oklahoma State University (Stillwater, OK 74078). It will only set you back $15. There is also an ICS course available from the National Association for Search and Rescue. The course costs $60 and you can get information from NASAR at P.O. Box 3709, Fairfax, VA 22038.

For those of you kind enough to send me checklists for the "Handbook of Checklists" project, don't despair. The project is moving along toward the typesetting phase. So many of you sent in checklists that it's taken me a little longer than expected to correlate and enter the items. When you get your copy I'm sure you'll enjoy the scope and content!

If you're interested in a super exercise involving mass casualty and a medical examiner support role, contact John Parken, KA7GZH, 4672 S. Deer Creek Road, SLC, UT 84124 for details (an SASE is appropriate). You might also ask him about the Salt Lake County ARES resource manual. Both the manual and the exercise provide super information for emergency responders. Until next month, 73 from Salt Lake City. □

PAT TICE, WØTDA

That helping hand

"Hams helping hams" ... That's been the Handi-Ham motto for 25 years, and it is as timely today as it was in 1967, when Handi-Hams was formed! Yes, the tradition of "Elmering" is alive and well throughout ham radio as local radio clubs run licensing classes, volunteer examiners give tests, and experienced operators patiently guide newcomers through those first shaky QSOs. All of this is especially appreciated at Handi-Hams which is, after all, primarily a volunteer organization. Indeed, there are only four regular employees here at HQ, and it would be impossible to serve our thousands of members around the world without a whole lot of help from volunteers!

To understand the role of volunteers, you have to understand just what it is that Handi-Hams does and for whom. Handi-Hams is a program of Courage Center, a non-profit rehabilitation facility for the physically disabled. Courage Center has many different programs to assist the physically disabled to lead full lives, but Handi-Hams is unique among them because we serve a membership that is, well ... everywhere! Other programs at Courage Center require some sort of attendance. (Try swimming in a therapeutic pool without being within a hundred miles of one.) But the only pool we use at Handi-Hams is (forgive this one, please) the *question* pool, and you don't need to travel to Courage Center to use it. We are an educational organization, and our most immediate goal is to provide the training that physically disabled persons need to gain their Amateur Radio licenses, begin operating and upgrade to higher tickets. That is no small task, and we depend on volunteers, hams like yourself, to help us to do it.

Here's a typical example of how it works: Sam Smith sends us a letter inquiring about our services. Sam is blind, and he has heard that ham radio is fun but knows nothing about it. "Could you help me?" he asks.

"Yes!" we say in the letter and membership application that we send Sam. And before we know it, Sam's completed application is back here, and we know some of the things about Sam that we need to give him some help. We respond with a membership card, a list of study materials, and a phone call to Sam to let him know how to start studying. Sam wants to use ARRL's *Now You're Talking,* so we send him a version read by volunteer Tony Tretter, WØKVO, on cassette tapes.

Sam studies the tapes, but he needs help to learn the code. We have code tapes too, but Sam really needs some personal help. Since he lives hundreds of miles from Courage Center, afternoon code practice with volunteer Dave Block, KAØVCW, in the HQ station here at Courage isn't feasible. No problem! It just so happens that we have a nearby volunteer, Joe Hamm, who has registered with us to be a one-to-one helper. We give Joe Sam's name and Joe sets up some study sessions.

At last the day arrives when Sam passes his test. His ticket will soon arrive, and he calls us with the good news! The only problem is that the rig he is interested in has an analog dial, and he can't read it.

Our shop volunteers Rex Kiser, WØGLU, Tom Cunningham, NIØH, Ken Williams, WØJKM, and Elmer Witham, NØDDJ, can modify Sam's rig so that he can read the dial! They will even go through the rig to make sure everything is working properly. If Sam hadn't been able to find a rig they might have found one to loan him—a rig that some generous person donated to Handi-Hams and that was refurbished and modified in our shop.

Finally, Sam gets on the air! He has gotten his ticket, set up his station and antennas and even learned operating technique, all with the help of volunteers! Perhaps next year he will decide to get his General ticket and attend one of the Handi-Hams Radio Camps in Minnesota or California, also staffed by volunteer instructors. One thing, however, is certain: Sam is opening a window to an entire world of new friends, and he's going to have fun!

We at Handi-Ham HQ work hard to support our volunteers. Sister Alverna, WAØSGJ, is our educational coordinator. She produces the study materials our volunteer instructors depend upon and juggles an amazing array of other duties to keep the system and its members up and running. Pam Westling, NØEFI, is our student coordinator. She is the person who works with those who are studying for their first licenses, coordinating one-to-one helpers and answering questions by telephone and letter. Jane Rova, our secretary, provides clerical support, keeps us organized, and produces the computer files that we need for our brochures and letters. And I write letters, make phone calls, and do what is necessary to assure that Handi-Hams is adequately funded and properly managed. All of us, staff and volunteers, are teachers in some capacity. That is our mission.

Thank you, volunteers. We couldn't do without you! And for those who would like to become a volunteer, contact Handi-Hams at Courage Center, 3915 Golden Valley Road, Golden Valley, MN 55422. □

Don't be shy

Worldradio is by, about and for you, the readers. Amateurs from all over the world submit news, features, public service information, construction projects, suggestions, opinions, hot tips and bits of Amateur Radio intrigue. You don't have to "be a writer," you just have to love Amateur Radio. So, c'mon! Don't be shy, write something for ***Worldradio!*** □

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

A new award

Earlier this year, 10-10 announced another new award, the 10-10 Worked all US State Capitals Award. The basic award is issued to any 10-10 member, with paid-up dues, for submitting QSL cards showing contact with another 10-10 member in 20 US state capitals. The certificate is red and blue with a US flag in the upper two corners and the 10-10 logo in the lower two corners. A map of the US, with each state capital identified, fills the center of the certificate. After receiving the basic certificate for contact with 20 state capitals, there is a silver seal for confirmation of contact with 40 state capitals and a gold seal for confirmation with all 50 state capitals. The cost of the certificate is $2, which includes return postage.

For an application and complete list of rules, send a #10 SASE to the certificate manager, Paul G. Johnson, N4JII, 2311 CCC Road, Dickson, TN 37055.

5H3CC, 10-10 #62214 from Tanzania

Father Camillo Calliari, 5H3CC, of Kipengere, Njombe Province, Tanzania, recently received his 10-10 #62214. Father Calliari is 52 years old and is a priest of the Order of La Consolana Missions of Torino, Italy. He has been an amateur for many years with the Italian call IN35BN. He has been a priest for about 25 years and was stationed at the Makambako Mission prior to being sent to Kipengere near the Liwigston Mountains, at an altitude of 2,400 meters.

We welcome Father Calliari, 5H3CC, #62214, to 10-10 and will be listening for his signal from Tanzania, band conditions permitting.

Jim Beswick, W4YHF, retires from 10-10

Jim Beswick, W4YHF, #11718, has retired as the fourth-area manager covering Alabama, Georgia and Puerto Rico. Jim has been a hard-working volunteer since 1980 and has earned his retirement. We thank you, Jim, for all of the many hours you have given to 10-10.

Rick Roberts, N4KCC, #41852, has taken over the responsibility of Alabama, Georgia and Puerto Rico. Members in the three fourth district areas noted should now send their dues and other membership information to Rick at 7106 Ridge Stone Drive, Ooltewah, TN 37363-8871.

A new roster

Finally, after several delays, our new Roster has been printed and is being shipped by Roster Manager Dee Gilbert, KA6HQJ, #30631. The Roster, dated June 1992, covers all numbers issued through June and has several blank pages of numbers for later entry. The roster is three-hole drilled for inserting into a three-ring notebook. The cost is $9 US or $12 DX. Send your order to Dee Gilbert, KA6HQJ, #30631, P.O. Box 503, Madera, PA 16661.

Next 10-10 QSO party

The Fall 1992 CW QSO Party will take place beginning at 0000Z on October 31 and end at 2400Z on November 1, 1992. Send logs to City of Roses Chapter, Robert O. Jensen, AA7FK, 17480 NW Santiam Drive, Portland, OR 97229. Remember, anyone can participate in 10-10 QSO parties, 10-10 member or not. But, only dues paid-up 10-10 members can win the awards. If you are a non-paid-up 10-10 member, why not send in your current dues and get in on the fun?

The next 10-10 SSB QSO party is scheduled for the weekend of February 6 and 7, 1993. More on this in later columns.

Michigan Water Wonderland Net

Word comes from chapter head Randy Shiemke, KA8VSR, #44592, that some publications have listed their net schedule in error. Randy advises that the correct time for the Michigan Water Wonderland Net is Monday night at 7 p.m. local time, and the frequency is 28.343 MHz. If you live in the Michigan area, or if band conditions permit, check in to this 10-10 chapter net. This chapter has a great looking certificate, one that would enhance anyone's certificate collection.

10-10 special event stations

KA9WAR, 10-10 #49686, will be operating a special event station from Peshtigo, Wisconsin, on September 26, 1992. Arde says he believes he is the only 10-10 member residing in Peshtigo (Marinette County). If you need Marinette County for your 10-10 county hunting, here may be an opportunity to get the county and work the special event station at the same time. QSL to KA5WAR, #49686, Arden Nelson, 329 Brown Ave., Peshtigo, WI 54157.

Ten-ten club station K8SCH, #46888, will operate a special event station for the Tall Stacks on the Ohio River on October 15 through 17, 1992, in celebration of the Golden Age of Steamboating. Operation will be on both SSB and CW. QSL to John Hugentober, N8FU, #16154, 4441 Andreas Avenue, Cincinnati, OH 45211.

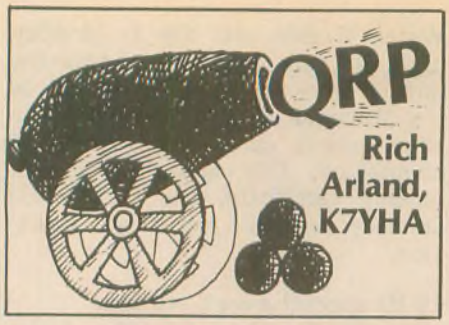
Finally

When you are involved in a special event activity or your chapter is holding a special event of any kind, let me know well in advance (at least two months) so we can list your activity here in the column.

If you have lost your 10-10 number, I can find it for you. Just send me your current call, including all previously issued calls, along with a #10 SASE. If you would like the information package, include $1, two first-class stamps and an address label (no SASE required). Remember, once a number is issued it is yours forever. Numbers are never re-assigned, so once you have been issued a 10-10 number, it stays with you no matter where you move.

If you are interested in finding out more about 10-10 and how you can become a member, send $1 and two first-class stamps to me at 18130 Bromley Street, Tarzana, CA 91304-1701. You will receive our information package which will include the latest issue of the *10-10 International News*. An application form for 10-10 membership is included. Also, *please* enclose an address label for the return of your package. No SASE, please, as the information package must be mailed in a 9 × 12 envelope and requires 98 cents postage for first class.

73, es cu next time. □



The recent *Worldradio* survey and some correspondence from readers have indicated that some of you would like to see an increased emphasis on QRP construction projects. There are several reasons why I do not feature regular construction projects in this column. First, there exists at least one bi-monthly and three quarterly QRP newsletters (in English) that feature a plethora of construction articles for the technically inclined low power communicator. In addition, there are regular QRP construction articles appearing in *QST, CQ,* and *73*, not to mention several books (by DeMaw, Hayward and others) dedicated to the topic of QRP construction projects. With all these avenues available to the QRP home constructor, there is little need for me putzing about, presenting yet another NE-602-based DC receiver or VXO-controlled transmitter.

The second reason is time. Working 55 to 60 hours per week, maintaining a family of five, remodeling a five-bedroom house, and writing two books and a monthly column leaves little time for homebrewing or operating (two things that I love to do). There just aren't enough hours in the day.

Finally, there exists a fiendish threat lurking in the shadows that is the nemesis of every technical author. Enter the dreaded "techno-dweebus," who crawls out from beneath his rock to confront *every* author who has ever written a technical article. The techno-dweebus is to the technical writing field what the art critic is to the world of fine arts. Most of the time he has no idea what he is talking about but, nevertheless, manages to assault the author with trivial drivel which is seldom correct or germane to the main thrust of the article. The techno-dweebus has absolutely no sense of humor and frequently misses the entire point of an article. And, the amount of mail generated by the techno-dweebus can be overwhelming to an author, causing him to seriously reconsider doing any further articles of a technical nature.

Having said all this, I recently received a message from Mike Czuhajewski, WA8MCQ, on my answering machine. Mike's message indicated that he wanted to take issue with a portion of my July QRP column about RF power measurement. Let me state that WA8MCQ is *not* a techno-dweebus, which is why I called him back. Had it been one of the usual hacks who normally call or write, I would have ignored the message and scheduled myself for a root-canal the following morning.

Mike is a retired USAF crypto maintenance trooper, which is why I like him. (We were in the same air force together!) I respect Mike's opinion and his technical expertise. And, upon completion of our conversation, I came to realize that I had made a common mistake regarding RF power measurements. All too often, when mistakes are made in print, the corrections are printed on the back page. Not this time. This one is right up front.

There are two glaring mistakes in the article. First the schematic of the RF probe shows a 4.14-meg ohm resistor labeled "R IN" on the schematic, while the text refers to this resistor as "R OUT." Take our pick, but change one to reflect the other.

The second mistake is more subtle. It is the result of yours truly not paying attention and doing the proper amount of homework. (Gadzooks! You mean that His Eminence, Sir Richard of Arland, is actually capable of making a mistake?!) The correct DC calibration voltage needed to produce a full scale swing for 5W output is 22.36V (using a 50 ohm dummy load). The explanation is somewhat detailed but here it goes (techno-dweebs pay attention, you *might* learn something):

When we deal with DC power, we are concerned with a steady state power. Average of DC power remains constant over a load. In RF, things are different. First of all, the RF voltage (and current) are constantly changing at a very rapid rate (millions or billions of times per second). In order to accurately calibrate any type of RF measuring device, this fact must be taken into consideration. The RF voltage applied to the input of the wattmeter/dummy load is rectified by the diode, D1 (refer to Fig. 1).

This results in positive pulsating RF voltage (the negative half of the RF voltage waveform is cut off due to the diode action of D1). C1 is *not* an RF bypass capacitor. In reality, it is part of a filter, just like a DC power supply. With each half-wave alternation of the input waveform, C1 is charged to the peak voltage of the incoming wave. It discharges only very slightly before the next peak in RF voltage occurs (remember, this stuff is changing direction very fast, unlike the lazy 60 Hz power found in DC power supplies). This means that C1 is constantly at the peak voltage of the applied RF signal. So, we are really dealing with *peak* voltage, as it appears across C1, rather than average (RMS) voltage.

Without going into any detailed explanation of the math behind the equation, the correct formula for determining the calibration voltage (Vcal) is as follows: $Vcal = \sqrt{P} \times 2R$, where P equals the desired power level to be measured (in this case it is the full scale reading desired on the wattmeter) and R equals the ohmic resistance of the dummy load.

Notice that the value of Vcal (22.36V) obtained by using the correct formula is considerably higher than the 15.8V value obtained in the original article. This is a mixed blessing. If you built the RF dummy load/wattmeter and calibrated it using the information in the original article, the full scale RF power measurement would be only 2.5W instead of 5W. That means, if you set your RF output according to the full scale reading obtained on the wattmeter (using the original formula) you

were running *half* the power you thought you were! If you had calibrated your transmitter's RF output using the 1W scale and were regularly making QRP QSOs, you were in fact running about 500mW output!

This is a great way to underscore the fact that QRP works! Unfortunately, it is quite misleading when accurate RF output measurements are desired. Speaking of accuracy, this RF wattmeter/dummy load is accurate down to about 10mW. Accurate voltage drops across the load can be measured down to about 1V. Using the correct power computation formula, $P = Vpk^2/2R$, where P equals the average DC power developed in the load, Vpk equals the peak RF voltage developed across the circuit, and R equals the ohmic resistance of the dummy load, we get a measured RF power of about 10mW! Not bad for an inexpensive RF measuring device.

Accuracy will suffer due to the meter scale. Obviously, the more the meter pointer is deflected, the more accurate the reading. The aforementioned 10mW RF level will be very close to the left edge of the meter (depending upon full scale calibration of 1 or 5W), thereby reducing the measurement accuracy dramatically. A solution would be to incorporate a separate calibration scale using 50mW as the full scale reading. This will improve measurement accuracy and enhance the versatility of the RF wattmeter.

I hope that this update on RF power measurement is of use to all of you who have been wondering how to get meaningful, accurate power measurements using inexpensive home-built test gear. In no way is this article intended to be the last word on RF power measurement for the low power communicator. For further in-depth reading on this topic please refer to *The Joy of QRP, Strategy for Success* by Ade Weiss, W0RSP (starting on page 133); *E /R Explained* by Mike Czuhajewski, WA8MCQ; *QRP Quarterly,* April '89, p.20; and "WA8MCQ Wattmeter Calibration Notes" by Mike Czuhajewski, WA8MCQ, *QRP Quarterly,* April '91, p.24-25.

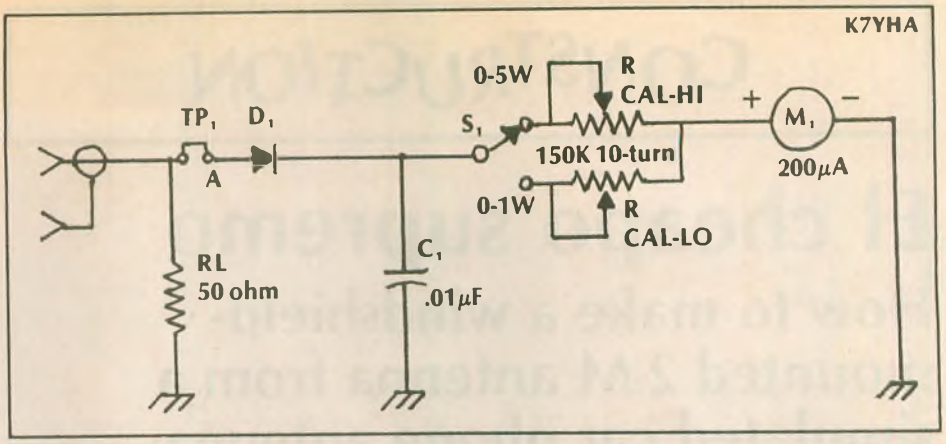


Figure 1

Shack update

Demolition of the third story end bedroom started in late January. Bit by bit the old plaster and lathe walls were ripped out, insulation was placed in the eaves and on the rafters to help keep the heat in during the colder months. A new double-hung, triple-glass replacement window was installed and slowly the new shack started to take shape. Joe Balutski, N3IKP, volunteered to do the AC wiring. Since the house was built around the turn of the century, much of the wiring was extremely old and in questionable shape. Add to this the "remodeling effort" done by the previous owners after the Agnes flood of 1972 (yes, our house was flooded out with waters reaching the tops of the doors on the second floor!) which was, to say the least, a token effort, and you begin to see what I was up against.

Joe procured an eight-breaker box, some 10-3 mc cable and #6 isolated ground cable and proceeded to run a separate 30 amp service and isolated ground from the main 200 amp breaker box in the basement to the new shack. The previous owners had all the convenience outlets on the second and third floors and all the lights tied into the same 20 amp breaker! Sure was fun to watch the lights go orange when we fired up the microwave oven!

With the new power and isolated ground in place, Joe decided to place banks of four duplex outlets per breaker on the operating side of the shack. These were connected to the new power panel by 12-3 mc cable to insure good DC ground and to reduce RFI. A 240V outlet was added, in Joe's words, "in case you want to run a linear, someday." New wiring included separate outlets for the air conditioner, computer desk, and workbench area, all tied into their respective breakers in the new power panel. In future columns I'll describe some of the physical construction techniques used in the new shack.

My first book, *Low Power Communications — Volume I, Basic QRP,* is selling well. If you'd like an autographed copy, please see the Mart ad in the back of *Worldradio* for details. 72 and 73 Rich, K7YHA □

El cheapo supremo

How to make a windshield-mounted 2-M antenna from a simulated car phone antenna

BERNARD P. GINSBERG, KC6P

Upon going to the local auto parts store to get a deep cycle battery for Field Day use, I noticed simulated car phone antennas on sale for $1.99. I felt that if these were made of metal, it might be possible to mount one on the car and somehow load it up on 2M. This was a lot easier than it seemed it would be, and I feel that other amateurs will be able to complete this project quickly and easily and have a nice windshield-mounted 2M antenna for their use.

This particular simulated car phone antenna (by Custom Accessories Incorporated of Lincolnwood, Illinois) was approximately 14 inches long, with a large coil in the center typical of cellular car phone antennas. Upon unscrewing the antenna from its base, it was found that the antenna itself was made from an iron-like metal. It was possible to scrape the insulation from this and solder to it.

The antenna base was mounted to the window with double-sided tape provided. A coax lead with an appropriate coax connector for the rig of a length long enough to drape down the side of the window, up to the antenna and through the door to my rig was prepared. The end that was to be attached to the antenna was taped to the side of the window near where the base was mounted.

The center conductor of the coax was soldered to an aligator clip which was clipped to the bared area of the base of the antenna. To provide a connection for the coax shield and a counterpose for the antenna itself, a 16 in. length of plain wire was soldered to the coax shield and taped alongside the coax to the side of the window, where it connected to the car and draped downwards.

I was amazed that connection of this, without any tuning or pruning of the antenna itself or moving the coil, resulted in an SWR of less than 2:1. By just bending one inch of the end of the wire that was away from the base of the antenna upwards in a slight "J" from the bottom of the antenna, I was able to get an SWR of less than 1.7:1.

Finally, the antenna coil was pulled apart very, very slightly. The end of the coil away from the base of the antenna was increased in spacing approximately one-quarter of an inch.

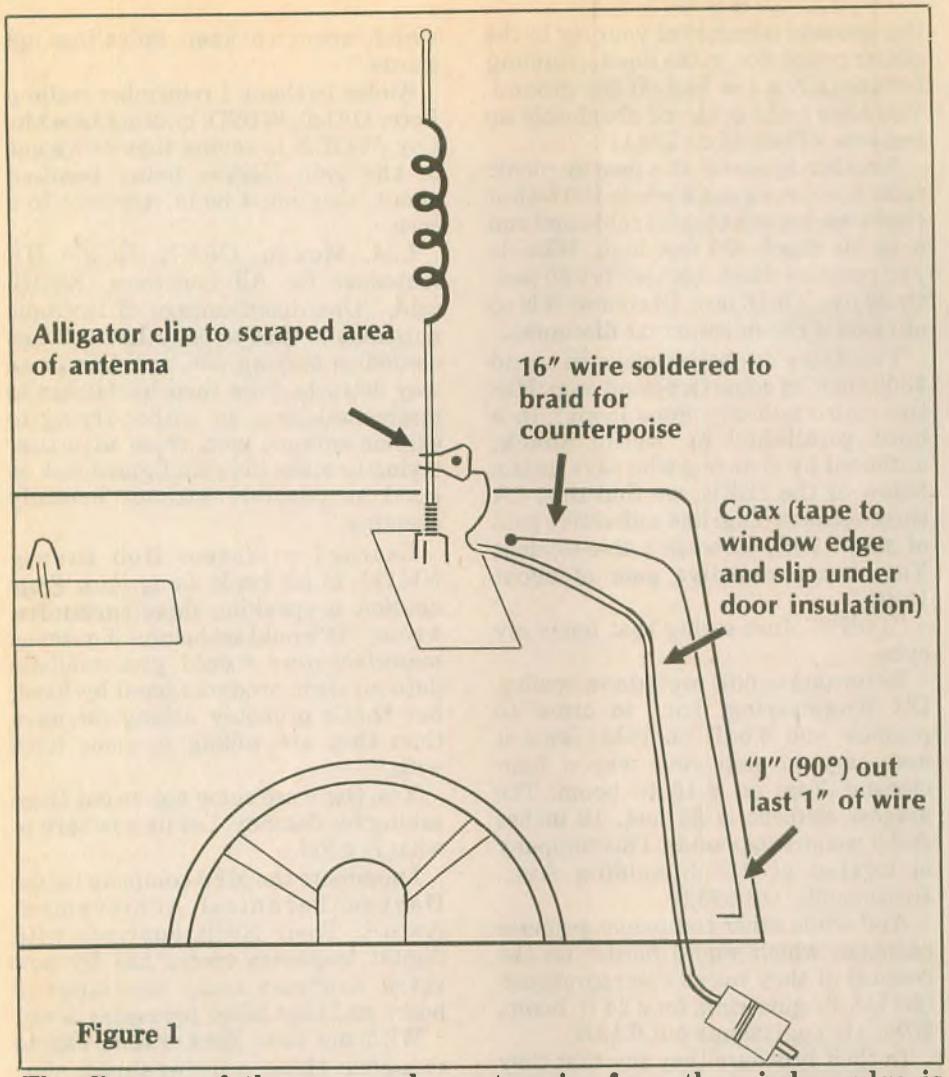


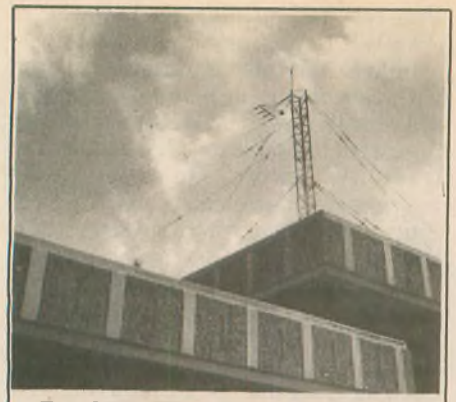
Figure 1

The distance of the coax and counterpoise from the window edge is enlarged here; actually, they are adhered to the edge with tape or rubber cement.

This resulted in a further lowering of the SWR to approximately 1.3:1.

I have used this very simple antenna with very favorable results on the local 2M repeaters. With 1W I am able to hit repeaters full quieting that required at least 3W before. On receive, the average station is heard three to four S-units higher than with a rubber duck in the car.

Although this is perhaps not as good an antenna as a 5/8-wave magmount, it certainly is a lot better than my rubber duckie, and certainly nothing could be cheaper than the "El Cheapo Supremo $1.99 Special." □



AERIALS

LIL PADDLE

Alas, it seems we are at the end of civility. Morality is unraveling. More and more the vultures are taking over. And, sadly, the publications have abdicated their role as watchdog.

A periodical issued by that self-proclaimed genius is indeed perverting science. An advert is being published for "a half-wave open loop" which claims "6dB gain over a dipole."

Nauseous! I must say. What does *The ARRL Antenna Book* reveal about the half-wave open loop? (Page 5-1.) "The small size and the shape of the directive pattern result in a loss of about 1dB when the field strength in the optimum direction from such a loop is compared with the field from a half-wave dipole in its optimum direction."

To poke a stick in the eye of the knowledgeable even further, a new product release from the same antenna company says, in promising "great DX," "You can use a tripod or other roof mount since height isn't required, and fewer feet of coaxial cable are needed (this also means less line loss)."

I know that the bulk of the readership of this column consists of (1) old coots hoping to catch Kurt in a mistake and, (2) newcomers trying to wend their way through the maze. For the newcomer: At 30 MHz, the loss in 100 feet of RG-8 foam is about 1dB.

Now, the newest neophytes of all could figure this out all by themselves. Scenario: You are at a picnic table. Your transceiver is on the table. In order to avoid that awful "line loss" you use an adaptor to go directly from the antenna terminal of your rig to the center connector on the dipole, running horizontally a few feet off the ground. You have truly achieved absolutely no line loss. (There is no line.)

Another amateur at a nearby picnic table has strung out a whole 100 feet of that treacherous coaxial cable and run it to his dipole, 90 feet high. Who do you perceive will do better? Try 50 feet. Or 30 feet. Or 16 feet. Of course, it is so obvious it doesn't warrant discourse.

Yes, there are better ways to spend $300 than on some two-band loop. Has the entire industry gone loopy? In a book published by Radio Shack, authored by someone who says he is a fellow of the IEEE, we find this: "A three-element Yagi has a directive gain of about 7dB, whereas a five-element Yagi has a directive gain of about 15dB."

"15dB?" Just seeing that hurts my eyes.

Returning to 6dB pretzels vs. reality, DX Engineering, Inc., in order to promise you 6.6dB on 15M, finds it necessary to ship your way a four-element Yagi on a 16 ft. boom. The longest element is 23 feet, 10 inches and it weighs 26 pounds. This company is located at 618 Spaulding Ave., Brownsville, OR 97327.

And while other companies promise numbers which would border on the comical (if they weren't so reprehensible) DX Engineering, for a 24 ft. boom, 20M, 3L Yagi claims but 6.1dB.

In their brochure they say that they are using only the free-space figures and avoiding "arbitrary numbers, which seem to keep spiraling upwards."

Kudos to them. I remember reading Peter O'Dell, WB2D, quoting Lew McCoy, W1ICP, in saying that with some of the gain figures being bandied about, they must be in reference to a rock.

L.A. Moxon, G6XN, in his HF Antennas for All Locations (RSGB) said, "One disadvantage of isotropic antennas is that nobody has yet succeeded in making one, but this in no way detracts from their usefulness to mathematicians, an author trying to explain antenna gain, or an advertiser trying to make his gain figures look as good as possible without actually cheating."

Learned professor Bob Brown, NM7M, in his book, *Long Path Propagation*, in speaking about tribanders, wrote: "It would be helpful if antenna manufacturers would give realistic data on their products band by band, but that's probably asking for more than they are willing to come forth with."

Yes, there are some voices out there asking for decency. Let us now turn to what is good.

I nominate the MFJ company for the Dayton Technical Achievement Award. Their SWR analyzer with digital frequency meter has by now saved amateurs many thousands of hours and kept blood pressures down.

With my dear Kurt attempting to resonate three wire-wrapped shoe boxes in parallel, the MFJ analyzer gives the answers immediately.

We put up the Antennas West half-square antennas for the Radiosport Contest. Highly, highly pleased. Their fiberglass poles are excellent for quick and temporary or fixed usage. The contest contacts were fast and furious and many DX contacts were also made in the few days prior and after the fray.

The Rupp Power and SWR meter (digital) is very good. More about it later.

I would like to mention that when we mention a product here, we have not had our observations coloured by the acceptance of complimentary equipment. All is purchased prior to usage. Should an unannounced product show up, after testing it would be returned in due course.

(Kurt N. Sterba will return next month. He's been very busy setting up his new corporation, The P.T. Barnum Antenna Co. The first product will be "La Stupenda." A never measured 9dB on 20M is promised. Know-nothings will probably say it looks like two coffee cans. The first advertising will be placed as soon as the post office box is obtained in Del Rio, Texas.) □

Pennsylvania QSO Party

Operating periods for this contest will be from 1600Z Oct. 10 to 0500Z Oct. 11, and 1300Z Oct. 11 to 2200Z Oct. 11, 1992.

Entry Classes: Single operator, no assistance; multi op-single transmitter; multi-op-multi transmitter; mobile-fully mobile; portable-no permanently installed equipment; QRP-single op only, 5W output max; medium power-5 to 150W output power; QRO-more than 150W power; Novice/Tech-single op, Novice frequencies only.

Operation: CW and phone. CW in CW subbands only. No repeater QSOs. Frequencies: SSB: 1.850, 3.980, 7.280, 14.280, 21.380 and 28.580. CW: 40 kHz up from the bottom of 1.810 kHz. Try 160M at 0300Z Oct. 10. Novice/Tech: 10 kHz up from the bottom end of the subband. Mobile window: 5 kHz below listed frequencies. *Please keep this clear for weak mobiles.*

Contacts: PA stations work everyone; others work PA stations. Stations may be worked once per mode on each band. Mobiles may be reworked as they change counties. All stations that are out of their normal call sign district must identify with a /4 or /7 or /3 as appropriate so that other stations can tell where they are without asking. (Example: K8HVT/3.)

Exchanges: Sequential serial number plus county or ARRL or CRRL section. Stations on county lines will give out one serial number per contact but all counties may be counted as multipliers.

Scoring: CW QSOs on 160 and 80M count two points; other CW QSOs count 1.5 points; phone QSOs count one point. *Multipliers:* PA stations add ARRL sections, CRRL sections, PA counties and one point for DX (150 total). Out-of-state stations: PA counties (67 total). *Final score:* total points multiplied by total multipliers. *QRP bonus:* Multiply your final score by 2. *Novice/Tech bonus:* Multiply your final score by three. *Mobile bonus:* Add 500 points to your final score for each PA county from which you made at least 10 QSOs. *Special bonus for 1992 only:* The Nittany ARC is operating W3YA from the grounds of the Christopher Columbus Chapel in Boalsburg, PA in commemoration of the quincentennial of Columbus' voyage to the New World. Add 500 points to your final score if you work W3YA during the contest.

Awards: A minimum of 20 QSOs is required to be eligible for any award. Plaques and certificates will be awarded, as well as the PA QSO Party Traveling Club Trophy and Club Gavel.

Logs: Logs must be submitted on an official form or reasonable facsimile. Forms are available from NARC. Entries with 100 or more QSOs must have dupe sheets. Computer logs and dupe sheets are okay. Computer logs must include a completed summary sheet. Illegible or late logs will be used as check logs *only*. One hundred points will be deducted for each dupe found. Send logs by Nov. 14, 1992 to PA QSO Party, Nittany ARC, P.O. Box 614, State College, PA 16804-0614. Please enclose $1 to help defray the costs of mailing, printing, etc. No SASEs will be used.

YL Anniversary Party

The CW portion of the contest will take place from 1400Z Wed., Oct. 14 to 1700Z Thurs., Oct. 15, 1992. The SSB portion will take place from 1400Z Wed., Oct. 28 to 1700Z Thurs., Oct. 29, 1992.

Eligibility: All licensed women operators throughout the world are invited to participate. YLRL members only are eligible for the cup awards. Non-members will receive certificates, Only YLRL members are eligible for the Corcoran and Hager awards.

Procedure: Call "CQ-YL."

Operation: All bands may be used. No crossband operation. Net contacts and repeater contacts do not count. A station may be worked and counted once on each band.

Exchange: Station worked, QSO number given and received, RS(T) given and received, ARRL Section/VE province/country. Entries in log must show time, band date and transmitter power.

Scoring: CW and SSB will be scored as separate contests. Submit separate logs for each contest. All the YLs within one of the US ARRL sections or within a Canadian province, score one point for each QSO with another station located within a section or province. Score two points for each contacted station not located within a US section or province (i.e. DX, or all stations not located within a US section or province). DX YLs score two points for each contact with a station on another continent, and one point for each contact with a station on their own continent. *Multipliers:* Multiply the number of contact points by the total number of different sections, provinces and countries worked. Contestants running a power output of 100W or less on CW and 200W PEP or less on SSB *at all times* during the contest earn a power factor of 1.5. The maximum power allowed is 750W on CW and 1,500W PEP on SSB. Compute by multiplying the points by the multiplier *and* by the power factor.

Awards: The YLAP Cups will be awarded for both the NA-YL and DX-YL with the highest CW scores and the highest SSB scores. If the winner is non-YLRL, a first-place certificate will be awarded. Second and third certificates will be awarded on each contest to the highest in CW and the highest in SSB in each district, province and country.

Logs: All logs must show the operator's US ARRL section/VE province or country to qualify for the awards and whether the operator is a YLRL member. For 200 or more QSOs separate logs and dupe sheets must be submitted. Logs must be printed or typed. All logs must be signed and show claimed score. No carbon copies will be accepted, and no logs will be returned. All logs must be postmarked 30 days after each contest ends. Submit logs to Carla Watson, WO6X, V.P. YLRL, 473 Palo Verde Dr., Sunnyvale, CA 94086.

1991 Illinois QSO Party

Sponsored by the Radio Amateur Megacycle Society, this event will take place from 1800Z Oct. 11 until 0200Z Oct. 12, 1992.

Suggested frequencies: 3.550, 7.050 and 14.050 kHz for CW, and 3.890, 7.290, and 14.290 kHz for phone. Bands include 160 through 10M, excluding 30, 17 and 12M. Novices call 30 kHz above the bottom end of the Novice subbands for CW and 28.390 kHz for phone.

Exchange: Illinois stations give RST and county; others give RST and state, province or country.

Scoring: Count one point per phone QSO, two points per CW QSO. No repeater QSOs. Stations may be worked once per band and mode, and once per band/mode/county for Illinois mobile stations. Each vehicle is considered one station and must use only one call. All parties which embark with a mobile must use the mobile's call exclusively for the duration of the contest. contacts with/by mobile stations stopped at the border of two (or more) counties count as two (or more) counties and as many QSOs. Illinois stations multiply points by the sum of states, Illinois counties, VE provinces, and a maximum of five DXCC countries (W/K and VE included). Count additional DX as points but not multipliers. Non-Illinois stations multiply points by number of Illinois counties worked. Illinois mobile stations may add 200 points to final score for each county from which 10 or more QSOs were made. All stations may earn one extra multiplier for every eight QSOs made with the same Illinois county. All stations may operate only one transmitter at a time.

Awards: Plaques will be awarded to the highest-scoring Illinois fixed station and highest-scoring Illinois mobile station. Certificates will be awarded to the 10 highest-scoring Illinois fixed stations, the top five scoring Illinois mobile stations, the highest score in each state, province and country, and the highest team/club aggregate score.

Logs: Logs must contain UTC, the call of the station worked, RST state or province, Illinois county, band and mode. *Circle new multipliers as worked.* Illinois mobiles indicate county changes in the log. Any station with over 100 QSOs must submit a dupe sheet. A summary sheet must also be submitted with every log. Entries must be postmarked by Monday, Nov. 9, 1992. Mail to RAMS, c/o Joe LeKostaj, 9134 Ewing Ave., Evanston, IL 60203.

Arizona

THE OLD PUEBLO RC is sponsoring the Tucson Hamfest on Oct. 18 from 7 a.m. to 1 p.m. at the DeAnza Drive-In in Tucson. Features include hourly drawings, ARCA meeting, repeater owner meeting and Arizona Packet Node Operators meeting. Admission $1. Vendors $4 per space. Talk-in on 146.22/82, 146.28/88, 146.52 simplex. Contact A.J. Pawlowski, KB7KZ, 3418 W. Green Trees Dr., Tucson, AZ 85741; 602/742-2605.

California

PACIFICON '92, sponsored by the Mt. Diablo ARC, will be held Oct. 16-18 at the Hilton Hotel in Concord. Admission is $3 in advance and $5 at the door. The swapmeet will run from 7 a.m. to 1 p.m. at the Willows Shopping Center parking lot and admission for sellers is $10 for a booth two parking spaces wide. Talk-in on 147.06 beginning at 6 a.m. Saturday. Contact Pacificon '92, P.O. Box 272613, Concord, CA 94527; 510/932-6125.

Connecticut

THE TRI-CITY ARC will hold its annual auction on Oct. 31 from 10 a.m. until sold out at the Senior Citizen's Center, Waterford Municipal Complex. Food will be available and there is wheel chair access. Admission is free. Set-up time is 9 a.m. Talk-in on 146.07/.67 repeater. Contact KA1BB at 203/739-8016.

Illinois

THE CENTRALIA WIRELESS ASSOCIATION will hold its annual hamfest on Oct. 18 from 8 a.m. at the Kaskaskia College Gymnasium, three miles northwest of Centralia. Features include free parking, food and refreshments available and prizes. Admission is $2 each or three for $5. Flea market table available on a reserved basis at $1 per foot. Space for "bring your own tables" is 50 cents per foot. Tailgaters may set up in the parking lot at no charge. Vendor set-up time is 6 a.m. Talk-in on 147.27/.87 and 443.2/448.2. For table reservations and information, contact Bud King, WA9U, at 618/532-6606. Mail ticket orders with SASE to Centralia Wireless Association, Hamfest Tickets, P.O. Box 1166, Centralia, IL 62801.

Indiana

THE INDIANA TRI-COUNTY HAMFEST, sponsored by the Cass County ARC, Miami County ARC and Tioga ARS, will be held Oct. 3 from 8 a.m. to 4 p.m. at the Miami County Indiana Fairgrounds. Features include free parking, vendors and forums inside and free (with ticket) tailgate sales outside. Admission is $4 in advance and $5 at the gate. Talk-in on 147.18 (+600) and 147.345 (+600). Contact Indiana Tri-County Hamfest, c/o Cass County ARC, P.O. Box 1092, Logansport, IN 46947.

Maryland

THE COLUMBIA ARA is holding its 16th annual hamfest and computer show on Oct. 11 from 8 a.m. to 3:30 p.m. at the Howard County Fairgrounds. Features include indoor display area, outdoor tailgating area, food and refreshments available and covered areas for inclement weather. Admission is $5, XYLs and kids free. Tables are $20 and tailgating space is $10 each. Talk-in on 146.52 simplex, 147.135/147.735 MHz repeater, crosslinked to 222.32/223.92 MHz. Contact CARA Hamfest Committee, P.O. Box 911, Columbia, MD 21044.

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THE NATIONAL CAPITOL DX ASSOCIATION is hosting DXPO '92 Oct. 10-11 from 12-10 p.m. Saturday and 9 a.m. to 1 p.m. Sunday at the Holiday Inn in College Park. Advance admission is $20 for the program and $25 for the banquet. For information, contact Stuart Meyer, W2GHK, National Capitol DX Association, at 703/281-3806, or FAX 703/281-3868.

Michigan

THE SOUTHWEST MICHIGAN AMATEUR RADIO TEAM and KALAMAZOO ARC are sponsoring their 10th annual hamfest Oct. 18 from 8 a.m. at Kalamazoo Central High School. Features include free parking and door prizes. Admission is $2 in advance and $3 at the door. Tables are $1.50 per foot, 4 ft. minimum. Vendor set-up time is 6 a.m. Talk-in on 147.040. Contact Gary Hazelton, KB8PL, 75075 M-40, Lawton, MI 49065.

Minnesota

THE TWIN CITIES FM CLUB is sponsoring the eighth annual Hamfest Minnesota and Computer Expo Oct. 31 at the St. Paul Civic Center. Features include major manufacturers, indoor flea market, seminars, prizes, VE exams, food and adjacent parking. Admission is $5 in advance and $6 at the door. Fleamarket tables are $18 each. Talk-in on 146.16/76 repeater. Contact Hamfest Minnesota and Computer Expo, Box 5598, Hopkins, MN 55343; 612/535-0637.

New Jersey

THE BERGEN ARA will hold its annual fall hamfest Oct. 10 from 8 a.m. to 2 p.m. at Fairleigh Dickinson University in Teaneck. Features include VE testing. Admission is $2, XYL and harmonics free. Sellers $10 per parking space. Space with power $20. Pre-registration required with power. Talk-in on 146.190/790, 145.620 simplex. For VE information, contact Pete Adely, K2MHP, at 201/796-6622 before 10 p.m. For hamfest information, contact Jim Joyce, K2ZO at 201/664-6725.

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THE TRI-COUNTY RADIO ASSOCIATION is sponsoring the TCRA Hamputer Fest Oct. 17 from 8 a.m. to 2 p.m. at the Union Catholic Regional High School in Scotch Plains. Features include indoor facilities, food and VE testing at 9:30 a.m. Admission is $4, children 12 and under free with parents. Tailgating space $8, tables $10, with air-conditioning $12. Talk-in on 147.255/.855, 449.975/4.975, 146.52. Contact Dick Franklin, W2EUF, 310 Indian Trail, Mountainside, NJ 07092; 908/654-4943.

New York

THE HALL OF SCIENCE ARC is holding a hamfest Oct. 18 from 9 a.m. at the New York Hall of Sciance parking lot in Queens. Features include free parking, door prizes, food and refreshments. Admission is $5. Vendors $8 per space. Vendor set-up time is 7:30 a.m. Talk-in on 445.175 NB2A repeater, 146.52 simplex. Contact Charles Becker, WA2JUJ, 516/694-3955 or Arnie Schiffman, WB2YXB, 718/343-0172 evenings.

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THE RADIO AMATEURS OF GREATER SYRACUSE will hold its 37th annual hamfest Oct. 10 from 9 a.m. to 4 p.m. at the Tricounty Convention Center in Baldwinsville. Features include commercial vendors, computers, tech talks, contests, restaurants, snack bars, movie theater, stores, wheelchair accessibility and VE exams. Vendor set-up time is 4-10 p.m. Friday and 6:30-8:30 a.m. Saturday. Talk-in on 146.31/91 MHz. For information call 315/469-0590.

North Carolina

THE MAYSVILLE HAMFEST will be held Oct. 11 from 8:30 a.m. in Maysville. Features include drawings, free tailgating with limited inside space, catered lunch available and VE exams at 9 a.m. Admission is free and drawing tickets will be sold. Talk-in on 145.21. Contact Jo Ann Taylor, WD4JYR, 220 Anita Forte Dr., Swansboro, NC 28584; 919/393-2120.

Ohio

THE INDEPENDENT RADIO ASSOCIATION will hold its 10th annual hamfest and computer expo Oct. 4 from 8 a.m. to 3 p.m. at the Clark County Fairgrounds. Features include prizes, indoor facilities and commercial vendors. Admission is $4 in advance and $5 at the door. Tables are $8 in advance and $10 at the door. Talk-in on 145.45 and 224.26 MHz. For ticket info, call 513/325-2053. For general info, call 513/323-1499.

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THE ASHLAND AREA ARC is holding a hamfest Oct. 4 from 8 a.m. to 3 p.m. at the Ashland County Fairgrounds. Features include 50/50 drawing, handmade country crafts and VE exams. Admission is $3. Tables $5. Talk-in on 147.105+. Contact Eric Webner, KA8FAN, 435 Snader Ave., Ashland, OH 44805; 419/281-4459.

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THE NORTHWEST OHIO ARC is holding a hamfest Oct. 11 from 6 a.m. at the Allen County Fairgrounds. Features include on-site camper parking ($7 charge for electric hook-up), security guards and all indoors. Admission is $4 in advance and $5 at the door. Tables $8. Vendor set-up times are 3-11 p.m. Oct. 10 and 5 a.m. Oct. 11. Talk-in on 146.67, 145.17, 444.925 std. splits. For VE exams, contact W8TY, P.O. Box 211, Lima, OH 45802. For tables and information, contact WD8BND, same P.O. Box.

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THE FIRELANDS ARA is holding its 1992 FARA Hamfest and Computer Fair Oct. 18 at the Ehove vocational school in Milan. Features include a packet seminar and demonstration and all indoor, heated facilities. Admission is $3 in advance and $4 at the gate. Eight-foot tables are $8. Talk-in on 146.805/205 MHz. Contact Gene Hutchins, 45 Welton Ave., Norwalk, OH 44857; 419/668-5796.

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THE MARION ARC is holding its 18th annual Heart of Ohio Hamfiesta and Computer Show Oct. 18 from 8 a.m. to 3 p.m. at the Marion County Fairgrounds Coliseum. Features include prizes, refreshments and ample free parking. Admission is $4 in advance and $5 at the door. Tables are $8. Talk-in on 147.90/30 repeater. Contact Dan Burns, N8JMF, 844 Robinson, Marion, OH 43302; 614/382-2384 after 4 p.m. Monday-Friday and all day Saturday and Sunday.

Oklahoma

THE NORTH CENTRAL OKLAHOMA HAMFEST, sponsored by OIDAR and the Kay County ARC, will be held Oct. 10 from 9 a.m. to 3 p.m. at the National Guard Armory in Ponca City. Features include flea market, commercial vendors, door prizes, BBQ lunch available and VE testing at 1 p.m. Admission is $1. Talk-in on 146.37 in/146.97 out, 449.70 in/444.70 out. Contact Mark Byard, N5OGP, Kay County ARC, P.O. Box 2750, Ponca City, OK 74602.

Pennsylvania

THE RF HILL ARC will hold its annual hamfest Oct. 25 at the Dublin Firehouse. Features include acres of parking, drawings, hot and cold meals and VE exams. Admission is $5, XYLs and kids free. Indoor spaces $8, outdoor spaces $6, bring your own tables. Talk-in on 145.31 (-600). Contact Bob Frantz, P.O. Box 29, Colmar, PA 18915; 215/536-9098.

South Carolina

THE SUMTER ARC is holding its 6th annual hamfest Oct. 24 from 8 a.m. to 4 p.m. at the Sumter County Exhibition Center. Features include CW contest, forums, Friday night cookout, prizes, blue-lite auctions and VE exams. Admission is $5. Tables are $6. Talk-in on 147.015. Contact Dan Mask, WB5SGH, P.O. Box 193, Sumter, SC 29151; 803/775-9106.

Texas

THE CLEAR LAKE ARC will hold an auction Oct. 24 from 9 a.m. at the Webster Volunteer Fire Station. Registration is $2 per participant. Registration begins at 7 a.m. Items sold for auction will be subject to a 10 percent handling fee (up to $20). Items bought back by the seller will be subject to a $1 buy back fee. Contact Jeff Racz, Clear Lake ARC, P.O. Box 57714, Webster, TX 77598.

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THE INTERNATIONAL HAMFIESTA will be held Oct. 10-11 from 8 a.m. to 5 p.m. Saturday and 8 a.m. to 3 p.m. Sunday at the Texas National Guard Building in El Paso. Features include RV parking (no hookups), seminars, refreshments, entertainment, QCWA breakfast and VE exams. Admission is $5 in advance and $6 at the door. Tables and tailgate spaces are $5. Contact Clay Emert, K5TRW, P.O. Box 31628, El Paso, TX 79931; 915/859-5502.

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THE WEST TEXAS ARC will hold their ninth annual Odessa Hamfest Oct. 31 through Nov. 1 from 8 a.m. to 5 p.m. Saturday and 8 a.m. to 2 p.m. Sunday at the Holiday Inn Convention Center in Oddessa. Admission is $6 in advance and $7 at the door. Tables are $7. Dealer set-up times are 4 p.m. to 10 p.m. Friday and 6 a.m. to 8 a.m. Saturday. Non-dealer set-up times are 7 p.m. to 10 p.m. Friday and 6 a.m. to 8 a.m. Saturday. Contact West Texas ARC, P.O. Box 7033, Odessa, TX 79760.

Tennessee

THE TRI-CITIES HAMFEST, sponsored by the Kingsport, Bristol and Appalachian Fairgrounds in Gray. Features include a large drive-in indoor and outdoor flea market space and RV hookups. Admission is $5. Contact Tri-Cities Hamfest, P.O. Box 3682 CRS, Johnson City, TN 37601.

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HAMFEST CHATTANOOGA AMATEUR RADIO and COMPUTER CONVENTION will be held Oct. 24-25 at the Chattanooga-Hamilton County Convention and Trade Center in Chattanooga. Contact Barbarra Gregory, WA4RMC, P.O. Box 3377, Chattanooga, TN 37404; 615/892-8889.

Washington

THE NORTH KITSAP ARC is sponsoring a flea market and swapmeet Oct. 10 from 9 a.m. to 4 p.m. at the Kitsap County Fairgrounds. Features include free parking for cars, trucks, RVs and motor homes, ARRL info and bookstore, country store for consignment sales, commercial displays and ham dealers. Admission is $4 at the door. Tables are $12 ($8 for half tables), and commercial spaces are $25 for each 80 sq. ft. Vendor set-up times are 4-10 p.m. Friday and 6-9 a.m. Saturday. Talk-in on 145.31. Contact Matt Amis, AA7LP, North Kitsap ARC, 2196 California Ave. E., Port Orchard, WA 98366.

Wisconsin

THE KETTLE MORAINE RADIO AMATEURS will hold their annual computer and ham radio swapfest Oct. 11 from 8 a.m. at the Waukesha County Exposition Center in Waukesha. Features include food and refreshments, free parking, door prizes and VE exams. Admission is $4 in advance and $5 at the door. Four-foot tables are $5 each, $6 at the door. Electrical outlet is $5. Vendor set-up time is 6 a.m. Talk-in on 147.39+. Contact KMRA Swapfest, P.O. Box 411, Waukesha, WI 53187-0411.

HE WHO BEATS HIS SWORD INTO A PLOWSHARE USUALLY ENDS UP PLOWING FOR THOSE WHO KEPT THEIR SWORDS.

— Central Michigan ARC

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

K-COM telephone RFI filter

K-COM announces the newest addition to its product line, the model RF-1 Coiled Cord filter. The filter uses mini-modular connectors for easy insertion in the coiled cord between telephone base and handset.

Increased use of long coiled cords prompted K-COM to develop the new filter. Popular cord lengths up to 25 feet approach the electrical equivalent of resonant antennas between 14 and 30 MHz. Cord interception of the radiated field from a transmitting source can produce RF current flow into telephone electronics, and telephone interference is often the result.

The new design provides a convenient method of blocking RF from either the telephone handset or base. Telephones with Touch-Tone pad, dialer and other electronics in the handset (Trimline, Slimline, amplified handsets, etc.) are protected best with filter insertion at the handset. Insertion at the base is recommended for telephones of traditional design.

K-COM manufactures a full line of telephone RFI filters including single-line and two-line modular versions and a hard-wired filter for interference rejection in telephone wiring. Company owner, Pete Krieger, WA8KZH, designs and oversees manufacture of all K-COM filters. WA8KZH is a telephone professional and author of numerous articles dealing with contemporary solutions to telephone RFI.

Model RF-1 Coiled Cord filter introductory price is $19.95 plus $1.50 shipping and handling. K-COM products are also available through leading amateur equipment dealers. For more information, contact K-COM, Box 82, Randolph, Ohio 44265; 216/325-2110; FAX 216/325-2525. □

TenTec Omni-VI transceiver

Ten-Tec began shipments of the new Omni-VI transceiver on June 5. Initial customer response is so strong that both the first and second production runs are sold out. Two notable things were done during development. Unprecedented input was solicited from present Ten-Tec owners and a panel of well known DXers and contesters were consulted throughout the design phase.

Omni-VI is the only US built rig in its price class. The design is a unique hybrid combining three technologies: 1) crystal mixing for quiet receiver performance, 2) powerful microprocessor loaded with sophisticated software control, 3) Automatic Notch Filter using digital signal processing. Omni-VI is Ten-Tec's first new product introduction since their successful transition to factory direct sales. Call the factory at 800/833-7373 for more information. □

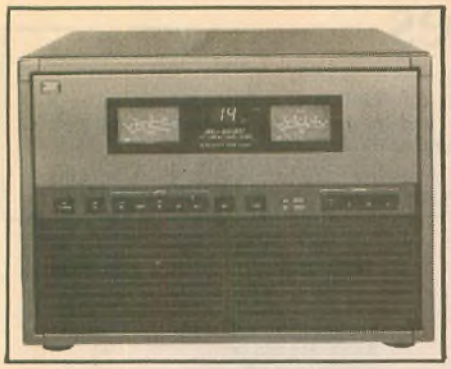
JRC linear amplifier

Japanese Radio Company, Ltd. is pleased to announce the newest addition to their Amateur Radio product line, the JRL-2000F HF linear amplifier. The JRL-2000F is the world's first MOSFET linear amplifier for the ham radio market. JRC has developed several MOSFET transmitters for commercial HF applications up to 10 kW, all using the same single-ended push-pull (SEPP) circuit design employed by the JRL-2000F.

The advantages of the JRL-2000F's 48-MOSFET power amplifier over conventional bipolar-type transistor amplifiers are: lower IMD and harmonic distortion; higher output power margin; higher efficiency; greater final device durability; and better linearity across wide frequency ranges.

The JRL-2000F features a built-in automatic antenna tuner and four antenna output connectors. Any exciter can be used with the JRL-2000F, which senses the input RF and automatically tunes the amp to the operating frequency. The internal CPU stores band, tuner and antenna settings to one of 1,820 memory channels for fast recall. When used with Japan Radio Company's JST-135 transceiver, frequency data from the transceiver's CPU can be read by the JRL-2000F for instant QSY *before* keying up.

A built-in switching power supply utilizes a unique Power Factor Connection (PFC) circuit to improve efficiency and reduce power consumption. The power factor of a typical switching-type supply is less than 60 percent; however, the JRL-2000F's power supply with its PFC circuit has a rated power consump-



tion of approximately 2.4 kVA at 2 kW DC input—a power factor of close to 100 percent.

The suggested retail price for the amplifier will be $4,899. For more information, contact Japan Radio Company, Ltd., 430 Park Avenue, New York, NY 10022. □

DX Consulting kits

Attention Ramsey and ICOM-22S transceiver owners:

DH Consulting has introduced a line of kits which enable full frequency coverage (5 kHz resolution) for Ramsey FX-146, FX-220, FTR-146, and ICOM-22S transceivers. You furnish four or five BCD thumbwheel switches and a few miscellaneous parts and DH Consulting furnishes two programmed EPROMs plus a printed circuit board which mounts neatly inside the transceiver.

Detailed, easy to understand instructions are included. Based on the June '92 *73 Amateur Radio Today* article entitled "8000 Channels for the FX-146." Send SASE for information to DH Consulting, 1803 Mission St., Suite 308, Santa Cruz, CA 95060. □

Free Austin software

Austin Antenna announces the availability of free software to facilitate the design of inductors, chokes, and ferrite toroids.

Several capabilities are included in the software. Inductance can be calculated from turns, diameter, wire size and coil length, and vice versa. One can build inductors using wire on hand. Straight wire inductors and ferrite toroid design rules are covered as well. Inductance can be determined from inductive reactance. Also included in the program is the inductance calculation for a short loaded dipole. Finally, construction details are determined for building capacitors from double sided printed circuit boards.

Invaluable for the hobbyist and experimenter alike, this software is a worthwhile addition to every lab. Requires VGA. Please send $5 to cover 5¼ in. floppy, copying, mailer, postage and handling to Austin Antenna, 10 Main St., Gonic, NH 03839, or call 603/335-6339 for more information. □

Gordon West videos

Well-known writer and instructor, Gordon West, WB6NOA, announces a new division to his Gordon West Radio School, video tapes. To complement his selection of over 62 individual audio theory and code cassettes, Gordon West has now gone video!

The hour-long *Ham Class* instructional video tells instructors and students how to get set for an upcoming ham class. The *Ham Class* video has the best of West's classroom live-action demonstrations, plus some straight talk to Elmers on how to set up their own evening or weekend training seminars. Everything is covered from rules and regulations through antennas and feedline chapters, and the tape finalizes on details about volunteer examination (VE) tests.

CQ Field Day is another favorite video cassette and is designed specifically for hams who want to set up their equipment out in the open. "We take you to an award-winning, 22A, Field Day station, and show you everything from the inside out," comments the producer, Dan Fort, AA6LM. "This tape is ideal for clubs, contest committees, or the ham just wanting to know more about how to set up a Field Day station," adds Fort.

Other Gordon West videos include *Marine Ham and SSB Installations*, an exciting aboard-ship presentation on how to install and maintain a marine and Amateur Radio high-frequency, single-sideband installation. West covers everything from grounding to automatic antenna couplers.

Radio School also presents the *CQ All Schools* video featuring well-known educator, Carole Perry, WB2MGP, plus a brand new tape on the VEC system and what it takes to become an accredited volunteer examiner, as well as a test-taker.

All video tapes are recorded with studio-quality cameras and editing equipment and are available for $19.95 each plus $3 postage and handling from Radio School, Video Education Division, 2414 College Drive, Costa Mesa, California 92626. □

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.

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 of a person to contact for further information.

p/r=pre-register w/i=walk-in

Date	City	Contact	Notes
Alabama			
Nov. 21	Tuscaloosa	Kelly Bruce, WD4DAT 205/339-7882	w/i OK
Arizona			
Nov. 7	Tucson	K7OPX 602/886-7217	w/i only
Nov. 21	Tucson	Robert Olson, WV7P 602/577-1050	w/i OK
Arkansas			
Nov. 21	Little Rock	Chuck, KI5HA 501/888-7517	w/i OK
Nov. 14	West Memphis	Gene Bagley, AB5BL 501/739-4029	w/i OK
California			
Nov. 7	Burbank	KE6AR 818/349-0927	w/i OK
Nov. 28	Elmira	Irene, KK6XB 707/446-8376	w/i only
Nov. 28	Fairfield	Jerry 916/662-0801	w/i only
Nov. 3	Fremont	KJ6EP 510/791-6818	w/i only
Nov. 21	Fresno	Kelsey, KK6AW 209/855-8558	w/i only
Nov. 14	Hesperia	NF6I 619/241-4732; K6BET 619/244-6080	w/i OK
Nov. 2	Lancaster	805/948-1865	p/r
Nov. 19	Long Beach	KA6HOQ 714/897-6331	w/i OK
Nov. 7	Los Angeles	Ali, AA6WC 213/778-6226	w/i OK
Nov. 7	Northridge	818/348-4457	w/i OK
Nov. 7	Ontario	Harry, KM6LO 818/810-0442	w/i OK
Nov. 21	Porterville	Pat, KG6WG 209/539-2429	w/i
Nov. 21	Rancho Palos Verdes	310/644-2271	w/i OK
Nov. 21	Redwood City	Joan, WA6BXT	w/i only
Nov. 14	San Pedro	N6DYZ 213/325-2965	w/i OK
Nov. 21	Santa Clarita	818/884-8030	w/i OK
Nov. 21	Santa Maria	805/929-3710	w/i OK
Nov. 21	Signal Hill	NN6Q 310/420-9480	p/r pref.; w/i
Nov. 14	Sonora	WA6NSK 209/586-4917	w/i
Nov. 21	Stockton	Ed, N6XMA 209/952-5996	w/i only
Nov. 14	Sunnyvale	AA6IY 408/255-9000	w/i only
Nov. 21	Westminster	Walt, KM6MQ 714/373-6077	w/i only
Colorado			
Nov. 9	Boulder	Barbara, N0BWS 303/530-2903	p/r pref.; w/i OK
Nov. 14	Denver	Glenn, W0IJR 303/360-7293, 24-hr. voicemail	w/i OK
Nov. 7	Pueblo	719/948-2291	w/i OK
Nov. 21	Westminster	N0BLU 303/650-6826; N0HNR 303/278-4280	p/r or w/i
Connecticut			
Nov. 7	Gales Ferry	KY1F 203/536-0187	w/i
Nov. 22	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i
Nov. 25	Shelton	WJ1T 203/736-0488	w/i pref.
Florida			
Nov. 2	Dunedin	Marv, WC2G 813/938-7810	p/r or w/i
Nov. 21	Fort Pierce	Fred Newmann, W2EUX 407/340-1069	w/i OK
Nov. 19	Hallandale	Norm, K4RBR 305/823-5437; Howard, N4EBT 305/935-5214	w/i only
Nov. 21	Melbourne	WB9IVR 407/724-6183	w/i OK
Nov. 24	New Port Richey	Marv, WC2G 813/938-7810	p/r or w/i
Georgia			
Nov. 22	Atlanta	Dale, N4REE 404/396-1332	w/i OK
Nov. 14	Augusta	Jim, N4JA 404/790-7802	w/i
Idaho			
Nov. 14	Boise	W7JMH 208/343-9153	w/i
Illinois			
Nov. 17	Aurora	N9AKE 708/892-1252	w/i pref.
Nov. 14	Belleville	John, WA0LIS 618/397-7235	w/i
Nov. 8	Bloomington	NX9M 309/662-3910	w/i OK
Nov. 21	Bolingbrook	Bob, WR9M 708/739-6015, NM9J 708/442-7100	w/i OK
Nov. 21	Chicago	312/929-8500, ext. 2221	w/i
Nov. 28	Chicago	KE9X 312/233-0605	w/i
Nov. 14	Dixon	W9LDU 815/284-6380	w/i
Nov. 20	Elmhurst	WK9U 708/833-7371	p/r
Nov. 21	Godfrey	KF9F 618/466-2306	p/r no-code
Nov. 7	Hoffman Estates	NO9A 708/593-8658	w/i
Nov. 21	Loves Park	Paul, WB9HGZ 815/987-6754	p/r; w/i
Nov. 14	Mt. Prospect	WA9DLI 708/437-1464	w/i
Nov. 5	Mundelein	K9IW 708/367-6303	w/i
Nov. 14	Oak Forest	KA9HDN 312/247-0650	w/i OK
Nov. 28	Oak Forest	WG9R 708/687-0511	w/i
Nov. 1	Paris	WO8X 217/463-2213	p/r; w/i
Indiana			
Nov. 14	Hammond	WO9H 219/738-2728	w/i
Nov. 10	New Carlisle	219/654-3007; or KK9T 219/654-8084	p/r
Nov. 7	Portage	KE9I 219/762-0580	w/i
Nov. 7	South Bend	NI9Y 219/259-9445	w/i OK
Iowa			
Nov. 15	Des Moines	NA0R 515/964-0900; or 515/967-3890	w/i
Kansas			
Nov. 17	Emporia	K0JDB 913/343-2158	w/i OK
Nov. 20	Kansas City	NC0M 913/262-0631	w/i OK
Nov. 7	Parsons	Mort, WS0R 913/421-1822	w/i OK
Kentucky			
Nov. 5	Middlesboro	Andrew, WB8WEZ 606/248-0046	w/i OK
Maine			
Nov. 20	Augusta	N1BCF 207/623-4249	w/i OK
Nov. 4	Newcastle	KA1DAX 207/563-8512	w/i OK
Nov. 29	Topsham	KY1J 207/725-2359	w/i OK
Nov. 1	Yarmouth	W3EZ 207/846-7734	w/i OK
Maryland			
Nov. 14	Davidsonville	NT3Z or NS3V 410/761-7115; or WC3I 301/262-5083	w/i OK
Nov. 21	Laurel	WB3GXW 301/572-5124	p/r pref.
Nov. 27	Springfield/Holyoke	WA1ZUH 413/245-3228	w/i OK
Michigan			
Nov. 14	Dearborn	313/676-6248	
Minnesota			
Nov. 17	Eden Prairie	Tom, AA0GP 612/448-2074	w/i
Mississippi			
Nov. 14	Grenada	Paul, N5UHW 601/565-7286	w/i OK
Nov. 22	Jackson	Mickey, N5NIL 601/956-8106	
Nov. 14	Laurel	Steve, N5DWU 601/763-3559	w/i OK
Missouri			
Nov. 7	Hillsboro	WD0GDY 314/671-4243	p/r only
Nov. 7	Independence	K0IXC 816/373-8976	w/i OK
Nov. 7	Kimberling City	NQ0G 417/739-2888	w/i OK
Nov. 14	Sullivan	N0GLN 314/764-2777	p/r only
Nov. 28	Des Peres	Gregg, KA0VWC 314/567-8777	p/r only
Montana			
Nov. 21	Billings	WB7H 406/656-6987	w/i OK
Nevada			
Nov. 21	Minden	W7QO 702/265-3430	w/i
New Jersey			
Nov. 21	Bayonne	WA2QYX 201/451-9471	w/i OK
Nov. 19	Bellmawr	WA2VQG 609/546-7710	w/i
Nov. 14	Cranford	24-hr hotline: 201/377-4790	
Nov. 11	Fort Monmouth	WB2GYS 908/532-5354	w/i
Nov. 14	Pennington	AA2F 609/737-1723	p/r pref.; w/i OK

New York

Nov. 14	Greenvale	WA2BGE 516/921-0085	w/i OK
Nov. 18	Lancaster	Chuck, WD2AIK 937-3592	p/r only
Nov. 19	Lower Westchester Co.	WK6R 914/834-2322	w/i OK
Nov. 7	North Tonawanda	Vern, AA2AC 716/634-5276	p/r only
Nov. 21	Potsdam	Dave, K2LMG 315/265-3491	w/i
Nov. 1	Yonkers	AC2V 914/237-5589	w/i OK

North Carolina

Nov. 21	Marion	John, KC4PGN 704/724-4083	w/i OK
Nov. 81	Salisbury	Isabelle, AB4UX 704/284-2414	w/i OK

Ohio

Nov. 14	Akron	KZ3E 216/972-7677	
Nov. 28	Canton	WB8IJVN 216/453-5896	
Nov. 7	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.; w/i OK
Nov. 15	Elyria	Ola, WD8MOU 216/647-5116	
Nov. 28	Fremont	W4SIG 419/332-2473	
Nov. 1	Huron	Gary, WW8H 419/433-3441	
Nov. 7	Lancaster	Ed, WX7C 614/653-2970	
Nov. 14	Maumee (Toledo)	Ross, NS8C 419/693-3023	
Nov. 14	Van Wert	KA8IAF 419/795-5763	
Nov. 14	Westerville	Wm. Tabor 614/861-6916	w/i OK
Nov. 17	Xenia	Dan, AA8EE 419/372-8530	
Nov. 19	Youngstown	Lou 216/788-1618	w/i ltd.
Nov. 14	Zanesville	Don, WA8BOV 614/454-0003	

Oregon

Nov. 11	Glide	AA7GC 503/672-7564; W6OFF 503/673-0558	w/i OK

Pennsylvania

Nov. 14	Butler Co.	W3DMB 412/282-6777	w/i ltd.
Nov. 7	Erie	W3CG 814/665-9124	w/i
Nov. 5	Philadelphia	ND3Q 215/482-0386 or 215/879-0505	w/i
Nov. 25	Warminster	WA3TQJ 215/343-3494	

Rhode Island

Nov. 12	Providence	NN1U 401/231-9156 or 401/454-6848	w/i OK
Nov. 28	Slatersville	W1YRC 401/333-2129 or 401/333-2373	w/i OK

South Carolina

Nov. 21	Charleston	Pat, AC4IH 803/553-3871	w/i
Nov. 7	Greenville	John, ND4N 803/288-0136	w/i OK
Nov. 21	Sumter	Dan, WB5SGH 803/775-9106	w/i

Tennessee

Nov. 27	Carter County	Joe, K4BKI 615/543-4022	w/i
Nov. 2	Chattanooga	Alan, WA4QCH 404/866-1200	w/i
Nov. 28	Greeneville	Jack, K4EPC 615/638-7056	w/i OK
Nov. 14	Henry County	Mackie, AA4YF 901/247-5489	w/i OK
Nov. 8	Jasper	Charles, KD4XX 615/942-5116	p/r pref.
Nov. 21	Knoxville	Ray, N4BAQ 615/688-7771	w/i OK
Nov. 9	McMinn County	Evan, WA4PNI 615/263-9300	w/i OK
Nov. 14	Morgan County	Paul, AA4UP 615/435-0080	w/i OK
Nov. 5	Morristown	Roy, KF4CB 615/586-3491	w/i OK

Texas

Nov. 7	Austin	Larry 512/345-7281	w/i
Nov. 10	Houston	ND5F 713/464-9044	p/r pref.; w/i OK
Nov. 14	Houston	Jim, KB5WAM 713/486-2032	
Nov. 21	Irving	Hall, K5ZSB 214/255-1077	w/i OK
Nov. 14	McGregor	AB5BA 817/859-5374	w/i OK
Nov. 14	Midland	KT5G 915/694-9450	w/i OK
Nov. 28	San Antonio	K5JWK 512/657-1549	w/i

Virginia

Nov. 21	Hampton	N4BDH 804/487-8611	
Nov. 21	Herndon	Mike, WB8RDN 703/450-2304	p/r
Nov. 7	Portsmouth	AA4AT 804/484-2857	

Washington

Nov. 28	Bremerton	Dave, AA7IA 206/698-9205	w/i

Wisconsin

Nov. 7	Racine	NW9P 414/658-8390	w/i

When will AMSAT-OSCAR-13 be in range?

ROSS FORBES, WB6GFJ

Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations: East = New York City; Mid = St. Louis, MO; West = Reno, NV.

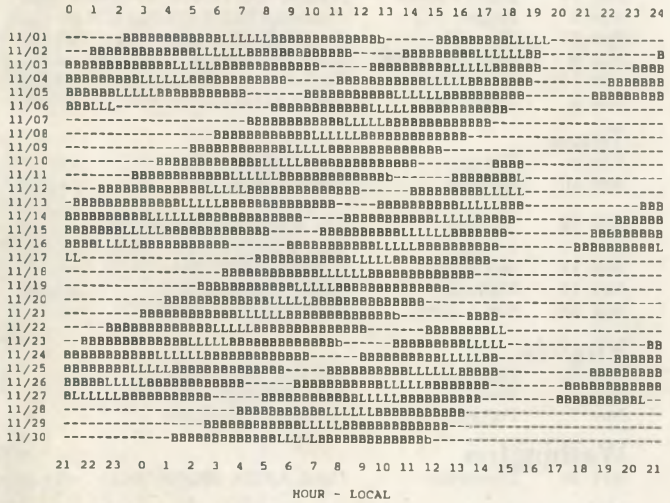
As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the telemetry beacon on 145.810 MHz. The letter "L" indicates the satellite is audible but you will hear signals between 435.650 and 436.000 MHz (SSB and CW).

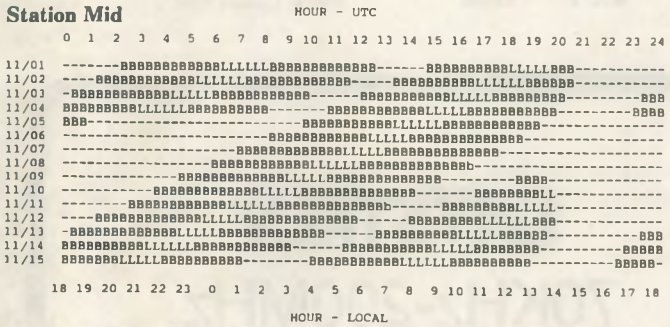
Remember, if a letter is printed on the chart, you should be able to hear OSCAR-13.

For more information about OSCAR, please send a SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. □

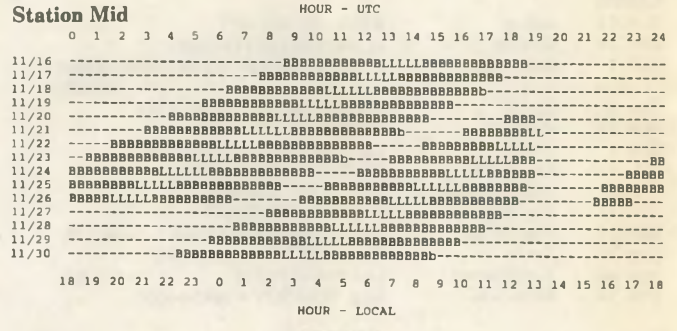
Station East



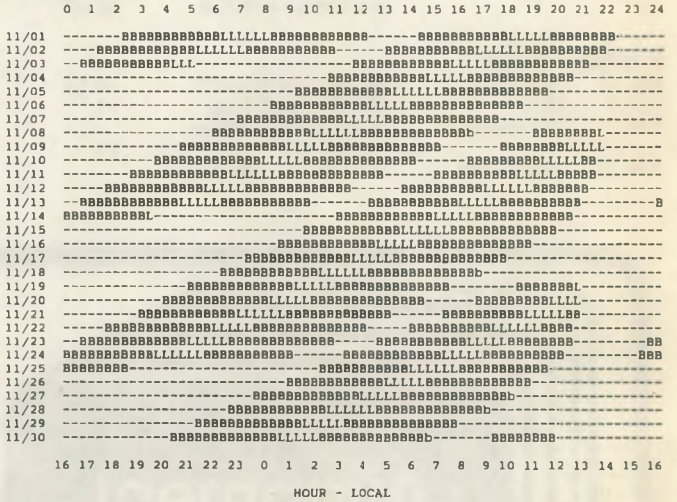
Station Mid



Station Mid



Station West



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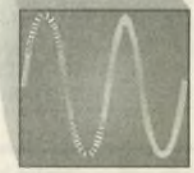

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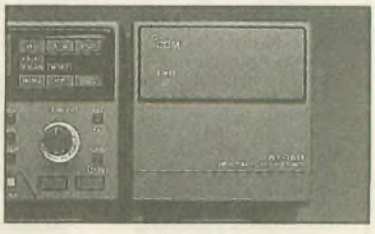

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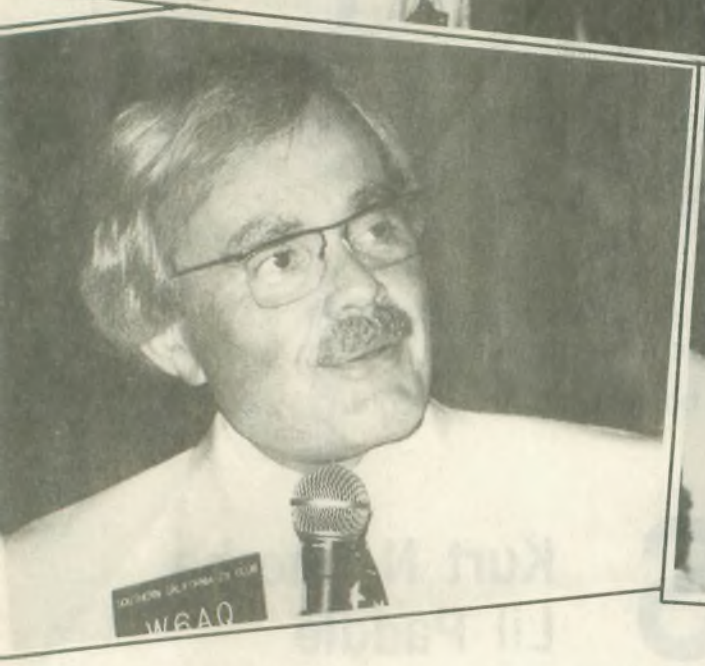

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